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# PROJECT MANUAL

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PROJECT No. J-381

## CHRISTENBERRY FIELD HOUSE RENOVATION

AUGUSTA UNIVERSITY

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CPL PROJECT NO.: R22.16686.00

DOCUMENT DATE 09-25-2023  
REVISED DATE 01-16-2024

### BID SET



1-16-2024



9-25-2023



CPL  
615 MOLLY LANE,  
SUITE 100

WOODSTOCK, GEORGIA 30189  
(800) 274-9000 - PH

BOARD OF REGENTS  
OF THE UNIVERSITY SYSTEM OF GEORGIA  
IN CARE OF: AUGUSTA UNIVERSITY  
1120 15TH STREET  
HS - 3000 - Q  
AUGUSTA, GEORGIA 30912



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### INVITATION TO BID AND BID REQUIREMENTS

*The Owner will receive sealed bids from Contractors at Augusta University Christeberry Field House, Room CFH 240 (NE Mezzanine, Lobby at Flagpole Entrance), 3109 Wrightsboro Road, Augusta, GA 30909. Bids must be physically on the table in the Bid Room by **11:00 AM**, at the time legally prevailing in Augusta, Georgia on **Tuesday, February 27th, 2024**, for the construction of J-381 – CHRISTENBERRY FIELD HOUSE RENOVATION, located in Augusta University, Augusta, Georgia. At the time and place noted above, the bids will be publicly opened and announced.*

The Architect will issue Bid Documents to all qualified General Contractors and any other subcontractor, vendor, etc. either 1.) upon receipt of a request accompanied by a non-refundable check made payable to CPL in the amount of: \$ 350.00 per set (full size bond print); or 2.) "No Charge" (PDF digital files only). Only full sets of construction documents will be issued – NO partial sets. Bid documents will be shipped post-paid, as soon as possible.

Email request for Bid Documents to Scott Hughes, AIA at [shughes@CPLteam.com](mailto:shughes@CPLteam.com) and Lori Brothers at [lbrothers@CPLteam.com](mailto:lbrothers@CPLteam.com).

Bidders are cautioned that acquisition of Bidding Documents through any source other than the office of the Design Professional is not advisable. Acquisition of Bidding Documents from unauthorized sources places the bidder at risk of receiving incomplete or inaccurate information upon which to base a bid.

*There will be a pre-bid conference held at **11:00 AM on Tuesday, February 6th, 2024**. Conference will be held at the at Augusta University Christenberry Field House, Room CFH 240 (NE Mezzanine, Lobby at Flagpole Entrance), 3109 Wrightsboro Road, Augusta, GA 30909. Attendance at this conference is MANDATORY for any Contractor intending to bid on this project. A sign-in sheet will be passed around. Others may attend if they so desire.*

Contract, if awarded, will be on a lump sum basis. No bid may be withdrawn for a period of thirty-five days after time has been called on the date of opening except in accordance with the provisions of Georgia law. Bids must be accompanied by a Bid Bond made payable to the Owner in an amount equal to not less than five percent of the Bid. Both a performance bond and a payment bond will be required, each in an amount equal to 100 percent of the Contract Sum prior to execution of contract.

The Owner reserves the right in its sole and complete discretion to waive technicalities and informalities. The Owner further reserves the rights in its sole and complete discretion to reject all bids and any bid that is not responsive or that is over the budget. The Owner anticipates that the contract will be awarded to the responsive and responsible bidder who provides the lowest bid within the budget. In judging whether the bidder is responsible, the Owner will consider, but is not limited to, the following:

Whether the bidder or its principals are currently ineligible, debarred, suspended, or otherwise excluded from bidding or contracting by any state or federal agency, department, or authority;  
Whether the bidder or its principals have been terminated for cause or are currently in default on a public works contract;  
Whether the bidder can demonstrate sufficient cash flow to undertake the project as evidenced by a Current Ratio of 1.0 or higher;  
Whether the bidder can demonstrate a commitment to safety with regard to Workers'

Compensation by having an Experience Modification Rate (EMR) over the past three years not having exceeded an average of 1.2; and  
Whether the bidder's past work provides evidence of an ability to successfully complete public works projects within the established time, quality, or cost, or to comply with the bidder's contract obligations.

In the event all responsive and responsible bids are in excess of the budget, the Owner, in its sole and absolute discretion and in addition to rejecting all bids, reserves the right either to supplement the budget or to negotiate with the lowest responsive and responsible bidder (after all deductive alternates are taken) but only for the purpose of making changes to the project that will result in a cost to the Owner that is within the budget, as it may be supplemented.

BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA  
IN CARE OF: AUGUSTA UNIVERSITY

BY: CRAIG VANDEVERE, DIRECTOR, PLANNING DESIGN & CONSTRUCTION



## INSTRUCTIONS TO BIDDERS

1. **Basis of Contract.** Contract, if awarded, will be on a lump sum basis and will be substantially in accordance with the Contract shown on pages Contract – 1 to Contract – 4.
2. **Examination of Site.** In undertaking the work under this Contract, the Contractor acknowledges that he has visited the Project Site and has taken into consideration all observed conditions that might affect his work.
3. **Surety and Insurance Companies.** The Contract provides that the surety and insurance companies must be acceptable to the Owner. Only those sureties listed in the Department of Treasury's Listing of Approved Sureties (Department Circular 570) are acceptable to the Owner. At the time of issuance, all insurance and bonds must be issued by a company licensed by the Georgia Insurance Commissioner to transact the business of insurance in the State of Georgia for the applicable line of insurance. Such company shall be an insurer (or, for qualified self insurers or group self insureds, a specific excess insurer providing statutory limits) with an A.M. Best Financial Strength Rating of "A-" or better and with an A.M. Best Financial Size Category of Class V or larger.
4. **Bidding Documents.** The Bidding Documents comprise the Construction Documents (Drawings and Specifications), the Invitation to Bid, the Instructions to Bidders, the Bid Form, and all Addenda, upon which the bidder submits a bid.
5. **Addenda.** All Addenda issued prior to bid date adjust, modify, or change the drawings and specifications as set forth in the Addenda. No Addenda will be issued within five days of the date set for opening bids without an extension of the bid date. All such Addenda are part of the contract.
6. **Interpretations.** No oral interpretation will be made to bidders as to the meaning of the drawings and specifications. Requests for interpretation of drawings and specifications must be made in writing to the Design Professional not later than **2:00 PM October 31st, 2023**. Failure on the part of the successful bidder to request clarification shall not relieve them as Contractor of the obligation to execute such work in accordance with a later interpretation by the Design Professional. All interpretations made to bidders will be issued in the form of Addenda to the plans and specifications and will be sent to all plan holders of record. Acknowledgement of receipt of such Addenda shall be listed in the Bid Proposal Form by the Contractor.

Email request for clarifications to Scott Hughes, AIA at [shughes@CPLteam.com](mailto:shughes@CPLteam.com) and Lori Brothers at [lbrothers@CPLteam.com](mailto:lbrothers@CPLteam.com).

7. **Alternates.** Unless otherwise stipulated, all alternate bids are deductive. It is in the best interest of the public, and the intent of the Owner is, that the entire Project be constructed within the funds allocated in the Project budget. The acceptance of any deductive alternate will be utilized as a last resort to accomplish the Project without requiring a redesign and rebidding of the Project. Any alternate, or alternates, if taken, will be taken in numerical sequence to the extent necessary.
8. **Sales Tax.** Unless otherwise provided for in the Contract Documents, the Contractor shall include in his bid all sales taxes, consumer taxes, use taxes, and all other applicable taxes that are legally in effect at the time bids are received.

## 9. Trade Names, Specifications.

(a) *No Restriction of Competition.* When reference is made in the Contract Documents to trade names, brand names, or to the names of manufacturers, such references are made solely to indicate that products of that description may be furnished and are not intended to restrict competitive bidding. If it is desired to use products of trade or brand names or of manufacturers' names that are different from those mentioned in the Bidding Documents, application for the approval of the use of such products must reach the hands of the Design Professional at least ten days prior to the date set for the opening of bids (see 9(b) below). This provision applies only to the party making a submittal prior to bid. If approved by Design Professional, the Design Professional will issue an addendum to all bidders. This provision does not prevent the Owner from initiating the addition of trade names, brand names, or names of manufacturers by addendum prior to bid.

(b) *Request for Approval of Substitute Product.* All requests for approval of substitution of a product that is not listed in the Bidding Documents must be made to the Design Professional in writing. For the Design Professional to prepare an addendum properly, an application for approval of a substitute product must be accompanied by a copy of the published recommendations of the manufacturer for the installation of the product together with a complete schedule of changes in the drawings and specifications, if any, that must be made in other work in order to permit the use and installation of the proposed product in accordance with the recommendations of the manufacturer of the product. The application to the Design Professional for approval of a proposed substitute product must be accompanied by a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Bidding Documents.

(c) *Burden of Proof.* The burden of proving acceptability of a proposed product rests on the party making the submission. Therefore, the application for approval must be accompanied by technical data that the party requesting approval desires to submit in support of its application. The Design Professional will consider reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed product with previous users, evidence of reputation of the manufacturer for prompt delivery, evidence of reputation of the manufacturer for efficiency in servicing its products, or any other written information that is helpful in the circumstances. The degree of proof required for approval of a proposed product as acceptable for use in place of a named product or named products is that amount of proof necessary to convince a reasonable person beyond all doubt. To be approved, a proposed product must also meet or exceed all express requirements of the Contract Documents.

(d) *Issuance of Addenda.* If the Design Professional approves the submittal, an addendum will be issued to all prospective bidders indicating the approval of the additional product(s). Issuance of an addendum is a representation to all bidders that the Design Professional in the exercise of his professional discretion established that the product submitted for approval is acceptable and meets or exceeds all express requirements. If a submittal is initially rejected by the Design Professional, but determined to be acceptable to Design Professional after a conference with the Owner, an addendum covering the said submittal will be issued prior to the opening of bids. The successful bidder may furnish no products of any trade names, brand names, or manufacturers' names except those designated in the Contract Documents

unless approvals have been published by addendum in accordance with the above procedure. Oral approvals of products are not valid.

(e) *Conference with the Owner.* Any party who alleges that rejection of a submittal is the result of bias, prejudice, caprice, or error on the part of the Design Professional may request a conference with a representative of the Owner, provided: that the request for said conference, submitted in writing, shall have reached the Owner at least six days prior to the date set for the opening of bids, time being of the essence.

**10. Employment of Georgia Citizens and Use of Georgia Products.** The work provided for in this Contract is to be performed in Georgia. It is the desire of the Owner that materials and equipment manufactured or produced in Georgia shall be used in the work and that Georgia citizens shall be employed in the work at wages consistent with those being paid in the general area in which the work is to be performed. This desire on the part of the Owner is not intended to restrict or limit competitive bidding or to increase the cost of the work; nor shall the fulfillment of this desire be asserted by the Contractor as an excuse for any noncompliance or omission to fulfill any obligation under the contract.

**11. Trading with the State Statutes, Ethics.** By submitting a bid, the bidder certifies that the provisions of law contained in O.C.G.A. Sections 45-10-20 to 45-10-71, which prohibit officials and employees of the state from engaging in certain transactions with the state and state agencies, and the Governor's Executive Orders governing ethics, have not and will not be violated in any respect in regard to this contract and further certifies that registration and all disclosures required thereby have been complied with.

**12. Georgia Security and Immigration Compliance Act Requirements.** No bid will be considered unless the Contractor certifies its compliance with the Immigration reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security Immigration Compliance Act OCGA 13-10-91 *et seq.* The Contractor shall execute the Georgia Security and Immigration Compliance Act Affidavit, as found in Section 7 of the Construction Contract. Contractor also agrees that it will execute any affidavits required by the rules and regulations issued by the Georgia Department of Audits and Accounts. If the Contractor is the successful bidder, contractor warrants that it will include a similar provision in all written agreements with any subcontractors engaged to perform services under the Contract.

**13. Owner's Policy Statement.** The policy of the Owner is that minority business enterprises shall have the maximum opportunity to participate in the Owner's purchasing process. The Owner encourages all minority business enterprises to compete for, win, and receive contracts for goods, services, and construction. In addition, Georgia law provides a state income tax credit available to any business that subcontracts with a minority-owned business. [See O.C.G.A. §48-7-38 and O.C.G.A. §50-5-130. See *also* Executive Order of the Governor No. A-11-0002-1992.] For more information, please contact the Board of Regents' Office of Business Development by e-mail at [BusinessDevelopment@usg.edu](mailto:BusinessDevelopment@usg.edu). Any questions regarding statements contained hereunder should be directed to {Name, Address, and Telephone Number of Designee, as described in the box below}.

**14. Bids.**

(a) *Bid Opening.* Bids will be opened and announced as stated in the Invitation to Bid.

(b) *Bid Submission.* All bids must be submitted on the Bid Proposal Form – Section 00 3100 and must be signed, notarized, and sealed by a notary public. All blanks for information entry in bid forms submitted to Owner should be filled. Blanks left unfilled constitute irregularities in the bid and place the bidder at risk of having the bid rejected *unless* the Owner rules the irregularity to be an informality or technicality that the director can waive, as is made clear in Paragraph 16 of these “Instructions to Bidders” and on the Bid Form. Numbers shall be written in English words and in Arabic numerals. **The inclusion of any condition, alternate, qualification, limitation, or provision not called for shall render the bid nonresponsive and shall be sufficient cause for rejection of a bid.**

(c) *Bid Security.* Bids must be accompanied by a Bid Bond made payable to the Owner in an amount not less than five percent of the Bid. Bid Bonds should be furnished on forms accepted as standard by the insurance industry, but shall be substantially in accordance with the Bid Security Form attached hereto.

(d) *Delivery of Bids.* Bids are to be addressed to the Owner, at the address shown in the Invitation to Bid. Bids must be enclosed in an opaque, sealed envelope; marked with the Bid Date, Bid Time, Bid Number, Name of Project; and identified with the words “Bid for Construction.” Bids must be placed in the hands of the Owner at the specified location by not later than the hour and date named in the Invitation to Bid. After that time, no bids may be received. It is the sole responsibility of the bidder to ensure the delivery of the bids to the required address.

(e) *Alternates.* A bid must be submitted for all deductive alternates. Failure to do so may render the bid nonresponsive and be sufficient cause for rejection of a bid.

(f) *Withdrawal of Bids.* Bids may be withdrawn by bidders prior to the time set for official opening. After time has been called, no bid may be withdrawn for a period of thirty-five days after the time and date of opening except as provided in O.C.G.A Section 13-10-22 (appreciable error in calculation of bid). Negligence or error on the part of any bidder in preparing his bid confers no right of withdrawal or modification of his bid after time has been called except as provided by Georgia law.

**15. Contract Award.** Award shall be made on a lump sum basis to the lowest responsive and responsible bidder. The lowest bid will be the bid whose price, after incorporating all accepted alternates, is the lowest responsive bid that was received from a responsible bidder. No bid may be withdrawn for a period of thirty-five days after time has been called on the date of opening except in accordance with the provisions of law.

**16. Owner’s Rights Concerning Award.** The Owner reserves the right in its sole and complete discretion to waive technicalities and informalities. The Owner further reserves the right in its sole and complete discretion to reject all bids and any bid that is not responsive or that is over the budget, as amended. In judging whether the bidder is responsible, the Owner will consider, but is not limited to consideration of, the following:

(a) Whether the bidder or its principals are currently ineligible, debarred, suspended, or otherwise excluded from bidding or contracting by any state or federal agency, department, or authority;

(b) Whether the bidder or its principals have been terminated for cause or are currently in default on a public works contract;

(c) Whether the bidder can demonstrate sufficient cash flow to undertake the project as evidenced by a Current Ratio of 1.0 or higher;

(d) Whether the bidder can demonstrate a commitment to safety with regard to Workers' Compensation by having an Experience Modification Rate (EMR) over the past three years not having exceeded an average of 1.2; and

(e) Whether the bidder's past work provides evidence of an ability to successfully complete public works projects within the established time, quality, or cost, or to comply with the bidder's contract obligations.

**17. Owner's Right to Negotiate with the Lowest Bidder.** In the event *all* responsive and responsible bids are in excess of the budget, the Owner, in its sole and absolute discretion and in addition to the rights set forth above, reserves the right either to (i) supplement the budget with additional funds to permit award to the lowest responsive and responsible bid, or (ii) to negotiate with the lowest responsive and responsible bidder (after taking all deductive alternates) only for the purpose of making changes to the Project that will result in a cost to the Owner that is within the budget, as it may be amended.

**18. Contract Forms.** The contract forms, including the payment and performance bonds, shall be as set forth in the General Conditions, Section 7 – Forms.

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**BID PROPOSAL FORM**

To: OWNER \_\_\_\_\_  
\_\_\_\_\_

Re: Project Name and No. \_\_\_\_\_

Bid Date: \_\_\_\_\_

**THE BID:**

**Bid.** Having carefully examined the Drawings and Specifications entitled PROJECT NO. J- 381, Christenberry Field House Renovations, Augusta University, and the Bidding Documents and Addendum No.(s) A1, \_\_\_\_\_, as well as the Site and conditions affecting the Work, bidder hereby proposes to furnish all services, labor, materials, and equipment called for by them for the entire Work, in accordance with the aforesaid documents, for the sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

which sum is hereinafter called the Bid. The Bid shall be the amount of the Contract Sum executed between the Owner and the Contractor unless Alternates are accepted.

**Deductive Alternates.** We further propose that, should any of the following deductive alternates be accepted and be incorporated in the Contract, the Bid will be altered in each case as follows:

1. **Deductive Alternate No. 1** – Replacement of existing exterior operable window screens. Refer to Contract Documents for description of work scope.

Deduct the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

2. **Deductive Alternate No. 2** – Replacement of “custom” color metal siding selection with manufacturer available stock color finish selection. Refer to Contract Documents for description of “custom” color metal siding work scope.

Deduct the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

3. **Deductive Alternate No. 3** – Replacement of existing electrical lighting fixtures in designated areas with LED electrical lighting fixtures as indicated in Contract Documents. Refer to Contract Documents for description of electrical lighting upgrades to LED lighting fixtures work scope.

Deduct the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

4. **Deductive Alternate No. 4** – Upgrade of existing mechanical equipment and related equipment with control systems to integrate with Building Automation System as indicated in Contract Documents. Refer to Contract Documents for description of mechanical systems control upgrades work scope.

Deduct the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

5. **Deductive Alternate No. 5** – Replacement of manufacturer prefabricated mitered inside and outside building corners for ribbed metal panels with manufacturer standard inside corner post and outside corner post details. Refer to Section 07 54213 – Flat Seamed and Corrugated Panels for defined work scope.

Deduct the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**Unit Prices.** The following are Unit Prices for specific portions of the Work as listed. The following is the list of Unit Prices.

6. **Unit Price No. 1** – Masonry Pointing. Refer to Section 02 5000 – Building Remediation for defined work scope.

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) / SF unit price **of wall** for Work not performed.

7. **Unit Price No. 2** – Existing exterior metal stud (LGMF) augmentation, remediation and reinforcing. Refer to Section 05 4000 – Cold-Formed Metal Framing for defined work scope.

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ) / LF unit price **of wall** for Work not performed.

8. **Unit Price No. 3** – Rust repair of existing cold-formed metal framing members and components. Refer to Section 02 5000 – Building Remediation for defined work scope.

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ) / LF unit price **of wall** for Work not performed.

9. **Unit Price No. 4** – Provide supplemental cold-formed metal stud wall bracing where indicated in Contract Documents. Refer to Section 05 4000 – Cold-Formed Metal Framing for defined work scope.

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ) / LF unit price **of wall** for Work not performed.

**Project Preliminary Milestone Construction Schedule.** Bidder is requested to submit a proposed preliminary milestone construction schedule with the bid. Proposed preliminary milestone construction schedule to include, at minimum, proposed contractor mobilization date, proposed construction start date, proposed project duration and proposed project substantial completion date. The bidders proposed preliminary milestone construction schedule, as submitted with Bid, will be reviewed for alignment with Owner expectations, as part of the overall bid evaluation process.

**Errors or Revisions.** Prior to the bid opening date and hour, errors may be stricken or revisions may be made and corrections entered on this proposal form or on the bid envelope with sufficient clarity to be easily understood. All such annotations shall be binding on the bidder.

**No Withdrawal.** For and in consideration of the sum of \$10.00, the receipt of which is hereby acknowledged, bidder and Owner agree that this bid may not be revoked or withdrawn after the time set for the opening of bids, except as provided in Georgia law, but is an irrevocable offer that shall remain open for acceptance for a period of thirty-five days following the time set for the opening of bids.

**Execution of the Contract.** If bidder is notified in writing by statutory mail of the acceptance of this bid within thirty-five days after time set for the opening of bids, bidder agrees to execute within ten days the Contract for the Work for the above stated Bid, as adjusted by the accepted Alternates, and at the same time to furnish and deliver to the Owner a Performance Bond and a Payment Bond on forms shown in Section 7 of the General Conditions of the Contract, both in an amount of equal to 100 percent of the Contract Sum.

**Commencement and Completion of Work.** Upon the Effective Date of the Contract, bidder agrees to commence all Preconstruction Activities. Upon issuance of a Proceed Order, bidder agrees to commence physical activities on the Site with adequate forces and equipment and to complete to Material Completion all work beginning the day after the date of the Proceed Order.

**Bid Bond.** Enclosed herewith is a Bid Bond (*NO OTHER FORM ACCEPTABLE*) in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ) (being not less than five percent of the Bid). Bidder agrees that the above stated amount is the proper measure of liquidated damages that the Owner will sustain by bidder's failure to execute the Contract or to furnish the Performance and Payment Bonds should bidder's bid be accepted.

**Obligation of Bid Bond.** If this bid is accepted within thirty-five days after the date set for the opening of bids and bidder fails to execute the Contract within ten days after Notice of Successful Bid, or if bidder fails to furnish both Performance and Payment Bonds, the obligation of the Bid Bond will remain in full force and effect and the money payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure; otherwise, the obligations of the Bid Bond will be null and void.

**Bidder Certification**

**Certification under Oath.** Under oath I certify that I am a principal or other representative of the bidder, and that I am authorized by it to execute the foregoing bid on its behalf; and further, that I am a principal person of the bidder with management responsibility for the construction for the bidder, and as such I am personally knowledgeable of all its pertinent matters. I further certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same services, materials, labor, supplies, or equipment and is in all respects fair and without collusion or fraud. Bidder and its principals understand that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards. Bidder agrees to abide by all conditions of this bid.

BY: \_\_\_\_\_  
*Authorized Signature (BLUE INK)*

\_\_\_\_\_  
Printed Name Title

Sworn to and subscribed before me this \_\_\_\_ Day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

(SEAL)

**NOTE: THE NOTARY SEAL MUST BE APPLIED UNDER GEORGIA LAW, WHETHER OR NOT THE LAW OF THE STATE WHERE EXECUTED PERMITS OTHERWISE.**



**STATEMENT OF BIDDER'S QUALIFICATIONS:  
(To be subscribed and sworn to before a notary public.)**

The bidder submits the following statement of bidder's qualifications for consideration by the Owner.

**Bidder's Name:** \_\_\_\_\_  
LEGAL NAME OF BUSINESS

**Bidder's Address:** \_\_\_\_\_  
LEGAL BUSINESS ADDRESS (NO P.O. BOX, **MUST** BE PHYSICAL ADDRESS)  
\_\_\_\_\_  
CITY STATE ZIP  
\_\_\_\_\_  
MAILING ADDRESS IF DIFFERENT FROM ABOVE

**Telephone Number:** \_\_\_\_\_  
AREA CODE NUMBER

**The full names of persons and firms interested in the foregoing bid as principals are as follows:**

(1) \_\_\_\_\_  
Circle One: President Partner Owner Other

(2) \_\_\_\_\_  
Circle One: Vice President Secretary Partner Other

(3) \_\_\_\_\_  
Circle One: Vice President Secretary Partner Other

**Note:** *If incorporated: The names of both the President and Corporate Secretary must be indicated.  
If a partnership, all partners must be indicated.*

**FEIN:** \_\_\_\_\_

**Contractor's Georgia License Type and Number:** \_\_\_\_\_

**Contractor's Federal Employment Verification Certification:** **(Must include completed Contractor Affidavit as found in Section 7 of the Contract)**

The Contractor is registered with, authorized to use, is using and will continue to use, the federal work authorization program throughout the term of the contract, and holds the following authorization:

User Identification Number: \_\_\_\_\_

Date of Authorization: \_\_\_\_\_

**State Where Organized or Incorporated:** \_\_\_\_\_

**Plan of Organization:** (Circle One) Proprietorship Corporation Partnership Joint Venture Other (Describe)

**Years Engaged in Construction Contracting in Present Firm Organization:** \_\_\_\_\_ years.

**Bidder Hereby Certifies that bidder:**

a. Has never refused to sign a contract at the original bid on a public works contract except as allowed under Georgia law.

- b. Has never been terminated for cause on a public works contract.
- c. Has had no (criminal or felony) convictions, suspensions, or debarments of the bidder, its officers, or its principals for building code violations, bid rigging, or bribery in the last ten years.
- d. Is not and its organization or its principals are not debarred, suspended, declared ineligible, or otherwise excluded by any Federal or State department or agency from doing business with the Federal Government or a State.
- e. Has insurance required by the Contract Documents in place or has arranged to obtain it from an insurer authorized to do business in the State of Georgia.
- f. Has sufficient bonding capacity to obtain a payment and performance bond from a surety meeting the requirements of the Contract Documents and authorized to do business in the State of Georgia.
- g. Has sufficient cash flow to perform this Project.

**Remarks or explanations of the above paragraphs a through g:**

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**Bidder Certification**

**Certification under Oath.** Under oath I certify that I am a principal or other representative of the bidder, and that I am authorized by it to execute the foregoing Statement of Bidder's Qualifications is true and correct, including any explanation above and submitted under oath.

BY: \_\_\_\_\_  
Authorized Signature (BLUE INK PLEASE)

\_\_\_\_\_  
Printed Name Title

Sworn to and subscribed before me this \_\_\_\_ Day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

(SEAL)

**NOTE: THE NOTARY SEAL MUST BE APPLIED UNDER GEORGIA LAW, WHETHER OR NOT THE LAW OF THE STATE WHERE EXECUTED PERMITS OTHERWISE.**

**Statistical Information.** This request is made for statistical purposes only.

PLEASE INDICATE BELOW WHICH OF THE FOLLOWING DESCRIPTIONS APPLY TO YOUR COMPANY:

\_\_\_\_ MINORITY BUSINESS ENTERPRISE (MBE) – One of the following statements describes this business: **a)** Owned by a member of a minority race; or **b)** a partnership of which a majority of interest is owned by one or more members of a minority race;

CPL

or **c)** a public corporation of which a majority of the common stock is owned by one or more members of a minority race. A member of a minority race is defined as a person who is a member of a race that comprises less than fifty percent of the total population of the State of Georgia. For recordkeeping purposes, this includes, but is not limited to, persons who are Black, Hispanic, Asian-Pacific American, Native American, or Asian-Indian American.

\_\_\_\_\_ GEORGIA MINORITY BUSINESS ENTERPRISE (GMBE) – Business meets the definition of a minority-owned business and, in addition, meets the following criteria: **a)** was organized in the State of Georgia; or **b)** reports income from the business for Georgia Income Tax purposes; or **c)** minority stockholders report earnings for Georgia Minority Business Enterprise. For more information, please contact the Board of Regents' Office of Business Development by e-mail at [BusinessDevelopment@usg.edu](mailto:BusinessDevelopment@usg.edu).

\_\_\_\_\_ NEITHER DESCRIPTION APPLIES TO YOUR COMPANY.

**BID REQUIREMENTS  
BID SECURITY FORM**

**NOTE TO CONTRACTOR: Use of Surety's standard Bid Bond form is acceptable as long as it substantially complies with the following:**

KNOW ALL BY THESE PRESENTS, That we, {Insert Contractor's Legal Name and Address} as Principal, hereinafter called the Principal, and {Insert Legal Name and Address of Surety}, a corporation duly organized under the laws of the State of {Insert State of Corporate Organization}, as Surety, hereinafter called the Surety, are held and firmly bound unto:

OWNER: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

as Obligee, hereinafter called the Obligee in the sum of \_\_\_\_\_ (Not less than five percent of the Bid) Dollars (\$ \_\_\_\_\_), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a Bid for     J-220 – Renovation of Technical Ed. Bldg. for Health Professions    ;

NOW, THEREFORE, if the Obligee shall accept the Bid of the Principal and (1) the Principal shall enter into a Contract with the Obligee in accordance with the terms of such Bid, and the Principal shall execute the Contract and give such bond or bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) in the event of the failure of the Principal to enter such Contract and give such bond or bonds, and the Principal shall pay to the Obligee the difference not to exceed the difference hereof between the amount specified in said Bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said Bid; then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this \_\_\_\_\_ Day of \_\_\_\_\_, 20\_\_\_\_

Name of Contractor: \_\_\_\_\_  
Principal

\_\_\_\_\_  
Witness

By: \_\_\_\_\_ (Seal)

\_\_\_\_\_  
Title

Name of Surety: \_\_\_\_\_  
Surety

\_\_\_\_\_  
Witness

By: \_\_\_\_\_ (Seal) (\*)

(\*) Attach Power of Attorney

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SECTION 00 5100 – AGREEMENT FORM

PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. The Board of Regents of the University System of Georgia “Design-Bid-Build Construction Contract Between Contractor and Owner”, is bound with this Section. This is the standard form of agreement between the Owner and Contractor. The “Design-Bid-Build Construction Contract Between Contractor and Owner” adopts by reference Section 00 7100 GENERAL CONDITIONS, and is designed for use with the referenced supplement, “Board of Regents of the University System of Georgia – General Conditions”, the General Conditions of the Contract for Construction.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 00 5100

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# DESIGN-BID-BUILD CONSTRUCTION CONTRACT

BETWEEN CONTRACTOR AND OWNER

TO BE USED WITH  
BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA'S  
DESIGN PROFESSIONAL (ARCHITECTURAL) CONTRACT

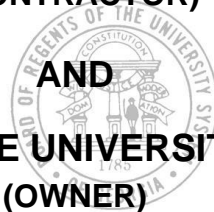


BETWEEN

LEGAL GC FIRM NAME  
(CONTRACTOR)

AND

BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA  
(OWNER)



For the Use and Benefit of:

**AUGUSTA UNIVERSITY**  
USING AGENCY (INSTITUTION)



PROJECT NO. **J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS**

**INCLUDES:**

Executive Summary of Contents  
Form of Contract  
Bid Requirements  
Table of Contents  
General Conditions  
Forms  
Supplementary General Conditions

Preface  
Contract 1 to Contract 3  
pp 1 - 13  
pp i to iv  
pp 1 to 74  
Forms 1 to Forms 29



**EXECUTIVE SUMMARY OF CONTENTS****FORM OF CONTRACT****BID REQUIREMENTS****GENERAL CONDITIONS****SECTION 1 – GENERAL**

- Part 1 - General
- Part 2 - Contractor's General Responsibilities and Duties.
- Part 3 - Owner's General Responsibilities and Rights.
- Part 4 - Protection of Persons and Property
- Part 5 - Bonds, Indemnity, and Insurance
- Part 6 - Hazardous Conditions and Materials
- Part 7 - Miscellaneous Provisions.

**SECTION 2 – PRE-COMMENCEMENT PHASE**

- Part 1 - Pre-commencement Phase Services
- Part 2 - Construction Documents and Site Plan

**SECTION 3 – CONSTRUCTION PHASE**

- Part 1 - Construction Phase Services
- Part 2 - Changes to the Work
- Part 3 - Time.
- Part 4 - Correcting the Work, Inspections, Covering and Uncovering Work
- Part 5 - Subcontractors, Trade Contractors, and Suppliers

**SECTION 4 – COMPENSATION**

- Part 1 - General.
- Part 2 - Payments Withheld
- Part 3 - Liens

**SECTION 5 - CONTRACT ADJUSTMENTS, DISPUTES, AND TERMINATION**

- Part 1 - Owner's Right to Suspend Work
- Part 2 - Contract Adjustments and Disputes
- Part 3 - Termination

**SECTION 6 – PROJECT COMPLETION**

- Part 1 - Material Completion
- Part 2 - Final Completion
- Part 3 - Inspections for Completion of the Work
- Part 4 - Final Documents
- Part 5 – Payment for Material Completion and Final Payment
- Part 6 - Correction of the Work after Final Completion

**SECTION 7 – FORMS**

- Performance Bond
- Payment Bond
- Georgia Security and Immigration Compliance Act Affidavit(s)
- Non-Influence Affidavit
- Statutory Affidavit
- Five Year Bond on Roofs and Walls
- Specimen Certificate of Manufacturer
- Certificate of Insurance
- Bond to Discharge Claim
- Change Order Forms
- Application for Payment Form
- Subcontractor Retainage Release Certificate
- Final Certification of Costs

**SUPPLEMENTARY GENERAL CONDITIONS**

**CONSTRUCTION CONTRACT**  
BETWEEN CONTRACTOR AND OWNER

**THIS CONSTRUCTION CONTRACT** (hereinafter the "Contract") made this Date day of Month, Year (hereinafter the "Effective Date"), by and between the **BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA** (hereinafter the "Owner"), for the use and benefit of AUGUSTA UNIVERSITY(hereinafter the "Using Agency" or "Institution") LEGAL GC Firm Name, (hereinafter the "General Contractor" / "Contractor"), whose address is MUST be a physical address. NO P.O. Boxes.; Phone: XXX-XXX-XXXX; Fax XXX-XXX-XXXX

(a) **Contractor's FEIN or Tax Identification Number:** \_\_\_\_\_

(b) **Contractor's Georgia License Type and Number:** \_\_\_\_\_

(c) **Contractor's Federal Employment Verification Certification:**

The Contractor is registered with, authorized to use, is using and will continue to use, the federal work authorization program throughout the term of the contract, and holds the following authorization:

User Identification Number: \_\_\_\_\_

Date of Authorization: Date

WITNESSETH, that the Contractor and the Owner, for the consideration set forth herein, the adequacy and sufficiency of which is hereby acknowledged by each party, agree as follows:

**Project No. J-381**

**Project Name and Description:** CHRISTENBERRY FIELD HOUSE RENOVATIONS (hereinafter the "Project.")

**1. Existing Documents.** The Contractor has reviewed and taken into consideration the Bidding Documents in preparing his bid.

**2. The Contract Sum:** The Owner shall pay the Contractor for the performance of the contract, subject to additions and deductions provided by approved change orders, in current funds, the Contract Sum as follows, base bid less Deductive Alternate 1:

\_\_\_\_\_ **AND /100 DOLLARS (\$** \_\_\_\_\_ **)**

**3.** The Material Completion and Occupancy Date shall be achieved by **Date**, the date specified in the Proceed Order.

**4. The agreed daily amount for Liquidated Damages is:** **\$ 0** per day.

**5. The agreed daily amount for Time Dependent Overhead Costs is:** **\$ 0** per day.

**6. Notice.** All notices in accordance with Section 1.1.5 shall be given to the following addresses:

- CONTRACTOR:** LEGAL GC Firm Name  
Physical Address, NO P.O. Boxes  
City, State Zip  
Attention: CM-POC, Title  
Phone Number: CM-POC Phone  
Email: CM-POC Email address
- OWNER:** Board of Regents of the University System of Georgia  
In Care of Augusta University  
1120 15<sup>th</sup> Street, HS – 3000 Q  
Augusta, GA 30912  
Attention: Craig Vandevere, Director Planning, Design & Construction  
Phone Number: 706-721-6951
- OWNER'S REPRESENTATIVE:** Joseph V. Gambill, Senior Architect & Planner, Augusta University  
Phone Number: 706-721-7148  
Email: jogambill@augusta.edu
- USING AGENCY :** Augusta University  
1120 15<sup>th</sup> Street, HS-3525, Augusta, GA 30912  
Joseph V. Gambill, Senior Architect & Planner, Augusta University  
Phone Number: 706-721-7148  
Email: jogambill@augusta.edu
- DESIGN PROFESSIONAL:** CPL  
615 Molly Lane, Suite 100  
Woodstock, GA. 30189  
Scott Gordon, AIA
- 7. Scope Of The Work:** The Contractor shall furnish all the materials, perform all of the Work, and do all things required by the Contract Documents.
- 8. Schedule and Completion:** The Pre-commencement Phase Services to be performed under this Contract shall commence upon the Effective Date of the Contract and be completed within 60 days thereafter. Activities on the Site shall commence on the date specified in the Proceed Order and shall be materially complete in accordance with established Milestones, and not later than the Material Completion and Occupancy Date.
- 9. Periodic Progress Payments:** The Owner shall make progress payments, less retainage, as set forth in Section 4 of the General Conditions.
- 10. Payment for Material Completion:** The Contractor may request payment of the remaining contract balance, including retainage, less amounts credited the Owner or incurred as liquidated damages, and less amounts withheld for the Punchlist by reason of Minor Items or Permitted Incomplete Work (See Paragraph 6.5.3.2). Payment for Material Completion shall be made by a check payable jointly to the Contractor and Surety and shall be mailed to the Surety.
- 11. Final Payment:** Final Payment shall be made within ten days of receipt of the final payment application as set forth in Section 6, Part 2 of the General Conditions, provided that all other requirements of the Contract shall have been met in full.
- 12. The Contract Documents:** This Contract, together with the Bidding Documents and the Bid, shall constitute the Contract Documents for the Project.

**13. Bonds:** The Contractor shall furnish both a performance bond and a payment bond and shall pay the premiums thereon as a Cost of the Work. The Performance Bond shall guarantee the full performance of the Contract.

**14. Full Performance:** The Owner and the Contractor hereby agree to the full performance of the Contract Documents.

**15. Applicable Law:** This Contract and all rights, privileges and responsibilities shall be interpreted and construed according to the laws of the State of Georgia.

**16. No Conflict Of Interest:** The Contractor covenants that it presently has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance required under this Contract. The Contractor further covenants that, in the performance of this Contract, it shall neither contract with nor employ any person having any such interest.

**17. Transactions With State Officials, Ethics:** The parties hereto certify that the provisions of law contained in the Act prohibiting full-time appointive officials and employees of the State from engaging in certain transactions affecting the State as defined in O.C.G.A. §§45-10-20-26 and the Governor's Executive Orders governing ethics, have not and will not be violated in any respect in regard to this contract and further certifies that registration and all disclosures required thereby have been complied with.

**18. No Assignment:** This Contract and the proceeds of this Contract may not be assigned or sublet as a whole, nor may the performance thereunder be assigned, without the prior written consent of the Owner.

**19. No Waiver:** The failure of the Owner at any time to require performance by the Contractor of any provision hereof, shall in no way affect the right of the Owner thereafter to enforce any provision or any part of the Contract, nor shall the failure of the Owner to enforce any breach of any provision hereof to be taken or held to be a waiver of such provision, or as a waiver, modification or rescission of the Contract itself.

**20. Full Agreement.** The Contract Documents supersede all prior negotiations, discussion, statements, and agreements between Owner and Contractor and constitute the full, complete, and entire agreement between Owner and Contractor. There can be no changes to this Contract by oral means, nor by course of conduct of the parties, nor by custom of the trade. No changes to this Contract will be binding on either party hereto unless such change is properly authorized, in writing, in accordance with Section 3, Part 2 of the General Conditions.

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[Signatures Begin on Next Page]

IN WITNESS WHEREOF the parties hereto have executed this Contract the day and year first written above.

**LEGAL GC FIRM NAME**  
**Contractor**

**ATTEST:**

\_\_\_\_\_  
\_\_\_\_\_, SECRETARY  
(SEAL, OVER SIGNATURE)  
(If not a corporation, signature must be notarized.)

**By:** \_\_\_\_\_ (L.S.)  
\_\_\_\_\_, PRESIDENT

**APPROVED: USING AGENCY**

**By:** \_\_\_\_\_  
Gregory Woodlief  
Senior Manager for Purchasing & Contract Management  
AUGUSTA UNIIVERSITY

**WITNESS:** \_\_\_\_\_  
\_\_\_\_\_  
(PRINT NAME / TITLE)

- Attachments:
- 1. General Conditions and Forms
  - 2. Supplementary General Conditions

SECTION 00 6100 – FORMS

PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. The “Board of Regents of the University System of Georgia – Section 7 Forms” is bound with this Section.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 00 6100

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## SECTION 7 – FORMS

### FORMS INDEX:

- Performance Bond
- Payment Bond
- Georgia Security and Immigration Compliance Act Affidavit(s)
- Non-Influence Affidavit
- Statutory Affidavit
- Five Year Bond on Roofs and Walls
- Specimen Certificate of Manufacturer
- Certificate of Insurance
- Bond to Discharge Claim
- Change Order Forms
- Application for Payment Form
- Subcontractor Retainage Release Certificate
- Final Certification of Costs



**PERFORMANCE BOND**

Bond No. \_\_\_\_\_

Project No. J-381

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_ as principal (hereinafter referred to as "Contractor"), and \_\_\_\_\_ as surety (hereinafter referred to as "Surety"), are held and firmly bound unto the Board of Regents of the University System of Georgia as Obligee (hereinafter referred to as "Owner") in the amount of and No/100 Dollars (\$ .00), to which payment Contractor and Surety bind Themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with the Owner bearing date of Month, Day, Year for: J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS, AUGUSTA UNIVERSITY, GA in accordance with drawings and specifications prepared by: CPL which said contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform and comply with the terms and conditions of said contract; and shall indemnify and save harmless the Owner against and from all cost, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

- (1) The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract, or to the work to be performed thereunder, or the specifications or drawings accompanying same, or the exercise of the Owner's right to do work pursuant to Articles 1.3.7, 1.7.8, or 5.3.5, or Paragraphs 3.4.1.4 or 5.3.2.3, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work or to the specifications or drawings. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Article 1.5.1, including Paragraph 1.5.1.3 for increases in the penal amount of this bond, and waives notice from the Owner of any such changes.
- (2) If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract and the Owner has terminated the Contractor's right to complete the Contract, the Surety shall promptly perform this bond agreement in accordance with its terms and conditions. If Surety chooses to investigate, Owner shall cooperate with the Surety in its investigation and shall make all public project records available for inspection by Surety at no cost to Owner. It shall be the duty of the Surety to give an unequivocal notice in writing to the Owner, within twenty-five (25) days after receipt of such a declaration of default, of the Surety's election to either remedy the default or defaults promptly or to perform the Contract promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence, and it shall then be the duty of the Surety to give prompt notice in writing to the Owner immediately upon completion of (a) the remedy and/or correction of each default, (b) the remedy and/or correction or each item of condemned work, (c) the furnishing of each omitted item of work, and (d) the performance of the contract. The Surety shall not assert its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the default or defaults or perform the Contract.
- (3) It is expressly agreed by the Principal and the Surety that the Owner, if he desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
- (4) 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 legal successors of the Owner.

(5) For the purposes of this bond, the name and address of the **responsible official of the Surety's claims department**, to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

TELEPHONE \_\_\_\_\_

(6) Further, this bond shall be the Performance Bond furnished under O.C.G.A. §§ 13-10-2, 13-10-20 and shall be subject to increase in the penal amount of the bond pursuant to such statutes and Article 1.5.1 of the Contract.

(7) No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

(NAME OF Contractor)

\_\_\_\_\_  
Secretary(\*)

By \_\_\_\_\_  
President

\_\_\_\_\_  
(SURETY) (\*) (\*)

\_\_\_\_\_  
(TITLE)

(\*) Please apply seal of Corporation over Secretary's Signature.

(\*) (\*) Please apply seal of Surety and arrange for countersignature by a "Georgia Licensed Agent" of Surety pursuant to O.C.G.A. §33-23-5. Kindly show title of the aforesaid agent as "Georgia Licensed Agent."

(\*) Attach Power of Attorney

## PAYMENT BOND

Bond No. \_\_\_\_\_

Project No. J-381

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_ as Principal (hereinafter referred to as the  
(Legal Title and Address of the Contractor)

"Principal") and \_\_\_\_\_ as Surety (hereinafter referred  
(Legal Name and Address of the Surety)

to as "Surety"), are held and firmly bound unto the BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA as Obligee (hereinafter referred to as "Owner") for the use and benefit of claimants defined, hereinafter in the amount of \_\_\_\_\_ Dollars (\$) to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with Owner dated Month, Day, Year for J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS, AUGUSTA UNIVERSITY, GA in accordance with the drawings and specifications prepared by: CPL which contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and materials supplied in the prosecution of the work provided for in said Contract, then this obligation shall be void, otherwise it shall remain in full force and effect subject, however, to the following conditions:

- (1) The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the work to be performed thereunder, or the specifications or drawings accompanying same, or the exercise of the Owner's right to do work pursuant to Articles 1.3.7, 1.7.8 or 5.3.5 or Paragraphs 3.4.1.4 or 5.3.2.3, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work or to the specifications or drawings. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Article 1.5.1, including Paragraph 1.5.1.3, for increases in the penal amount of this bond and waives notice from the Owner of any such changes.
- (2) A claimant is defined as any subcontractor and any person supplying labor, materials, machinery, or equipment in the prosecution of the work provided for in said contract.
- (3) Every person entitled to the protection hereunder and who has not been paid in full for labor or materials furnished in the prosecution of the work referred to in said bond before the expiration of a period of ninety (90) days after the day on which the last of the labor was done or performed by him, or materials or equipment or machinery was furnished or supplied by him for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due him, provided, however, that any person having direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Contractor furnishing said payment bond shall have (a) given written notice to said Contractor within ninety (90) days from the day on which such person did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done; and (b) if the Contractor has filed a Notice of Commencement in accordance with the requirements of O.C.G.A. §13-10-62 and Articles 4.3.2 of the contract, given to said contractor a written Notice to Contractor within 30 days from the filing of the Notice of Commencement or 30 days following the first delivery of labor, materials, machinery or equipment, whichever is later, setting forth:
  - A) The name, address, and telephone number of the person providing labor, material, machinery, or equipment;
  - B) The name and address of each person at whose instance the labor, material, machinery or equipment is being furnished;
  - C) The name and the location of the public work; and
  - D) A description of the labor, material, machinery, or equipment being provided and, if known, the contract price or anticipated value of the labor, material, machinery, or equipment to be provided or the amount claimed to be due, if any.

It is provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by the depositing of a notice, certified mail, postage paid, duly addressed to the Contractor at any place he maintains an office or conducts his business, or his residence, in any post office or branch post office or any letter box under the control of the Post Office Department or notice may be served by statutory mail pursuant to O.C.G.A. §9-10-12 or in any manner in which the sheriffs of Georgia are authorized by law to serve summons or process. Every suit instituted under this section shall be brought in the name of the claimant without Owner being made a party thereof. The official who has custody of said bond is authorized and directed to furnish, to any person making application thereof who submits an affidavit that he has supplied labor or materials for such work and payment therefore has not been made, or that he is being sued on any such bond, a copy of such bond and the contract for which it was given, certified, by the official who has custody of said bond and contract shall be admitted in evidence without further proof.

Applicants shall pay for such certified statements and such fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fixed fee exceed the fees that the clerks of the superior courts are permitted to charge for similar copies.

- (4) It is expressly agreed by the Principal and the Surety that the Owner, if he desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
- (5) For the purposes of this bond, the name and address of the **responsible official of the Surety's claims department**, to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

TELEPHONE \_\_\_\_\_

- (6) Further, this bond shall be the Payment Bond furnished under O.C.G.A. §§ 13-10-1, 13-10-60 *et seq.* and shall be subject to increase in the penal amount of the bond pursuant to such statutes and Article 1.5.1 of the Contract.
- (7) No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST: (NAME OF Contractor)

\_\_\_\_\_  
Secretary(\*)

By \_\_\_\_\_  
President

\_\_\_\_\_  
(SURETY) (\*) (\*)

\_\_\_\_\_  
(TITLE)

(\*) Please apply seal of Corporation over Secretary's Signature.  
 (\*) (\*) Please apply seal of Surety and arrange for countersignature by a "Georgia Licensed Agent" of Surety pursuant to O.C.G.A. §33-23-5. Kindly show title of the aforesaid agent as "Georgia Licensed Agent."

(\*) Attach Power of Attorney

**GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT(S)**

“Contractor” in the following Affidavits shall mean “General Contractor”/“Contractor” for the purpose of compliance with O.C.G.A. § 13-10-91, (b).

For the purpose of completing the attached Affidavits, please insert the following:

- “Name of Public Employer” shall mean “Board of Regents of the University System of Georgia, Owner, for the use and benefit of **AUGUSTA UNIVERSITY**, Using Agency”
- “Name of Project” shall mean “Project No. **J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS.**”

**Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Board of Regents of the University System of Georgia for the use and benefit of **AUGUSTA UNIVERSITY**, Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Contractor

Name of Project: **J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS**

Board of Regents of the University System of Georgia  
For the use and benefit of **AUGUSTA UNIVERSITY**  
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
\_\_\_\_\_

**Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with \_\_\_\_\_ (name of contractor) on behalf of Board of Regents of the University System of Georgia for the use and benefit of **Augusta University** Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Subcontractor

Name of Project: **J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS**

Board of Regents of the University System of Georgia  
For the use and benefit of **AUGUSTA UNIVERSITY**  
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
\_\_\_\_\_

**Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)**

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract) and \_\_\_\_\_ (name of contractor) on behalf of Board of Regents of the University System of Georgia for the use and benefit of **AUGUSTA UNIVERSITY** Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Sub-subcontractor

**J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS**

Name of Project

Board of Regents of the University System of Georgia

For the use and benefit of **AUGUSTA UNIVERSITY**

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC  
My Commission Expires:



### NON-INFLUENCE AFFIDAVIT

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

I do solemnly swear on my oath that as to the Contract dated \_\_\_\_\_, 20\_\_\_\_\_,  
between \_\_\_\_\_  
(NAME OF CONTRACTOR)

and the Owner, I have no knowledge of the exertion of any influence or the attempted exertion of any influence on the firm on behalf of which this affidavit is made in any way, manner, or form in the purchase of materials, equipment, or other items involved in construction, manufacture, or employment of labor under the aforesaid Contract by any employee, officer, or agent of the Owner, or any person connected with the State Government of Georgia in any way whatsoever.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature (L.S.)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Firm

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

Personally before me, the undersigned authority, appeared \_\_\_\_\_  
(NAME OF PERSON SIGNING THE AFFIDAVIT)

who is known to me to be an official of the firm of \_\_\_\_\_,  
(NAME OF CONTRACTOR)

and who, after being duly sworn, stated on his oath that he had read the above statement and that the same is true and correct.

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

### STATUTORY AFFIDAVIT

COUNTY OF \_\_\_\_\_ STATE OF \_\_\_\_\_

FROM: \_\_\_\_\_

Contractor

TO: \_\_\_\_\_

Owner

Re: Contract entered into the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, between the above-mentioned parties for the construction

of Project No. \_\_\_\_\_ located at \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS:**

1. The undersigned hereby certifies that all work required under the above Contract has been performed in accordance with the terms thereof, that all Subcontractors, Suppliers, Trade Contractors, mechanics, and laborers have been paid and satisfied in full, or will be paid and satisfied in full out of the proceeds of this payment as set forth in O.C.G.A. §13-10-80, and that there are no outstanding claims of any character [including disputed claims or any claims to which the Contractor has or will assert any defense] arising out of the performance of the Contract which have not been paid and satisfied in full except as listed herein below:.....

**Instructions to Contractor- ENTER THE WORD "NONE" OR LIST THE NAMES OF CLAIMANTS**

2. The undersigned further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, Subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a lien upon the property of the Owner.

3. The undersigned makes this affidavit for the purpose of receiving final payment in full settlement of all claims against the Owner arising under or by virtue of the contract, and acceptance of such payment is acknowledged as a release of the Owner from any and all claims arising under or by virtue of the contract.

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_(L.S.)

Signature

\_\_\_\_\_

Title

\_\_\_\_\_

Firm

COUNTY OF \_\_\_\_\_ STATE OF \_\_\_\_\_

Personally before me, the undersigned authority, appeared \_\_\_\_\_  
(NAME OF PERSON SIGNING THE AFFIDAVIT)

who is known to me to be an official of the firm of \_\_\_\_\_,  
(NAME OF CONTRACTOR)

and who, after being duly sworn, stated on his oath that he had read the above statement and that the same is true and correct.

\_\_\_\_\_

Notary Public

My Commission expires \_\_\_\_\_

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

### FIVE YEAR BOND ON ROOFS AND WALLS

STATE OF GEORGIA

COUNTY OF \_\_\_\_\_

**Firmly Bound.** Know all men by these presents, that we, \_\_\_\_\_ (“Contractor”) as Principal, and (Name of Surety), as Surety, are held and firmly bound unto \_\_\_\_\_,

(Insert Name of Owner)

Owner, in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) for the payment of which well and truly to be made and done, we bind ourselves, our executors and administrators, our successors and assigns, jointly and severally, by these presents.

**Condition of Obligation.** The condition of the above obligation is such that WHEREAS Contractor has entered into a Contract with Owner dated \_\_\_\_\_ (enter date of contract), for construction of Project No. \_\_\_\_\_.

**Warranty.** WHEREAS, the said Contractor warrants with respect to the said work that for a period of five years from the date of the execution of the final certificate of the Design Professional, the roofs of the building (or buildings) and roofs of passages, including but not limited to the roof envelope, including but not limited to the roof decking; deck sheathing; material used as a roof base or insulation over which roof is applied; roofing materials; promenade decks or any other work on the surface of the roof; flashing; base flashing; counter flashing; metal work, gravel stops; or roof expansion joints shall be absolutely watertight and free from all leaks. At no expense to the Owner, the Contractor will make repairs to any defects that may develop in the work including but not limited to: blisters, exposed felts, ridges, wrinkles, splits, warped insulation, and loose flashing, in a manner compatible to the system and acceptable under industry standards and in accordance with the construction specifications. The Contractor also warrants that for the same five-year period the walls of the building (or buildings) and building envelope, including but not limited to: vertical and/or horizontal expansion joints, below and/or above grade waterproofing, below and/or above grade damp-proofing, thru-wall flashing, damp course flashing and waterproofing of joints at openings in walls including but not limited to door perimeters, window perimeters, vents and pipe openings shall be absolutely watertight and free from all leaks, seepage or dampness, and that he shall, at no expense to the Owner, make repairs to any defects that may develop in the work in a manner compatible to the system and acceptable under industry standards and in accordance with the construction specifications, Provided, however: That the following are excluded from the warranty:

- (a) Defects or failures resulting from abuse by the Owner, upon presentation of competent evidence of same by the Contractor.
- (b) Defects in design that the said Contractor shall produce competent evidence of having had provided clear written notice in writing to the Owner prior to commencing installation of the Work, except, however, that the Contractor shall not be responsible, insofar as liability under this bond is concerned, for bringing to the attention of the Owner defects in design involving failure of only the following three structural elements:
  - (1) Structural Frame
  - (2) Load bearing walls
  - (3) Foundations

nor shall the Contractor be responsible for correction of leaks resulting from said failure.

- (c) Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion upon presentation of competent evidence of same by the Contractor..
- (d) The Contractor is not an insurer nor is he a guarantor of the design. Any other provisions of this bond to the contrary notwithstanding, the Contractor shall not be required to remedy any errors or omissions of design.

**Leaks or Defects.** WHEREAS the said Contractor agrees that should any leaks or defects occur in the roof envelope or wall envelope of the said (Name and Number of Project) the said Contractor will promptly remedy the said leaks or defects and pay for any damage to other work of said Project resulting therefrom, except, however, that when this instrument is executed by a Trade Contractor this Contract, shall, insofar as the Trade Contractor is concerned, extend only to the work executed by said Trade Contractor.

**Notice to Surety.** If the Contractor shall have been given notice to remedy leaks or defects pursuant to the Contract Documents and has been declared in default by the Owner and the Owner has terminated the Contractor’s right to complete the remedy, the Surety shall be notified in writing and shall promptly perform this bond agreement in accordance with its terms and conditions. If Surety chooses to investigate, Owner shall cooperate with the Surety in its investigation and shall make all public project records available for inspection by Surety at no cost to Owner. It shall be the duty of the Surety to give an unequivocal notice in writing to the Owner, within twenty-five

(25) days after receipt of such notice, of the Surety's election to either remedy the leaks and defects promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence, and it shall then be the duty of the Surety to give prompt notice in writing to the Owner immediately upon completion of the remedy and/or correction of the leaks or defects. The Surety shall not assert its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the leaks or defects.

**Full Force and Effect.** NOW, THEREFORE, the condition of this obligation is such that if the Contractor\_ shall in all things promptly and faithfully perform and comply with the terms and conditions hereinbefore set forth, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Principal WITNESS

By: \_\_\_\_\_

TITLE \_\_\_\_\_

\_\_\_\_\_  
Surety WITNESS

By: \_\_\_\_\_

TITLE \_\_\_\_\_

(\* ) Attach Power of Attorney

Instructions for execution by Contractor

- (a) If the firm is a partnership, all members of the partnership must execute.
- (b) If the firm is a corporation, the president must sign, the secretary must attest, and the Seal of Corporation must be affixed.
- (c) If the firm operates as a sole proprietorship, the proprietor must execute.

## SPECIMEN CERTIFICATE OF MANUFACTURER

**INSTRUCTIONS FOR PREPARATION OF CERTIFICATE:** To be acceptable, the certificate must be prepared in the form indicated by this specimen on the official letterhead of the manufacturer. No portions of the certificate may be omitted. Attached is a copy of the Contract provision under which the certificate is required. The Authority needs only one copy of the certificate. If equipment of a manufacturer is not installed in strict compliance with the recommendations of the manufacturer or if in the design of the work the equipment is not applied in strict compliance with the recommendations of the manufacturer, a letter from the manufacturer should be forwarded to the Contractor [with copies to the Design Professional and the Owner] setting forth a list of the deviations from the recommendations of the manufacturer and stating what remains to be done in order to bring the work into strict compliance with the recommendations of the manufacturer. Prior to calling upon the representative of the manufacturer for performance of the services necessary to enable him to execute a certificate in accordance with this specimen, it is the obligation of the Contractor to have installed the work in strict compliance with the recommendations of the manufacturer [See Article 2.2.4 of the Contract], and it is likewise the obligation of the Contractor to have put the equipment in good operating condition in absolute and final readiness for the "start-up," "testing," and "placing into operation" as defined herein below by the representative of the manufacturer.

Date: \_\_\_\_\_

**Insert name and address of Owner**

Re: Certificate of [JOHN DOE CORPORATION] that equipment or components furnished by it has [or have, as the case may be] been installed in strict compliance with its recommendations and is [or are, as the case may be] operating properly at PROJECT NO. \_\_\_\_\_

Gentlemen:

1. We certify through our duly authorized and acting agent that the following item [or items, as the case may be] furnished by us to the Project named in the caption was [or were, as the case may be] started up, tested, and placed in operation by our authorized field representative on [enter the date on which the field representative performed the start-up, test, and placing into operation] and is [or are, as the case may be] operating properly:

[List the item or items furnished to the job. Show catalogue number or numbers.]

2. We certify further that the aforesaid equipment was installed in strict compliance with our recommendations as published by us in the following document [or documents, as the case may be]:

[Insert the date, name, or other positive means of identifying the exact document or documents in which the recommendations for installation and use of the item or items are published.] (\*)

3. A copy of the aforesaid document(s) is (are) attached hereto.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

JOHN DOE CORPORATION

By: \_\_\_\_\_  
Authorized Representative

(\*) The date must be shown  
[See Article 6.4.1.2.5

### DEFINITIONS:

1. "Start-up" is defined as putting the equipment into action.
2. "Testing" is defined as performing such testing as is stipulated in the Contract Documents to be performed.
3. "Placing into operation" is defined as operating the equipment for a sufficient period of time for the determination to be made that it is performing properly.

**INSTRUCTIONS TO PRODUCING AGENT: COMPLETE THE SHADED PORTIONS OF THIS CERTIFICATE OR SIMILAR FORM AND RETURN TO THE INSURED, WITH ADDITIONAL INSURED ENDORSEMENTS ATTACHED. NO CONDITION, TERM, QUALIFICATION, LIMITATION, EXCEPTION, EXEMPTION, MODIFICATION, OR PROVISIO SHALL APPEAR ON THE CERTIFICATE.**

## Certificate of Insurance

<b>Name, Address and Telephone Number of Producing Agent</b>		<b>PROJECT NO.: J-381</b>		
		<b>PROJECT NAME: J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS, AUGUSTA UNIVERSITY, GA</b>		
<b>Name and Address of Insured Contractor (Contractor)</b>		<b>Certificate Holder(Owner):</b> Board of Regents of the University System of Georgia 270 Washington Street, SW, 6 <sup>th</sup> Floor Atlanta, Georgia 30334 <b>Attn: Director of Contracts &amp; Services, Office of Facilities</b>		
Type of Insurance	Policy No.	Company Affording Coverage	Policy Expiration Date	Limits
<b>Commercial General Liability(1993 ISO Occurrence Form or its equivalent);</b> Includes XCU Coverage				Each Person \$1,000,000.00 Each Occurrence \$1,000,000.00 Products-Co./Op Agg \$1,000,000.00 Personal & Adv injury \$1,000,000.00 Contractual \$1,000,000.00 General Aggregate \$2,000,000.00
<b>Commercial Business Automobile Liability</b>				Bodily Injury \$1,000,000.00 Property Damage \$1,000,000.00 Combined Single Limit \$1,000,000.00
<b>Commercial Umbrella Liability</b>				Each Occurrence \$2,000,000.00 Aggregate \$4,000,000.00
Workers Compensation				W C Statutory Limits
<b>Employers' Liability</b>				Each Accident \$1,000,000.00 Disease Each Employee \$1,000,000.00 BI - Disease-Aggregate \$1,000,000.00
<b>Builders Risk written on 1991 Cause of Loss-Special Form or its equivalent</b> OR <b>Installation Floater</b> (for other than new construction)				Cost of Project
The insured contractor has provided the contract provisions concerning insurance to the Undersigned, and the Undersigned had reviewed the insurance coverages required for the project referenced above and makes the following certifications, which shall serve to bind the various insurance carriers as follows:				
1. Such insurance as is herein certified (i) are written in accordance with the company's regular policies and endorsements, subject to the company's applicable manuals or rules and rates in effect, (ii) have been issued to the insured named above, and (iii) are in force at this time. 2. With the exception of the Workers Compensation policy, the Officers, Members, Agents, & Employees of the Owner and the State of Georgia are included as additional insureds as their interests may appear and a copy of the additional insured endorsement(s) is attached hereto. The undersigned certifies that he has so notified each Insurer that Georgia law requires that the Attorney General of Georgia shall represent and defend the state entities and Indemnities named herein remains in full force and effect and is not waived by issuance of any policy of insurance Disease Each Employee \$1,000,000.00 BI - Disease-Aggregate \$1,000,000.00. 3. Each policy either provides or has been endorsed to meet Georgia law that the policy shall not be canceled, changed, allowed to lapse, or allowed to expire for any reason until thirty (30) days (10 days for non-payment of premium) after the Certificate holder has received written notice thereof as evidenced by return receipt of certified or overnight letter.				
<b>Authorized Representative:</b> _____				<b>Date:</b> _____
<b>Typed Name:</b> _____				

THIS FORM IS FOR OPTIONAL USE TO RELEASE TO THE CONTRACTOR FUNDS WITHHELD FROM A PAY APPLICATION IN THE EVENT A SUBCONTRACTOR FILES A CLAIM AGAINST THE CONTRACT BALANCE HELD BY THE OWNER THAT REMAINS UNRESOLVED. THIS IS A SUBORDINATE DOCUMENT TO THE PAYMENT BOND FOR THE PROJECT, AND IS CALCULATED AGAINST THE PENAL AMOUNT OF THAT PAYMENT BOND. THERE ARE OTHER METHODS THAT MAY BE USED TO REMEDY SUCH SITUATIONS, HOWEVER, THIS FORM IS EFFECTIVE WHEN NONE OF THE PARTIES ARE ABLE TO REACH AGREEMENT UPON THE CLAIM.

### BOND TO DISCHARGE CLAIM

WHEREAS, \_\_\_\_\_ (hereinafter referred to as "Claimant" has filed a claim against \_\_\_\_\_ (the "Contractor", hereinafter referred to as "Principal") on the following contract:

WHEREAS, the undersigned Principal and Surety have issued Payment Bond No. \_\_\_\_\_ (the "Primary Bond") to the Owner, as Obligee, on the Contract dated \_\_\_\_\_ for Project \_\_\_\_\_ ;

WHEREAS, the undersigned Principal and Surety dispute the Claimant's entitlement to all or part of the claim and expressly reserve all rights and defenses available at law in connection therewith;

WHEREAS, \_\_\_\_\_ as Principal and \_\_\_\_\_ as Surety, desire to continue to receiving payments from the Owner for work done on the above referenced project,

NOW THEREFORE, in consideration of these premises, the undersigned Principal and Surety do hold themselves firmly bond unto \_\_\_\_\_ as Claimant, in the total amount of \_\_\_\_\_ dollars (\$\_\_\_\_\_), representing double the amount of the claim.

The condition of this Bond to Discharge Claim is such that should the undersigned Principal or Surety pay to the Claimant the sum that may be found to be due to the Claimant upon the trial of any action that may be filed by said Claimant, or if Principal or Surety pay to the Claimant a sum agreeable to Claimant and Claimant accepts such payment, then this Bond shall be void; otherwise to remain in full force and effect.

The penal amount of the Primary Bond is conditionally reduced by the amount of this Bond to Discharge Claim, and upon payment of any sums to the Obligee under this Bond to Discharge Claim, the penal amount of the Primary Bond is reduced *instanter* by the amount of such payment.

No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2 of the Contract.

IN WITNESS WHEREOF, the said Principal and Surety have set their hands and seals this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Principal

by: \_\_\_\_\_

\_\_\_\_\_  
Surety

by: \_\_\_\_\_

Attorney-in-Fact

\_\_\_\_\_  
Type Name Above

**CHANGE ORDER FORMAT  
(Lump Sum)**

**NOTE TO DESIGN PROFESSIONAL:**

Please prepare each Change Order in the form and wording given below, deleting inapplicable wording and adding such explanations as may be necessary. The wording in Paragraph 11 may not be changed or altered in any way by either the Design Professional or the Contractor. Send four copies, signed by you and the Contractor, to the Owner. *Do not forward a Change Order unless it is accompanied by a breakdown which has been certified by the Contract Compliance Specialist and Program Manager (if applicable).*

**CHANGE ORDER No.** \_\_\_\_\_

Note to Design Professional:  
*Please leave the Change Order number blank. The Owner will assign a number.*

Project Name: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Owner

Note to Design Professional: *No Change Order should be forwarded unless you have been furnished with a letter from the Owner authorizing same.*

1. Submission of this Change Order for consideration was authorized by letter from the Owner, dated \_\_\_\_\_, 20\_\_\_\_, Incumbrance Record No. \_\_\_\_\_.
2. The changes hereinafter described are applicable to the Contract for the construction of the above-referenced Project and amend the Contract Documents.
3. Description of Change:

Note to Design Professional: *Be sure to give a complete statement describing the changes in the work, including the specifications. If drawings are necessary, refer to them by date, etc., and state they are made a part of the Change Order. Copy of drawings should be attached to the Change Order.*

4. This Change Order is deemed necessary and originated with the (Design Professional) (Owner) (Contractor) (Using Agency). *(Indicate applicable entity.)*
5. This Change Order is necessary to:

Note to Design Professional: *Give a complete description of conditions which necessitate the change.*

6. The amount of the Change Order was determined by:

Choose one:  
a. Estimate and acceptance in lump sum.  
b. Unit prices stated in contract or subsequently agreed upon.  
c. Cost and percentage as described in general conditions.

7. A memorandum is attached showing cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).



8. We have verified the quantity and quality of all materials shown on the memorandum. We have verified that all prices are reasonable and do not exceed current costs for like services or materials, and we have verified that the quality of the materials meets the requirements of the Contract Documents.

*Note to Design Professional: Please observe that verification of quantities and prices means the Design Professional who signs the Change Order has personal knowledge that the quantities shown in the memorandum referred to under paragraph 7 above are correct, that he has personally satisfied himself that full credit has been extended for any work or materials deleted or omitted, and that he has conclusively established by such checking or inquire as may be necessary that the prices and allowances shown in the memorandum comparable with current costs for like services and materials.*

9. The contractor shall be allowed \_\_\_\_\_ additional calendar days for completion. The Material Completion and Occupancy Date is: \_\_\_\_\_.

*Note to Design Professional: Please insert the number of additional Days allowed and the new Material Completion and Occupancy Date, or, if no additional time is allowed, insert "0" for the Days and "No Change" for the date.*

10. The Contract Sum shall be (increased) (decreased) by \$ \_\_\_\_\_ on account of this change.

*Note to Design Professional: Please delete inapplicable language in parentheses and enter the dollar amount for this change. Insure that cost of the Work, percentage markup for profit, and the daily rate of general conditions costs is accurate and included in the amount of an additive change. If a deductive change, the amount is generally cost of the work only; however, consult with the owner in significant deductive Change Orders to determine if time or profit should be included in the deducted amount.*

11. The payment and extension of time, if any, provided by this Change Order constitutes compensation in full to the Contractor and its Subcontractors, Suppliers, and Trade Contractors for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner and the Design Professional, and design consultants.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: CPL

By: \_\_\_\_\_  
\_\_\_\_\_  
(Print Name/Title)

By: \_\_\_\_\_  
\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_

APPROVED AND AGREED BY USING AGENCY:  
AUGUSTA UNIVERSITY

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_  
\_\_\_\_\_  
(Print Name/Title)

By: \_\_\_\_\_  
\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

Date approved by Owner: \_\_\_\_\_

**CHANGE ORDER FORMAT  
(Force Account or Indeterminate Units)**

**NOTE TO DESIGN PROFESSIONAL:**

Please prepare each Change Order in the form and wording given below, deleting inapplicable wording and adding such explanations as may be necessary. The wording in Paragraph 8 may not be changed or altered in any way by either the Design Professional or the Contractor. The wording in Paragraph 5 of the Final Cost Amendment may not be changed or altered in any way by either the Design Professional or the Contractor. Send four copies, signed by you and the Contractor, to the Owner. *Do not forward a Change Order unless it is accompanied by a breakdown which has been checked by the Contract Compliance Specialist and Program Manager (if applicable).*

CHANGE ORDER No. \_\_\_\_\_

Note to Design Professional:  
*Please leave the Change Order number blank. The Owner will assign a number.*

Project Name: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Owner

Note to Design Professional: *No Change Order should be forwarded unless you have been furnished with a letter from the Owner authorizing same.*

1. Submission of this Change Order for consideration was authorized by letter from the Owner, dated \_\_\_\_\_, 20\_\_\_\_, Incumbrance Record No. \_\_\_\_\_.

2. The changes hereinafter described are applicable to the Contract for the construction of the above-referenced Project and amend the Contract Documents..

3. Description of Change:

Note to Design Professional: *Be sure to give a complete statement describing the changes in the work, including the specifications. If drawings are necessary, refer to them by date, etc., and state they are made a part of the Change Order. Copy of drawings should be attached to the Change Order.*

4. This Change Order is deemed necessary and originated with the (Design Professional) (Owner) (Contractor) (Using Agency). *(Indicate applicable entity.)*

5. This Change Order is necessary to: Note to Design Professional: *Give a complete description of conditions which necessitate the change.*

6. The Maximum Allowable Cost of the Change Order was estimated by:

Choose one:

- a. Estimate in lump sum.
- b. Unit prices stated in contract or subsequently agreed upon, and an estimated number of units.
- c. Cost and percentage as described in general conditions.

7. A memorandum is attached showing the estimated cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).

8. The Maximum Allowed Cost for this Change Order is \$ \_\_\_\_\_, and is established as Incumbrance Record No. \_\_\_\_\_. This Maximum Allowed Cost may be amended by the Owner in the event the actual costs are expected to exceed the Maximum Allowed Cost, provided that Contractor shall give written notice of such fact prior to incurring actual costs in excess of ninety percent of the Maximum Allowable Cost. In no event shall actual costs be incurred in excess of the Maximum Allowed Cost, as it may be amended.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: CPL

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_

APPROVED AND AGREED BY USING AGENCY:  
AUGUSTA UNIVERSITY

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

Date approved by Owner: \_\_\_\_\_

**FINAL COST AMENDMENT  
TO  
CHANGE ORDER NO. \_\_\_\_\_**

1. A memorandum is attached showing cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).
2. We have verified the quantity and quality of all materials shown on the memorandum. We have verified that all prices are reasonable and do not exceed current costs for like services or materials, and we have verified that the quality of the materials meets the requirements of the Contract Documents.

*Note to Design Professional: Please observe the fact that verification of quantities and prices means the Design Professional who signs the Change Order has personal knowledge that the quantities shown in the memorandum referred to under paragraph 7 above are correct, that he has personally satisfied himself that full credit has been extended for any work or materials deleted or omitted, and that he has conclusively established by such checking or inquire as may be necessary that the prices and allowances shown in the memorandum comparable with current costs for like services and materials.*

3. The contractor shall be allowed \_\_\_\_\_ additional calendar days for completion. The Material Completion and Occupancy date is: \_\_\_\_\_ .

*Note to Design Professional: Please insert the number of additional Days allowed and the new Material Completion and Occupancy Date, or, if no additional time is allowed, insert "0" for Days and "No Change" for the date.*

4. The Contract Sum shall be *(increased)* *(decreased)* by \$ \_\_\_\_\_ on account of this change.

*Note to Design Professional: Please delete inapplicable language in parentheses and enter the dollar amount for this change. Insure that cost of the Work, percentage markup for profit, and the daily rate of general conditions costs is accurate and included in the amount of an additive change. If a deductive change, the amount is generally cost of the work only; however, consult with the owner in significant deductive Change Orders to determine if time or profit should be included in the deducted amount.*

5. The payment and extension of time, if any, provided by this Change Order constitutes compensation in full to the Contractor and its Subcontractors, Suppliers, and Trade Contractors for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any Claims related thereto against the Owner and the Design Professional, and design consultants.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: CPL

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_

APPROVED AND AGREED BY USING AGENCY:  
AUGUSTA UNIVERSITY

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

Date approved by Owner: \_\_\_\_\_

**APPLICATION FOR PAYMENT**

APPLICATION FOR PAYMENT NO. \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

**CERTIFICATE OF THE CONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE**

To the best of my knowledge and belief, I certify that all items, units, quantities, and prices of work and material shown on this Application for Payment No. \_\_\_\_\_ are correct; that all work has been performed and materials supplied in full accordance with the terms and conditions of the Contract Documents between \_\_\_\_\_

(Owner)

and \_\_\_\_\_ dated \_\_\_\_\_  
(Contractor)

and all authorized changes thereto; and that the following is a true and correct statement of the contract account up to and including the last day of the period covered by this Application and that no part of the "amount due this Application" has been received.

(a)	Total amount earned for work in place (original contract)	\$
(b)	Total amount earned for work in place (Change Orders)	\$
(c)	Value of materials stored at site	\$
(d)	Total amount earned ( (a) plus (b) plus (c) )	\$
(e)	Amount retained (10%)	\$
(f)	Total earned less retained percentage ( (d) minus (e) )	\$
(g)	Total previously approved	\$
(h)	Amount due THIS ESTIMATE ( (f) minus (g) )	\$
(i)	Retainage payment to Subcontractors per Paragraph 4 .1.2.5 of the General Conditions.	\$
(j)	AMOUNT DUE Contractor ( (h) minus (i) )	\$

I further certify that all claims outstanding against the undersigned Contractor for labor, materials, and expendable equipment employed in the performance of said contract have been paid in full in accordance with the requirements of said contract, except such outstanding claims as are listed below or on the attached sheet, which statement contains all claims against the Contractor which are not yet paid, including all disputed claims and any claims to which the Contractor has or will assert any defense.

I further certify that all of the materials indicated on this Application for Payment as being stored on the Site, but not yet incorporated into the building, have been purchased, delivered, and are now stored on the Site for future incorporation into the building and until so incorporated the title to same is, upon payment of this statement, vested in the Owner. Furthermore, the undersigned Contractor assumes full responsibility for the existence, protection, and, if necessary, replacement of the above-mentioned materials until the completion of this contract.

Contractor \_\_\_\_\_

By

Date \_\_\_\_\_

Title

**STATEMENT OF THE CONTRACT COMPLIANCE SPECIALIST**

I have checked this Application for Payment and, to the best of my knowledge and belief, the statement of work performed and statement of materials stored on site by the Contractor are supported by my observations

Name \_\_\_\_\_ Contract Compliance Specialist.

Date:

**CERTIFICATE OF THE DESIGN PROFESSIONAL**

I certify that I have verified this Application for Payment and, to the best of my knowledge and belief, it is a true and correct statement of work performed and statement of materials stored on site by the Contractor and that the Contractor's certified statement of his account and the amount due him is correct and just. I further certify that all work has been performed and materials have been supplied in full accordance with the terms and conditions of the Contract Documents and authorized changes thereto.

Name \_\_\_\_\_ Design Professional.

Date:

## SCHEDULE OF CHANGE ORDERS

In support of Application for Payment No. \_\_\_\_\_

Project No. \_\_\_\_\_ Period Ending: \_\_\_\_\_

Contractor: \_\_\_\_\_

CHANGE ORDERS		ADDITIONS			DEDUCTIONS
Number (1)	Date (2)	Authorized Amount (3)	Amount this Period (4)	Completed Previous Periods (5)	Authorized Deductions (6)

**WORK PERFORMED TO DATE**

In support of Application for Payment No.

For the period from \_\_\_\_\_, through \_\_\_\_\_ inclusive.

Project No.

Name and location of Project

Contractor's Name and Address

**WORK INCLUDED IN ORIGINAL CONTRACT**

**DETAILED ESTIMATE**

**WORK PERFORMED TO DATE**

CSI Category and Description Item No. and Designation (1)	Number & Kind of Units (2)	Unit Price (3)	Estimated Cost (4)	No. of Units (5)	Amount Earned to Date (6)	Value of Incomplete Work (7)	Percent Complete (8)
<b>A. Contracting Requirements: *</b> a. b. c.  <b>1. Division 1 – General Requirements: *</b> a. b. c.  <b>2. Division 2 – Site Construction: **</b> (i) Building a. b. c.  (ii) Infrastructure a. b. c.  <b>3. Division 3 – Concrete: *</b> a. b. c.  <b>4. Division 4 – Masonry: **</b> (i) Building a. b. c.  (ii) Infrastructure a. b. c.  <b>5. Division 5 – Metals: *</b> a. b. c.							

<p><b>6. Division 6 – Wood and Plastics: *</b> a. b. c.</p> <p><b>7. Division 7 – Thermal &amp; Moisture: *****</b> a. b. c. Roof:</p> <p><b>8. Division 8 – Doors &amp; Windows: *</b> a. b. c.</p> <p><b>9. Division 9 – Finishes: *</b> a. b. c.</p> <p><b>10. Division 10 – Specialties: *</b> a. b. c.</p> <p><b>11. Division 11 – Equipment: ***</b> (i) Fixed or Built-in: a. b. c.  (ii) Moveable: a. b. c.</p> <p><b>12. Division 12 – Furnishings: ***</b> (i) Fixed or Built-in: a. b. c.  (ii) Moveable: a. b. c.</p> <p><b>13. Division 13 – Special Construction: *</b> a. b. c.</p> <p><b>14. Division 14 – Conveying Systems: *</b> a. b. c.</p> <p><b>15. Division 15 – Mechanical: *****</b> (i) Building a. b. c.  (ii) Infrastructure a. b. c.</p> <p><b>16. Division 16 – Electrical: **</b> (i) Building a. b. c.</p>			
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(ii) Infrastructure a. b. c.							
17. Division 17 – Special Inspections: ** (i) Building a. b. c.  (ii) Infrastructure a. b. c.  (iii) Documents							
A. Total Amount of original contract							
B. Plus or minus total previously approved C. O.'s incl.		Nos.-----					
C. Plus or minus C. O.'s Nos.-----incl. approved covered by this est.-----		during period					
D. Total Net Adjusted Amt.							

**NOTES:** The following breakdowns must be accomplished in order to comply with Government Accounting requirements. Upon completion of the Project, the final Application for Payment must show all divisions and sections, and a Final Certification of Costs for Capital Asset Accounting completed and submitted with the Application for Final Payment.

- \* Report Items in each division, by CSI division and such other breakdown as is useful to the Contractor or Contract Compliance Specialist.
- \*\* These items must be broken down into 2 categories, (i) Building and (ii) Infrastructure, reported by specification section. Infrastructure for these purposes is defined as everything outside a line five feet from the building footprint.
- \*\*\* These items must be broken down into 2 categories; (i) fixed equipment & furnishings and (ii) Moveable equipment & furnishings and reported by specification section.
- \*\*\*\* Division 15 – Mechanical. This item must be broken down into 2 categories, (i) Building and (ii) Infrastructure, reported by specification section. Chillers and HVAC units that serve the facility are to be included as a part of the Building, even if they are outside the 5-foot limit. Chillers and HVAC units that are outside the 5 foot limit and serve more than one facility, such as equipment used in a central plant, are to be included in Infrastructure.
- \*\*\*\*\* Division 7 – Thermal & Moisture Components of the Roof system should be reported as a separate line item. Generally, this includes components of Sections 7500 and 7600.

**SUMMARY OF MATERIALS STORED**

In support Application for Payment No.

Project No. \_\_\_\_\_ Period Ending:

Contractor:

ITEM NO.	NAME (Contractor or Subcontractor)	TYPE OF MATERIAL	QUANTITY	AMOUNT (Dollars)
		TOTALS		

Prepared by \_\_\_\_\_ for \_\_\_\_\_  
(Contractor)

Date \_\_\_\_\_, and certified by him to be a true and accurate statement.

Checked:

By: \_\_\_\_\_  
Contract Compliance Specialist

Date:

**SUBCONTRACTOR RETAINAGE RELEASE CERTIFICATE**

*(To be Originated by Subcontractor)*

TO: Board of Regents of the University System of Georgia, Owner  
AUGUSTA UNIVERSITY, Using Agency

RE: Project Name and Number: J-381 CHRISTENBERRY FIELD HOUSE RENOVATIONS, AUGUSTA  
UNIVERSITY, GA  
Certificate Regarding Subcontractor's Completed Work and Retainage Release

1. This is to certify that our work is one hundred percent complete for our subcontract number \_\_\_\_\_.  
Our retainage is due in accordance with the contract documents. Our scope of work included the  
\_\_\_\_\_. The total amount of retainage now due is \$\_\_\_\_\_.

2. The Subcontractor hereby certifies that all work required under the above contract has been performed in accordance with the terms thereof, that all materialmen, subcontractors, mechanics, and laborers have been paid and satisfied in full, and that there are no outstanding claims of any character (including disputed claims or any claims to which the subcontractor has or will assert any defense) arising out of the performance of the contract which have not been paid and satisfied in full except as listed hereinbelow, which exceptions apply only to the release in Paragraph 5, below:

**[Enter: "None" or List or Make Reference & Attach Exhibit A.]**

3. The Subcontractor further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a claim or lien upon the property of the Owner.

4. The Subcontractor has received final payment in full settlement of all claims against the Owner arising under or by virtue the contract, and acceptance of such payment is acknowledged as a release of the Owner from any and all claims arising under or by virtue of the contract. This release includes any claims set forth or excepted in Paragraph 2 above.

5. **[Strike out if not applicable]** The Subcontractor has received final payment in full settlement of all claims against the Contractor arising under or by virtue the contract, and acceptance of such payment is acknowledged as a release of the Contractor from any and all claims arising under or by virtue of the contract except as set forth in Paragraph 2 above.

6. Payments pursuant to this certificate shall in no way diminish, change, alter or affect the rights of the Owner under the contract documents.

SUBCONTRACTOR:

By: \_\_\_\_\_ Date: \_\_\_\_\_

CONTRACTOR:

By: \_\_\_\_\_ Date: \_\_\_\_\_

DESIGN PROFESSIONAL:

By: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTICE: OWNER MUST RECEIVE A COPY WITH ALL ORIGINAL SIGNATURES.**

**FINAL CERTIFICATION OF COSTS  
FOR CAPITAL ASSET ACCOUNTING**

Date: \_\_\_\_\_

To: \_\_\_\_\_ (Owner)

The following accounting of costs for Project No. \_\_\_\_\_, Project Name: \_\_\_\_\_

\_\_\_\_\_ at \_\_\_\_\_

is submitted as follows, with the breakdown of costs as specified in the Final Pay Request attached hereto and incorporated herein, for the purposes of capital asset accounting pursuant to GASB 34 Accounting Statements:

1.	<b>BUILDING AND BUILDING IMPROVEMENTS: *</b>	\$ _____
2.	<b>INFRASTRUCTURE: **</b>	\$ _____
3.	<b>FURNISHINGS AND EQUIPMENT: ***</b>	\$ _____
		=====
	<b>TOTAL:</b>	\$ _____

**Notes:**

- (Contractor must insure costs from all Change Orders are apportioned and included in each line item above)
- \* **Building:** Include totals from Items A, 1, 3, 5, 6, 7, 8, 9, 10, 13, 14, 15 and "Building" portions of Items 2, 4, and 16.
- \*\* **Infrastructure:** Include totals from the "Infrastructure" portions of Items 2, 4 and 16.
- \*\*\* **Furnishing and Equipment:** Include totals from only the "moveable" portions of Items 11 and 12.

I certify to the best of my knowledge and belief that all of the amounts set forth on this Certificate are true and correct and are supported by the financial records for this project on file with the Contractor.

Contractor \_\_\_\_\_ By: \_\_\_\_\_

Date \_\_\_\_\_ Title: \_\_\_\_\_

**CERTIFICATE OF THE DESIGN PROFESSIONAL**

I certify to the best of my knowledge, information and belief that the amounts certified by the Contractor are consistent with the estimates provided in my final Statement of Probable Cost for the Project; that the Building Improvement contains a footprint based upon a line 5 feet outside the building structure) of \_\_\_\_\_ square feet, a total of \_\_\_\_\_ gross square feet, and contains \_\_\_\_\_ floors (including basements). The building fire protection system is \_\_\_\_\_ (include type of system). The Certificate of Occupancy was issued on \_\_\_\_\_. I further certify that the design intent for this project is that the Building and Building Improvements are of Building Construction Class \_\_\_\_\_ and ISO Occupancy Type(s) \_\_\_\_\_ and have an expected useful life of \_\_\_\_\_ years from the date of this Certificate, and that my observations of the construction confirm these expectations. (See Exhibit J of Design Professional Contract.)

Name \_\_\_\_\_ Design Professional. Date: \_\_\_\_\_

**CERTIFICATE OF THE USING AGENCY OR OWNER**

*I certify that to the best of my knowledge, information, and belief that the cost of the real property covered by this project, to the boundaries on the final Site Plan, was \$ \_\_\_\_\_ and the cost of additional government-supplied furnishings and equipment acquired for this Project was \$ \_\_\_\_\_*

Name \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**SUPPLEMENTARY GENERAL CONDITIONS**

List supplementary condition(s)

**OR state:**

None at time of Contract Execution.

SECTION 00 7100 – GENERAL CONDITIONS

PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. The “Board of Regents of the University System of Georgia – General Conditions” is bound with this Section. This document is the General Conditions of the Contract for Construction for this project. “Board of Regents of the University System of Georgia – General Conditions” adopts by reference Section 00 5100 AGREEMENT FORM, and is designed for use with the referenced supplement, “Design-Bid-Build Construction Contract Between Contractor and Owner”.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 00 7100

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- 1.7.10 Assignment
- 1.7.11 Interpretation of Contract Documents
- 1.7.12 Counterparts
- 1.7.13 Forms and Specimens
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### **Part 1 Pre-commencement Phase Services**

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- 2.1.2 Construction Preparation Period
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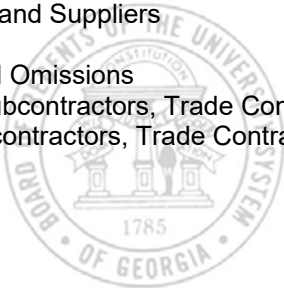
- 5.1.1 Owner's Right to Suspend Work
- 5.1.2 Owner's Right to Stop Work
- 5.1.3 Owner's Rights Independent from Rights and Duty of the Design Professional

**Part 2 Contract Adjustments and Disputes**

- 5.2.1 General Provisions
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- 5.3.3 Contractor's Right to Terminate
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### **Part 1 Material Completion**

- 6.1.1 Material Completion
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- 6.2.1 Final Completion
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### **Part 3 Inspections for Completion of the Work**

- 6.3.1 General Responsibility of the Contractor for Inspection
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- 6.4.1 Final Documents
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- Sub-Subcontractor Affidavit
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- Five Year Bond on Roofs and Walls
- Specimen Certificate of Manufacturer
- Certificate of Insurance
- Bond to Discharge Claim Change Order Forms
- Application for Payment Form
- Subcontractor Retainage Release Certificate Final Certification of Costs

## **SUPPLEMENTARY GENERAL CONDITIONS**

# GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## SECTION 1 – GENERAL

### PART 1 GENERAL PROVISIONS

#### 1.1.1 General Matters

1.1.1.1 This Contract and Affiliated Agreements – Requirement for Written Agreements. This Contract and all Affiliated Agreements, including any subsequent modifications, must be in writing, dated, and executed by the parties. Affiliated Agreements, including financial arrangements with respect to this Project, must be promptly and fully disclosed to the Owner upon their execution or modification.

1.1.1.2 Basic Statement of Owner Objectives. The Owner's basic objectives are the construction of the Project within the limits of the funds available to Owner for construction of the Project, and in accordance with the approved Construction Documents.

1.1.1.3 Project Team. To accomplish Owner's objectives, Owner intends to employ a team concept in connection with the construction of the Project. The basic roles and general responsibilities of team members are set forth in general terms below but are more fully set forth in the Design Professional Contract with respect to the Design Professional, and in this Contract with respect to the Contractor.

1.1.1.3.1 Relationship of Parties. The Owner and the Contractor agree to proceed with the Project on the basis of trust, good faith, and fair dealing and to cooperate fully with each other. The Owner and the Contractor shall do all things reasonably necessary to perform this Contract in an economical and timely manner, including without limitation, consideration of design modifications to enhance constructability and alternative materials or equipment, if considered necessary or convenient by the Owner. The Contractor agrees to procure or furnish, as permitted by the laws of Georgia, all Pre-Commencement phase services and construction phase services as set forth herein. The Owner shall endeavor to promote harmony and cooperation among the Owner, Design Professional, the Using Agency, Contractor and other persons or entities employed by the Owner for the Project.

1.1.1.3.2 Design Professional. The Design Professional is retained in accordance with the Design Professional Contract (i) for the design and preparation of Construction Documents that are necessary to implement the Program governing the construction of the Project or Components thereof, and the design and preparation of any necessary documents antecedent to preparation of such Construction Documents, or (ii) for construction contract administration of the Work under Contract Documents, or (iii) for both. The Contractor acknowledges and agrees that the Contract Documents are addressed to skilled tradesmen in the construction profession who shall be required to use their special skills and experience, through submittals and shop drawings, to translate the Design Professional's design intent as expressed in the Contract Documents into a completed structure. The Contract Documents shall specify when shop drawings or submittals require the seal of a specialty consultant.

1.1.1.3.2.1 The basis of the Owner's engagement of the Design Professional is the "Design Professional Contract." The Contractor is advised that both the Owner and the Design Professional have on file, at their respective places of business, copies of that executed agreement. The Design Professional is not the agent of the Owner, except to the extent so specified in writing, but is employed as a consultant to the Owner to assist the Owner in determining if the conditions of the contract have been met. All decisions of the Design Professional on matters of aesthetics are final, conclusive, and binding on all parties if consistent with the requirements of the Contract Documents.

1.1.1.3.2.2 The Contractor promptly shall request and review a copy of the Design Professional Contract during the Pre-commencement Phase and shall become familiar with the respective services, authorities, obligations, and responsibilities of the parties therein. Contractor agrees to develop a working relationship with the Design Professional to effectuate the purposes of the Project in accordance with the terms of this Contract and with consideration of the Design Professional's responsibilities under the Design Professional Contract.

1.1.1.3.2.3 The Contractor acknowledges that the respective contracts require the Owner and the Design Professional to proceed with the Project on the basis of trust, good faith, and fair dealing, and they will take all actions reasonably necessary to ensure the Project proceeds to completion within the Owner's time and budgeting constraints. The Contractor also acknowledges that the Design Professional is to perform all tasks and services required of it under the Design Professional Contract. The Contractor further acknowledges that, in order for the Design Professional to perform its obligations, the Design Professional requires certain materials, information, or other submissions pursuant to the Contract Documents from the Contractor. The Contractor agrees to provide the Design Professional with the submittals required by the Contract Documents. The Contractor further agrees to cooperate with the Design Professional to ensure timely completion of all obligations under this Contract to complete the entire Project.

1.1.1.3.2.4 Contractor agrees that the services provided by the Design Professional under the Design Professional Contract are intended to coordinate and complement, but not to diminish, alter or substitute for, any of the services, authority, obligations, or responsibilities of the Contractor under this Contract. Contractor further agrees that the performance of services by the Design Professional in connection with the Project shall in no way relieve Contractor from any of its services, authority, obligations, or responsibilities under this Contract, and shall not alter or diminish those services, authority, obligations, or responsibilities in any way whatsoever.

1.1.1.3.3 Program Manager. In lieu of a Program Manager, the Design Professional is designated to perform the role of Program Manager.

1.1.1.3.4 Owner's Representative. Owner shall from time to time in writing designate one person as Owner's Representative under this Contract. Owner's Representative so designated in writing shall serve as Owner's Representative under this Contract unless or until Owner gives notice in writing of the appointment of his successor. Owner or Owner's Representative may designate in writing assistants to serve as Owner's Representative with respect to the Project governed by this Contract or in different phases or in specific areas of responsibility with respect to the Project. All requests for consents and approvals required of Owner in connection with the Project, whether Design Professional, or Contractor, shall be submitted to Owner's Representative, or if the matter is within the written designation of authority of his assistant, to his designated assistant. Design Professional and Contractor may rely upon written consents and approvals signed by the Owner's Representative, or his designated assistant acting within the scope of his written designation, as the consent and approval of Owner.

1.1.1.3.5 Using Agency, Using Agency's Representative. The Project is intended for the benefit of the Using Agency. A copy of all matters submitted to Owner shall also be submitted to Using Agency for Using Agency's information. The Using Agency may designate one or more representatives to participate with Owner in Owner's activities under this Contract. Neither the Using Agency nor any representative of Using Agency shall have any authority to act for or in the name of the Owner. Participation in the Project by Using Agency or its representative(s) shall be solely advisory to the Owner. The Design Professional, Contractor, or any Separate Contractor must not act or rely solely upon any directive, interpretation, decision, act, or omission of Using Agency or the Using Agency's Representative.

1.1.1.3.6 Owner's Construction Inspector. Owner may from time to time in writing designate a person or firm as Owner's Construction Inspector under this Contract. The Owner's Construction Inspector may be hired by Owner or hired under the Program Manager's Contract or the Design Professional's Contract and shall provide inspection services of the Work on behalf of the Owner. The presence of an Owner's Construction Inspector does not relieve the Contractor of any of its responsibilities for quality control and independent testing set forth in the General Requirements. The Owner's Construction Inspector has the authority to report any deviations from the Contract Documents directly to the Contractor's superintendent at the job site for immediate action, and also to report same to the Program Manager or Design Professional, and Owner.

1.1.1.3.7 Representatives. The designated representatives of the Contractor and the Owner shall have full authority to act (other than for the receipt of notices that must be given as specified in Paragraph 1.1.5) in matters relating to this Contract until notice is given that such authority has been revoked. Contractor and the Owner may each rely upon the written certification of the other as to the appointment of a designated representative or the revocation of his authority. The Contractor shall designate, in writing, a representative authorized to act on the Contractor's behalf with respect to the Project. The Contractor's initial authorized representative shall be the Project Superintendent of the Contractor as identified by the Contractor. Contractor shall employ the Project Superintendent and necessary assistants who shall be in attendance at the Site during the progress of the Work. The Contractor's designee shall represent Contractor: All written communications given to the Contractor's designee shall be binding upon Contractor.

1.1.1.3.8 Separate Contractor. Owner may select one or more Separate Contractors to perform work with respect to the Project or Components thereof. The Contractor shall afford the Owner's Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall coordinate the Separate Contractors' schedules with those of the Contractor. The Owner's Separate Contractors shall adhere to the Contractor's work rules, schedule, laydown areas, and safety requirements.

1.1.1.3.9 Commissioning Authority. Owner may select and employ a Commissioning Authority to perform building commissioning activities and monitor testing activities. The Commissioning Authority shall perform and coordinate and accomplish its work as set forth in Articles 1.3.4 and 2.1.9.

## 1.1.2 Project Team, Cooperation, Partnering

1.1.2.1 Concept. It is the Owner's expectation that the Design Professional, Owner, Using Agency, Contractor, and any Separate Contractor, shall work as a Project Team to effect the commencement of and completion of construction in accordance with the Project Schedule, and to achieve Final Completion of the Project. Each team member shall communicate with all other team members to assure overall coordination, cooperation, and efficiency. Each team member shall cooperate fully with and coordinate fully with each other team member in order to achieve Project completion in an expeditious and economical manner. The Contractor shall schedule regular meetings of the key principals of the Project Team in an effort to solve problems in a partnering atmosphere to facilitate the ability of each team member to meet its business objectives, so long as its business objectives are consistent with the successful completion of the Project. It is the Owner's intent that all consensus decisions of the Project Team, where differing from the Contract Documents, be reduced to writing in an appropriate Change Order.

1.1.2.2 Conference. Promptly after the execution of this Contract, Contractor shall confer with the Design Professional, Owner, and Using Agency to identify personnel and relevant organizational charts of each team member, and to establish working relationships with each team member.

1.1.2.3 Authority of Contractor. Contractor is, and at all times during the term of this Contract shall be, an independent contractor in the performance of its duties and obligations under this Contract. Contractor shall have no authority to bind or otherwise obligate Owner, orally, in writing or by any acts, unless specifically authorized by Owner in writing. Nothing contained in this Contract shall constitute or be deemed or construed to create a partnership or joint venture, or any agency relationship, between Owner and Contractor.

1.1.2.4 Team Evaluation Process, Covenant not to Sue. If Team Evaluation is elected as part of this Contract, all team members agree to participate in good faith in the State of Georgia's formal Team Evaluation Process [copies of which will be made available to any bidder on request]. By executing this agreement for construction services with the Owner, the Contractor waives any and all legal rights for defamation, libel or slander and covenants not to sue the Board of Regents, the Owner, the Design Professional, the Using Agency, other team members, and their respective representatives and agents for comments, rankings, and results related to the Contractor's performance posted in good faith as a part of, and in accordance with, said Team Evaluation Process. The Design Professional and other team members, in their agreements with the Owner, have executed, or will execute, a similar agreement.

## 1.1.3 Constitutional Principles Applicable to State Public Works Projects

1.1.3.1 Title to Project Site. Title to the Site is vested in the Board of Regents of the University System of Georgia as public property of the State of Georgia and is not subject to levy or lien.

1.1.3.2 Title to Improvements and Delivered Materials. Title to all improvements constructed at the Site vests *instanter* in the Board of Regents. Title to all materials vests in the Board of Regents upon their delivery without rejection by the Contractor at the Site, regardless of the status of payment or nonpayment of the costs thereto. Protection of laborers and Suppliers (regarding payment for services and materials) is effected through the provision of payment and performance bonds by the State.

1.1.3.3 Limited Waiver of Sovereign Immunity *Ex Contractu*. Contractor acknowledges and agrees that Owner is an agency or instrumentality of the State of Georgia, and as such is entitled to the protection of sovereign immunity. As set forth in Article I, Section II, Paragraph IX of the 1983 Georgia Constitution, sovereign immunity is waived "as to any action *ex contractu* for the breach of any written contract." Contractor specifically acknowledges the constitutional and contractual requirements that written changes, modifications, and waivers to this Contract must be specifically executed by the Owner as set forth in the Contract Documents. Accordingly, Contractor specifically acknowledges the constitutional prohibitions against claims against Owner based solely upon oral statement, course of conduct, customs of the trade, quasi-contract, quantum meruit, or O.C.G.A § 13-4-4 (mutual departure from contract terms).

1.1.3.4 Limitations upon Authority of Agents. Contractor further acknowledges that Owner is an agency or instrumentality of the State of Georgia, and as such acts through specific public officials. The legal concepts of agency applicable to the Owner are solely as set forth in O.C.G.A. §45-6-5 and as further specified in the Contract Documents. Contractor specifically acknowledges the statutory and contractual requirements that written changes, modifications, and waivers to this contract must be executed only by the identified representatives of Owner as set forth in the Contract Documents. Accordingly, Contractor specifically acknowledges that any claims against Owner based upon the act of any non-authorized employee or official are invalid.

1.1.3.5 U.C.C. Not Generally Applicable. Contractor further acknowledges and agrees that Owner, as set forth in subsection (3) above, has granted only a limited waiver of sovereign immunity, such that the provisions of the Uniform Commercial Code (O.C.G.A §11-1-101 through §11-2-725) governing sales of goods do not apply to this Contract. Contractor specifically acknowledges the contractual requirements that written changes, modifications, and waivers to this contract must be specifically executed by the Owner as set forth in the Contract Documents. Accordingly, Contractor specifically waives and covenants not to make against Owner any claims based upon the Uniform Commercial Code. Contractor understands, however, that Contractor's subcontracts with Suppliers and Subcontractors may in fact include sales of goods and therefore be properly governed by the Uniform Commercial Code; nonetheless Contractor covenants that any such application shall in no way be construed to have any legal effect upon this contract between Owner and Contractor.

**1.1.4 Third Party Beneficiary.** Contractor acknowledges, stipulates, and agrees that the Owner is a public department, agency, or commission of the executive branch of government of the State of Georgia performing an essential public and governmental function by means of the Contract. Contractor acknowledges, stipulates, and agrees that the Using Agency is an express third-party beneficiary of this Contract. There are no individual or personal third-party beneficiaries of this Contract.

#### **1.1.5 Notice**

1.1.5.1 General Requirement. Any notice, election, demand, request, consent, approval, or other communication required or permitted to be given under this Contract shall be in writing signed by an officer or duly authorized representative of the party making same and shall be delivered personally or shall be sent by certified or statutory mail, postage prepaid, return receipt requested, shall be effective as of the date on which it is received or would have been received but for the refusal of the addressee to accept delivery, and shall be addressed as shown in the Contract. The persons and addresses to which notices should be given may be changed by notice given in accordance with this Article.

1.1.5.2 Copies of Notices to Owner. Wherever the Contract Documents provide that a copy of any notice, request, or demand filed with the Design Professional by the Contractor shall be furnished to the Owner, such notice, request, or demand shall not become effective until the Owner has received his copy. No notice in writing or given orally to the Design Professional or to the Contract Compliance Specialist is notice to the Owner unless copy of the aforesaid notice in writing shall have been properly served upon the Owner at the address shown in the Contract.

#### **1.1.6 Liquidated Damages**

1.1.6.1 Time of the Essence. Time being of the essence of this Contract, and a material consideration thereof, it is mutually agreed by the parties hereto in case of the Contractor's failure to complete the construction within the

time specified, the Owner will be damaged thereby. The Contractor shall commence performance of the Work on the Site under this Contract as of the Proceed Order Date. The Contractor shall complete construction, except for Minor Items and Permitted Incomplete Work (see Article 6.1.1), not later than the Material Completion and Occupancy Date, as adjusted by Change Order.

1.1.6.2 Liquidated Damages. Liquidated Damages will not be applied in this Contract. Because it is difficult to definitely ascertain and prove the amount of said damages, inclusive of, but not limited to, expenses for inspection, superintendence, loss of use, and necessary traveling expenses, the Owner, Contractor, and Using Agency hereby agree that the amount of such damages shall be the daily rate specified in the Contract, beginning upon the contractually required Material Completion and Occupancy Date and ending on the date that the Certificate of Material Completion is issued. The parties agree that the specified Liquidated Damages are not established as a penalty but are calculated and agreed upon in advance as a fair and equitable amount reasonably estimated in advance to cover losses to be incurred by the Owner and Using Agency for such delay or interruption in view of the uncertainty and impossibility of ascertaining actual damages that would be incurred.

1.1.6.2.1 Contractor Agrees to Pay. The Contractor agrees to pay the amount, computed by multiplying the Liquidated Damages set forth in the Contract by the number of days between the contractually required Material Completion and Occupancy Date and the date that the Certificate of Material Completion is issued.

1.1.6.2.2 Deducted as They Accrue. Liquidated Damages shall be deducted from periodic payments as they accrue and such deduction shall be in addition to the retainage provided for in the Contract. The remaining balance of any Liquidated Damages shall be deducted from the Payment for Material Completion to the Contractor or its Surety. If the unpaid balance of the Contract Sum is less than the total amount to be deducted for Liquidated Damages as herein above provided, the Contractor shall promptly pay to the Owner, upon the Owner's demand, the amount by which such sum exceeds the unpaid balance of the Contract Sum.

1.1.6.3 Limitation on Owner's Damages. Except as otherwise set forth in the Contract Documents, damages of the Owner and Using Agency for delay shall be limited to the Liquidated Damages as defined herein. Nothing in this Article shall be construed to limit Owner's right to pursue damages or remedies for claims against the Contractor for reasons other than delay.

## 1.1.7 Documents

1.1.7.1 Precedence of Documents and Changes. In the event of conflict, the Contract takes precedence over the Supplementary Conditions, and the Supplementary Condition take precedence over the General Conditions. No change to the Contract Documents is effective unless notice shall have been issued by the Owner bearing the imprimatur of the Owner as follows:

*"By order of the Board of Regents of the University System of Georgia, Owner."*

The Design Profession has no authority to amend the Contract Documents, orally or in writing, either expressly or by implication.

1.1.7.2 Copies of Contract Documents to Contractor. Without charge to the Contract the Design Professional shall furnish to the Contractor up to five sets of completed Contract Documents in hardcopy, one set of reproducible and electronic background floor and reflected ceiling plan drawings and, if requested, one copy in read-only electronic format. The Contractor may obtain such additional sets of Contract Documents, as the Contractor deems necessary and Professional. shall pay the cost of reproduction of such additional sets to the Design Professional.

1.1.7.3 Marked-Up ("As-Built") Documents. Prior to Final Completion, the Contractor shall provide one complete set of Marked-Up Documents to the Design Professional. The Marked-Up Documents shall consist of the Contract Documents annotated and changed to reflect the as-built condition of the Project, including all Change Orders, field instructions, answers to RFI's, clarifications, sketches, delegated contractor design drawings and locations of utilities and other hidden elements.

1.1.7.4 Copies to the Owner. Upon Owner's request, the Contractor shall furnish the Owner with copies of Project related correspondence, letters of transmittal, etc.



**1.1.8. Defined Terms.** Wherever used in the Contract Documents, the terms defined in this Contract will have the meanings indicated that are applicable to both the singular and plural, and to the masculine and feminine thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents may include references to identified articles and paragraphs, and the titles of other documents or forms.

1.1.8.1 Meaning of Words and Phrases. Unless the context or the Contract Documents taken as a whole indicate to the contrary, words used in the Contract Documents that have usual and common meanings shall be given their usual and common meanings; words having technical or trade meanings shall be given their customary meaning in the subject business, trade, or profession. Materials or work described in words that, so applied, have a well-known technical or trade meaning shall be held to refer to such recognized meaning.

1.1.8.2 Cross-References, Headings, and Citations to the Contract. Cross-references, headings, and citations to the Contract, if any, are for the convenience of the Contractor and the Owner and are not intended to be plenary or exhaustive nor are they to be considered in interpreting the Contract Documents or any part of the Contract Documents.

1.1.8.3 Install, Deliver, Furnish, Supply, Provide and Other Such Words. Install, deliver, furnish, supply, provide, and other such words mean that the Work in question shall be put in place by the Contractor ready for use unless expressly provided to the contrary.

1.1.8.4 Articles Not Plenary. This Article and Article 1.1.9 are not entire, plenary, or exhaustive of all terms used in the Contract and General Conditions that require definition. There may be definitions of other terms under articles to which the terms are related.

### **1.1.9 Basic Definitions**

1.1.9.1 *Addenda.* Written or graphic instruments issued prior to the opening of bids that clarify, correct, or change any of the component parts of the Bidding documents.

1.1.9.2 *Affiliate.* With respect to Contractor, any firm, partnership, corporation or other legal entity that is owned by, under common ownership or control with, or having a common principal or shareholder with, the Contractor, whether such relationship is direct or indirect. In addition, unless the consequences of such relationship for the purposes of this Contract are expressly waived in writing by the Owner after full disclosure by the Contractor, the term "Affiliate" also includes any entity currently affiliated with Contractor as a partner or joint venturer with respect to any commercial venture, whether or not such venture includes the Project. See O.C.G.A. §13-10-23.

1.1.9.3 *Affiliated Agreement.* Any agreement concerning the Project between the Contractor and an Affiliate, including all modifications and amendments thereto.

1.1.9.4 *Application for Payment.* The form acceptable to Owner that is to be used by the Contractor during the course of the Work in requesting payment from the Owner and that is to be accompanied by such supporting documentation as is required by the Contract Documents.

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

1.1.9.6 *Authorization for Using Agency to Enter.* The Notice from Owner to the Contractor and the Using Agency, upon issuance of a Certificate of Material Completion, that the Using Agency is authorized to take possession of the Project.

1.1.9.7 *Bid.* The offer of a Bidder submitted on the prescribed form setting forth the Contract Sum for all activities required by the Bidding Documents.

1.1.9.8 *Bid Bond.* A bond, required by law, with a surety in accordance with the Instructions to Bidders, substantially in the form and substance specified in the Bidding Documents, with the Owner as obligee, and intended to secure the execution of the Contract by the Bidder.

1.1.9.9 *Bidding Documents.* The Construction Documents, the Invitation to Bid, the Instructions to Bidders, the Bid Form, and all Addenda, upon which the Bidder submits a Bid.

1.1.9.10 *Bulletin*. Written or graphic material issued after the award of the contract that clarifies, corrects, or proposes a change in any of the component parts of the Contract Documents.

1.1.9.11 *Business Day*. A business day is each calendar day other than Saturday, Sunday, and any holiday observed by Owner.

1.1.9.12 *Change Order*. A document issued on or after the Effective Date of the Contract, signed by the Contractor and the Owner and ordinarily certified by the Design Professional, which may authorize a change or changes, including but not limited to a change to the Contract Sum, the Contract Time, or the Contract Documents.

1.1.9.13 *Claim*. A demand or assertion by the Owner or the Contractor seeking an adjustment of the Contract Sum or Contract Time, or both, 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 the Contractor arising out of or relating to the Contract. The responsibility to substantiate a Claim shall rest with the party making the Claim. A demand for money or services by a third party, including a Trade Contractor, Supplier, or subcontractor to the Contractor, is ipso facto not a Claim against the Owner.

1.1.9.14 *Construction Documents*. The architectural and engineering documents setting forth the design for the Project prepared by the Design Professional. Construction Documents include, but are not limited to, the Specifications, the Drawings, the Supplementary Conditions, the General Conditions, and all Addenda.

1.1.9.15 *Construction Progress Schedule*. A schedule indicating proposed activity sequences and durations, milestone dates for receipt and approval of pertinent information, preparation, submittal, and processing of Shop Drawings and Samples, delivery of materials or equipment requiring long-lead time procurement, and proposed date(s) of Material Completion and Occupancy and Final Completion. The schedule will be developed to represent the CSI Specification Divisions. It shall have a minimum number of activities as required to adequately represent to Owner the complete scope of work and define the Project's critical path and associated activities. If the Project is to be phased, then each individual Phase should be identified from start through completion of the overall Project and should be individually scheduled and described, including any Owner's occupancy requirements and showing portions of the Project having occupancy priority. The format of the schedule will have dependencies indicated on a monthly grid identifying milestone dates such as construction start, phase construction, structural top out, dry-in, rough-in completion, metal stud and drywall completion, equipment installation, systems operational, Material Completion and Occupancy Date, final inspection dates, Punchlist, and Final Completion date.

1.1.9.16 *Contract*. The written document that is the evidence of the Contract between the Owner and the Contractor.

1.1.9.17 *Contract Compliance Specialist*. A person, if so designated by the Owner, to record daily events at the Site, including deliveries of equipment and supplies, and the progress of the Work. The Contract Compliance Specialist is not an inspector, and has no authority or power to act as agent for the Owner or to approve or disapprove any action of the Contractor. The Contract Compliance Specialist has no authority to and shall not be requested to sign or initial documents such as delivery receipts, drayage or hauling receipts, or time and materials tickets, or other similar documents evidencing transactions among the Contractor and Subcontractors.

1.1.9.18 *Contract Documents*. The Contract Documents include the executed Contract, the Bid, the Bidding Documents, and all Change Orders.

1.1.9.19 *Contract Sum*. The amount of money payable by the Owner to the Contractor for completion of the Pre-Commencement Services and the Work in accordance with the Contract Documents.

1.1.9.20 *Contract Time*. The period of time established for completion of the Project by the Contract Documents. Contract Time commences upon the date specified in the Proceed Order and ends upon the Material Completion and Occupancy Date, as it may be amended.

1.1.9.21 *Contractor*. The person or entity responsible for the proper completion of the activities described in the Contract Documents and who executes the Contract.

1.1.9.22 *Cost of the Work*. The sum of all allowable costs necessarily incurred and paid by Contractor in the proper performance of the Work.

1.1.9.23 *Day*. Unless otherwise stated, reference to the terms "day," "days," "month," or "months" mean calendar day, calendar days, calendar month, and calendar months, respectively.

1.1.9.24 *Defective Work*. Work that, for any reason, is not in compliance with the Contract Documents. Defective Work is usually identified in a Notice of Non-Compliant Work.

1.1.9.25 *Design Professional Contract*. The Contract between the Owner and the Design Professional for the design of the Project.

1.1.9.26 *Design Professional*. The architect or engineer or architectural or engineering firm selected by Owner (i) for the design and preparation of Contract Documents governing the construction of a Project, or (ii) for construction contract administration under the Contract Documents, or (iii) for both, all such services and the scope thereof to be set forth in the Design Professional Contract. The Design Professional is not an employee of the Owner but is engaged or retained by it for the purpose of performing design and construction administration services for the project. The term "Design Professional" includes architects, engineers, surveyors, designers, and other consultants retained by the Design Professional.

1.1.9.27 *Drawings*. That part of the Contract Documents prepared or approved by the Design Professional that graphically show the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

1.1.9.28 *Effective Date of the Contract*. The date indicated on the Contract or as otherwise specified therein.

1.1.9.29 *Final Certificate, Design Professional's Certificate of Final Completion*. The Certificate issued by the Design Professional stating that all work has been completed in accordance with the terms of the Contract Documents. See Section 6, Project Completion.

1.1.9.30 *Final Completion*. The full and final completion of all Work in accordance with the Contract Documents.

1.1.9.31 *Final Notice of Non-Compliant Work*. The Final Notice of Non-Compliant Work issued as a result of the Inspection for Material Completion, also known as the Final Punch List. Upon the completion or correction of this Non-Compliant Work ("punch list" work) the Design Professional will issue the Final Certificate.

1.1.9.32 *Hazardous Substances*. See Section 1 Part 6.

1.1.9.33 *Material Completion and "Material Completion and Occupancy Date"*. See Section 6 Part 1.

1.1.9.34 *Milestone*. A principal event specified in the Contract Documents including the Material Completion and Occupancy Date and other events relating to an intermediate completion date or time.

1.1.9.35 *Notice*. Written notice. See Article 1.1.5.

1.1.9.36 *Notice of Apparent Successful Bid*. The written notice by the Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, the Owner will sign and deliver the Contract. The Construction Preparation Period begins on the Effective Date of the Contract. (See Section 2, Part 1.)

1.1.9.37 *Notice of Non-Compliant Work*. A Notice of Non-Compliant Work shall be in writing, shall be dated, shall be signed by the Design Professional, and shall be addressed to the Contractor with a copy to the Owner, as set forth in Section 3, Part 4 (Correcting the Work) and Section 6, Part 6 (Correcting the Work after Final Payment).

1.1.9.38 *Owner*. The Board of Regents, by and through a State Agency, identified as such in this Contract with whom Contractor has entered into the Contract and for whom the Work is to be completed.

1.1.9.39 *Overall Project Schedule*. The Construction Progress Schedule that is approved by the Owner.

1.1.9.40 *Pre-Commencement Phase Services.* The services required to be provided by the Contractor for the Pre-Commencement Phase of the Project in accordance with the Contract Documents.

1.1.9.41 *Proceed Order.* The Proceed Order is a written notice from the Owner that includes a specified date (i.e. the Proceed Order Date) upon which the Contractor is authorized to commence physical work on the Site. Unless the Proceed Order states otherwise, the Proceed Order Date shall be the date upon which the Proceed Order is actually signed and dated by the Owner's authorized representative. A Proceed Order is a condition precedent to the execution of any Work on the site by the Contractor. The Proceed Order was formerly referred to as the "Notice to Proceed."

1.1.9.42 *Project.* The total and complete undertaking for the public works facility to be constructed under this Contract.

1.1.9.43 *Project Manual.* A bound manual prepared by the Design Professional. It includes the Invitation to Bid, Instructions to Bidders, the Bid Form, the Specifications, the General Conditions and Supplementary General Conditions.

1.1.9.44 *Resident Engineer Inspector.* Synonymous with Contract Compliance Specialist. See Paragraph 1.1.9.16.

1.1.9.45 *Samples.* Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged. The Contractor shall furnish for approval all samples required by the Contract Documents. The Work shall be in accordance with approved samples.

1.1.9.46 *Separate Contractor.* Any person or entity other than Contractor that enters into an agreement with Owner to perform the construction of all or any portion of the construction on a Project.

1.1.9.47 *Site.* Lands or areas indicated in the Contract Documents as being furnished by the Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by the Owner that are designated for the use of the Contractor. Also referred to as Project Site, Job Site and Premises.

1.1.9.48 *Specifications.* That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto. The term "Specifications" shall also include all written matter in the Project Manual or on the drawings and any Addenda or Change Orders thereto.

1.1.9.49 *Subcontractor.* The generic term subcontractor as employed herein includes only those having a direct contract with the Contractor.

1.1.9.50 *Submittals.* Shop Drawings, schedules, data, catalogue cuts, manufacturers' published recommendations, charts, bulletins, brochures, illustrations, circulars, roughing drawings or formulae, etc., that are specifically prepared, distributed, or assembled by or for Contractor or by Subcontractors, manufacturers, or Suppliers and submitted by Contractor to illustrate some portion of the Work or for use in installing the Work. The Contract Documents shall specify when shop drawings or submittals require the seal of a specialty consultant.

1.1.9.51 *Successful Bidder.* The responsible Bidder submitting the lowest responsive Bid.

1.1.9.52 *Supplier.* A manufacturer, fabricator, distributor, supplier, or vendor of goods or equipment in connection with the Work, or any other party having a Contract or Purchase Order with the Contractor or with a Subcontractor to furnish materials or equipment to be incorporated in the Work by the Contractor or a Subcontractor.

1.1.9.53 *Trade Contractor.* A Subcontractor who furnishes and installs materials according to the plans and specifications of this Project but does not include one who merely furnishes materials. See 1.1.9.49.

1.1.9.54 *Underground Facilities.* All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including without limitation those that convey electricity, gases, steam, liquid petroleum products, telephone or other

communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

1.1.9.55 *Unit Price Work*. Work to be paid for on the basis of unit prices as defined and described in the Contract Documents. A percentage markup for overhead or profit shall be included in all unit prices.

1.1.9.56 *Using Agency*. The State entity for which the Project is being constructed. The term may include an institution (e.g., University of Georgia) that is a part of the Board of Regents of the University System of Georgia.

1.1.9.57 *Using Agency's Representative*. The Using Agency may designate from time to time a Using Agency's Representative, who shall work with the Design Professional and the Owner's Representative as a liaison with the Using Agency.

1.1.9.58 *Work*. All labor, materials, and services necessary to produce the construction of the Project in accordance with the Contract Documents, including the entire construction or the various separately identifiable parts thereof. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all equipment, fixtures, and supplies into such construction, all as required by the Contract Documents.

## **PART 2            CONTRACTOR'S GENERAL RESPONSIBILITIES AND DUTIES**

### **1.2.1    Contractor's General Responsibilities**

#### **1.2.1.1    Representations of Contractor.**

1.2.1.1.1 Independent Contractor. The Contractor represents that it is an independent contractor, competent, knowledgeable, and familiar with the type of work contemplated by this Contract. The Contractor agrees and understands that neither it nor any of its agents or employees may act in the name of the Owner except and unless specifically authorized in writing by the Owner to do so. The Contractor shall furnish construction administration and management services and use the Contractor's best efforts to perform the Project in an expeditious and economical manner consistent with the interests of the Owner.

1.2.1.1.2 Familiarity with Project. Contractor represents that it has: (a) visited and examined the Site(s), (b) taken into account local conditions and observed conditions that affect the Project, the Work, or the cost thereof, (c) investigated the labor situation related to the Project, (d) examined the superintendence of the Project, the Work, the time of completion, and other relevant matters, and (e) has taken these into consideration in submitting his bid.

1.2.1.2 Responsibility to Coordinate. Contractor acknowledges its responsibility to coordinate the Work with that of Separate Contractors to be selected for the installation of other work within the Project, or in the proximity of the Project. Contractor expressly agrees to schedule and, with the assistance of Owner, coordinate the Work with such Separate Contractors and to permit each phase of the Project to be completed on schedule.

1.2.1.3 Project Delivery. Contractor shall construct the Project in accordance with the Contract Documents, and Contractor shall deliver the Project completed in accordance with the Contract Documents, substantially free from defects, and within the Contract Time.

1.2.1.4 Contractor's Warranty as to Performance. The Contractor warrants that he is familiar with the codes applicable to the Work and that he has the skill, knowledge, competence, organization, and plan to execute the Work promptly and efficiently in compliance with the requirements of the Contract Documents. The Contractor has the obligation to keep a competent superintendent on the Work during its progress, to employ only skilled workers, and to enforce strict discipline and good order among his employees. The Contractor is responsible for seeing that the Work is installed in accordance with the Contract Documents. Failure or omission on the part of the Owner, representatives of the Owner, agents of the Owner, the Contract Compliance Specialist, engineers employed by the Design Professional, representatives of the Design Professional, or the Design Professional either to discover or to bring to the attention of the Contractor any deviation from, omission from, or noncompliance with the Contract Documents shall not be used by the Contractor or its surety as a defense for failure on his part to install the Work in accordance with the Contract Documents or for any other neglect to fulfill requirements of the Contract; neither shall the presence of any one, or all, or any of the foregoing at the Site or the fact that any one, or all, or any of the foregoing may have examined the Work or any part of the Work be used

as a defense by the Contractor against a claim for failure on his part to install the Work in accordance with the Contract Documents or for any neglect to fulfill requirements of the Contract. No requirement of this Contract may be altered or waived except by Change Order.

## **1.2.2 Contractor's General Duties**

1.2.2.1 Construction Staging and Construction Services. The Contractor shall provide and pay for all labor, materials, equipment, transportation, construction, resources, work, and services necessary or incidental to completing the Work for each phase of the Project in a proper and timely manner in accordance with the Contract Documents and applicable laws.

1.2.2.2 Supervision and Direction. Contractor shall supervise and direct the Work using diligent skill and attention. Contractor shall be responsible for and shall coordinate all construction means, methods, techniques, sequences, and procedures. (See Article 3.1.1 et seq.)

1.2.2.3 Enforce Discipline. Contractor shall at all times enforce strict discipline and good order among its employees, Subcontractors, and others performing the Work, and shall not employ or permit the employment of unfit persons or persons not skilled in the task assigned to them.

1.2.2.4 Security Clearances. Where work is required within a specially secured controlled access environment, work shall be performed by personnel who have passed a security screening.

1.2.2.5 Maintain Records. Contractor shall keep Owner informed of the progress of the Work. Contractor shall maintain records of the cost for the Work pursuant to and in compliance with GASB 34 accounting requirements and such other methods as Owner may require, including complete backup documentation for all pay applications.

1.2.2.6 Answer Questions. Contractor, with reasonable promptness and in accordance with time limits set by Owner, shall answer Owner's questions and provide Owner with requested Project information.

1.2.2.7 Acts and Omissions. Employees of or Subcontractors to the Contractor shall perform the Work required by this Contract. The Contractor is responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons.

1.2.2.8 Contractor. Contractor shall, in coordination with the Design Professional, accomplish the construction of the Project, including all required submittals, and such Change Orders as may be issued.

1.2.2.9 Meetings with the Owner. Contractor shall schedule and conduct meetings with the Owner, Design Professional, Separate Contractors, and appropriate Subcontractors, not less than biweekly, for the purpose of discussing the status and progress of the Work. Such meetings shall be held as often as Owner determines.

1.2.2.10 Schedule and Coordination Meetings. Contractor shall schedule and conduct meetings as necessary with Subcontractors, Suppliers, and other appropriate Project Team Members to coordinate and schedule the Work.

**1.2.3 Audit.** At the request of the Owner, the Contractor shall allow the Owner the opportunity to select an auditor to examine and inspect the Project and the Contractor's books, records, and any and all accounts and similar data related to the Project. The Owner shall bear the cost of such audit. The auditor may sign a confidentiality agreement before conducting any such audit. Notwithstanding such agreement, Contractor understands and agrees that all project records are subject to the Georgia Open Records Act.

**1.2.4 Employment of Georgia Citizens and Use of Georgia Products and Georgia Forest Products.** Given that the Work provided for in this Contract is to be performed in Georgia, it is the wish of the Owner that materials and equipment manufactured or produced in Georgia shall be used in the Work and that Georgia citizens shall be employed in the Work at wages consistent with those being paid in the general area in which the Work is to be performed. This desire on the part of the Owner is not intended to restrict or limit competitive bidding nor to increase the cost of the Work; nor shall the fulfillment of this desire be asserted by the Contractor as an excuse for any noncompliance or omission to fulfill any obligation under the Contract. O.C.G.A. §§50-5-60 to 63 are further incorporated into the General Conditions of the Contract as expressed below:

- (a) No contract for the construction of, addition to, or repair of any facility, the cost of which is borne by the State, or any department, agency, commission, authority, or political subdivision thereof shall be let, unless said contract contains a stipulation therein providing that the Contractor, Construction Manager or Subcontractor shall use exclusively Georgia forest products in construction thereof, when forest products are to be used in such construction, addition or repair, and if Georgia forest products are available.
- (b) These provisions shall not apply when in conflict with Federal law, rules, and regulations concerning interstate commerce or construction.

## **PART 3 OWNER'S GENERAL RESPONSIBILITIES AND RIGHTS**

### **1.3.1 Owner's Representative**

1.3.1.1 Written Designation. The Owner shall designate, in writing, a representative authorized to act on the Owner's behalf with respect to the Project. The Owner hereby designates the party identified in the Contract as its initial authorized representative and reserves the right to designate additional or replacement representatives by written notice to the Contractor.

1.3.1.2 Accessibility. The Owner's Representative shall be readily accessible (either on site or by computer, phone, fax or otherwise), shall be well acquainted with the Project, and shall have authority promptly to render decisions and to furnish information required of, or to be provided by, the Owner hereunder.

1.3.1.3 Independent Review and Inspection. The Owner may undertake independent inspection of the installation of the Work. Such independent inspector shall operate on behalf of the Owner and shall act to protect the best interests of the Owner.

### **1.3.2 Design Professional**

1.3.2.1 Design Professional to Design Work. The Design Professional Contract requires the Design Professional to design and to prepare the Contract Documents, a copy of which shall be furnished to the Contractor upon request. The Design Professional Contract requires the Design Professional to designate a readily accessible representative (either on Site or by computer, phone or fax or otherwise) who shall have authority promptly to render decisions and to furnish information required of the Design Professional.

1.3.2.2 Copies of Contract Documents to Contractor. The Design Professional Contract requires that the Contractor be furnished, free of charge, up to ten sets of completed Contract Documents in hard copy, one full set of reproducible drawings and electronic background floor and reflected ceiling plan drawings and, if requested, one complete copy in read-only electronic format. The Contractor may obtain such additional sets of Contract Documents as the Contractor deems necessary and shall pay the cost of reproduction of such additional sets to the Design Professional.

1.3.2.3 Contract Administration. The Design Professional shall provide periodic review of the Work to assess compliance with the Contract Documents. The Design Professional shall not review any Work in respect to safety. The Design Professional is not the agent of the Owner but is engaged as a consultant to the Owner to assist the Owner in determining if the conditions of the contract have been met. He is the agent of the Owner only when in special instances he is authorized in writing by the Owner so to act, and in such instances he shall, upon request, show the Contractor written authority. He has authority to stop the Work whenever such stoppage may be necessary to enforce the proper execution of the Contract.

1.3.2.4 Impartial Decisions. The Design Professional is the interpreter of the conditions of the Construction Contract and the judge of its performance, in the first instance. The Design Professional shall side neither with the Owner nor with the Contractor but shall use its powers to enforce performance by both.

1.3.2.5 Design Professional Decisions. Design Professional's decisions must be in writing and signed by the Design Professional of Record.

1.3.2.5.1 Promptness. The Design Professional shall make decisions within fourteen calendar days after proper presentation of evidence on (1) any issue, claim, or dispute of the Owner or Contractor, or (2) a demand of the Owner or Contractor for a decision on any matter relating to the execution or progress of the Work.

1.3.2.5.2 Additional Time. If because of events beyond the Design Professional's reasonable control, it is not able to meet the specified time period, then it should be entitled to ask the Owner for additional time, which request shall not be unreasonably denied.

1.3.2.5.3 Protests of Design Professional's Decisions. All decisions of the Design Professional on any claim, dispute, or demand shall be final and binding on the Contractor in the absence of written notice of protest from the Contractor received by the Owner within fourteen calendar days of the date of the decision of the Design Professional is received by the contractor. See Section 5 Part 2.

1.3.2.6 Aesthetics. All decisions of the Design Professional on matters of aesthetics are final, conclusive, and binding on all parties if consistent with the requirements of the Contract Documents.

1.3.2.7 Succession. In case of the termination of the employment of the Design Professional, the Owner shall appoint a capable and reputable Design Professional against whom the Contractor makes no reasonable objection and whose status under the Contract shall be that of the former Design Professional.

**1.3.3 Permits, Licenses, and Inspections.** The Owner shall cooperate with the Contractor in obtaining building and other permits, licenses, and inspections. See also Subparagraph 2.1.2.2.3 and Article 2.1.5.

**1.3.4 Testing.** The Owner shall provide and pay for initial and subsequent independent construction testing as required by the Contract Documents. Laboratories for testing services shall be selected by, engaged by, and responsible to the Design Professional. In the case of tests (a) prescribed in the Contract Documents or any part thereof, or (b) requested by the Design Professional, the Contractor must give notice to the selected testing agency stating the date and the hour when he will be ready for the test to be made. In the event the test fails or the Contractor is not ready for the test, the expense of the services of the testing laboratory shall be deducted from the Contract Sum, upon notice to the Contractor by the Owner accompanied by a copy of the invoice for the testing services for the test that failed or for which the Contractor was not ready. The notice and readiness provisions of this article do not apply to verification of design mix on concrete.

**1.3.5 No Partial Occupancy.** There shall be no partial occupancy by the Using Agency of the Project prior to the achievement of Material Completion. This provision may be modified in the Supplementary General Conditions only for phased construction projects with stand-alone components or may be modified by Change Order.

**1.3.6 Disqualification of Potential "Pre-Qualified" Subcontractors.** The Owner may disqualify for just cause any pre-qualified potential subcontractors identified in the Bidding Documents. Owner shall pay any difference in the cost of the Work resulting from such disqualification.

**1.3.7 Owner's Right to Perform Work.** The Owner reserves the right to perform construction or operations related to the Project with Separate Contractors on the Site. If the Contractor claims that delay or additional cost is because of such action by the Owner, the Contractor shall assert such claims as provided in Section 5, Part 2 of the General Conditions.

## **PART 4 PROTECTION OF PERSONS AND PROPERTY**

**1.4.1 Reasonable Precautions.** The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (a) employees performing the Work and other persons, including without limitation the General Public, who may be affected thereby; (b) the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site, under care, custody, or control of the Contractor or the Contractor's Subcontractors; or (c) other property at or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, replacement or other rearrangement in the course of construction.

**1.4.2 Duty to Protect Property.** The Contractor shall continuously maintain adequate protection of the Work from damage and shall protect all other property on the Site from damage, injury, or loss regardless of who may be the owner of said property. He shall make good any such damage, injury, or loss.

**1.4.3 Safety Precautions.** The Contractor shall comply with the rules and regulations of OSHA and the Department of Labor (O.C.G.A. Section §34-2-6), and, where not inconsistent with the foregoing, the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., for safety and prevention of accidents, and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on work under the Contract. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any



damage that may result from their improper construction, maintenance, or operations. He shall erect and properly maintain at all times, as required by the conditions and progress of the Work, proper safeguards for the protection of workers and the public and shall post danger warnings against any hazards created by the construction operations. The Contractor shall designate a responsible member of his organization, normally the superintendent, whose duty shall be the prevention of accidents.

**1.4.4 Emergencies.** In an emergency affecting the safety of persons or property or the Work or of adjoining property, the Contractor shall take reasonable precautions to prevent imminent damage, injury, or loss.

**1.4.5 Fire Protection.** Contractor shall take adequate and reasonable precautions to protect the Work against damage by fire and smoke. For example, without limitation, Contractor shall do the following:

- (a) Provide fire extinguishers or fire hoses in readily accessible locations;
- (b) Periodically inspect fire extinguishers, remove discharged extinguishers immediately, and replace with new or recharged extinguishers;
- (c) Keep fire extinguishers or fire hoses within five (5) feet of any welding or open flame operations;
- (d) Remove oil-soaked and paint-soaked materials, including paper and rags, from the Site daily, and more frequently as necessary, to eliminate danger of fire.
- (e) Prohibit workers from smoking during operations involving combustible adhesives, solvents, mastics, or other fire hazard materials.

**1.4.6 Remedy Damages.** The Contractor shall promptly remedy damages and loss to property at the Site caused by the Contractor, by any Subcontractor, by anyone directly or indirectly employed by the Contractor or any such Subcontractor, or by anyone for whose acts the Contractor or any such Subcontractor may be liable. Should the Contractor cause damage to any Separate Contractor's work, the Contractor agrees, upon due notice, to settle with the Separate Contractor.

**1.4.7 Written Programs.** Contractor shall have written environmental, quality control, crisis/emergency management, health and safety programs in place with a designated (qualified) coordinator as the point of contact during the project. Such plans shall be on the Site and the superintendent and the project management team shall be familiar with and utilize such programs.

## **PART 5 BONDS, INDEMNITY, AND INSURANCE**

### **1.5.1 Bonds**

**1.5.1.1 Performance Bond and Payment Bond.** The Contractor shall furnish both a performance bond and a payment bond in the exact form set forth in Section 7, (Forms) of these General Conditions.

**1.5.1.2 Required Qualifications for Surety.** The Contract provides that the surety and insurance companies must be acceptable to the Owner. Only those sureties listed in the Department of Treasury's Listing of Approved Sureties (Department Circular 570) are acceptable to the Owner. All bonds at the time of issuance must be issued by a company authorized by the Insurance Commissioner to transact the business of suretyship in the State of Georgia, and shall have a Best Policyholders Rating of "A-" or better and with a financial size rating of Class V or larger.

**1.5.1.3 Penal Amount of Bonds, State Law.** The Contractor acknowledges and agrees that, pursuant to O.C.G.A. §§13-10-2, 13-10-20, 13-10-40 and 13-10-60, the performance bond and the payment bond must be in a penal amount equal to at least 100% of the Contract Sum. Accordingly, the Contractor warrants and agrees that, for any Change Order increasing the Contract Sum by five percent or more or when the total cost of the work has increased by five percent or more, it shall obtain a written amendment to the payment bond and the performance bond increasing the penal amounts of both bonds to 100% of the Contract Sum, effective as of the date of the Change Order. The premium increase, if any, may be properly included in the cost of the Change Order. The Design Professional shall approve no payment for the work provided by the Change Order until the Contractor has provided the written amendment to the Owner.

### **1.5.2 Liability and Indemnification**

**1.5.2.1 General Liability.** The Contractor shall be responsible to the Owner from the time of the signing of the agreement or the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from any negligent act or omission or breach, failure or other default regarding the Work by the Contractor, or any of its Subcontractors, its agents, employees or others working at the direction of the Contractor or on its behalf, regardless of who may be the owner of the property.

1.5.2.2 Indemnification Agreement. Contractor hereby agrees to indemnify and hold harmless the Owner, the State of Georgia and its departments, agencies and instrumentalities and all of their respective officers, members, employees and directors (hereinafter collectively referred to as the "Indemnitees") from and against any and all claims, demands, liabilities, losses, costs or expenses, including attorneys' fees, due to liability to a third party or parties, for any loss due to bodily injury (including death), personal injury, and property damage arising out of or resulting from the performance of this Contract or any act or omission on the part of the Contractor, its agents, employees or others working at the direction of Contractor or on its behalf., or due to any breach of this Contract by the Contractor, or due to the application or violation of any pertinent Federal, State or local law, rule or regulation. This indemnification extends to the successors and assigns of the Contractor. This indemnification obligation survives the termination of the Contract and the dissolution or, to the extent allowed by law, the bankruptcy of the Contractor. If and to the extent such damage or loss (including costs and expenses) as covered by this indemnification is paid by the State Tort Claims Trust Fund, the State Authority Liability Trust Fund, the State Employee Broad Form Liability Fund, the State Insurance and Hazard Reserve Fund, and other self-insured funds (all such funds hereinafter collectively referred to as the "Funds") established and maintained by the State of Georgia Department of Administrative Services Risk Management Division (hereinafter "DOAS") the Contractor agrees to reimburse the Funds for such monies paid out by the Funds.

1.5.2.2.1 This indemnification does not extend beyond the scope of this Contract and the work undertaken thereunder. Nor does this indemnification extend to claims for loses or injuries or damages incurred directly by the Indemnitees due to breach, negligence or default by the Indemnitor under the terms and conditions of this Contract.

1.5.2.2.2 This indemnification does not extend to claims for loses or injuries or damages incurred by the Indemnitees due to any negligent act, error, or omission of a design professional in the performance of professional services that fails to meet the applicable professional standard of care, skill and ability as employed by others in their profession.

1.5.2.3. DOAS. Risk Management will endeavor to notify affected insurers of claims made against the State that fall within this indemnity. In the event of litigation, the Attorney General will endeavor to keep the Contractor and its general liability insurer as named on the insurance certificate informed regarding the claims and settlement.

### 1.5.3 Insurance Requirements

1.5.3.1 Insurance Certificates. The Contractor shall, in accordance with 2.1.2.2, procure the insurance coverages identified below at the Contractor's expense (e.g. within the bid price and Contract Sum) and shall furnish the Owner an insurance certificate listing the Owner as the certificate holder and as an additional insured. Evidence of insurance coverages shall be provided on the form shown in Section 7 or on a form acceptable to the Owner. The insurance certificate must provide the following:

- (a) Name and address of authorized agent
- (b) Name and address of insured
- (c) Name of insurance company(ies)
- (d) Description of policies
- (e) Policy Number(s)
- (f) Policy Period(s)
- (g) Limits of liability
- (h) Name and address of Owner as certificate holder
- (i) Project Name and Number
- (j) Signature of authorized agent
- (k) Telephone number of authorized agent
- (l) Mandatory thirty-day notice of cancellation or non-renewal (except ten days for non- payment).

1.5.3.2 Insurer Qualifications, Insurance Requirements. Each of the insurance coverages required below (i) shall be issued by a company licensed by the Insurance Commissioner to transact the business of insurance in the State of Georgia for the applicable line of insurance, and (ii) shall be an insurer (or, for qualified self-insureds or group self-insureds, a specific excess insurer providing statutory limits) with a Best Policyholders Rating of "A-" or better and with a financial size rating of Class V or larger. Each such policy shall contain the following provisions:

1.5.3.2.1 The insurance company agrees that the policy shall not be canceled, changed, allowed to lapse or allowed to expire until thirty days after the Owner has received written notice thereof, as evidenced by return receipt of certified mail or statutory mail, or until such time as other insurance coverage providing

protection equal to protection called for in this Contract shall have been received, accepted and acknowledged by the Owner. Such notice shall be valid only as to the Project as shall have been designated by Project Number and Name in said notice.

1.5.3.2.2 The policy shall not be subject to invalidation as to any insured by reason of any act or omission of another insured or any of its officers, employees, agents or other representatives ("Separation of Insureds").

1.5.3.2.3 Each Insurer is hereby notified that the statutory requirement that the Attorney General of Georgia shall represent and defend the Indemnities remains in full force and effect and is not waived by issuance of any policy of insurance. In the event of litigation, any settlement on behalf of the indemnities must be expressly approved by the Attorney General. The Contractor and its insurance carrier may retain, but are not obligated to retain, counsel to assist with the defense of the Indemnities, in which case there will be mutual cooperation between the Attorney General and such counsel. See O.C.G.A. § 45-15-12.

1.5.3.2.4 All deductibles shall be paid for by the Contractor.

1.5.3.2.5 Self-insured retention, except for qualified self-insurers or group self-insurers, in any policy shall not exceed \$100,000.00.

1.5.3.3 Required Insurance Coverages. The Contractor also agrees to purchase insurance and have the authorized agent state on the insurance certificate that the Contractor has purchased the following types of insurance coverages, consistent with the policies and requirements of O.C.G.A. §50-21-37. The minimum required coverages and liability limits are as follows:

1.5.3.3.1 Workers' Compensation Insurance. The Contractor agrees to provide at a minimum Workers' Compensation coverage in accordance with the statutory limits as established by the General Assembly of the State of Georgia. A group insurer must submit a certificate of authority from the Insurance Commissioner approving the group insurance plan. A self-insurer must submit a certificate from the Georgia Board of Workers' Compensation stating the Contractor qualifies to pay its own workers' compensation claims. The Contractor shall require all Subcontractors performing work under this Contract to obtain an insurance certificate showing proof of Workers' Compensation Coverage and shall submit a certificate on the letterhead of the Contractor in the following language:

This is to certify that all subcontractors performing work on this Project are covered by their own workers' compensation insurance or are covered by the Contractor's workers' compensation insurance.

1.5.3.3.2 Employers' Liability Insurance. The Contractor shall also maintain Employer's Liability Insurance Coverage with limits of at least:

- |       |                                 |                                |
|-------|---------------------------------|--------------------------------|
| (i)   | Bodily Injury by Accident       | \$1,000,000 each accident;     |
| (ii)  | Bodily Injury by Disease        | \$1,000,000 each employee; and |
| (iii) | Bodily Injury/Disease Aggregate | \$1,000,000 each accident.     |

The Contractor shall require all Subcontractors performing work under this Contract to obtain an insurance certificate showing proof of Employers Liability Insurance Coverage and shall submit a certificate on the letterhead of the Contractor in the following language:

*This is to certify that all subcontractors performing work on this Project are covered by their own Employers Liability Insurance Coverage or are covered by the Contractor's Employers Liability Insurance Coverage.*

1.5.3.3.3 Commercial General Liability Insurance. The Contractor shall provide Commercial General Liability Insurance (2001 ISO Occurrence Form or equivalent) that shall include, but need not be limited to, coverage for bodily injury and property damage arising from premises and operations liability, products and completed operations liability, blasting and explosion, collapse of structures, underground damage, personal injury liability and contractual liability. The CGL policy must include separate aggregate limits per Project and shall provide at a minimum the following limits:

	<b>Coverage</b>	<b>Limit</b>
1.	Premises and Operations	\$ 1,000,000.00 per Occurrence

- |    |                                   |                                |
|----|-----------------------------------|--------------------------------|
| 2. | Products and Completed Operations | \$ 1,000,000.00 per Occurrence |
| 3. | Personal Injury                   | \$ 1,000,000.00 per Occurrence |
| 4. | Contractual                       | \$ 1,000,000.00 per Occurrence |
| 5. | General Aggregate                 | \$ 2,000,000.00 per Project    |

Additional Requirements for Commercial General Liability Insurance are shown below at Paragraph 1.5.3.3.6.

1.5.3.3.4 Commercial Business Automobile Liability Insurance. The Contractor shall provide Commercial Business Automobile Liability Insurance that shall include coverage for bodily injury and property damage arising from the operation of any owned, non-owned, or hired automobile. The Commercial Business Automobile Liability Insurance Policy shall provide not less than \$1,000,000 Combined Single Limits for each accident. Additional Requirements for Commercial Business Automobile Liability Insurance are shown below at Paragraph 1.5.3.3.6.

1.5.3.3.5 Commercial Umbrella Liability Insurance. The Contractor shall provide a Commercial Umbrella Liability Insurance to provide excess coverage above the Commercial General Liability, Commercial Business Automobile Liability and the Workers' Compensation and Employers' Liability to satisfy the minimum limits set forth herein. The umbrella coverage shall follow form with the Umbrella limits required as follows:

**For Contract Amounts Less than \$5,000,000.00:**  
 \$ 2,000,000 per Occurrence  
 \$ 4,000,000 Aggregate

**For Contract Amounts Equal to or Greater than \$5,000,000:**  
 \$2,000,000 per Occurrence  
 \$10,000,000 Aggregate

Additional Requirements for Commercial Umbrella Liability Insurance are shown below at Paragraph 1.5.3.3.6.

1.5.3.3.6 Additional Requirements for Commercial Policies in Paragraphs 1.5.3.3.3 through 1.5.3.3.5

- (a) The policy shall name as additional Insureds the officers, members, and employees of the Owner and the Using Agency.
- (b) The policy must be on an "occurrence" basis.

1.5.3.3.7 Builders Risk Insurance. Contractor shall provide a Builder's Risk Policy to be made payable to the Owner and Contractor, as their interests may appear. The policy amount should be equal to 100% of the Contract Sum, written on a Builder's Risk "All Risk", or its equivalent. The policy shall be endorsed as follows:

The following may occur without diminishing, changing, altering or otherwise affecting the coverage and protection afforded the insured under this policy:

- (i) Furniture and equipment may be delivered to the insured premises and installed in place ready for use; and
- (ii) Partial or complete occupancy by Owner; and
- (iii) Performance of work in connection with construction operations insured by the Owner, by agents or lessees or other Contractors of the Owner or Using Agency.

In the event that the Contract is for renovation, addition or modification of an existing structure and Builders Risk Insurance is not available, the Owner will accept an Installation Floater Insurance Policy with the above endorsements in lieu of the Builders' Risk Insurance Policy. Such floater must insure loss to materials and equipment prior to acceptance by Owner and must be on an ALL RISK BASIS with the policy written on a specific job site.

1.5.3.3.8 Disposition of Insurance Documents. One original certificate of insurance with all endorsements attached must be deposited with Owner for each insurance policy required.

1.5.3.4 Termination of Obligation to Insure. Unless otherwise expressly provided to the contrary, the obligation to insure as provided herein shall not terminate until the Design Professional shall have executed the Certificate of Material Completion.

1.5.3.5 Failure of Insurers. The Contractor is responsible for any delay resulting from the failure of his insurance carriers to furnish proof of proper coverage in the prescribed form.

## **PART 6 HAZARDOUS CONDITIONS AND MATERIALS**

### **1.6.1 Hazardous Materials**

#### **1.6.1.1 Definition.**

1.6.1.1.1 The term "Hazardous Materials shall mean any material or substance within the meaning and definition for "Hazardous Substance" and/or "Hazardous Waste" as those terms are employed and set forth in the Georgia Hazardous Site Response Act and the Comprehensive Environmental Response Compensation and Liability Act as amended, 42 USC § 6901 et seq., and regulations promulgated thereunder (collectively "CERCLA") and any corresponding state or local law or regulation, and shall also include: (a) any Pollutant or Contaminant as those terms are defined in CERCLA; (b) any Solid Waste or Hazardous Constituent as those terms are defined by, or are otherwise identified by, the Resource Conservation and Recovery Act as amended, 42 USC § 6901 et seq., and regulations promulgated thereunder (collectively "RCRA") and any corresponding state or local law or regulation; (c) crude oil, petroleum and fractions of distillates thereof and petroleum releases ; (d) any other material, substance or chemical defined, characterized or regulated as toxic or hazardous under any applicable law, regulation, ordinance, directive or ruling, including, but not limited to, Asbestos or polychlorinated biphenyl (PCB),and, (e) any infectious or medical waste or environmental contamination as defined by any applicable federal or state laws or regulations.

1.6.1.1.2 The term "Hazardous" Materials does not include those materials that are expressly and specifically required to be installed under the Contract Documents.

1.6.1.1.3 The term "Hazardous" Materials does not include products or materials that are commonly used in construction or industrial practice so long as they are used in accordance with the manufacturer's instructions or Material Safety Data Sheets issued for the product or materials. (See Article 1.6.3 below.)

1.6.1.2 Obligation to Notify Owner of Existing Hazardous Materials. The Contractor shall immediately notify the Owner and the Design Professional, both orally and in writing, of the presence and location of any physical evidence of, or information regarding the presence of Hazardous Materials at the Site of which it becomes aware. If the Contractor encounters Hazardous Materials on the Site the Contractor shall (i) immediately stop performance of Work or that portion of the Work affected by or affecting such Hazardous Materials; (ii) secure the contaminated area against intrusion; (iii) not disturb or remove the Hazardous Materials; (iv) not proceed, or allow any subcontractor or supplier to proceed, with any Work or other activities in the area affected by such Hazardous Materials until such materials have been properly remediated and until directed in writing to do so by the Owner; and, (v) take any other steps necessary to protect life and health and the surrounding environment. The Contractor shall be entitled to adjustment of the Contract Time and the Contract Sum pursuant to Section 5, Part 2 of these General Conditions in order to compensate for the impact of any required demolition, re-work, shutdown, delay, protection of work, disruption, and start-up resulting from the encountering of such Hazardous Materials on the Site for which the Contractor is not responsible.

1.6.1.3 Prohibition Against Selecting and Installing Products Containing Hazardous Materials. The Contractor shall not select, install or otherwise incorporate any products or materials containing Hazardous Materials within the boundaries of the Site. Should the Contractor or any Subcontractors have knowledge that, or believe that, an item, component, material, substance, or accessory within a product or assembly selected by the Contractor or any Subcontractor may contain Hazardous Materials it is the Contractor's responsibility to secure a written certification from the manufacturer of any suspected material which identifies the specific Hazardous Material(s) contained, together with the Material Safety Data Sheets (MSDS) for such materials which shall be submitted to the Owner and Design Professional.

1.6.1.4 Fill, Backfill and Landscaping. No soil found on Site, or transported to the Site from remote locations, which contains debris or waste or Hazardous Materials shall be used for fill, backfill or landscaping topsoil.

**1.6.2 Responsibility and Warranty of Subcontractors, Trade Contractors and Suppliers.** Products that are specified by reference standards or in descriptive manner without a manufacturer's name, model number or trade name, to be selected by the Contractor, shall not contain Hazardous Materials in any form, except as and to the extent permitted in 1.6.1, above, and 1.6.3, below. The Contractor shall require that each of its Subcontractors and Suppliers warrant to the Owner and Design Professional that all materials, products and assemblies, other than those which specifically and

expressly required by the Contract Documents, incorporated, or submitted for incorporation into this Project, are free of Hazardous Materials. This warranty shall also include all materials, components, and accessories not specifically enumerated or detailed in the Contract Documents but which are required by performance specifications or recommended by manufacturers for complete installation of materials, products and assemblies.

**1.6.3 Hazardous Materials and Substances Used on the Job Site.** Products containing Hazardous Materials may be employed in the performance of work by the Contractor and its Subcontractors, as allowed by subparagraph 1.6.1.1.2 and 1.6.1.1.3 above, as a means and methods application or as part of its performance of the Work, such as chemicals used on the Site, but only provided that: (i) such products are used In accordance with the manufacturer's instructions and Material Safety Data Sheets; (ii) such products are rendered harmless upon completion of the affected Work; (iii) reasonable precautions can be and are taken to prevent foreseeable bodily injury or death to persons involved in the Work or in its proximity, including the ultimate users of the completed Work; (iv) the Contractor shall make available to the Owner and the Design Professional copies of Material Safety Data Sheets (MSDS) for any such products used on the Site, and (v), the Contractor shall immediately notify Owner, Design Professional and appropriate regulatory agencies if there is a spill or release or misuse of any such product used on the Site that exceeds State or Federal reportable limits.

**1.6.4 Hazardous Conditions.** The Contractor and Owner acknowledge that previously unknown hazardous conditions may be uncovered at any job site, and in particular where existing structures are being demolished and/or remodeled to accommodate new construction or to reutilize existing facilities. Should a hazardous condition not involving Hazardous Materials as set forth above be encountered on the Site, and should reasonable safety precautions be deemed by the Contractor in good faith to be inadequate to prevent foreseeable personal injury to persons encountering the hazardous condition, the Contractor shall, upon recognizing the hazardous condition, stop work in the affected area and immediately report the hazardous condition to the Design Professional and Owner in writing. The Owner shall undertake, or shall contract (by Change Order) with the Contractor or contract with a Separate Contractor, to resolve the condition. So long as the hazardous condition did not result from activities or substances brought on the Site by the Contractor, the Contractor is entitled to adjustments in the Contract Time and the Contract Sum as set forth in Paragraph 1.6.1.2 above.

## **PART 7 MISCELLANEOUS PROVISIONS**

### **1.7.1 Legal Compliance**

1.7.1.1 General. This Contract shall be governed by the law of Georgia. The Contractor shall comply with all laws, rules, regulations, ordinances, and orders of any government agency having jurisdiction in the performance of the Work and shall ensure the compliance of its Subcontractors.

1.7.1.2 Specific Laws. Without limiting the generality of the foregoing Paragraph, the following laws are specifically referenced:

- 1.7.1.2.1 The Drug-Free Workplace Act, O.C.G.A. § 50-24-1, et seq.
- 1.7.1.2.2 Preference for Georgia Supplies, materials, equipment, and agricultural products, O.C.G.A. §§50-5-60 through 61.
- 1.7.1.2.3 Preference for Georgia forest products, O.C.G.A. § 50-5-63.
- 1.7.1.2.4 Preference for local sellers of Georgia products, O.C.G.A. § 50-5-62.
- 1.7.1.2.5 Standards and Requirements for Construction, Alterations, etc., O.C.G.A. § 8-2-1 et seq.
- 1.7.1.2.6 Control of Soil Erosion and Sedimentation, O.C.G.A. § 12-7.1, et seq.
- 1.7.1.2.7 Regulation of Fire and other Hazards, O.C.G.A. § 25-2-1 et seq.
- 1.7.1.2.8 Regulation of Blasting Operations, O.C.G.A. § 25-2-1 et seq. and 25-9-1 et seq.
- 1.7.1.2.9 Providing safe workplace, O.C.G.A. §§ 34-2-10 and 34-7-20
- 1.7.1.2.10 Georgia Facility Protection Act, O.C.G.A. § 25-9-1 et seq. (See Article E-12(f))
- 1.7.1.2.11 High Voltage Safety Act, O.C.G.A. § 46-3-30 et seq.
- 1.7.1.2.12 Access and Use by Physically Handicapped Persons, O.C.G.A. § 30-3-1 et seq.
- 1.7.1.2.13 Small and Minority Business Enterprises, O.C.G.A. §§ 50-5-120 et seq. and 50-5-130 et seq.
- 1.7.1.2.14 Trading with the State or State Officials, O.C.G.A. §§ 45-10-20 to 45-10-71.
- 1.7.1.2.15 Title VII of the Civil Rights Act, 42 U.S.C. § 2000a through 2000h-6
- 1.7.1.2.16 Age Discrimination in Employment Act, 29 U.S.C. § 621 et seq.; 42 U.S.C. § 6101 et seq.
- 1.7.1.2.17 Americans with Disabilities Act, 42 U.S.C. § 12101 et seq.
- 1.7.1.2.18 Federal Occupational Safety and Health Act, 29 U. S. C. § 651 et seq.
- 1.7.1.2.19 Federal Emergency Planning and Community Right-to-Know Act, 42 U. S. C. § 11001 et seq.
- 1.7.1.2.20 Georgia Open Records Act, O.C.G.A. §50-18-70 et seq.

- 1.7.1.2.21 Georgia Blasting Standards Act, O.C.G.A. § 25-8-1 et seq. and Blasting, Excavating Nearby Underground Gas Pipes and Utilities, 25-9-1 et. seq.
- 1.7.1.2.22 Scaffolding and Staging Statute, O.C.G.A. §34-1-1 et seq.
- 1.7.1.2.23 Department of Labor Rules and Regulations, O.C.G.A. § 34-2-6 et seq.
- 1.7.1.2.24 Hazardous Chemical Protection and Right to Know Act, O.C.G.A. § 45-22-2 et seq.,
- 1.7.1.2.25 Retainage on Public Works Contracts, O.C.G.A. §13-10-80 et seq.
- 1.7.1.2.26 Compliance with “federal work authorization programs” and federal Immigration Reform and Control Act of 1986 by Georgia Public Employers, contractors and subcontractors, O.C.G.A. §13-10-90 et seq.

1.7.1.3 Building Codes. The following Building Codes, in the latest editions approved by the Georgia Department of Community Affairs, shall be used. (See O.C.G.A. §8-2-20.) The Design Professional will designate any additional codes or special modifications in the Supplementary General Conditions. As of the year 2000, these codes are published jointly by the Southern Building Code Congress International, the International Code Council, the Building Officials and Code Administrators, International, and the International Conference of Building Officials, and are commonly referred to as the International Building Codes.

- 1.7.1.3.1 Georgia State Minimum Standard Building Code (International Building Code, 2000 Edition) with Georgia Amendments.
- 1.7.1.3.2 Georgia State Minimum Standard Mechanical Code (International Mechanical Code, 2000 Edition), with Georgia Amendments.
- 1.7.1.3.3 Georgia State Minimum Standard Gas Code (International Fuel Gas Code, 2000 Edition), with Georgia Amendments.
- 1.7.1.3.4 Georgia State Minimum Standard Plumbing Code (International Plumbing Code, 2000 Edition), with Georgia Amendments.
- 1.7.1.3.5 Georgia State Minimum Standard Electric Code (National Electrical Code, 2002 Edition), with Georgia Amendments.
- 1.7.1.3.6 Georgia State Minimum Standard Energy Code (International Energy Conservation Code, 2000 Edition), with Georgia Amendments.
- 1.7.1.3.7 Georgia State Minimum Standard Fire Prevention Code (International Fire Code, 2003 Edition), with Georgia Amendments.

1.7.1.4 Fire, Life Safety, and Accessibility Codes. The following codes, in the versions approved by the Georgia State Fire Marshal/Fire Safety Commissioner and Department of Human Resources, shall be used. The Design Professional will designate any additional codes or special modifications in the Supplementary General Conditions.

- 1.7.1.4.1 Georgia State Life Safety Code (NFPA 101)
- 1.7.1.4.2 State Accessibility Codes (See O.C.G.A. §30-3-3)
- 1.7.1.4.3 Rules and Regulations of the Georgia Safety Fire Commissioner (See O.C.G.A. §§25-2-4,12.)
- 1.7.1.4.4 Swimming Pool Permits and Regulations (See O.C.G.A. §31-45-3, Rules and Regulations Chapter 290-5-57)

1.7.1.5 Latest Edition. The latest edition approved by the implementing agency of the regulations, rules, and codes listed in Paragraphs 1.7.1.3 and 1.7.1.4 above, with all amendments as of the date of the opening of bids, shall govern the installation of all Work and is adopted and incorporated into the Contract Documents and made a part thereof by reference, Provided, however that the drawings and specifications shall be adhered to in all cases where they call for quality of materials, quality of workmanship, or quality of construction which is equal to or in excess of the quality required by the above stated codes and Provided also: That there may be no variances from the drawings and specifications except to the extent that the said variances shall be necessary in order to comply with the above stated codes. It shall be the responsibility of the Contractor to familiarize himself with the requirements of the above stated codes. If there are any express requirements in the drawings or specifications that are at variance to the above stated codes, all changes in the Work necessary to eliminate or add to the said requirements and make the Work conform to the above stated codes shall be adjusted as provided in the Contract for changes in the Work.

1.7.1.6 Compliance with Executive Orders Concerning Ethics. The Contractor warrants that he and his firm have complied in all respects with the Governor’s Executive Orders concerning ethics matters, including, but not limited to, Executive Order dated January 13, 2003 (establishing Code of Ethics for Executive Branch Officers and

Employees, including provisions governing former officers and employees); Executive Order dated October 1, 2003 (governing vendors to state agencies and disclosure and registration of lobbyists); and O.C.G.A. Sections 21-5-70(5), 21-5-71 and 21-5-73, all as amended effective January 9, 2006 (requiring registration and disclosure filings by state agency vendor lobbyists). In this regard, the Contractor certifies that any lobbyist employed or retained by the Contractor or his firm has both registered and made the required disclosures required by the Executive Orders, as amended.

**1.7.1.7 Compliance with Federal and State Work Authorization and Immigration Laws.** The Contractor and all subcontractors, suppliers and consultants must comply with all federal and state work authorization and immigration laws, and must certify compliance using the form set forth in Section 7 ("Georgia Security and Immigration Compliance Act Affidavits"). The required certificates must be filed with the Owner and copied maintained by the Contractor as of the beginning date of this contract and each subcontract, supplier contract, or consultant contract, and upon final payment to the subcontractor or consultant. State officials, including officials of the Georgia Department of Audits and Accounts, officials of the Owner, retain the right to inspect and audit the Project Site and employment records of the Contractor, subcontractors and consultants without notice during normal working hours until Final Completion, and as otherwise specified by law and by Rules and Regulations of the Georgia Department of Audits and Accounts.

**1.7.1.8 Compliance with the Board of Regents of the University System of Georgia's (the "Board") Policy Regarding Background Checks.** Pursuant to Board policy number 7.7.5.2 or any successor Board policy regarding background checks, the CM/GC must determine whether background checks are required by law or policy to be completed on the CM/GC's employees and/or the CM/GC subcontractors' employees providing on-site construction services. Any required background checks shall be conducted by the CM/GC, and the CM/GC must take appropriate action on any required background checks. Generally, the Board will not require additional background checks. However, in certain circumstances on a specific project basis, the Board's chief administrative officer or his/her designee may require additional background checks or that certain individuals be disqualified from working on-site for that particular project. The GM/GC shall defend, indemnify, and hold harmless the Board for any failure of the CM/GC to obtain and take action on background checks as required. The CM/GC shall also defend, indemnify, and hold harmless the Board from the actions of the CM/GC's employees and subcontractors' employees.

**1.7.2 Surveys, Permits, and Regulations.** The Owner shall furnish all surveys unless otherwise specified. Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be obtained and paid for by the Contractor. Permits, licenses, and easements for permanent structures or permanent changes in existing facilities shall be obtained and paid for by the Owner unless otherwise specified. The Contractor and its Subcontractors must pay any municipal or county occupational licenses, taxes, or fees, if any. The Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the Work. If the Contractor observes that the drawings or specifications are at variance with any such laws, ordinances, rules or regulations, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the Work. If the Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules or regulations without such notice to the Owner, he shall bear all costs arising therefrom. Nothing in this paragraph shall be construed to impose design responsibility on the Contractor except as noted in the Contract Documents.

**1.7.3 Open Records Act.** Owner and Design Professional and Contractor acknowledge and agree that all records of the project and the Work, including records of Subcontractors, are subject to the Georgia Open Records Act, O.C.G.A. §50-18-70 et seq., with particular attention being called to O.C.G.A. §50-18-70(a) regarding the records of private persons, firms, corporations, or other private entity engaged in performance of services or functions on behalf of a state agency, public agency or public office.

**1.7.4 Use of Site.** The Contractor has a revocable license to come on, use, and perform Work upon the Premises, shall confine thereto his plant, his apparatus, the staging and storage of materials, the operations of his forces and the Work to limits indicated by law, ordinances, permits, or the Contract Documents, and shall not unreasonably encumber the Premises with his materials. The Contractor shall not load or permit any part of the Work to be loaded with weight that will endanger its safety. The Contractor shall enforce Contract requirements regarding signs, advertisements, fires, and smoking and shall remove from the Premises and properly dispose all trash and debris.

**1.7.5 Office for Contract Compliance Specialist (CCS).** (Not Applicable to this project)



**1.7.6 Utilities.** Pending the extension and connection of permanent water, permanent gas, permanent sewer taps, and permanent electric power, the Contractor shall obtain temporary water, temporary gas, temporary electric power, and provide sewage disposal at his own expense. In the absence of provisions to the contrary, the Contractor shall pay for all utilities services until Material Completion has **been completed**. See 01-5000-3, 1.05 Use Charges for provisions to the contrary.

**1.7.7 Royalties and Patents.** The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof. The Owner shall defend and be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified.

**1.7.8 Separate Contracts.** The Owner reserves the right at any time and from time to time upon notice to Contractor to perform, or cause to be performed by other Contractors, other work at the Site in connection with the development of the Project that is not contemplated hereby or that is contemplated hereby if the Contractor and the Owner shall be unable to agree upon a Change Order incorporating such work as Work of the Contractor under this Contract. In either case, the Owner shall assure that such personnel or Contractors do not cause any conflict with the Work of Contractor. Contractor shall afford the Owner and other Contractors reasonable opportunity for the introduction, protection, and storage of material and equipment at the Site and the execution of work, and shall properly connect, if required by Contract Documents, and coordinate its work with theirs. If any work by the Owner or its other Contractors increases Contractor's costs or extends the time of performance, Contractor shall be entitled upon timely claim to a Change Order for payment by Owner of any reasonable costs actually incurred by Contractor as a result thereof and to an extension of time for performance for such reasonable time as the Design Professional shall determine. Contractor has no responsibility hereunder to certify the suitability or correctness of any work performed by Owner's own personnel or other Contractors under direct contract with the Owner. This Article also applies to installation of loose equipment and fixtures by the Owner, Using Agency, or a Separate Contractor.

**1.7.9 Women, and Disadvantaged Business Participation**

1.7.9.1 Good Faith Efforts. Contractor shall, to the extent consistent with quality, price, risk and other lawful and relevant considerations, use its good faith efforts to achieve participation by minority, women, and disadvantaged business enterprise participation in Work and services contracted to Contractor under this Contract.

1.7.9.2 Policy of the State of Georgia. It is the policy of the State of Georgia that minority business enterprises shall have the maximum opportunity to participate in the State purchasing process. Therefore, the State of Georgia encourages all minority business enterprises to compete for, win, and receive Contracts for goods, services, and construction. In addition, the State encourages all companies to sub-contract portions of any State Contract to minority business enterprises. It is the wish of the Owner that minority businesses be given the opportunity to propose on the various parts of the Work. This desire on the part of the Owner is not intended to restrict or limit competitive selection or to increase the cost of the Work. The Owner supports a healthy free market system that seeks to include responsible businesses and provides ample opportunity for business growth and development.

1.7.9.3 Minority Vendor Designee. The minority vendor designee of the Owner shall be specified in the Supplementary General Conditions or the Instructions to Bidders.

**1.7.10 Assignment.** The Contractor shall not assign the Contract or sublet it as a whole nor shall the Contractor assign any moneys due or to become due to him hereunder. Contractors may subcontract portions of the Work, normally performed by Subcontractors.

**1.7.11 Interpretation of Contract Documents.** The Contract Documents shall be construed neither against nor in favor of either party but shall be construed in a neutral manner.

**1.7.12 Counterparts.** This Contract may be executed in multiple counterparts. All counterparts shall constitute one and the same instrument. One (1) counterpart of this Contract shall be delivered to the Owner and one (1) counterpart to the Contractor.

**1.7.13 Forms and Specimens.** The forms and specimens In Section 7 are incorporated by reference herein and shall be executed in substantial conformance as required or convenient in describing obligations under the Contract Documents.

**1.7.14 Entire Agreement.** The Contract Documents referenced herein constitute the entire Contract between the Owner and the Contractor with respect to the Project and supersedes all prior negotiations, representations, and agreements. Except as set forth herein, there are no other promises, understandings, agreements, representations or warranties, oral or written, expressed or implied between the parties. This Contract may not be changed, modified, or terminated, in whole or in part, nor any provision waived except by Change Order.

## SECTION 2 – PRE-COMMENCEMENT PHASE

### PART 1 PRE-COMMENCEMENT PHASE SERVICES

**2.1.1 Pre-commencement Coordination.** As early as practicable and reasonably in advance of the commencement of Work on the Project, the Contractor shall schedule and conduct an initial construction coordination meeting for the purpose of determining and developing the appropriate and necessary processes and procedures for proper planning and coordination for the installation of all the Work. The meeting shall include all of the Subcontractors, Trade Contractors, , and Suppliers materially involved in such installation of the Work. The Contractor shall assure that each necessary Subcontractor involved in performance of the Work shall be present and represented by a knowledgeable person with authority to reach agreement on the coordination procedures and processes involving its portion of the Work. The Owner shall be represented at this initial meeting by the Owner's Representative and shall require that authorized and knowledgeable representatives of each of the separate disciplines in the design team, comprising the Design Professional and all Consultants contributing to the design preparation, shall also be present at the initial meeting. If necessary, additional meetings shall be scheduled by the Contractor with all of the affected parties to continue review and resolution of any real or apparent conflicts or interferences.

#### 2.1.2 Construction Preparation Period

**2.1.2.1 Requirement for Project Planning.** No physical work will begin on the construction site until the receipt of a Proceed Order issued by the Owner. The Contract assumes that a Proceed Order will be issued in not more than sixty days from the Effective Date of the Contract. Failure of the Contractor to provide the necessary documentation for the issuance of a Proceed Order shall not entitle the Contractor to any extension of time. If a Proceed Order is not issued within sixty days from the award of the Contract and non-issuance is due to nonperformance by the Contractor, the Contractor may be in default.

**2.1.2.2 Timing of Submission of Documents.** No Proceed Order shall be issued until the Owner has received, in good and proper order, the following documents. The documents shall be submitted in accordance with the following schedule:

2.1.2.2.1 Within ten days of the Notice of Apparent Successful Bid:

- (a) Contract executed by Contractor
- (b) Payment and Performance Bonds in accordance with Article 1.5.1

2.1.2.2.2 Within fourteen days of the Effective Date of the Contract:

- (a) Proof of Insurance as required in Paragraph 1.5.3.1
- (b) List of intended Subcontractors

2.1.2.2.3 Prior to the issuance of the Proceed Order, but in any event, within sixty days of the Effective Date of the Contract:

- (a) Submittal and Shop Drawing Schedule as required in Article 2.2.3
- (b) Construction Progress Schedule as required in Article 2.1.5
- (c) Documents Review Report as required in paragraph 2.1.2.3
- (d) Construction Management Plan as required in Article 2.1.3
- (e) Documentation necessary for receiving land disturbance permits, See Article 2.2.5
- (f) Contractor's Quality Control Program as required in Article 2.1.4

- (g) Written Safety Program as required in Article 1.4.7
- (h) Contractor's Schedule of Rental Rates and Wage Rates

**2.1.2.3 Document Review and Verification.** Within one business day of receipt of the Effective Date of the Contract Contractor shall commence a review of the plans and Specifications, to identify conflicts, omissions, or constructability issues in the documents. Contractor shall prepare a report containing a list of issues and suggested modifications identified. He shall provide a copy of the report to the Design Professional and the Owner prior to the end of the Construction Preparation Period. If a fire protection sprinkler system is required, the Contractor shall submit to the Design Professional the certificate of competency of the fire protection sprinkler system Trade Contractor as required by State of Georgia Fire Protection and Safety Code. The certificate of competency shall be provided to the Design Professional prior to any work being performed on the fire protection sprinkler system. Nothing in this paragraph shall be construed to impose design responsibility on the Contractor except as noted in the Contract Documents.

**2.1.3 Construction Management Plan.** Contractor shall prepare and furnish to the Owner a thorough and complete plan for the management of the Project from issuance of the Proceed Order through the issuance of the Design Professional's Certificate of Material Completion. Such plan shall include, without limitation, an estimate of the manpower requirements for each trade and the anticipated availability of such manpower, a schedule prepared using the critical path method that will amplify and support the schedule required in Article 2.1.5 below, and the Submittal Schedule as required in Article 2.2.3. The Contractor shall include in his plan the names and resumés of the Project Superintendent, Project Manager and the person in charge of Safety.

#### **2.1.4 Quality Control Program**

**2.1.4.1 Responsibility for Quality of Materials and Installation.** Contractor acknowledges that he has full, total, and complete responsibility for providing materials, labor, and all other items necessary for providing the level of quality specified in the Contract Documents. He agrees that this responsibility is indivisible, non-delegable, non-transferable, and not diminished by any inspections provided by the Design Professional or his consulting engineers, nor by any inspections provided by the Owner. In recognition of this, Contractor will prepare for submission and review by the Design Professional, a written program describing the efforts that will be taken to ensure the proper quality level is achieved. The program shall be submitted prior to the issuance of a Proceed Order.

**2.1.4.2 Written Program.** Contractor's written Quality Control Program shall describe in detail the steps the Contractor will take to ensure quality and will include, without limitation, those personnel, in addition to the Superintendent, who will provide review and verification of the proper installation of the Work. Each Subcontractor having responsibility for more than \$100,000 of the contract cost shall be addressed in the plan. The written program shall include affidavits from each of the involved Subcontractors acknowledging their responsibilities under the Contract in general and the Quality Control Program specifically.

**2.1.5 Construction Progress Schedule; Overall Project Schedule.** The Contractor shall submit for review by the Design Professional and approval by the Owner a Construction Progress Schedule based upon the Design Professional's Preliminary Design and Construction Schedule and prepared using a CPM (Critical Path Method) process within sixty days after the Effective Date of the Contract, utilizing a full-featured software package in a form satisfactory to the Design Professional and Owner, showing the dates for commencement and completion of the Work required by the Contract Documents, including coordination of mechanical, plumbing, and electrical disciplines, as well as coordination of the various subdivisions of the Work within the Contract. Milestones must be clearly indicated and sequentially organized to identify the critical path of the Project. The Construction Schedule will be developed to represent the CSI specification divisions. It shall have the minimum number of activities required to adequately represent to the Owner the complete scope of Work and define the Project's (and each Phase's if phased) critical path and associated activities. The format of the Construction Progress Schedule will have dependencies indicated on a monthly grid identifying milestone dates such as construction start, phase construction, structural top out, dry-in, rough-in completion, metal stud and drywall completion, equipment installation, systems operational, inspections for Material Completion and Occupancy Date, and Final Completion Date. The Contractor shall submit, along with the Construction Progress Schedule, the Submittal Schedule for approval by the Design Professional, correlating the associated approval dates for the documents with the Construction Progress Schedule. Upon recommendation by the Design Professional and approval by the Owner, the Construction Progress Schedule shall become the Overall Project Schedule, which shall be utilized by the Design Professional, Owner and Contractor. The Contractor must provide the Design Professional and the Owner with monthly updates of the Overall Project Schedule indicating completed activities and any changes in sequencing or activity durations, including approved change orders. See also Article 3.3.5.

**2.1.6 Progress Reports and Information.** When required, the Contractor shall submit to the Owner such schedule of quantities and costs, payrolls, bills, vouchers, correct copies of all subcontracts, statements, reports, correct copies of all agreements, correspondence, and written transactions with the surety on the performance bond that have any relevance to the Work, estimates, records, and other data as the Owner may request that concerns the Work performed or to be performed under this Contract. When requested by the Owner, the Contractor shall give the Owner access to its records relating to the foregoing. (See also Article 1.2.3, Audits.) The above reports shall include, but are not limited to,

- (a) written notice of dates by which specified Work will have been completed
- (b) written notice of dates by which Non- Compliant Work will be made good
- (c) written notice that Non-Compliant Work has been made good
- (d) written notice as to the date or dates by which Work that has not been performed with equal steps and at the same rate required by the Overall Project Schedule shall have been brought into conformity with the Overall Project Schedule
- (e) date by which any undisputed claim of a Subcontractor supplier, or laborer shall have been paid
- (f) written advice regarding the nature and amount of any disputed claim of a Subcontractor, supplier, or laborer, and
- (g) information regarding Work performed under Change Orders.

**2.1.7 Rental Rates and Wage Rates for Change Orders.** As soon as is practical, but prior to the completion of the Construction Preparation Period and in any event prior to the commencement of any Work on the Site, the Contractor shall submit in accordance with the style and format of a specimen to be furnished by the Owner for consideration of the Owner the following: (1) a proposal for rental rates on heavy construction equipment that shall apply in the event Change Order Work is performed, and (2) a proposal for wage rates for the types of project labor that shall apply in the event of the execution of any Change Order Work. Under penalty of false swearing, a principal of the contracting firm shall certify that the proposal for rental rates and proposal for wage rates do not exceed current costs for like services. The Owner will in no event consider a rental rate in excess of eighty percent of the rate set forth in the latest edition of the "Compilation of Nationally Averaged Rental Rates for Construction Equipment" of the Associated Equipment Distributors unless the rates proposed in excess of eighty percent are supported by proof satisfactory to the Owner that the excess rates are reasonable. If the equipment is owned by the Contractor the costs shall be charged at a maximum of eighty percent of market monthly rental rates for the amount of time used. If applicable, transportation costs may be included. The decision of the Owner shall be final, binding and conclusive on all parties. Rental rates shall be payable only for the actual time the equipment is required on the Site.

### **2.1.8 Unit Prices**

**2.1.8.1 During Construction Preparation Period.** Prior to the completion of the Construction Preparation Period, the Contractor shall establish with the Owner Unit Prices not already bid. Examples include additional installation of stormwater management BMPs, any other anticipated Change Order Work that can utilize Unit Prices, or for any items of Work considered necessary by the Design Professional and not established in the Contract Documents.

**2.1.8.2 During Construction.** Upon request of the Owner the Contractor shall submit written proposals for unit prices to be applied in the event Change Order Work is authorized by the Owner to be performed under Case (b).

**2.1.8.3 Calculation of Unit Prices.** Unit Prices include all sums for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, or injury. Unit prices to cover the addition or reinstallation of stormwater management BMPs shall be calculated by type and linear foot. Unit Prices shall not include any Time Dependent Overhead Costs, as such costs will be added as appropriate pursuant to Section 3, Part 3. The Contractor shall certify that the Unit Prices submitted do not exceed current costs in the industry or trade for like services or materials.

**2.1.9 Building Commissioning Services.** The Owner may provide as a part of its testing services the Building Commissioning services involving the project's HVAC and exhaust systems, temperature control systems, fire detection and alarm systems, emergency power and lighting system, fire suppression system, security locks and security locking control systems, food service equipment (if applicable), and laundry equipment (if applicable). In the event the Using Agency's Program specifies additional commissioning services, the Owner shall procure such services as well. The Owner, through its Executive Administrator, may engage an independent Commissioning Authority. It is the intent of this Article that the Commissioning Authority enforce the requirements mentioned herein and certify that the systems and equipment listed all function properly prior to the initiation of each final inspection.

2.1.9.1 Initial Building Commissioning Plan. The Owner may develop with its Commissioning Authority, the Contractor and the Design Professional, an initial Building Commissioning plan to consist of the following:

2.1.9.1.1 The Building Commissioning Plan shall include a summary of understanding of the design intent for each of the relevant building systems and equipment. Each design intent summary shall establish critical performance criteria that indicates whether a system is properly functioning.

2.1.9.1.2 The Building Commissioning Plan shall include a commissioning schedule listing the duration of each commissioning activity such as system and equipment manual submittal and approval, equipment start-up, and system and equipment training, and combining all such activities in a manner reflecting the inherent subsidiary relationships between activities. This schedule shall be used as a basis for accomplishing the commissioning portion of the Overall Progress Schedule.

2.1.9.2 Define Duties. The Contractor, in coordination with the Commissioning Authority and the Design Professional, shall during preparation of the Contract Documents clearly define all duties and activities required of the various Trade Contractors relating to Building Commissioning, any necessary order in which these activities and duties must take place, and define all critical performance criteria to be achieved.

2.1.9.3 Inspect, Review and Monitor. The Commissioning Authority shall inspect, review and monitor all Building Commissioning related construction activities for timeliness, completeness and conformance with the criteria established by the contract documents, and report same to the Contractor, Owner and the Design Professional. The Contractor and Commissioning Authority shall coordinate and supervise the training activities of each system.

## **PART 2 CONTRACT DOCUMENTS AND SITE PLAN**

### **2.2.1 Contract Documents**

2.2.1.1 Familiarity with Contract Documents. Contractor represents that it has reviewed or will review and become familiar with the Contract Documents, not later than the commencement of the construction phase.

2.2.1.2 Identification of Construction Documents. The Design Professional shall identify the Construction Documents, which shall include, but are not limited to, the Specifications, the Drawings, and all Addenda. The Construction Documents are included within the Contract Documents.

2.2.1.3 Correlation and Intent. It is the intention of the Owner, Design Professional, and Contractor that the Construction Documents include all items necessary for proper execution and full and final completion of the Work. The Contract and Construction Documents (the Contract Documents) are complementary, and what is required by one is as binding as if required by all. Performance by the Contractor is required to the extent consistent with and reasonably inferable from the Contract Documents as being necessary to produce the design intent as expressed in the Contract Documents. The intention of the Owner and the Design Professional is that the Contract and Construction Documents include all labor and materials, equipment, and transportation necessary for the proper execution of the work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class, or trade of the specifications shall be supplied unless noted on the drawings.

2.2.1.4 Arrangement of Specifications. The Specifications are separated into numbered and titled divisions for convenience of reference. Neither the Owner nor the Design Professional shall assume any responsibility for defining the limits of any subcontracts on account of the arrangement of the Specifications. Notwithstanding the appearance of such language in the various divisions of the Specifications as, "The Plumbing Contractor," "The Electrical Contractor," "The Roofing Contractor," etc., the Contractor is responsible to the Owner for the entire Contract and the execution of all of the Work referred to in the Contract Documents. No partial sets of Bidding Documents shall be issued by the Design Professional. Any partial documents issued by the Contractor shall be the responsibility of the Contractor.

2.2.1.5 Conflicts. The following general principles shall govern the settlement of disputes that may arise over conflicts in the Contract Documents: (a) as between figures given on drawings and the scaled measurements, the figures shall govern; (b) as between large-scale drawings and small-scale drawings, the larger scale shall govern; (c) as between the Contract and the Specifications, the requirements of the Contract, as executed, shall govern. Conflicts noted shall be reported to the Design Professional. The principles set forth herein shall not alter the provisions of Paragraph 1.1.7.1. Schedules, lists, indexes, tables, inventories, written instructions, written

descriptions, summaries, statements, classifications, Specifications, written selections, or written designations, although appearing on the drawings, are deemed to be and are Specifications.

**2.2.1.6 Requests for Information (RFI).** In the event the Contract Documents are not complete, definite, and clear, the Contractor shall request the Design Professional in writing for additional instructions and shall furnish the Owner a copy of the RFI. With reasonable promptness but not more than five days thereafter, the Design Professional shall furnish complete, definite, and clear instructions in writing, or by means of drawings, or both. In the event such additional instructions are given orally for expediency, they shall be confirmed in writing or by drawings or both within five days following the oral instructions. Any such additional instructions shall be consistent with the Contract Documents and reasonably inferable therefrom. The Work shall be executed in conformity with the aforesaid instructions. The Design Professional shall furnish the Owner a copy of all additional instructions issued to the Contractor. If, because of events beyond its reasonable control, the Design Professional is not able to meet the specified time period, then it is entitled to ask for additional time from the Owner.

**2.2.1.7 Effect of Addenda, Bulletins, and Change Orders.** No special implication, interpretation, construction, connotation, denotation, import, or meaning shall be assigned to any provision of the Contract Documents because of changes created by the issuance of any (1) Addendum, (2) Bulletin, or (3) Change Order other than the precise meaning that the Contract Documents would have had if the provision thus created had read originally as it reads subsequent to the (1) Addendum, (2) Bulletin, or (3) Change Order by which it was created.

**2.2.1.8 Intellectual Property Rights in Construction Documents, Drawings, and Models.** The drawings, Specifications and other documents prepared by the Design Professional pursuant to this Contract (including, without limitation, the Construction Documents), are the property of the Owner, whether or not the Project for which they are made commences or completes construction. Neither the Contractor nor any Subcontractor or material or equipment supplier shall own or claim a copyright in such drawings, Specifications, and other similar or related documents; Owner shall retain all common law, statutory, and other intellectual property rights with respect thereto. The Contractor must deliver remaining copies of such documents to the Owner upon request or upon completion of the Work, except that the Contractor may keep one copy of such documents for its files. The Contractor shall only use such drawings, Specifications and other documents for this Project. Neither the Contractor nor any Subcontractor or material or equipment supplier may use such drawings, Specifications, and other documents on other projects without the specific written consent of the Owner. All models are the property of the Owner.

## **2.2.2 Documents at the Project Site**

**2.2.2.1 Drawings and Specifications at the Project Site.** The Contractor shall keep at the Site at least one copy of the Contract Documents and Change Orders, all in good order and available to the Design Professional and to his representatives.

**2.2.2.2 Recording Changes.** The Contractor shall record all changes and shall annotate a copy of the drawings to reflect the as-built condition as required in Paragraph 1.1.7.3 above.

**2.2.3 Submittals.** Submittals required by the Contract Documents shall be prepared specifically for the Work by the Contractor to illustrate some portion of the Work. Submittals are not Contract Documents.

**2.2.3.1 Submittal Schedule.** Within sixty days after the Effective Date of the Contract, the Contractor shall prepare and submit a Submittal Schedule for review and approval of the Design Professional. In establishing the Submittal Schedule the Contractor shall take into account large submittal documents that will require longer review times, e.g., submittals with over fifty sheets of drawings. The Design Professional's approval shall be based on conformance of the Submittal Schedule with the Overall Project Schedule, subject to change from time to time in accordance with the progress of the Work.

**2.2.3.2 Submission and Approval.** The Contractor's Submittals must comply with the Contract Documents. The Contractor shall review and approve all Submittals prior to submission. The Contract Documents shall specify when shop drawings or submittals require the seal of a specialty consultant. The Contractor shall submit copies of Submittals as required by the Contract Documents for the Work of the various trades. The Design Professional shall review, approve, or take other appropriate action with respect to shop drawings, samples, or other submissions of the Contractor, including, but not limited to, confirming conformance with the design concept of the Project and with the Contract Documents. The Design Professional shall respond to and return said items to the Contractor within fourteen calendar days from receipt provided that the Submittals are submitted by the Contractor in accordance with the required Submittal schedule. The Design Professional shall

review and give comment or approval to Submittal schedule within fourteen calendar days from receipt. Large submittal documents may require longer review times, e.g., submittals with over fifty sheets of drawings. If, because of events beyond its reasonable control, the Design Professional is not able to meet the specified time period, then it is entitled to ask for additional time from the Owner. The Contractor shall make all corrections required by the Design Professional and furnish such corrected copies as may be needed. If the Contractor believes that any corrections required by the Design Professional constitute a change to the contract, the Contractor shall immediately notify the Design Professional and Owner and request instructions. By forwarding the approved Submittals to the Design Professional, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents. The Design Professional's approval of Submittals shall not relieve the Contractor from the responsibility for errors of any sort in Submittals or schedules. The Contractor shall perform no portion of the Work for which the Contract Documents require Submittals until the Design Professional has approved the respective Submittal. The Contractor shall maintain at the Site one copy of all approved Submittals.

**2.2.3.3 Cost of Additional Review.** The Design Professional shall be responsible for an initial and one subsequent review of the Submittal. Where the subsequent Submittal is not accepted due to noncompliance with the Contract Documents, the Contractor shall be responsible for payment for the additional time required by the Design Professional to complete the Submittal review.

**2.2.4 Manufacturer's Recommendations.** All work or materials shall be installed in accordance with the manufacturer's recommendations and requirements. The Contractor shall obtain the manufacturer's recommendations and requirements, for its use at the Site in executing the Work, copies of bulletins, circulars, catalogues, or other publications bearing the manufacturer's titles, numbers, editions, dates, etc. If the manufacturer's recommendations and requirements are not available, the Contractor shall request installation instructions from the Design Professional.

## **2.2.5 Site Plan**

**2.2.5.1 General.** The Design Professional is responsible for providing the initial sealed Site Plan as a part of the Bidding Documents. During the Pre-Commencement phase, the Contractor shall review the initial Site Plan and make and submit recommendations for any changes to the initial Site Plan. The Contractor is required to obtain the land disturbance permit(s) applicable to the Owner that implement the National Pollution Discharge Elimination System (NPDES) requirements for stormwater management for construction activities from the appropriate issuing authority. Compliance requires that there be properly designed Best Management Practices (BMPs), properly installed BMPs, and inspection and maintenance of the installed BMPs.

**2.2.5.2 Implementation.** The Design Professional will depict upon the Site Plan its initial recommendations as to elements of the erosion, sedimentation, and pollution control plan, specifying his recommended design of BMPs for the Project, including stormwater management facilities, and other like matters. It is the Contractor's responsibility to review the design of the BMPs and submit any changes to the plan, including the Contractor's desired use of entrances to the Site, Contractor's trailer(s) location, laydown areas and other similar matters affecting the design and implementation of the BMPs. The Design Professional and Contractor shall arrive at a final sealed Site Plan for submission to the permitting officials that enables the land disturbance permitting of the Project. The Design Professional and Contractor shall resolve with the local permitting official any deficiencies by the end of the Pre-commencement period.

**2.2.5.3 Installation, Inspection, and Maintenance.** The Contractor is responsible for installation and maintenance of the BMPs as a part of its Bid. The Design Professional shall obtain the services of a qualified testing laboratory to inspect the BMPs in accordance with the permits, the costs of such inspections to be borne by the Owner. In the event of Abnormal Weather Conditions or force majeure, the Contractor shall be compensated for re-installation of BMPs at established Unit Prices.

**2.2.6 Geological and Archeological Specimens.** If, during the execution of the Work, the Contractor, any Subcontractor, or any servant, employee, or agent of either should uncover any valuable material or materials, such as, but not limited to, treasure trove, geological specimens, archival material, archeological specimens, or ore, the Contractor acknowledges that title to the foregoing is vested in the Owner. The Contractor shall notify the Owner upon the discovery of any of the foregoing, shall take reasonable steps to safeguard it, and seek further instruction from the Design Professional. Any additional cost incurred by the Contractor shall be addressed under the provision for changed conditions. The Contractor agrees that the Geological and Water Resources Division and the Historic Preservation Division of the Georgia Department of Natural Resources may inspect the Work at reasonable times.

## SECTION 3 – CONSTRUCTION PHASE

### PART 1 – CONSTRUCTION PHASE SERVICES

#### 3.1.1 Basic Construction Services

3.1.1.1 Requirement to Commence Work. The Contractor shall under all circumstances commence work under this Contract no later than ten days after the Proceed Order Date of the Proceed Order.

3.1.1.2 Payment for Services and Work. Unless otherwise stipulated, the Contractor shall provide and pay for all materials, supplies, labor, services, water, tools, equipment, light, power, transportation, and other utilities and facilities necessary for the proper execution and completion of the Work.

3.1.1.3 Quality of Materials and Workmanship. Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials and work. The burden of proof is on the Contractor.

3.1.1.4 Quality and Discipline of Employees. The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

3.1.1.5 Failure of the Contractor to Supply Workmen. A Notice of Non-Compliant Work may be issued for failure of the Contractor to supply enough workers or enough materials or proper materials.

#### 3.1.1.6 Superintendence and Supervision by Contractor.

3.1.1.6.1 Supervision by Contractor. The Contractor shall give efficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications, and instructions and shall at once report to the Design Professional any error, inconsistency, or omission that he may discover, but he shall not be held responsible for their existence or discovery.

3.1.1.6.2 Superintendent of Contractor. The Contractor shall keep on this work during its progress and until the Final Certificate has been executed by the Design Professional a competent Project Superintendent and any necessary assistants, all satisfactory to the Design Professional and Owner. The Project Superintendent shall not be changed except with the consent of the Owner and the Design Professional unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent represents the Contractor and all directions given to the superintendent shall be as binding as if given to the Contractor.

3.1.1.6.3 Replacement Project Superintendent. If the Contractor terminates the Project Superintendent or, if the Contractor, for any reason, engages a Project Superintendent different from the one originally assigned to the Project, Contractor must ensure that the replacement Project Superintendent has similar qualifications and experience as the originally identified Project Superintendent. Furthermore, the Contractor must obtain the Owner's prior written approval before engaging a permanent replacement Project Superintendent.

**3.1.2 Measurements and Dimensions.** Before ordering material or doing work that is dependent upon coordination with building conditions, the Contractor shall verify all dimensions, elevations, grades, and pitch by taking measurements at the building and shall be responsible for the correctness of same. Any discrepancies between the drawings and/or specifications and the existing conditions shall be referred to the Design Professional for additional instructions before any work affected thereby is begun.

**3.1.3 Rain Water, Surface Water, and Back-up.** The Contractor shall protect all Work, including but not limited to, excavations and trenches, from rainwater, surface water, and back up of drains and sewers. The Contractor shall furnish all labor, pumps, shoring, enclosures, and equipment necessary to protect and to keep the Work free of water.

**3.1.4 Dust Control.** Dust-proof enclosures or partitions for protection wherever dusty or dirty work is performed and dampening of debris to avoid dusting when removed shall be provided and included as a cost of the work.

**3.1.5 Cutting, Patching, and Fitting.** The Contractor shall do all cutting, patching, and fitting of the Work that may be required to make its several parts come together properly and fit.



**3.1.6 Space Conditions.** All pipes passing through floors, walls, and ceilings shall be installed with sufficient space between them to permit installation of pipe insulation and floor, wall, and ceiling plates without cutting of insulation or plates. Roughed-in dimensions shall be prepared by the Contractor to accomplish this requirement. The Contractor shall locate all equipment that must be serviced, operated, or maintained in fully accessible positions. This provision includes but is not limited to valves, traps, cleanouts, motors, controllers, switchgear, drain points, filter, access doors, and fire dampers. If spaces, dimensions, or other design conditions do not permit compliance with the present article, the Contractor shall file a request in writing with the Design Professional for additional instructions, furnishing a copy to the Owner.

### **3.1.7 Cleaning Up**

**3.1.13.1 During Construction.** At all times, the Contractor shall keep the premises free from accumulations of waste material or rubbish caused by his employees, Trade Contractors, or work. Periodically during the course of the Work he shall remove all his rubbish from and about the building and all his tools, scaffolding, and surplus materials and shall leave his work "broom-clean" or its equivalent, unless more exactly specified. Prior to Final Completion by a Trade Contractor of any Trade Contract, Contractor shall require the Trade Contractor to remove from the Work and Site all temporary systems, tools, equipment, machinery, and surplus materials not required for the continued performance of any Work under the Trade Contract or this Contract. In case of dispute, after 48 hours written notice the Owner may remove the rubbish and charge the cost to the Contractor.

**3.1.13.2 Prior to Material Completion.** Prior to the inspection for Material Completion of the Project Contractor shall remove from the Site all wastes and rubbish, clean all tile and glass surfaces, replace broken glass, remove stains, paint spots, and clean and polish all plumbing fixtures and equipment, leave the Work "vacuum clean" or its substantial equivalent, all hard surface floors swept and mopped, all carpeted floors vacuumed, all surfaces other than floors dusted, blower dusted, or wiped (depending on type of surface) and surface blemishes cleaned, all glazing washed [both sides], and all electrical and mechanical equipment and fixtures cleaned, with all ductwork cleaned and filters replaced, if such are dirty, before other cleaning is started, and re-cleaned if any dust or dirt has gotten into the ductwork during the cleaning process. The Contractor shall restore existing facilities such as roads, other paved surfaces, fencing, curbing and the like at the Site to at least their preconstruction conditions; provided, however, the Contractor may, in an orderly fashion, leave such equipment and supplies at the Site as necessary to achieve Final Completion of the Project. This cleaning must be completed before the Contractor can expect the Design Professional to commence the inspection for Material Completion. To achieve Material Completion, the Contractor shall have fully cleaned the Site – all debris must have been removed from the site and all paved surfaces must have been broom swept and thoroughly hosed down.

**3.1.8 Duty of Contractor to Report Defects.** If any part of the Contractor's work depends for proper execution or results upon the work of any Separate Contractor to the Owner, the Contractor shall inspect and promptly report to the Design Professional any apparent defects in such work that render it unsuitable for such proper execution and results.

**3.1.9 Duty of Contractor to Report Conflicts.** To ensure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Design Professional any discrepancy between the executed Work and the drawings or specifications.

## **PART 2 CHANGES TO THE WORK**

**3.2.1 Acknowledgement of Existing Physical Conditions.** In undertaking the work under this Contract, the Contractor acknowledges that he has visited the premises and has taken into consideration all open and apparent conditions that might affect his work. No claim based on lack of knowledge of existing conditions shall be allowed unless the existing physical conditions cannot be discovered by a reasonably observant person. Any claims relating to conditions that are materially different from the Contract Documents that were not open and apparent may be adjusted as provided in this Part.

**3.2.2 Owner's Right to Make Changes.** Without invalidating the Contract, the Owner, by Change Order and without notice to the sureties, may authorize or order extra work or changes by altering, adding to, or deducting from the Work or the Contract Time, the Contract Sum being adjusted accordingly. All Change Orders shall be performed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of signing of the Change Order. (See Change Order formats in Section 7.) Prior to the issuance of the Proceed Order, the Contractor and the Owner shall advise each other in writing of their designees authorized to accept and approve changes to the Contract Sum and the limits to each designee's authority. Should any designee or limits of authority change during the time this Contract is in effect, the Contractor or Owner shall give written notice to the other as provided in Article 1.1.5.

There is no legal limitation on the Owner's right to make changes such as may be, in the Owner's sole discretion, useful or desirable to the Project.

**3.2.3 Changes Forbidden without Consent of Owner.** Neither the Design Professional nor the Contractor shall make any change whatsoever in the work without an approved Change Order. In the absence of an approved Change Order, the Contractor shall have no claim for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury, damages, or time based upon or resulting from any change. The provisions of this Article do not apply to emergencies as described in Article 1.4.4.

### **3.2.4 Form and Execution of Change Orders**

**3.2.4.1 The Change Order.** The Change Order is the instrument by which adjustments in the Contract Sum and the Contract Time are effected. The Change Order shall be accompanied by a breakdown as set forth in Paragraph 3.2.7.4. The breakdown is for the purpose of enabling the Design Professional and the Owner to make a judgment on the dollar amount of the adjustment in the Contract Sum and is not a part of the Change Order. No condition, term, qualification, limitation, exception, exemption, modification, or proviso, except as set forth in this Part, shall appear in the breakdown. Only such conditions, terms, qualifications, limitations, exceptions, exemptions, modifications, and provisos as are permitted under this Part are valid. The Design Professional shall certify to the dollar amount and description of the adjustments permitted by the Change Order.

**3.2.4.2 Execution of Change Orders.** Change Orders shall be signed by the Contractor, ordinarily certified by the Design Professional, and approved by the Owner in accordance with the form of Change Order prescribed by the Owner. No request for payment by the Contractor for a Change Order shall be due, nor shall any such request appear on an Application for Payment, until the Change Order is executed by the Owner. In the event of emergency (see Article 1.4.4) or significant impact to the Overall Project Schedule, the Owner shall direct the Change Order to proceed upon a Force Account until the cost and time is resolved in the manner set forth in Paragraph 3.2.7.3 below.

#### **3.2.4.3 Disagreement between Design Professional and Contractor.**

**3.2.4.3.1 As to Contract Sum.** Should the Design Professional disagree with the Contractor as to the amount of the adjustment to the Contract Sum and such disagreement is not resolved between them within seven days, the Owner, if it desires the Change Order work to proceed, may direct a Change Order for Force Account or Indeterminate Units.

**3.2.4.3.2 As to Contract Time.** Should the Design Professional disagree with the Contractor as to the amount of the adjustment to the Contract Time and such disagreement not be resolved between them within seven days, the decision of the Design Professional as to any adjustment in the Contract Time, including any designation by the Design Professional of such time as is eligible for Time Dependent Overhead Costs, shall be final, subject to protest to the Owner of the Design Professional's decision as set forth in Section 5 Part 2.

**3.2.4.3.3 As to Other Disagreements.** Should the Design Professional disagree with the Contractor as to matters other than Contract Sum or Contract Time, the dispute shall be resolved by the Owner as set forth in Section 5, Part 2.

**3.2.4.4 Change Order Conditions.** All Change Orders are issued under the following conditions and shall contain the following language as appropriate:

**3.2.4.4.1 For Lump Sum Change Order:** The payment and extension of time (if any) provided by this Change Order constitutes compensation in full to the Contractor and its Subcontractors and Suppliers for all costs and markups directly and indirectly attributable to the Change Order herein, for all delays related thereto and for performance of changes within the time stated.

**3.2.4.4.2 For Force Account or Indefinite Amount Change Order:** The payment and extension of time (if any) provided by this Change Order constitutes interim compensation to the Contractor and its Subcontractors and Suppliers for actual costs and markups directly and indirectly attributable to the Change Order herein, for all delays related thereto and for performance of changes within the time stated.

3.2.4.4.3 For All Change Orders: Any changes or reservations by the Contractor to the representations and releases in the Change Order, or refusal of the Contractor to execute the Change Order, shall be a material breach of this Contract that may be sufficient cause to issue a declaration of default.

**3.2.5 All Cost and Time Impacts to be Included.** Each Change Order shall include all time and monetary impacts of the change. Failure to include a change in Contract Time or in Contract Sum in Change Orders shall be considered a zero price/zero time Change Order and shall waive any change in Contract Time and Contract Sum. Commencement of Work upon a Change Order is conclusive proof that the Contractor accepts the Change Order.

**3.2.6 Changes in Contract Time.** All Change Orders must state that the Contract Time and the Material Completion and Occupancy Date either are not changed or are increased or decreased by a specific number of Days. The CONTRACTOR must provide written justification for the extension to the Design Professional and to the Owner. The written justification must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior Change Orders to the Contract. No extension to the Contract Time shall be allowed unless the additional or changed Work increases the length of the critical path beyond the Material Completion and Occupancy Date. If approved, the increase in time required to complete the Work shall be added to the Contract Time. The Owner may decrease, by Change Order, the Contract Time when an Owner-requested deletion from the Work results in a decrease in the actual time required to complete the Work as demonstrable on the critical path of the Construction Progress Schedule. Eligibility and processing requirements for Time Dependent Overhead Costs for compensable delay is addressed in Article 3.3.8 and 3.3.10.

**3.2.7 Determining the Cost to Owner for Changes.** The cost to the Owner of any change shall be determined in one or more of the following ways:

3.2.7.1 Lump Sum. The Change Order cost is determined by mutual agreement as a lump sum amount changing the Contract Sum allowed for completion of the Work. The Change Order shall be substantiated by documentation itemizing the estimated quantities and costs of all labor, materials and equipment required as well as any mark-up used. The price change shall include the cost percent allowed for the Contractor's overhead and profit and, if eligible, Time Dependent Overhead Costs.

3.2.7.2 Unit Price Work. The Change Order cost is calculated by using unit prices and calculating the number of net units of Work in each part of the Work that is changed, either as the Work progresses or before Work on the change commences, and by then multiplying the calculated number of units by the applicable unit price set forth in the Contract or multiplying by a mutually agreed unit price if none was provided in the Contract. No additional percentage markup for overhead or profit shall be added to the unit prices as this markup is included within the unit prices. Time Dependent Overhead Costs will be added if eligible.

3.2.7.3 Force Account. The Change Order cost is accomplished by Force Account in the event the Contractor and Design Professional cannot agree on the cost of the Change Order or the cost cannot be reasonably determined prior to beginning the Work.

3.2.7.3.1 A Force Account is the establishment by the Owner's Incumbrance Record of a maximum dollar amount (Stipulated Maximum Sum) beyond which no changed work may be undertaken, subject to amendment, for funding all costs of a Change Order. As the Work authorized by the Change Order progresses, the Contractor must provide an accounting of actual costs incurred in accomplishing the Work. The accounting must include an annotated copy of the Overall Project Schedule to accurately show the status of the Work at the time the Change Order utilizing a Force Account is issued, to show the start and finish of the changed Work, and to show the status of the Work when the changed Work is completed.

3.2.7.3.2 Actual costs, except as otherwise agreed to in writing by the Owner, shall not exceed those prevailing for the trades or crafts, materials, and equipment in the locality of the Project, may include only those items listed as allowable in Article 3.2.9, and shall not include any of the costs listed as not allowable in Article 3.2.10. The Owner shall be permitted, on a daily basis, to verify such records and may require such additional records as are necessary to determine the cost of the change to the Work.

3.2.7.3.3 The Owner shall prescribe the dollar limit for a Force Account in writing by authorizing a Stipulated Maximum Sum of money to be committed toward execution of the said change, and the Contractor shall have no authority to perform any change that will cost the Owner in excess of the Stipulated Maximum Sum. The Stipulated Maximum Sum shall be based on the estimated cost of the

Work and the Contractor's allowance for overhead and profit as set forth in 3.2.8 below, including any time extension, Time Dependent Overhead Costs (if eligible), and a reasonable contingency. It shall be the sole responsibility of the Contractor to apply in writing to the Owner, NOT to the Design Professional, for an increase in the Stipulated Maximum Sum if the total value of the Work is approaching and might exceed the Stipulated Maximum Sum.

3.2.7.3.4 Within fourteen days of the conclusion of such Work ordered by Force Account, the Contractor and the Owner shall arrive at the total lump sum cost for the Change Order. Such lump sum cost shall be incorporated into and finalize the Change Order and shall reference and close the Incumbrance Record establishing the Force Account.

3.2.7.4 Breakdown of Expenditures. The Contractor shall review any Owner requested or directed change and shall respond in writing within fourteen calendar days after receipt of the proposed change (or such other reasonable time as the Owner may direct), stating the effect of the proposed change upon his Work, including any increase or decrease in the Contract Time and Sum. The Contractor shall furnish to the Owner and the Design Professional an itemized breakdown of the quantities and prices and expenditures for labor and materials used in computing the proposed change in Contract Sum, in the form prescribed by the Owner, and the breakdown shall be accompanied by the following declaration:

*I do solemnly swear to the best of my knowledge, information, and belief, that the costs shown hereinabove do not exceed current costs for like services or materials in the locality of the Project and, in the case of a Force Account, the costs represented do not exceed the actual costs to the Contractor; and that the quantities shown do not exceed actual requirements.*

The Contractor shall obtain and furnish as back up to the Contractor's breakdown a separate breakdown for each subcontractor's charges prepared by each subcontractor on the letterhead of the subcontractor and properly signed by the subcontractor. The Owner shall review the Contractor's proposal and respond to the Contractor within fourteen days of receipt.

### **3.2.8 Cost Allowable for Changes to the Work, Allowances for Contractor, and Permissible Expenditures.**

3.2.8.1 Overhead and Profit. The percentage for overhead and profit to be used in calculating additive changes in the Work (not including changes covered by unit prices) shall not exceed the percentages for each category listed below. Said percentages for overhead and profit shall be applied only on the net cost of the changed Work, (i.e., the difference in cost between original and revised Work).

3.2.8.1.1 Contractor. If the Contractor does all or part of the changed Work with employees that work directly for the Contractor, its markup for overhead and profit on the changed Work the Contractor performs with its employees shall be twenty-five percent of the first \$50,000 of the net Allowable Costs, and twenty percent of the remaining net Allowable Costs, if any.

3.2.8.1.2 Subcontractor. If a Subcontractor does all or part of the changed Work with employees that work directly for the Subcontractor, the Subcontractor's markup for overhead and profit on the Work the Subcontractor performs with its employees shall be twenty-five percent of the first \$50,000 of the net Allowable Costs, and twenty percent of the remaining net Allowable Costs, if any. Determination of a Subcontractor's extended overhead costs, if any, is the responsibility of the Contractor.

3.2.8.1.3 Contractor's Markup on Subcontractor' Work. The Contractor's management markup on the subcontractor's net additional allowable expenditures shall be seven-and-one-half percent. The Contractor shall not be permitted the overhead and profit markup on Time Dependent Overhead Costs but shall be permitted a management markup of five percent on Time Dependent Overhead Costs.

3.2.8.1.4 Second and Lower Tier Subcontractor. If a Subcontractor at any tier does all or part of the changed Work with its employees, the Subcontractor's markup on the Subcontractor's work with its employees shall be twenty-five percent of the first \$50,000 of the cost, and twenty percent of the remaining cost, if any. The management markup of a Subcontractor's work by the Contractor and all intervening tiers of Subcontractors shall not exceed seven-and-one-half percent for the Contractor and any Subcontractor, or a total of fifteen percent for the changes to the Work.

3.2.8.2 The above percentages shall be applied to the net Allowable Costs, if any, as limited and defined in this Part. If the net difference between Allowable Costs and credits to the Owner results in a decrease in the Owner's

cost, the amount of credit allowed the Owner shall be the net decrease without any allowance for profit and overhead. Other than any eligible Time Dependent Overhead Costs, all costs that are not Allowable Costs in Article 3.2.9 or are disallowed in Article 3.2.10 shall be considered as overhead and shall be exclusively compensated in the allowances provided for in paragraph 3.2.8.1 above.

**3.2.9 Allowable Costs for Changes in the Work.** Allowable cost for changes to the Work are limited to the following:

3.2.9.1 Labor costs for employees directly employed in the change in the Work, including salaries and wages plus the cost of payroll charges and fringe benefits and overtime premiums, if such premiums are explicitly authorized by the Owner, set at rates established in the manner set forth in Article 2.1.7.

3.2.9.2 Materials incorporated into the change to the Work, including costs of transportation, handling, fuel, and on-site storage, if applicable.

3.2.9.3 Equipment incorporated in the changed Work or equipment used directly in accomplishing the Work. If the equipment is rented expressly for accomplishing the change in the Work, that cost shall be the rental rate according to the terms of the rental agreement, which the Owner shall have the right to approve, or shall be set at rates established in the manner set forth in Article 2.1.7. The decision of the Owner shall be final, binding, and conclusive on all parties.

3.2.9.4 Costs of increases in premiums for the Contractor's Payment Bond and Performance Bond or for bond premiums for its Subcontractors, to the extent that such increased costs are a result of coverage adjustments for changes in Work approved by the Owner. Prior to requesting payment for the Change Order work, the Contractor shall provide proof of its notification to the Surety of the change in the Work and of the Surety's agreement to include such change in its coverage. The cost of the increase in premium shall be an allowable cost but shall not be marked up. In no event shall a cost in excess of two percent of the cost of the change be allowable.

3.2.9.5 Sales, consumer, use, and other applicable taxes that are legally in effect at the time the change order is approved.

3.2.9.6 Any other costs directly attributable to the change in the Work, such as professional engineering costs, except those set forth in Articles 3.2.8 and 3.2.10.

3.2.9.7 For Change Order Work directed by the Owner, where the headquarters of the Subcontractor actually performing the work is more than 100 miles from the Project Site, the Subcontractor may include in the cost of the Change Order a stipend of fifty dollars per day for each worker performing work at the Site if that worker is receiving a per diem under present company policy, not to exceed the number of workers and number of days determined by Design Professional's decision to be attributable to the new work so ordered, so long as the number of workers and number of days attributable to any deleted work is deducted there from. No allowance for overhead or profit as set forth in Article 3.2.8 may be added to the Change Order cost on account of the stipend amount, and the full amount of the stipend must be actually paid to the eligible worker or it shall be forfeited by the Contractor and Subcontractor(s).

3.2.9.8 The Owner may require any or all of the following documentation to be provided by the Contractor to support the Allowable Costs:

- (a) certified payroll records showing the name, classification, date, daily hours, total hours, rate, and extension for each laborer, foreman, supervisor or other worker;
- (b) equipment type & model, dates, daily hours, total hours, rental rate or other specified rate, and extension for each unit of equipment;
- (c) invoices for materials showing quantities, prices, and extensions;
- (d) daily records of waste materials removed from the Site and/or fill materials imported to the Site;
- (e) certified measurements of over excavations, piling installed and similar work; and/or
- (f) transportation records for materials, including prices, loads, and extensions.

**3.2.10 Costs Not Allowable for Changes in the Work.** Costs not allowable under any circumstances are as follows:

3.2.10.1 Costs due to the negligence of the Contractor, Subcontractors, or other persons for whom the Contractor is responsible, including but not limited to costs of delay, costs for the correction of Non-Compliant Work, costs for improper disposal of material, costs for equipment wrongly supplied, costs for the Contractor's delay in performing the Work, or costs for delay in ordering and obtaining normally available materials or equipment.

3.2.10.2 Home office expenses, including payroll costs for the Contractor's or any Subcontractors' officers, executives, administrators, accountants, counsel, engineers, timekeepers, estimators, clerks, and other similar administrative personnel employed by the Contractor, whether at the Site or in the Contractor's or a Subcontractor's principal or branch office for general administration of the Work (including those referred to as "Eichlay costs"). These costs are deemed overhead included in the percentage markups allowable in Article 3.2.8 above.

3.2.10.3 Home and branch office expenses that include, but are not limited to, expenses of Contractor's home and branch offices, Contractor's capital expenses, interest on Contractor's capital used for the Work, charges for delinquent payments, small tools, incidental costs, rent, utilities, telephone and office equipment, and other general overhead expenses of the home and branch office (including those referred to as "Eichlay costs").

3.2.10.4 Where Work is deleted from the Contract (by Bulletin, Change Order, or otherwise) prior to commencement of that Work without substitution of other similar Work, one hundred percent of the Contract Sum attributable to that Work shall be deducted from the Contract Sum. However, in the event that material submittals have been approved and orders placed for said materials, a lesser amount as justified by proper documentation shall be deducted from the Contract Sum. The credit if any to the Owner for reduced premiums on payment bonds and performance bonds shall be in all cases one hundred percent of the credit. If the deductive Change Order affects the critical path or the schedule and it causes an overall reduction in the Contract Time, jobsite time dependent expenses shall be included in the deduction at the rate established in the Contract for Time Dependent Overhead Costs.

3.2.10.5 Wages of a foreman, if the foreman is concurrently supervising other Work at the Site.

3.2.10.6 Premiums for bonds required of Subcontractors by the Contractor.

**3.2.11 Change Order Formats.** Formats for Lump Sum Change Orders and for Change Orders based upon either a force account or upon unit pricing with an indeterminate number of units are in Section 7, Forms.

**3.2.12 Changes due to Subsurface or Other Unforeseen Conditions.**

3.2.12.1 Subsurface Conditions. Unless the Contract Documents stipulate specific quantities and units of rock or unsuitable soils, the Contractor shall assume material below the surface of the Earth to be earth and other material that can be removed by power shovel or similar equipment. Should conditions encountered below the surface of the ground be at variance to the number of unit requirements as indicated by drawings or specifications, and absent an agreed-upon unit price established prior to the bid by Addendum, or after contract execution by Change Order, the Contract Sum and/or time shall be adjusted as provided in the Contract Documents for changes in the work.

3.2.12.2 Other Unforeseen Conditions. If unknown physical conditions are encountered at the Site that differ materially from those indicated in the Contract Documents, then the Contractor shall give notice to the Design Professional promptly before conditions are further disturbed, but in no event later than two business days after the first observance of the conditions. The Design Professional shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost or time required for performance of any part of the Work, the Design Professional may recommend an adjustment by Change Order to the Contract Sum or Contract Time, or both. If the Design Professional determines that the conditions at the Site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall so notify the Owner and the Contractor in writing, stating the reasons. Protest by either party of the Design Professional's decision shall be in accordance with Section 5, Part 2.

**3.2.13 Compensable Rock.** CAUTION: No rock for which extra compensation is expected to be received shall be removed except pursuant to and in conformity with a written authorization or order of the Owner. Unless otherwise provided in the Bid Documents, no removal of rock as defined herein shall be included in the Bid. Shale, rottenstone, or stratified rock that can be loosened with a pick or removed by a hydraulic excavator equivalent to a Caterpillar Model 215, a single engine pan (Caterpillar 621 or equivalent) that is pushed by a crawler tractor (Caterpillar D-8K or equivalent), or similar equipment shall not be classified as rock.

3.2.13.1 Definitions of Compensable Rock. Rock, for the purposes of pricing its removal, is defined as follows:

3.2.13.1.1 Rippable Rock. Rippable rock is defined as any material that can be ripped with a single-tooth hydraulic ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds (Caterpillar D-8K or equivalent) and occupies an original volume of at least one cubic yard.

3.2.13.1.2 Mass Rock. Mass rock is defined as any material that cannot be ripped with a single-tooth hydraulic ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds (Caterpillar D-8K or equivalent) and occupies an original volume of at least one cubic yard.

3.2.13.1.3 Trench Rock. Trench rock is defined as any material that must be removed from a trench that cannot be excavated with a hydraulic excavator having a bucket curling force rated at not less than 18,300 pounds (Caterpillar Model 215 or equivalent) and occupies an original volume of at least one-half cubic yard.

3.2.13.1.4 Caisson Rock. Caisson Rock is defined as material that must be removed from a shaft which cannot be penetrated faster than two feet per hour (fifteen minute minimum) using a rock auger with bullet-shaped hardened steel teeth (Kennametal bits or equivalent), and the drilling equipment should have the capacity to produce a continuous torque of at least 1,000,000 inch pounds and a downward force of at least 50,000 pounds (a Hughes LLDH in good working condition) for piers up to seventy two inches in diameter. Use of equipment with greater torque or downward force modifies the definition of refusal to be the point at which the equipment cannot penetrate faster than two feet per hour (fifteen minute minimum). In rare cases, refusal may occur on a rock seam or boulder above the general massive rock surface. The compensation for Caisson Rock should include only material that cannot be penetrated by the rock auger at the specified rate.

3.2.13.2 Pricing for Compensable Rock. All compensable rock shall be priced by unit prices upon volume prior to removal and shall be calculated by survey and engineering calculations. No rock shall be priced by truckload, bucket load, or other similar pricing methods. Unit prices shall be determined prior to removal, either in the Contract Documents or by Change Order. Unit prices shall be inclusive of all profit and overhead, except for Time Dependent Overhead Costs. Unit prices shall include the following:

- (a) Excavation and removal of all rubble;
- (b) Addition and removal of overburden for blasting;
- (c) Excavation of all blast rubble;
- (d) Replacement of suitable soils in areas of over blasting or over removal; and
- (e) All costs of labor, equipment, supplies, blasting materials, safety requirements, drayage, haulage, and disposal, including offsite disposal costs.

The Contractor expressly agrees that the Contractor's sole monetary remedy for extensions of Contract Time due to removal of rock that materially affects the completion of the Work by lengthening the critical path of the Overall Project Schedule shall be the daily rate established in the Time Dependent Overhead Costs in the Contract. Extensions of Time and compensation for Time Dependent Overhead Costs for compensable rock are to be processed as a Change Order pursuant to Article 3.2.6.

**3.2.14 Subcontractor Claims for Extended General Conditions Costs.** The daily rate for Time Dependent Overhead Costs established in the Contract is intended to compensate the Contractor for the additional jobsite overhead costs resulting from any compensable time extension. The Contractor, in its sole discretion, shall be responsible for allocating the Time Dependent Overhead Costs among its affected subcontractors and itself. Owner's payment of the Time Dependent Overhead Costs to the Contractor, and Contractor's allocation thereof, shall constitute the only monetary compensation the Contractor and subcontractors shall be entitled to receive as reimbursement for Time Dependent Overhead Costs incurred as a result of any compensable delay to the Project.

**3.2.15 Release of Claims.** The execution by the Contractor of a Change Order shall be and operate as a release to the Owner of all claims by the Contractor and of all liability owing to the Contractor for all things done or furnished in connection with the Work described in the Change Order. The execution of any Change Order by the Owner shall not be an acceptance of any Work or materials not in accordance with the Contract Documents, nor shall it relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his surety from any obligation arising under the Contract or the Performance Bond or Payment Bond.

**3.2.16 Sole Source Designation for Change Order Work.**

3.2.16.1 Definition of Sole Source. As used in this Article 3.2.16, "Sole Source" means a Trade Contractor or Supplier or Subcontractor specified by name in a Bulletin as the exclusive source from which conforming goods or services may be obtained. Designation of goods or services by reference to a named source accompanied by the qualification "or equal" or similar language is not a designation of a Sole Source as that term is defined herein.

3.2.16.2 Limitations. This Article 3.2.16 applies only to Bulletins referenced in a proposed Change Order that designates a Sole Source that was not designated in the Bidding Documents. Except as stated in this Article, the Contractor's inability to obtain payment and performance bonds from Sole Source Subcontractors or warranties from Subcontractors, as required under the Bidding Documents for this Contract, shall not otherwise excuse the Contractor from its bonding and warranty obligations under this Contract.

3.2.16.3 Sole Source as Grounds for Rejection of a Change Order. If a Change Order is submitted to Contractor for the purposes of adding a Bulletin to this Contract and said Bulletin designates a Sole Source from which Contractor is required to procure goods or services necessary to perform the Work, which Sole Source has not been designated previously, Contractor shall be entitled to reject the proposed Change Order if the designated Sole Source refuses to provide to Contractor the warranties, bonds, terms or schedule required under the Contract Documents, including any warranty or terms or schedule required by Bulletins referenced in the proposed Change Order. In such event, Contractor shall give written notice to the Owner rejecting the proposed Change Order and, if possible, shall accompany said written notice with a proposal from Contractor for changes or modifications to the Bulletin so as to eliminate the Sole Source designation but to achieve goods or services equal in quality or function. The Owner may then require the Design Professional to revise the subject Bulletin so as to eliminate the designation of the Sole Source by incorporation of Contractor's proposal or otherwise. Upon revision of the Bulletin by the Design Professional and approval thereof by the Owner, the Owner shall again submit to the Contractor a proposed Change Order for the purpose of adding the revised Bulletin to this Contract. If the Owner decides to retain the Sole Source in the Change Order and Contractor cannot acquire the full contractually required warranties from the Sole Source, Contractor shall be held only to the warranty terms and schedule obtainable from the Sole Source.

3.2.16.4 No Excuse Without Notice. If Contractor accepts a proposed Change Order adding a Bulletin to this Contract that designates a Sole Source without invoking this Article and putting the Owner on notice, Contractor shall not be excused from its obligations with respect to the described Work by reason of the refusal of a designated Sole Source to provide warranties as required under this Contract.

## **PART 3 TIME**

**3.3.1 Time is of the Essence.** Time is of the essence of this Contract and all obligations hereunder.

**3.3.2 Competent Management of Time.** The Contractor has represented to the Owner, in order to be awarded this contract, that the Contractor is experienced in managing construction in accordance with contract requirements and in a timely manner and that the Contractor has included in his proposal sufficient sums to carefully and competently manage this project for completion within the stipulated Contract Time.

### **3.3.3 Contract Time**

3.3.3.1 Fair and Reasonable. The Contractor has carefully examined and analyzed the Site, the Contract Documents, and all known factors related to his ability to complete this project within the Contract Time stipulated. By submitting his bid for this project, the Contractor agrees that the stipulated Contract Time is fair and reasonable.

3.3.3.2 Delays. The parties recognize there may be delays to perform Change Order work in the event that conditions encountered at the Site are different from those indicated in the Contract Documents, or to perform Change Order work to correct errors in the plans and specifications. Execution of any change must be authorized. In such event, there shall be an adjustment in the Contract Sum as provided in the Contract Documents for changes in the Work, the parties agree that such delays are not a ground for claiming extraordinary remunerations except as set forth in this Contract in Article 3.3.8 below.

### **3.3.4 Commencement, Prosecution, and Completion**

3.3.4.1 Commencement, Prosecution, and Completion of Work. The Contractor will be required (a) to commence the Work under this Contract on the applicable Proceed Order Date, (b) to prosecute the Work with faithfulness and energy (c) to install the various parts of the work with equal steps shown on the Overall Project Schedule and at the same rate (or better) shown on the Overall Project Schedule and (d) to complete the Work within the



Contract Time, as adjusted. Commencement of the Work shall mean actual physical work on the Site. Unless otherwise agreed, and subject to Change Orders, Material Completion of the Project must be achieved on or before the date established as the Material Completion and Occupancy Date under the Schedule.

3.3.4.2 Contractor's Acceleration for failure to meet Schedule Requirements. In the event the Contractor shall be delinquent in respect to achieving the Milestone dates established in the Overall Project Schedule, Contractor shall, within seven days after receipt of written demand of the Owner, cause its employees and Subcontractors to perform work at an accelerated pace with hours and days in addition to the normal working hours and working days, as necessary to promptly bring the Work into compliance with the Overall Project Schedule. Fulfillment of this requirement as to overtime work shall not relieve the Contractor from liability for breach of the covenant as to time. For account of recovery of lost time required of the Contractor for its breach of covenant as to time, the Contractor shall be entitled to no claim against the Owner for any payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury or damages.

### 3.3.5 Construction Progress Schedule (Overall Project Schedule)

3.3.5.1 Submittal, Approval, and Updates. Not later than sixty days after the Effective Date of the Contract, but prior to the Proceed Order, the Contractor must submit a Construction Progress Schedule in accordance with Section 2.1.5.

3.3.5.2 Approval of Overall Project Schedule. Upon recommendation by the Design Professional and approval by the Owner, the Construction Progress Schedule shall become the Overall Project Schedule, and becomes a part of this Contract. The Overall Project Schedule shall govern the schedule of activities of the Contractor under this Contract.

3.3.5.3 Monthly Updates. The Contractor must provide the Design Professional and the Owner with monthly updates of the Overall Project Schedule indicating completed activities and any changes in sequencing or activity durations. (See also Articles 2.1.2 and 2.1.5).

3.3.6 **Completion Date.** The Work under this Contract shall be completed by midnight of the date required in the Contract as the Material Completion and Occupancy Date unless extended by approved requests for extension of time.

3.3.7 **General Rule – No Damages for Delay, Extension of Time Sole Remedy.** Contractor shall not be entitled to any damages for delay or to any other reimbursement as a Cost of the Work, or to an increase in the contract amount, or to payment, damages, monies, or compensation of any kind from Owner for direct, indirect, impact, or disruption damages (including but not limited to costs of acceleration of Work or any Phase thereof) arising because of delay or other hindrance of any kind whatsoever; except as specifically permitted by Article 3.3.8. Extension of the time is the Contractor's sole remedy for any delays not the fault of the Contractor.

3.3.8 **Exception to General Rule – Compensable Delay.** The extension of the Contract Time and the adjustment to the Contract Sum specifically provided for in this Article shall be Contractor's sole and exclusive remedy for delays, hindrances, interferences or resulting inefficiencies and re-sequencing.

#### 3.3.8.1 Compensable Delay – Unavoidable Delay

3.3.8.1.1 Delay by Owner or Design Professional. If the Contractor is delayed in the progress of the Work between the Proceed Order Date and the Material Completion and Occupancy Date, as amended, by an act or neglect of the Owner, Owner's employees, Design Professional or Separate Contractors employed by the Owner, or by other causes beyond the Contractor's control which the Design Professional determines are the fault of the Owner or the Design Professional and may justify delay, then the Contract Time will be extended by Change Order for such reasonable time as the Design Professional and the Owner may determine; provided, however, that (i) such delays extend the Overall Project Schedule's critical path; (ii) the Contractor has taken all reasonable actions to mitigate the effects of the delay on the Work; (iii) the fault or negligence of the Contractor, the Contractor's agents or employees did not materially contribute to such causes; and (iv) the Contractor shall have notified Owner of the cause or causes of such delay within fourteen days from the date on which the Contractor first becomes aware of such delay.

3.3.8.1.2 Delay in Responses to Submittals. Any claim by Contractor for a change in the Material Completion and Occupancy Date due to delay of responses to submittals may be made during the time while the failure of the Design Professional to act or perform continues, or within seven days after such failure to act or perform has been cured. If no Submittal Schedule or agreement as required in Paragraph 2.2.3.1 is agreed upon, then a claim for delay will be allowed only after the Design Professional has been allowed fourteen days to take action. Any claim for extension of time must be reasonable and take into consideration the nature of the submittal.

3.3.8.1.3 To be Processed as a Part of the Change Order Process. Extensions of Time and compensation for Time Dependent Overhead Costs for Unavoidable Delay are to be processed as a Change Order pursuant to Article 3.2.6.

### 3.3.8.2 Compensable Delay – Certain Change Orders

3.3.8.2.1 Owner-Requested Changes. If the Owner requests changes in the Contract Documents that would materially affect the completion of the Work by lengthening the critical path of the Overall Project Schedule, the Design Professional shall determine the appropriate number of days and thereby extend the Material Completion and Occupancy Date. The Contractor expressly agrees that the Contractor's sole monetary remedy for such extensions of Contract Time shall be calculated at the daily rate established for Time Dependent Overhead Costs in the Contract.

3.3.8.2.2 Other Change Orders. For Change Orders involving the following situations that would materially affect the completion of the Work by lengthening the critical path of the Construction Progress Schedule, the Design Professional shall determine the appropriate number of days and thereby extend the Material Completion and Occupancy Date. The Contractor expressly agrees that the Contractor's sole monetary remedy for such extensions of Contract Time shall be calculated at the daily rate established for Time Dependent Overhead Costs in the Contract.

- (a) Changes due to Subsurface or Other Unforeseen Conditions, Article 3.2.12.
- (b) Changes for Compensable Rock, Article 3.2.13.
- (c) Changes deleting work, Paragraph 3.2.10.4

3.3.8.2.3 To be Processed as a Part of the Change Order Process. Extensions of Time and compensation for Time Dependent Overhead Costs for all Change Orders are to be processed as a part of each Change Order pursuant to Article 3.2.6.

3.3.8.3 Compensable Delay – Force Majeure. If, between the Proceed Order Date and the Material Completion and Occupancy Date, as amended, the CM/GC is unable to perform or is delayed in the performance of any of the terms and provisions of this Contract, that materially affects the completion of the Work by lengthening the critical path of the Construction Progress Schedule, as a result of (i) governmental preemption of materials in connection with a national emergency declared by the President of the United States; (ii) riot, insurrection, acts of terror or terrorism or other civil disorder affecting performance of the Work; (iii) labor strikes that could not be reasonably anticipated, or (iv) earthquakes, or unusual and extreme weather conditions constituting Acts of God, then, and in any such event, such inability or delay shall be excused, and the time for completing the affected portions of the Project (and the entire Project, if applicable) shall be extended for such reasonable period of time as the delay has affected the critical path of the performance of the Work hereunder.

3.3.8.3.1 Mitigation of Delay. Contractor shall take all reasonable actions to minimize the delay caused by any of the above factors, and shall notify Owner in writing with a copy to the Design Professional of any event allowing for excuse or delay not later than seven days after the Contractor first becomes aware of the event, or should have become aware, of the event; otherwise Contractor will be deemed to have waived the excuse or delay.

3.3.8.3.2 To be Processed as a Part of the Change Order Process. Extensions of Time and compensation for Time Dependent Overhead Costs for Force Majeure are to be processed as a Change Order pursuant to Article 3.2.6.

3.3.8.4 Compensable Delay – Abnormal Weather. Extensions of time will be granted for abnormal inclement weather conditions that delay the critical path of the progress of the work.

3.3.8.4.1 Abnormal weather delay is defined as days lost to weather conditions either (i) in excess of days specified in the Supplementary General Conditions, or (ii) if not defined in the Supplementary General Conditions, as days in excess of a local historic average prevailing at the Site recorded by the National Oceanic and Atmospheric Administration (NOAA) for the 120 months immediately preceding the Proceed Order Date.

3.3.8.4.2 Not later than ten days after of the first occurrence of the event giving rise to the claim or with respect to claims for extension of time as a result of abnormal weather, and not later than ten days after the end of each calendar month thereafter, the Contractor shall file a claim with the Design Professional with a copy to the Owner. By not later than fifteen days from the receipt of the claim, the Design Professional shall render a decision concerning the allowance of an extension of time and shall report his decision to both the Contractor and the Owner.

3.3.8.4.3 Extensions of Time and compensation for Time Dependent Overhead Costs for Abnormal Weather are to be processed as a Change Order pursuant to Article 3.2.6.

3.5.8.5 Protest. The Design Professional's decision as to abnormal weather delay shall be subject to protest by either the Contractor or the Owner as set forth in Section 5, Part 2.

**3.3.9 Non-Compensable Delay.** Contractor understands, acknowledges and agrees that delays occasioned by the events and occurrences set forth below are not compensable delays and do not constitute reason for extending the Date for Material Completion and Occupancy. It is Contractor's responsibility to make adequate provision for the following in scheduling the Work:

3.3.9.1 Normal Weather Conditions. Weather conditions other than those that substantially vary from the normal climatology conditions that prevailed at the Site for the preceding 120 months, as evidenced by data published by the National Oceanic and Atmospheric Administration.

3.3.9.2 Delay in Delivery of Materials or Equipment. Delay in delivery of materials or equipment for any cause other than those specified in Paragraph 3.3.8.3. No claim will be approved if materials or equipment are delayed due to Contractor's tardy procurement or expediting.

3.3.9.3 All Other Delay. All delay not covered in Article 3.3.8.

**3.3.10 Submission of Claims for Compensable Delay and to Extend the Material Completion and Occupancy Date.**

3.3.10.1 Time for Submission. Except as specified below, any claim by Contractor for a change in the Contract Time or the Material Completion and Occupancy Date shall be made within fourteen days of the day on which the Contractor becomes aware of the event on which the claim is based or, if the Contract Documents specify a shorter or longer period with respect to such event, within the period specified by the Contract Documents.

3.3.10.2 Delay Claim Must Be in Writing. Any claim to extend the Contract Time and Material Completion and Occupancy Date must be in writing, must set forth in detail the basis for the claim and the number of days of delay claimed, must be correlated with the approved Overall Project Schedule, must be executed by the Contractor and delivered to the Design Professional and the Owner, and must be reviewed and an appropriate time assessed by the Design Professional.

3.3.10.3 When Delay Claim Deemed Waived. Any claim to extend the Contract Time and Material Completion and Occupancy Date not made in writing to Owner within the above time periods shall be deemed waived and shall not thereafter be valid. In the case of a continuing delay as a result of a single event, only one claim submission is necessary.

3.3.10.4 Design Professional to Decide. The Contract Time and the Material Completion and Occupancy Date may be extended for such reasonable time as the Design Professional may decide, and the Overall Project Schedule shall then be updated.

3.3.10.5 Payment for Extensions of Contract Time. The Contractor expressly agrees that the Contractor's sole monetary remedy for Compensable Delay shall be calculated at the daily rate established for the Time Dependent Overhead Costs in the Contract.

3.3.10.6 Claims Related to Extraordinary Time Dependent Overhead Cost. In situations where Time Dependent Overhead Costs are authorized, and the cost incurred exceeds 170% of the established Time Dependent Overhead Cost daily rate, then the Contractor may submit a claim under this article for consideration of such extraordinary additional cost.

### 3.3.11 **Recovery of Schedule Delays**

3.3.11.1 Recovery of Schedule Delays. If the Design Professional determines that the Project is one week or more behind schedule, per the approved Overall Project Schedule, the Design Professional shall so notify the Contractor in writing. Within seven days of the date of the Design Professional's notice, the Contractor shall deliver to the Design Professional and Owner a written plan explaining how the Contractor intends to bring the Project back on schedule. The Contractor's plan must provide sufficient detail to allow the Design Professional and Owner to determine the proposal's feasibility.

3.3.11.2 Recovery of Schedule Delays During Last Sixty Days of Contract Time. At any time during the last sixty days of the Contract Time that the Design Professional finds that the Contractor is behind schedule per the Contract Time, as amended, the Design Professional shall notify the Contractor in writing. Within seven days of the date of the Design Professional's notice, the Contractor shall prepare and deliver to the Design Professional and Owner a written plan explaining how the Contractor intends to bring the Project back on schedule. The Contractor's plan must provide sufficient detail to allow the Design Professional and Owner to determine the proposal's feasibility.

## PART 4 **CORRECTING THE WORK, INSPECTIONS, COVERING AND UNCOVERING WORK**

### 3.4.1 **Correcting the Work**

3.4.1.1 Notice of Non-Compliant Work. A Notice of Non-Compliant Work shall be in writing, shall be dated, shall be signed by the Design Professional, shall be addressed to the Contractor with a copy to the Owner, and shall contain three elements as follows:

- 3.4.1.1.1 Description of Work:
  - (a) That has been omitted or
  - (b) That is unexecuted as of the date of the Notice of Non-Compliant Work, the time for its incorporation into the work as planned in the Overall Project Schedule having expired, or
  - (c) That has not been executed in accordance with the methods and materials designated in the Contract Documents.
- 3.4.1.1.2 Contract References: Citation of the provision or provisions of the Contract Documents which specify the Work to be executed.
- 3.4.1.1.3 Time for Compliance: Fixing of a reasonable space of time within which the Contractor shall have made good the deficiency (which said space of time shall not be deemed to be an extension of Contract Time) for filing the Notice of Readiness for Inspection for Material Completion pursuant to Article 6.3.2 nor shall it be deemed to be authorization for amendment to the Overall Project Schedule.

3.4.1.2 Failure to Supply Workmen or Materials or to Prosecute the Work. A Notice of Non-Compliant Work may be issued for failure of the Contractor to supply enough workers or enough materials or proper materials to prosecute the Work. A Notice of Non-Compliant Work in such event may be based on Article 3.3.2 (Competent Management of Time), and upon the definition of Work as set forth under Paragraph 1.1.9.58.

3.4.1.3 Removal and Making Good of Non-Compliant Work. The Contractor shall remove from the Site within the space of time designated in Notice of Non-Compliant Work all work determined by the Design Professional as failing to conform to the contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed by such removal or replacement. The Contractor shall supply any omitted work and perform all unexecuted work within the space of time fixed by the Design Professional in Notices of Non-Compliant Work.

3.4.1.4 Remedy of the Owner for Breach of Notice of Non-Compliant Work.

**3.4.1.4.1 Failure to Make Good a Deficiency.** If the Contractor does not make good a deficiency within a reasonable space of time fixed in a Notice of Non-Compliant Work, the Owner may do any of the following:

- (a) Remove the Non-Compliant Work and store it at the expense of the Contractor. If the Contractor does not pay the expenses of such removal and storing within ten days after receipt of written demand of the Owner, the Owner may upon three days' notice in writing to the Contractor sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner.
- (b) Supply omitted work, perform unexecuted work, or replace and re-execute work not done in accordance with the methods and materials designated in the Contract Documents, and deduct the cost thereof from any payment then or thereafter due the Contractor. The Design Professional shall approve the amount charged to the Contractor.

**3.4.1.4.2 Other Remedies.** The remedies stated in this article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies. Time limits stated in Notices of Non-Compliant Work are of the essence of the contract. Unless otherwise agreed to by the Owner in writing, the making good of Non-Compliant work shall physically commence at the Site in not more than seven days after receipt of the Notice of Non-Compliant Work, except that in case of emergency correction shall physically commence at the Site at once, and except that the Contractor shall in any event physically commence the correction at the Site early enough to complete within the space of time allowed in the Notice of Non-Compliant Work. The Owner shall give prompt consideration to reasonable requests for delay in commencement of the making good of Notices of Non-Compliant Work. The making good of Non-Compliant work shall be completed within the space of time allowed in the Notice of Non-Compliant Work unless the Contractor shall have requested from the Design Professional an increase in the amount of time allowed and the Design Professional shall have given notice to the Contractor in writing, with copy to the Owner, stating the additional amount of time, if any, allowed.

**3.4.1.5 Notice of Correction from Contractor.** The Contractor shall give prompt notice in writing to the Design Professional, with copy to the Owner, upon completion of the correction of the Non-Compliant work. In the absence of such notice, it shall be and is presumed under this Contract that there has been no correction, supplying remedy, or performance of unexecuted work.

**3.4.1.6 The Owner's Right to Correct Work.** If the Contractor should neglect to prosecute the Work properly or fail to correct Non-Compliant Work or fail to perform any provision of this Contract, the Owner, after three days' written notice to the Contractor, may without prejudice to any other remedy he may have (including without limitation remedies against the Contractor's surety), make good the deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

## **3.4.2 Inspections**

**3.4.2.1 Access to Work.** The Design Professional, the Owner, and their representatives shall have access at all times to the work wherever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

**3.4.2.2 Notice of Readiness for Inspection to Design Professional from Contractor Prior to Covering Work.** If the specifications, the Design Professional's instructions (either in the specifications or issued later in writing), laws, ordinances or any public authority require any work to be specially tested or approved, the Contractor shall give the Design Professional timely notice in writing of its readiness for inspection. If the inspection is by any authority other than the Design Professional, the Contractor shall give timely notice of the date fixed for such inspection. Inspections by the Design Professional shall be made promptly and, where practicable, at the source of supply.

### **3.4.2.3 Fire Marshal Inspections.**

**3.4.2.3.1 General.** The State Fire Marshal may make inspections at any time. It shall be the responsibility of the Contractor to request an inspection at eighty percent completion and at 100% completion and to give notice when all items on the 100% inspection report have been completed. Requests shall be in writing with a copy to the Owner and Design Professional.

**3.4.2.3.2 Inspections Defined.** The basic definitions for eighty percent and 100% inspections are as follows:

- (a) Eighty Percent Inspection: The structural components are in place and open for review of the fire safety components. NOTE: Structural components include the following: fire walls, vertical shafts, stairways, smoke stops, hazardous area separation, roof and ceiling assemblies, corridor and door width, and HVAC system.
- (b) 100% Inspection: The Contractor has completed all of the items on the eighty percent inspection report and has the certificate of occupancy in hand.

3.4.2.4 False Start. In the event the Contractor shall have issued notice of readiness prematurely, his action shall be deemed to be a "false start." The Contractor shall be liable for the damage resulting from the aforesaid false start, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

3.4.2.5 Certificate of Occupancy. The Contractor's obligation under the Contract is to install the Work in accordance with the Contract Documents, obtain the Certificate of Occupancy from the State Fire Marshal or his deputy, and forward it to the Design Professional as a part of the final close out procedures. The Design Professional's obligation is to design the Work to comply with the applicable codes and to qualify for a Certificate of Occupancy.

### **3.4.3 Covering and Uncovering Work**

3.4.3.1 Re-examination or Re-testing of Work Covered Pursuant to Consent of Design Professional. Re-examination or re-testing of questioned Work previously covered pursuant to consent of the Design Professional may be ordered by the Design Professional. If so ordered the Work must be uncovered by the Contractor. The Owner shall pay the cost of re-examination and replacement or of re-testing if such Work is found in accordance with the Contract Documents. The Contractor shall pay such cost if such Work is found not in accordance with the Contract Documents unless the Contractor can show that a Separate Contractor caused the defect in the Work. In that event, the Owner shall pay such cost. Re-examination or re-testing under the terms of this Paragraph applies only to Work that has been covered with consent of the Design Professional. Work covered without consent of the Design Professional must be uncovered for examination as provided below.

3.4.3.2 Re-examination or Re-testing of Work Covered Without Consent of Design Professional. If any Work should be covered without approval or consent of the Design Professional or contrary to any provision of the Contract Documents, such Work must be uncovered for examination by the Design Professional at the Contractor's expense. The Contractor shall be liable for the costs resulting from the aforesaid uncovering, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced thereby.

**3.4.4 Inspection Does Not Relieve Contractor**. Under the Contract Documents, the Contractor acknowledges that it has the responsibility for furnishing all services, labor, supplies, and materials for the entire Work in accordance with such documents. No provisions of this article nor any inspection of the Work by the Owner, representatives of the Owner, the Using Agency, Contract Compliance Specialist, clerk-of-the-works, engineers employed by the Design Professional, representatives of the Design Professional, or the Design Professional shall in any way diminish, relieve, or alter said responsibility and undertaking of the Contractor. Neither shall the omission of any of the foregoing to discover or to bring to the attention of the Contractor the existence of any Work or materials injured or done not in accordance with said Contract Documents in any way diminish, relieve, or alter such obligation of the Contractor nor shall the aforesaid omission diminish or alter the rights or remedies of the Owner as set forth in the Contract Documents. The Contract Compliance Specialist has no power to make decisions, to accept or reject work, or to consent to the covering of Work. The Contract Compliance Specialist owes no duty to the Contractor.

## **PART 5 SUBCONTRACTORS, TRADE CONTRACTORS, AND SUPPLIERS**

### **3.5.1 Subcontractors, Trade Contractors, and Suppliers**

3.5.1.1 Submission of List. Within fourteen days of the Effective Date of the Contract, the Contractor shall submit in writing to the Design Professional a list of the names of Subcontractors that the Contractor intends to employ on the Work. The list of Subcontractors is not submitted for approval but is for the purpose of establishing the following:

3.5.1.1.1 What trades and portions of the work are to be performed under subcontract, and,

3.5.1.1.2 The names of the parties selected by the Contractor to perform work by subcontract, the aforesaid selection being a matter lying solely within the discretion of the Contractor.

3.5.1.1.3 The Contractor shall identify each minority owned and each female owned Trade Contractor and Subcontractor or Supplier performing work on or supplying material to the project.

3.5.1.1.4 By not later than the tenth day of the month following the end of each quarter the Contractor shall submit to the owner a list of all minority and female owned Subcontractors, Trade Contractors, or Supplier performing work on or supplying material to the Project and the amount paid to each for that quarter.

3.5.1.2 No Approval of Subcontractors, Trade Contractors, and Suppliers. Neither the Owner nor the Design Professional undertakes to pass upon or approve any Subcontractor, Trade Contractor, or supplier.

**3.5.2 Representation of Contractor.** The Contractor represents that the Subcontractors, Suppliers, and Trade Contractors selected by it are reputable, skilled, reliable, competent, qualified in the trade or field in which they are to perform on the Project, and thoroughly familiar with the codes and laws applicable to their work.

**3.5.3 Contractor Responsible for Acts and Omissions.** The Contractor agrees that he is as fully responsible for the acts and omissions of his Subcontractors, Trade Contractors, Suppliers, and employees, and further of all persons directly or indirectly employed by them, as the Contractor is for the acts and omissions of employees and persons directly employed by the Contractor. The failure of a Subcontractor, Trade Contractor, supplier, or employee to perform shall not be asserted by the Contractor as an excuse for any omission from or noncompliance with requirements of the Contract Documents; nor shall the Contractor be entitled to an extension of time solely because of failure of a Subcontractor, Trade Contractor, supplier, or employee to perform. The subcontracting of work does not relieve the Contractor of the responsibility for the execution of the work and for compliance with all requirements of the Contract Documents. The Contractor shall not assert negligence, inefficiency, insolvency, bankruptcy, or incompetence of any Subcontractor, Trade Contractor, supplier, or employee as excuse for the existence of any noncompliance with or omission to fulfill any obligation under the Contract either as to timely performance or as to compliance with methods and materials designated in the Contract Documents; nor shall the Contractor assert nonperformance of a Subcontractor, Trade Contractor, supplier, or employee as excuse for the existence of any noncompliance with or omission to fulfill any obligation under the Contract. As to Subcontractor, Trade Contractor, supplier, and employees of the Contractor, the doctrine that a principal is liable for the acts and omissions of his agent shall be binding on the Contractor in his relationship to the Owner, and the Contractor may not reverse the aforesaid doctrine by contract or legal mechanism.

**3.5.4 No Contract between Owner and Any Subcontractor, Trade Contractor, Supplier, or Employee.** Nothing contained in the Contract Documents shall create any contractual relation between the Owner and any Subcontractor, Trade Contractor, Supplier, or employee of the Contractor or its Subcontractors.

**3.5.5 Relationship of Contractor with Subcontractors, Trade Contractors, and Suppliers.**

3.5.5.1 Obligations of Each. The Contractor agrees to bind every Subcontractor, Trade Contractor, Supplier (hereinafter collectively referred to as "Subordinate Contractor") to the terms of the Contract Documents insofar as they are applicable to its work, including the following provisions of this Article:

3.5.5.1.1 The Contractor Agrees:

- (a) To be bound to the Subordinate Contractor by all the obligations that the Owner owes to the Contractor under the Contract Documents.
- (b) To pay the Subordinate Contractor upon the payment of certificates issued under the schedule of values described in the General Conditions the amount allowed to the Contractor on account of the Subordinate Contractor's work to the extent of the Subordinate Contractor's interest therein within seven days of receipt of payment from the Owner; provided, however, that retainage shall be released to the Subordinate Contractor as provided by law and in accordance with the statutory affidavit set forth in Section 7, Forms.
- (c) To pay the Subordinate Contractor upon the payment of certificates issued otherwise than the schedule of values such manner that at all times the Subordinate Contractor's total payments shall be as large in proportion to the value of the work done by the Subordinate Contractor as the total amount certified and paid to the Contractor is to the value of the work done by the Subordinate Contractor.
- (d) To pay the Subordinate Contractor a just share of any property insurance money received by the Contractor and due to Subordinate Contractor for work performed by Subordinate and paid for by insurance.

- (e) That no claim for services rendered or materials supplied or other matters by the Contractor against the Subordinate Contractor shall be valid unless written notice thereof is given by the Contractor to the Subordinate Contractor prior to or during the first ten days of the calendar month following that in which the Contractor determines that the claim is chargeable against that Subordinate Contractor.
- (f) To give the Subordinate Contractor, upon its request, an opportunity to be present with Contractor and to submit evidence in any dispute involving rights of the Subordinate Contractor.

3.5.5.1.2 The Contractor Agrees to require its Subcontractors to do the following:

- (a) To be bound to the Contractor by the terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities that the Contractor by the aforesaid documents assumes toward the Owner.
- (b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under these General Conditions.
- (c) To make all claims for extras, for extensions of time or for damages to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner, except that the time for making such claims to the Contractor is within ten days after the initial event leading to the claim.
- (d) To pay their Subordinate Contractors upon the payment of certificates issued under the schedule of values described in the General Conditions the amount allowed on account of such Subordinate Contractor's work to the extent of such Subordinate Contractor's interest therein within seven days of its receipt of payment; provided, however, that retainage shall be released as provided by law and in accordance with the statutory affidavit set forth in Section 7, Forms.
- (e) To pay their Subordinate Contractors upon Subcontractor's receipt of payment such that at all times their Subordinate Contractors' aggregate payments shall be in proportion to the Work performed by each of the Subordinate Contractors.

3.5.5.2 Owner Not Obligated to Any Subcontractor, Subordinate Contractor, Trade Contractor, or Supplier. There is no obligation on the part of the Owner to pay to or to see to the payment of any sums to any Subcontractor, Subordinate Contractor, Trade Contractor, Supplier, laborer, employee, or person supplying labor, materials, machinery or equipment to the Project.

3.5.5.3 Term "Substantial Completion" Deleted. The term "substantial completion," if found, is hereby deleted and is of no force in all Subcontracts, Trade Contracts, and in the Trade Sections of the Contract Documents. In certain contexts, the term may be superseded by the term "Material Completion" as defined in this Contract.

3.5.5.4 Failure to Incorporate Terms in Subcontracts. The Contractor agrees that failure on his part to incorporate this Article 3.5.5 in all Subcontracts, Trade Contracts, or Supplier contracts, is a material breach of an essential covenant of this Contract, and further agrees that in the event of such breach the Contractor shall, within five days after demand of the Owner, furnish proof in writing that the deficiency has been remedied to the end that (1) the Contractor may not maintain that it is beyond his competence to require performance of terms of the contract by a subcontractor and (2) no subcontractor may maintain that he has not assumed toward the Contractor all the obligations and responsibilities that the Contractor has assumed toward the Owner. Failure on the part of the Contractor to effect remedy as above within five days after receipt of written demand of the Owner shall be grounds for issuance of a declaration of default by the Owner.

## SECTION 4 – COMPENSATION

### PART 1 GENERAL

**4.1.1 Payments.** The Owner will make progress payments to the Contractor in accordance with Section 4 of the General Conditions. Final Payment will be made in accordance with Section 6 of the General Conditions. The date and amount of payment are subject to Section 4, Part 2. Sums retained by the Owner remain the property of the Owner until such time as the Contractor shall have become entitled to receive such payment pursuant to Section 6 of the General Conditions by furnishing the remainder of the Work and services required by the Contract Documents.



## 4.1.2 Application for Payments

4.1.2.1 Form of Application. The Contractor shall periodically submit to the Design Professional an Application for Payment on the form set forth in Section 7 (sometimes called a "Periodical Estimate") for each payment requested, and, if requested by the Owner or Design Professional, shall attach backup materials including, but not limited to, receipts or other vouchers, showing his payments for materials and labor, including payments previously made to Subcontractors.

4.1.2.2 Initial Breakdown and Periodical Payments. Each Application for Payment shall be submitted at least ten days before each payment falls due, and the Contractor shall, before the first application, shall submit to the Design Professional a Schedule of Values of the various parts of the work, including quantities, aggregating the total sum of the Contract, divided in the same manner set forth in the Application for Payment Form set forth in Section 7 showing the Contractor's right to the payment claimed and so arranged and so itemized as to meet the approval of the Design Professional and, further, if requested, supported by such evidence as to its correctness as the Design Professional may direct.

4.1.2.3 Materials Stored. If the Application for Payment includes materials delivered and suitably stored at the Site but not incorporated in the work, they shall, if required by the Owner or the Design Professional, be conditional upon submission by the Contractor of bills of sale or such other procedure as will establish the Owner's title to such material or otherwise adequately protect the Owner's interest. The Contractor is responsible for the existence, protection, and, if necessary, replacement of materials until execution of the Final Certificate of the Design Professional. The Owner shall not pay for any materials stored off-site.

4.1.2.4 Retainage. Retainage shall be withheld from each periodic payment to the Contractor in the amount of five percent of the sum of the total amount earned for work-in-place (original Contract), total amount earned for work-in-place (Change Orders), and Value of Materials stored at the Site.

4.1.2.5 Subcontractor's Retainage Release. At the discretion of the Owner and request by Contractor, an amount equal to the subcontract retainage of a Subcontractor may be separately released from the retainage held by the Owner as he completes his work. An application in accordance with the Owner's specimen (See Section 7, Forms) for release of a Subcontractor's retainage shall contain a release of all claims by the Subcontractor and shall bear the original certificates of the Subcontractor, the Contractor, and the Design Professional that the Subcontractor's work has been fully performed and that the sum for which payment is requested is due by the Contractor to the Subcontractor. Checks releasing a Subcontractor's retainage shall be made payable to the Contractor, the Contractor's surety, and the Subcontractor and shall be mailed to the Contractor's surety. This article does not create any contractual relationship between the Owner and the Subcontractor or any duty of the Owner to any Subcontractor.

4.1.2.6 Accounting Format. Applications for Payment shall be broken down by CSI Category and, in certain situations, by CSI Description and capital asset category, as set forth in the form for Application for Payment. The purpose is to provide appropriate backup documents for the Contractor's Final Certification of Costs in conformance with GASB 34 accounting standards. See Section 7 – Forms, "Application for Payment" and Final Certification of Costs.

**4.1.3 Processing of Application for Payment (Periodical Estimates).** The Contract Compliance Specialist (CCS) will review the Application for Payment prepared and executed by the Contractor and, if he concurs, execute a certificate on the face of the Application for Payment as to its accuracy. The Design Professional shall visit the Site after the Contractor and CCS have agreed on the Application for Payment and conduct such inspections and reviews as are necessary to make a decision as to the accuracy of the Application for Payment. If the CCS and the Contractor cannot agree on the appropriateness of the Application for Payment in question, the Design Professional shall make a decision. Upon determining the appropriateness of the Application, the Design Professional shall execute the certificate on the Application for Payment and forward it to the Owner for payment. Not later than seven days after receipt of the Application for Payment, the Design Professional shall issue its certificate for such amount as it decides to be properly due or state in writing its reasons for withholding any sums in its certificate.

**4.1.4 Effect of Design Professional's Certificate on an Application for Payment.** No certificate issued by the Design Professional, nor payment made to the Contractor by the Owner, or partial or entire use or occupancy of the Work by the Owner shall be an acceptance of any work or materials not in accordance with the Contract Documents.

**4.1.5 Payment Due.** Payment of an Application for Payment shall be due ten days after receipt by the Owner of the certification of the Application for Payment by the Design Professional.



**4.1.6 Payment Due Dates and Interest.** Should the Owner fail to pay a proper invoice within thirty calendar days of receipt, the Contractor shall notify the Owner in writing by certified or statutory mail. If the Owner fails to pay within five business days of receipt of the notice, the Contractor shall receive, in addition the sum named in the proper invoice, interest thereon at the rate of one-half percent per month on the unpaid balance as may be due.

**4.1.7 Payments for Change Order Work.** Payments will not be made for any changes in the Work until a Change Order has been executed.

## **PART 2 PAYMENTS WITHHELD**

### **4.2.1 Payments Withheld**

**4.2.1.1 Payments Withheld or Nullified.** The Design Professional or the Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss because of the following conditions:

- (a) Defective work not remedied.
- (b) Claims or liens filed.
- (c) Failure of the Contractor to make payments properly to Subcontractor or Supplier for materials or labor.
- (d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (e) Damage to a Separate Contractor or to the Owner or a third party.
- (f) Failure to maintain a rate of progress consistent with the Milestones.
- (g) Failure to supply enough skilled workers or proper materials.
- (h) Court-ordered retention.
- (i) State Tax Forms not on file.
- (j) Breach of this Contract.

**4.2.1.2 Withheld Payments Restored.** When the conditions above are remedied, payment shall be made for amounts withheld because of them.

## **PART 3 LIENS**

**4.3.1 Public Property Not Subject to Lien.** The Contractor acknowledges that, pursuant to law, the Site is public property of the State of Georgia and is not subject to lien or levy. The Contractor will notify the Owner of any liens or levies against the Site of which it becomes aware. The Contractor shall cooperate with the Owner and shall use its best efforts to assist in securing the release of any liens or levies of which it becomes aware.

**4.3.2 Notice of Commencement.** A Notice of Commencement shall be filed by the Contractor with the Clerk of the Superior Court in the county in which the Project is located, pursuant to O.C.G.A. §13-10-62.

**4.3.3 Release of Liens.** Neither any part of the retainage nor the Final Payment shall become due until the Contractor, if required, shall deliver to the Owner a complete release of all liens or conditional release of lien upon payment or claims arising out of this contract in accordance with the Owner's specimen form (a copy of which will be provided to any bidder on request), or receipts in full in place thereof and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all labor and materials for which a lien or claim could be filed; but the Contractor may, if any Subcontractor or claimant refuses to provide a release, furnish a bond satisfactory to the Owner to indemnify the Owner against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien or claim, including all costs and reasonable attorney's fees.

## **SECTION 5 – CONTRACT ADJUSTMENTS, DISPUTES, AND TERMINATION**

### **PART 1 OWNER'S RIGHT TO SUSPEND OR STOP WORK**

**5.1.1 Owner's Right to Suspend Work.** The Owner reserves the right, with or without the concurrence of the Design Professional, to suspend the Work at any time or from time to time at the Owner's sole discretion, upon giving Contractor five days advanced written notice thereof. If the Owner exercises this right and then resumes the Work covered hereby, Contractor shall be entitled upon timely claim to a Change Order for payment by Owner of any reasonable Actual Costs actually incurred by Contractor in connection with the suspension and resumption of the Work, as well as an extension in



the time for performance of the Work to the extent Contractor is delayed by Owner's suspension, to include compensation based upon the rate for Time Dependent Overhead Costs. The Design Professional shall determine the time, which shall be binding upon both Owner and Contractor, as set forth in Section 3, Part 3.

**5.1.2 Owner's Right to Stop Work.** The Owner reserves the right, for itself and for any designated Construction Inspector retained by Owner, upon observation of apparent nonconforming Work, to immediately stop the affected Work. If the Work is later determined by the Design Professional to be in fact conforming Work, then Contractor shall be entitled upon timely claim to a Change Order for payment by Owner of any reasonable Actual Costs actually incurred by Contractor in connection with the stop Work order and resumption of the Work, as well as an extension in the time for performance of the Work to the extent Contractor is delayed by Owner's stop Work order. The Design Professional shall determine the time, which shall be binding upon both Owner and Contractor, as set forth in Section 3, Part 3.

**5.1.3 Owner's Rights Independent from Rights and Duty of the Design Professional.** The rights granted to Owner under this Article are independent of the duty and obligation of the Design Professional to stop the Work for non-compliant work or to issue Notices of Non-Compliant Work.

## **PART 2 CONTRACT ADJUSTMENTS AND DISPUTES**

### **5.2.1 General Provisions**

5.2.1.1 No Arbitration. There is no agreement to arbitrate any dispute arising under the Contract Documents. Any and all references to arbitration in any of the Contract Documents, including without limitation any exhibits, attachments or references, are hereby deleted and rendered null and void.

5.2.1.2 Continuation of the Work. Unless otherwise agreed in writing, and notwithstanding any other rights or obligations of either of the parties under any Contract Documents or Contracts, the Contractor must carry on with the performance of its contract services and the Work, including all duties and obligations hereunder, during the pendency of any Claim, dispute, and other matter in question or during any alternative dispute resolution proceeding, court proceeding, or other proceeding to resolve any Claim, dispute, and other matter in question, and the Owner will continue to make payments in accordance with the Contract Documents. The Owner, however, is under no obligation to make payments on or against such Claims, disputes, and other matters in question during the time required to resolve such Claims, disputes, and other matters in question.

### **5.2.2 General Claims for Contract Adjustments and Disputes**

5.2.2.1 General Claims of the Contractor. Should the Contractor suffer any injury or damage to person or property that Contractor reasonably believes a legal basis exists for liability on the part of the Owner, Program manager, or Design Professional, and that should result in an adjustment in the Cost of the Work or the Contract Time, such claim shall be made in writing in the form of a Request for Change Order to the Design Professional and copy the owner within fourteen days after such injury or damage is or has been observed. Any and all claims not made within said fourteen days are barred, waived, released, and discharged. The decision of the Design Professional is final and binding on the Contractor unless the Contractor protests the decision of the Design Professional and files a Statement of General Claim as set forth below.

5.2.2.2 Processing of General Claims. All claims must be filed and processed as a request for Change Order and subject to the processes and limitations set forth in Section 3 Part 2. If the requested Change Order is rejected, a protest may be made as set forth in Paragraph 5.2.2.3 below.

5.2.2.3 Protest; Statement of General Claim; Time of Submission. No protest of a claim decision of the Design Professional by the Contractor, whether said claim shall be accrued or prospective, shall be valid unless a "Statement of Claim" in writing and accompanied by vouchers and other supporting data shall have been filed with the Owner's Representative, or if there is no Owner's Representative, with the Owner by the Contractor not later than thirty days after the Design Professional's decision to reject the claim, time being of the essence. The "Statement of Claim" shall contain a concise and clear recital of the grounds and the legal basis upon which the claim is asserted, including a designation of the applicable provisions of the Contract Documents. The Statement of Claim shall indicate the dollar amount of the claim and the number of days of adjustment of the Contract Time. The Owner and Contractor shall endeavor to resolve the dispute in accordance with Article 5.2.3 below.

5.2.2.4 Claims by Subcontractors. No claim or protest shall be made by the Contractor solely on the ground that a Subcontractor, Supplier, or Trade Contractor has made a claim or protest against the Contractor. The Contractor must maintain its claim or protest against the Owner based upon the provisions of the Contract



Documents and independent of any right the Subcontractor, Supplier, or Trade Contractor has against the Contractor. The Contractor shall defend the Owner from any claims or protests submitted by a Subcontractor, Supplier, or Trade Contractor asserted in violation of, or contrary to any provision of the Contract Documents.

### **5.2.3 Dispute Resolution**

5.2.3.1 Initial Dispute Resolution. If a dispute arises out of or relates to this Contract or its breach, the parties shall endeavor to settle the dispute first through direct discussions between the parties' representatives who have the authority to settle the dispute. If the parties' representatives are not able to promptly settle the dispute, they shall refer the dispute to the senior administrators of the parties who have the authority to settle the dispute, who shall meet within fourteen days thereafter. If the dispute is not settled by the senior administrators, the parties may submit the dispute to mediation in accordance with Paragraph 5.2.3.2.

5.2.3.2 Mediation. If the dispute cannot be settled pursuant to Paragraph 5.2.3.1, the parties may elect to submit the dispute to mediation. The parties agree to conclude such mediation within sixty days of electing mediation. The parties shall select a mutually agreeable mediator and shall share the cost of the mediator equally. Either party may terminate the mediation at any time after the first session, but the decision to terminate shall be communicated directly by the party's representative to the other party's representative and the mediator.

5.2.3.3 Multiparty Proceeding. All parties necessary to resolve a claim shall be parties to the same dispute resolution proceeding and shall share the costs equally. Appropriate provisions shall be included in all other contracts relating to the Work to provide for the consolidation of such dispute resolution procedures.

5.2.3.4 No Litigation. No litigation may be commenced without first following the process in this Article. Action may be filed in the Superior Court in Fulton County, Georgia, pursuant to OCGA §50-21-1, after the filing party provides thirty days written notice to the opposing party.

### **5.2.4 Certain Claims Excluded from General Claims**

5.2.4.1 All claims for Compensable Delay under Article 3.3.8.

5.2.4.2 All claims for changes to the Work under Article 3.2.12, Article 3.2.13, Article 3.2.14, and Article 3.2.16.

## **PART 3 TERMINATION**

### **5.3.1 Owner's Right to Terminate Contract for Convenience**

5.3.1.1 Termination for Convenience. The Owner may at any time, and for any reason or without any reason or cause, terminate this Contract by written notice to the Contractor specifying the termination date, without cause and irrespective of whether or not Contractor is in default of any of its obligations hereunder. The effective date of termination shall not be earlier than seven days from the date of confirmed receipt of the written notice.

5.3.1.1.1 The Contractor shall: (i) stop the Services or the Work (as applicable); (ii) place no further orders or Subcontracts for materials, labor, services or equipment; and (iii) terminate all material and equipment orders and Subcontracts to the extent terminable (unless otherwise directed by Owner in writing) and advise Owner of all materials, equipment and other items which cannot be canceled or which are already delivered and allow Owner to participate in the salvage or disposition thereof.

5.3.1.1.2 If Owner terminates this Contract pursuant to this Section prior to the commencement of the Construction Stage, Contractor shall, as soon as practical after receiving notice of termination under Section 5.3.1.1, submit to Owner an Application for Payment for all services performed through the date of receipt of the notice of termination, for which payment has not been previously made pursuant to the terms of this Contract.

5.3.1.1.3 If Owner terminates this Contract pursuant to this Section after commencement of the Construction Stage, Contractor shall, as soon as practical after receiving notice of termination under Section 5.3.1.1, submit to Owner an Application for Payment showing all of the costs incurred by Contractor in the performance of the Work terminated through the date of receipt of the notice of termination. The phrase "costs incurred by Contractor in the performance of the Work terminated" as used herein shall be deemed to include:

- (i) Subcontract costs of Work completed;
- (ii) Cancellation fees in regard to equipment and materials ordered;

- (iii) Cost of all materials and equipment ordered which cannot be cancelled; less actual proceeds received upon the disposition thereof;
- (iv) Field Work accomplished;
- (v) Permit, engineering, bond and inspection fees;
- (vi) All other direct costs actually incurred by Contractor that can be demonstrated by invoice, canceled check, or other appropriate documentation;
- (vii) General Conditions costs and profit incurred through the date of termination.
- (viii) Job Site and termination costs for ten business days after the date of termination to be paid at the daily rate Time Dependent Overhead Costs.

5.3.1.2 Acceptance of payment by the Contractor shall constitute a waiver of all further claims by Contractor against Owner under the Contract, and shall be Contractor's exclusive remedy for termination of the Contract.. Notwithstanding anything to the contrary contained in the Contract Documents, in no event shall Contractor be entitled to any payment on account of accident or lost profits or consequential damages in connection with any termination of the Contract, or otherwise in connection with the Contract.

5.3.1.3 Condition Precedent to Payment. As a condition precedent to receiving the payment set forth in this Article 5.3.1, Contractor shall deliver to the Owner all papers, documents, assignments and agreements relating to the Project, in particular the Contract Documents (including ownership and copyright thereof) as set forth in Article 1.1.7, Paragraphs 1.1.9.17 and 2.2.1.8.

5.3.1.4 Assignment of Rights, Trade, and Subcontracts.

5.3.1.4.1 Assignment. If requested, Contractor shall assign to the Owner or to an entity of Owner's choice any or all of Contractor's contractual rights in respect thereof, so that the assignee shall be fully vested with all rights and benefits of Contractor under such papers, documents and agreements, together with releases and waivers of lien in the same manner as would be required upon Final Completion. The Owner may also request the assignment from Contractor to Owner or to the entity of Owner's choice of any or all Subcontractors and supplier agreements entered into by Contractor and in that event the assignee shall be solely obligated to the Subcontractors and Suppliers under such contracts or agreements for all sums payable thereunder and not previously paid by the Owner to Contractor.

5.3.1.4.2 Cessation of Entitlement. Upon the Contractor's assignment of agreements, contracts, Trade Contracts and/or Owner's payment of monies due Contractor as provided in Subparagraph 5.3.1.4.1 above, Contractor shall be entitled to no further compensation of any kind from Owner and shall have no further obligation with regard to the assigned agreements, contracts, Subcontractors or Supplier.

**5.3.2 Owner's Right to Declare Default and/or Terminate Contract for Cause**

5.3.2.1 Termination for Cause. In the event that any provisions of this Contract are violated by the Contractor, through its own forces or by any of its subcontractors, the Owner may serve written notice upon the Contractor and the surety of the Owner's intention to declare default and terminate the Contractor. Unless within ten days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the Contractor shall, upon the expiration of said ten days, be in default. Such notices shall outline the reasons for such intention to terminate the contract. In the event of any such default, the Owner shall immediately serve notice thereof upon the surety and the Contractor, and the Owner shall demand that the surety perform in accordance with its bond. If the surety fails to exercise its election under the bond or does not commence performance thereof within the time required by the bond, the Owner may take over the Work and prosecute the same to completion for the account of and at the expense of the Contractor. The Contractor and its surety shall be liable to the Owner for any excess cost to the Owner. The Owner may take possession of and utilize in completing the Work such materials, appliances, and plant as may be on the Site and necessary thereto.

5.3.2.2 Grounds for Issuance of Notice of Declaration of Default. It shall be a sufficient ground for the issuance of a notice of declaration of default that the Contractor has been unfaithful or delinquent in the performance of the Contract or any part of it in any respect. The Design Professional does not have authority to declare the Contractor in default.

5.3.2.2.1 Non-Compliant Work. Without limitation of the foregoing and without subtracting from any right or defense of the Owner under other provisions of the Contract Documents, the Contractor acknowledges and agrees that it is grounds for issuance of a notice of declaration of default under the performance bond if the Contractor shall have neglected or failed for any reason to remedy a breach of a Notice of Non-

Compliant Work within thirty days after the Owner shall have given written notice of said breach to the Contractor.

5.3.2.2.2 Failure to Prosecute the Work. If the Contractor refuses or fails, except in cases for which extensions of time are provided, to supply enough properly skilled workmen or proper materials, or if it fails to make proper payment to Subcontractors for materials or labor, or if it fails to diligently prosecute the Work in accordance with the Contract Documents, then the Owner may, without prejudice to any right or remedy and after giving the Contractor and its Surety, after ten days' written notice of the Owner's Intent to Declare Default, during which period the Contractor fails to cure or fails to commence and thereafter diligently prosecute Work necessary to cure the violation, declare the Contractor to be in default.

5.3.2.2.3 Other Failures of the Contractor. If Contractor, without limitation, makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its insolvency, or if it persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction over the Project, or if it otherwise is guilty of a violation of any provision of this Contract, then the Owner may, without prejudice to any right or remedy and after giving the Contractor and its Surety, if any, ten days written notice of the Owner's Intent to Declare Default, during which period the Contractor fails to cure or fails to commence and thereafter diligently prosecute Work necessary to cure the violation, declare the Contractor to be in default.

5.3.2.3 Owner's Right to Prosecute the Work. Time being of the essence, if the Contractor shall be declared in default, both the Contractor and the Surety agree that the Owner may, after giving the Contractor and Surety the required notice and time under the bond if any is required, without prejudice to any other remedy and without invalidating the performance bond, make good such deficiencies and may deduct the cost thereof from payment due the Contractor or, at the Owner's option and without prejudice to the Owner's rights against the Contractor and Surety, the Owner may terminate the Contractor and take possession of the Site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor and finish the Work by whatever method the Owner shall deem expedient.

5.3.2.4 Effect of Later Determination. In the event the parties agree or a court of competent jurisdiction determines (or the parties agree to settle with a consent determination) that a default is wrongful or not the fault of the Contractor, the termination shall be considered to be a Termination for Convenience and the sole remedy available to the Contractor shall be the contractual treatment of the termination pursuant to Article 5.3.1 above and without any other damages or relief.

### **5.3.3 Contractor's Right to Terminate**

5.3.3.1 Contractor's Right to Stop Work. The Contractor may, upon seven days written notice to the Owner and the Design Professional, stop Work without penalty for the following reasons:

5.3.3.1.1 Order of Court or Superior Public Authority. If any court or other superior public authority issues an order that affects the Work and the order results from no act or fault of the Contractor, the Contractor may stop the affected Work. In addition, the Contractor may stop Work as a result of an act of government, such as a declaration of a national emergency, making critical materials unavailable.

5.3.3.1.2 Failure to issue Certificate of Payment. Work may be stopped if the Design Professional should fail to certify any Application for Payment within fourteen days after said certification is due from the Design Professional. This ground terminates upon any payment of the Application for Payment by the Owner.

5.3.3.2 Contractor's Right to Terminate Contract.

5.3.3.2.1 Contractor's Right to Terminate for Nonpayment. If the Owner fails to pay the Contractor when payment is due, the Contractor must give written notice of the Contractor's intention to terminate this Contract. If the Owner fails to provide the Contractor payment or written notice of a dispute as to the amount sought by the Contractor within thirty days after receipt of the Contractor's written notice, the Contractor may terminate this Contract. Upon such termination the Owner will pay the Contractor for the Work properly executed to date, and, upon timely claim therefore, for any proven loss sustained or cost incurred upon any materials, equipment, tools, construction equipment and machinery, and cancellation charges on existing obligations of the Contractor.

5.3.3.2.2 Contractor's Right to Terminate after Stopping Work. After stopping its Work in accordance with Paragraph 5.3.3.1 above, the Contractor may, upon thirty days written notice to the Owner and the Design Professional, terminate this Contract and recover from the Owner payment for all Work executed and any proven loss sustained or incurred upon any plant or any materials, equipment, tools, construction equipment and machinery, and cancellation charges on existing obligations of the Contractor, if the grounds for stopping the Work are not removed.

**5.3.4 Limitation on Payments.** For terminations pursuant to Article 5.3.2 and 5.3.3, the Contract Sum shall be deemed earned only to the extent of an amount that bears to the total Contract Sum the same ratio that the Work in place at the time of termination bears to the total Work, as reasonably determined by the Design Professional, and approved by the Owner.

**5.3.5 Termination by Owner for Abandonment by Contractor.** Both the Contractor and the Surety agree that, after fourteen calendar days' written notice to the Contractor, the Owner may terminate the Contractor if the Contractor abandons the Project. If such termination occurs, the Owner shall credit the Contractor for Work satisfactorily completed, less any costs and liquidated damages the Owner suffers in correcting the Work, re-contracting and starting-up a replacement contractor, and completing the Project, including all warranties.

**5.3.6 Notices of Termination.** Notwithstanding any other provision of this Contract, no party may terminate this Contract, regardless of reason, unless the terminating party shall first issue a written Notice of Termination or of Default to the terminated or defaulted party by Statutory Mail or Certified Mail, Return Receipt Requested.

## SECTION 6 - PROJECT COMPLETION

### PART 1 MATERIAL COMPLETION

#### 6.1.1 Material Completion

6.1.1.1 Material Completion Defined. Material Completion is when the Work or designated portion thereof is complete in accordance with the Contract Documents so that the Owner and its Using Agency can occupy and utilize the Work for its intended use. Material Completion shall include issuance of any required Health Department inspections and any necessary certificates to operate, certificate of occupancy, as well as complete operation of all applicable building systems including, but not limited to, mechanical, electrical, plumbing, fire protection, fire alarm, security, elevators, life safety, and accessibility. Material Completion occurs when the Work is complete, except for Minor Items or Permitted Incomplete Work or Warranty Complaint Items (see Article 6.6.3), and a Certificate of Material Completion is obtained.

6.1.1.1.1 Material Completion and Occupancy Date. The date designated in the Contract for Material Completion to be achieved.

6.1.1.1.2 Minor Item Defined. A Minor Item is a portion or element of the Work—

- (a) That can be totally complete within thirty days; and
- (b) That can be completed while the Using Agency occupies the Work without impeding or interfering with either the Using Agency's use and occupation of the Work or the Contractor's ability to complete the Minor Item; and
- (c) That will not interfere with the complete use and enjoyment of the project by the Using Agency.

6.1.1.1.3 Permitted Incomplete Work Defined. Permitted Incomplete Work is work that is incomplete through no fault of the Contractor, as determined by the Owner, including, but not limited to, seasonal test and balance, seasonal landscaping, scheduled elevator inspection or maintenance, incomplete work due to failure of Separate Contractors to complete work, and the like.

6.1.1.2 When Material Completion Required. Material Completion shall be achieved within the Contract Time and by the Material Completion and Occupancy Date, as amended. Failure by the Contractor to achieve Material Completion by not later than the Material Completion and Occupancy Date, as amended, shall be sufficient cause for the assessment of Liquidated Damages.

**6.1.2 Effect of Achieving Material Completion.** Upon the date when Material Completion is actually achieved, the following matters are conclusively determined:

- 6.1.2.1 Occupancy of the Work. The Using Agency may immediately occupy the Work without restriction.
- 6.1.2.2 Warranty Periods. All warranties begin to run from the date Material Completion is achieved.
- 6.1.2.3 Utilities. All utilities become the responsibility of the Using Agency.
- 6.1.2.4 Insurance. The Using Agency is responsible for all insurance for the Project.
- 6.1.2.5 Liquidated Damages. The Liquidated Damages daily rate is reduced to zero.
- 6.1.2.6 Payment for Material Completion. The Contractor may request payment of the remaining contract balance, including retainage, less the amounts credited the Owner or incurred as Liquidated Damages, and less the amounts withheld for the punch list by reason of Minor Items or Permitted Incomplete Work. See Paragraph 6.5.3.2.

**6.1.3 Effect of Failure to Achieve Material Completion.** Should Material Completion not be achieved by the Material Completion and Occupancy Date, as amended, the following matters are conclusively determined:

- 6.1.3.1 Breach of Contract. As time is of the essence in the completion of the Work, the Contractor is in breach of the Contract and is subject to default.
- 6.1.3.2 Liquidated Damages. Liquidated Damages at the specified daily rate in the Contract begin to accrue and are payable on the day immediately following the Material Completion and Occupancy Date.

## **PART 2 FINAL COMPLETION**

### **6.2.1 Final Completion**

6.2.1.1 Final Completion. Final Completion shall be evidenced by the Design Professional's Certificate of Final Completion. Final Completion should include completion of Permitted Incomplete Work, as defined in Section 6, Part 1.

6.2.1.2 When Final Completion Required. Minor Items shall be completed as expeditiously as possible, but not later than thirty days after Material Completion of the Work. Permitted Incomplete Work shall be completed as expeditiously as possible, but not later than a date established by the Design Professional. The Design Professional's Certificate of Final Completion shall not be issued until all Minor Items and Permitted Incomplete Work are completed.

6.2.1.3 Deductions for Uncorrected Work. If the Design Professional and Owner deem it inexpedient to correct work not done in accordance with Contract Documents, a deduction from the Contract Sum may be made; but there is no duty on the part of the Owner to accept any work not done in accordance with the Contract Documents.

**6.2.2 Effect of Achieving Final Completion.** Upon the date when Final Completion is achieved and the Design Professional's Certificate of Final Completion is issued, the following matters are conclusively determined:

6.2.2.1 Project Completion. The Project and the Work are complete.

6.2.2.2 Payment for Final Completion. All amounts withheld from Payment for Material Completion and not previously paid to the Contractor or credited to the Owner, as set forth in Section 6, Part 4, are payable upon receipt of a final pay request from the Contractor.

**6.2.3 Effect of Failure to Achieve Final Completion.** Should Final Completion not be achieved within the time specified, as amended, the Owner may issue to the Contractor a fourteen-day notice as a final warning to complete the Work. If Final Completion is not achieved by the end of the fourteenth day from the date of the Notice, the following matters are conclusively determined, subject to any request for extension of time as set forth in paragraph 6.2.3.3 below:

6.2.3.1 Breach of Contract. As time is of the essence in the completion of the Work, the Contractor is in breach of the Contract and is subject to default.

6.2.3.2 Ineligibility to Bid Upon State Contracts. The Contractor is ineligible to bid or propose on any contract of the Owner, the Georgia State Financing and Investment Commission, the Board of Regents of the University



System of Georgia or any unit of the University System of Georgia, or the Georgia Department of Administrative Services. In the event a bid has been submitted but the bid award has not been made, the Contractor's ineligibility requires that its bid be rejected.

6.2.3.2.1 Automatic Restoration of Eligibility to Bid. The Contractor's eligibility to bid upon state contracts shall be restored automatically as of the date of achievement of Final Completion as evidenced by the Certificate of Final Completion.

6.2.3.2.2 Application to Reinstate Eligibility to Bid. If the Contractor never achieves Final Completion, the Contractor's eligibility to bid or propose on state contracts may be reinstated upon the following:

- (a) Not earlier than eighteen months after the date of failure to achieve Final Completion, a written application requesting reinstatement of eligibility to one of the following: the Director, Construction Division, GSFIC; the Vice Chancellor for Real Estate & Facilities, Board of Regents; or the Commissioner, Department of Administrative Services; and
- (b) The showing of good and just cause to believe that the actual achievement of Final Completion was impossible, or the showing of other good and just cause that the Contractor's eligibility should be reinstated.
- (c) The Contractor may request a personal presentation in the application.

6.2.3.3 Extension of Time for Final Completion. The Contractor may file a request for an additional extension of time in the manner prescribed in Section 3, Part 3, and the effects of Failure to Achieve Final Completion shall be suspended until the Design Professional's decision. Should the Design Professional grant the application for extension of time generally, the time for achieving Final Completion shall be adjusted accordingly. Should the Design Professional grant the application for extension of time for a specific item of Work, that item of Work shall be deemed Permitted Incomplete Work with a specific individual final completion date.

### **PART 3           INSPECTIONS FOR COMPLETION OF THE WORK**

**6.3.1 General Responsibility of the Contractor for Inspection.** The Contractor acknowledges and agrees that it has an indivisible, non-delegable, and nontransferable contractual obligation to the Owner to make its own inspections of the Work at all stages of construction; and it shall supervise and superintend performance of the Contract in such manner as to enable it to confirm and corroborate at all times that all work has been executed strictly in accordance with the methods and materials designated in the Contract Documents. The Contractor's inspections are also for the purpose of permitting the Contractor to accurately represent that (a) its certifications on Applications for Payment are true and correct and (b) its notices of readiness for inspections are true and correct. Accordingly, the Contractor acknowledges and agrees that it may not defend or excuse any deviation from the Contract Documents on the ground (a) that another person or party failed to bring the deviation to its attention, or (b) that any Subcontractor is at fault.

#### **6.3.2 Notice of Readiness for Inspection for Material Completion**

6.3.2.1 Preparation of Initial Punchlist. Prior to the Material Completion and Occupancy Date, as amended, the Contractor shall correct all non-compliant or incomplete work. The Contractor shall then prepare an initial punch list itemizing to the best of the Contractor's knowledge all Minor Items and Permitted Incomplete Work (as defined in Section 6, Part 1) and provide a copy of the initial punch list to the Design Professional and Owner. The Contractor is encouraged to consult with the Design Professional prior to finalizing the initial punch list, in particular in arriving at consensus for Minor Items and Permitted Incomplete Work.

6.3.2.2 Contractor's Notice of Readiness for Inspection for Material Completion. After or simultaneously with the provision of the initial punch list, the Contractor shall give the Design Professional and Owner written Notice of Readiness for Inspection for Material Completion in the following words:

*The work on the Contract for the [show name of Project as it appears in the Contract] having been materially completed, I request that the Design Professional perform an Inspection for Material Completion promptly in accordance with Section 6 of the General Conditions. I have attached the initial punch list.*

6.3.2.3 No Inspection without Notice. No Inspection for Material Completion shall be made until such time as the Design Professional and Owner have received notice in the form indicated above. In the event the Contractor shall have issued the Contractor's Notice of Readiness for Inspection for Material Completion prematurely, the

Contractor shall be liable for the damage resulting therefrom, including but not limited to the salaries, professional fees, travel expenses, and living expenses of the persons or parties inconvenienced thereby.

6.3.2.4 Additional Requirements for Inspection for Material Completion. The Contractor shall not request any Inspection for Material Completion before the Contractor has provided to the Design Professional the following:

6.3.2.4.1 a copy of the initial test and balance report on the heating, ventilating, and air conditioning system;

6.3.2.4.2 a copy of the facility operation and maintenance instructions, and any other documents specified by the Design Professional in Division 1 of the Specifications; and

6.3.2.4.3 A certification from the Contractor that all building systems specified in Paragraph 6.1.1.1 above are operational. The Contractor expressly agrees that obtaining the manufacturer's warranties are solely the responsibility of the Contractor. In fulfilling this responsibility, the Contractor shall obtain the manufacturer's certificates in the format specified in Section 7 below and shall coordinate the initial start-up and testing of building systems. In all cases where the equipment of two or more manufacturers ties in and functions together, the Contractor shall require the manufacturers' field representatives to perform simultaneously the initial start-up, the testing, and the placing of their equipment into operation. "Start-up" is defined as putting the equipment into action. "Testing" is defined as performing such testing as is stipulated in the Contract Documents to be performed. "Placing into operation" is defined as operating the equipment for a sufficient period of time to determine that it is performing properly.

**6.3.3 Conducting the Inspection for Material Completion.** The Design Professional shall conduct the Inspection for Material Completion within seven days of receipt of the notice specified in Paragraph 6.3.3.2. The Design Professional shall confirm the initial punch list, shall add or delete Minor Items or Permitted Incomplete Work as appropriate, shall assign values to each item on the punch list, and shall assign completion dates for the items of Permitted Incomplete Work. At the completion of the Inspection for Material Completion, the resulting punch list shall be finalized by the Design Professional and provided to the Contractor within five days and shall become the final punch list. Upon determination of conformity with the definition of Material Completion as specified in Section 6.1.1.1 above, the Design Professional shall issue a Certificate of Material Completion.

**6.3.4 Notification of Using Agency of Site Visits by the Contractor or Subcontractors.** Following the issuance of a Certificate of Material Completion, the Contractor or its Subcontractors shall not visit the Site without first giving notice to the Using Agency and the Owner.

**6.3.5 Contractor's Notice of Readiness for Interim Inspection for Punchlist Completion.** Not more than thirty days after Material Completion, and upon completion of the Final Punchlist (including all Minor Items and such Permitted Incomplete Items as are due to be completed), the Contractor shall give the Design Professional and Owner written notice requesting Inspection for Final Completion in the following words:

*The work on the Contract for the [show name of Project as it appears in the Contract] having been 100% completed, except for Permitted Incomplete Work not yet due to be completed, I request that the Design Professional perform an Inspection for Final Completion promptly in accordance with Section 6 of the General Conditions.*

No inspection for Interim Inspection for Punchlist Completion shall be made until the Design Professional and the Owner have received notice in the form indicated above. In the event the Contractor shall have issued the Contractor's Notice of Readiness for Interim Inspection for Punchlist Completion prematurely, the Contractor shall be liable for the damages resulting therefrom, including but not limited to the salaries, professional fees, travel expenses, and living expenses of the persons or parties inconvenienced thereby.

**6.3.6 Conducting the Interim Inspection for Punchlist Completion.** The Design Professional will conduct the Inspection for Final Completion. The Design Professional will confirm the final punch list has been completed including all Minor Items. Upon completion of the inspection, the Design Professional will issue a Report of Interim Inspection, noting any Permitted Incomplete Work that remains to be accomplished and the date by which it is to be completed. In the event all Permitted Incomplete Work has been completed at the time of this Interim Inspection, and the Design Professional so certifies, then this inspection shall be deemed an Inspection for Final Completion. In the event any Minor Item is determined to be incomplete, the Owner may give the fourteen-day notice of failure to complete the Work, as set forth in Article 6.2.3.



**6.3.7 Conducting the Inspection for Final Completion.** When all Permitted Incomplete Work has been completed or scheduled for completion, the Owner shall call for and the Design Professional shall schedule the Final Inspection with the Owner and Contractor. The Design Professional shall conduct the Inspection for Final Completion and shall confirm that all Permitted Incomplete Work has been completed. Then the Design Professional shall issue the Certificate of Final Completion and Final Payment and any remaining funds may, upon an Application for Payment, be paid to the Contractor. Any Final Documents not yet submitted must be submitted with the Application for Final Payment. In the event any item of Permitted Incomplete Work is determined to be incomplete and the date for its completion has passed, the Owner may give the fourteen-day notice of failure to complete the Work, as set forth in Article 6.2.3.

## **PART 4 FINAL DOCUMENTS**

### **6.4.1 Final Documents**

6.4.1.1 Final Documents Defined. Final Documents consist of all documents set forth in Division 1 of the specifications, as well as all warranties and guarantees required by the Contract Documents.

6.4.1.2 Minimum Specific Final Documents Required. Prior to submission of the Application for Payment for Material Completion, all Final Documents, including but not limited to the following, must be submitted to the Owner and Using Agency:

#### 6.4.1.2.1 Affidavits.

- (a) A Non-Influence Affidavit in the exact form as shown in Section 7, Forms.
- (b) A Statutory Affidavit in the exact form as shown in Section 7, Forms. Any exceptions to the Statutory Affidavit are subject to the approval of the Owner.

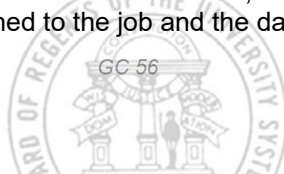
#### 6.4.1.2.2 Bonds.

- (a) A Five-Year Bond for Roofs and Walls as shown in Section 7, Forms, written by a surety authorized to do business in the State of Georgia and in the penal sum of the actual cost of the exterior walls, wall cladding, wall components, wall insulation, roof insulation, roof deck and roof but not less than the amount shown as in the approved initial breakdown for these roof systems and wall systems.
- (b) Any Bonds to Discharge Claim issued to Subcontractors and Suppliers as shown in Section 7, Forms.

6.4.1.2.3 Marked-up Construction Documents. The Contractor shall provide a complete set of Marked-up Contract Documents to the Design Professional, which set shall reflect all changes caused by RFIs, field changes, Change Orders, or observed changes by the Contractor or subcontractor(s) for the purpose of the Design Professional's issuance of Record Documents to the Owner.

6.4.1.2.4 Operation and Maintenance Data and Instructions and Training. The Contractor shall furnish proper written instructions to the Owner and Using Agency on operation and maintenance of all mechanical and electrical equipment. The Contractor shall provide training to the Using Agency in the operation and maintenance of all mechanical and electrical systems in the presence of the Design Professional and Owner and shall give notice in writing to the Design Professional, Owner and Using Agency at least fifteen days prior to the date it is proposes for the training. For all items of mechanical or electrical equipment or apparatus installed that require operation or maintenance after occupancy, the Contractor shall furnish and deliver to the Owner and Using Agency complete brochures and data as prepared and published by the manufacturers covering details of operation and maintenance.

6.4.1.2.5 Certificates of Manufacturers for Major Components. Certificates of Manufacturers shall be provided for elevators, moving walks, dumbwaiters, escalators, lifts, major components of HVAC and plumbing systems, e.g., cooling towers, compressors, condensers, absorption units, chiller units, fan coil units, air handling units, boilers, base mounted pumps, temperature controls, chemical feed systems; sewage pumps and water treatment systems, and incinerator systems; and major components of electrical systems. Start-up, testing, and placing into operation shall be performed by the field representative(s) of the manufacturer(s), and certificate(s) of the manufacturer(s) shall be filed with the Owner on the letterhead(s) of the manufacturer(s) in which the manufacturer(s) certifies or certify that "the equipment has been installed in strict compliance with the recommendations of the manufacturer(s) and is operating properly," in the format shown in Section 7, Forms. The manufacturer shall list in the certificate the item or items furnished to the job and the date, name, or other positive means of identifying



any supplementary documents containing the recommendations of the manufacturer, with a copy of each of the supplementary documents attached to the certificate.

6.4.1.2.6 Final Certification of Costs. For proper capital asset reporting of the Project, the Contractor shall submit its Final Certification of Costs in the format set forth in Section 7, Forms.

6.4.1.2.7 Keys. Unless an alternative locking or keying system is specified, a minimum of two sets of keys, with tags indicating room number or room description or door each key is intended to fit attached to each key, shall be delivered to the Owner and Using Agency. Contractor shall prepare and furnish with the keys an itemized key schedule listing the room number or room description or door, serial number of key, and number of keys being delivered for each door or lock.

**6.4.2 Presentation of Final Documents.** At the time of the Inspection for Material Completion, but in any event prior to the application for Final Payment, the Contractor will provide the Owner and Using Agency with a three-ring binder containing all of the Final Documents, warranties, and guarantees required by the Contract Documents. Included in the binder shall be the documents indicating the brand names actually used in the installation of the work.

**6.4.3 Keys.** Keys with tags indicating number and/or description of door or room each key is intended to fit attached to each key shall be delivered to the Owner and Using Agency. The Contractor shall prepare and furnish with the keys an itemized key schedule in quintuplicate listing the door or room number and/or description, serial number of key and number of keys being delivered for each door or lock.

## **PART 5 PAYMENT FOR MATERIAL COMPLETION AND FINAL PAYMENT**

**6.5.1 Payment for Material Completion.** Payment for Material Completion shall be due 10 days after receipt by the Owner of the application for payment upon achievement and certification of Material Completion, provided that Final Documents shall have been submitted. Payment shall be made by a check payable jointly to the Contractor and surety and shall be mailed to the surety.

### **6.5.2 Application for Payment for Material Completion**

6.5.2.1 Certification of Contractor. The Contractor shall certify, over his own signature, that the Work provided for by the Contract Documents has been completed under the terms and conditions thereof, and that the entire balance of the contract, including retainage, is due and payable, except for those amounts determined by the Design Professional to be withheld due to credits due to the Owner and Minor Items or Permitted Incomplete Work pursuant to Article 6.6.3 below.

#### 6.5.2.2 Supporting Documentation.

6.5.2.2.1 Financial Data. The Contractor shall submit evidence satisfactory to the Design Professional that all payrolls, material bills, and other indebtedness connected with the work have been paid.

6.5.2.2.2 Affidavits and Bonds. The Contractor shall attach copies of the affidavits and bonds set forth in subparagraphs 6.4.2.2.1 and 2 above, execute the payment certification and forward it directly to the Design Professional.

### **6.5.3 Release of Contractor's Retainage.**

6.5.3.1 Establishment of List. At the completion of the Inspection for Material Completion, the Design Professional and Contractor, with the consent of the Owner, shall develop the Final Punchlist. The Design Professional will assign a value for each the Minor Items and Permitted Incomplete Work.

6.5.3.2 Establishment of Amount of to be Withheld for Punchlist Items. In general, the amount to be withheld from the Payment for Material Completion and to be paid upon Final Completion shall be equal to 200% of the Design Professional's value of completing the Work for each Minor Item or Permitted Incomplete Work. The following additional amounts to be withheld shall be applied where applicable.

6.5.3.2.1 Mechanical and HVAC Systems. Until such time as the Design Professional shall have certified that the heating system has been balanced under seasonable weather conditions, the amount withheld shall in no event be less than \$1,000.00.



6.5.3.2.2 Certificates. For each certificate required for major components a sum of \$500.00 shall be withheld until such certificate shall have been filed with the Owner and Institution.

**6.5.4 Effect of Payment for Material Completion and Release of Claims.** Owner shall process the Payment for Material Completion as expeditiously as possible in accordance with the certification of the Design Professional, but interest shall not accrue until thirty (30) days have elapsed from receipt, unless error is found in the application or supporting documents. Acceptance of Payment for Material Completion by the Contractor shall operate as settlement, waiver, release, discharge and payment in full of all claims against Owner of any nature arising out of the Project except for the work associated with the Minor Items and the Permitted Incomplete Work.

**6.5.5 Final Payment.** Final Payment shall be due 10 days after receipt by the Owner of the application for payment upon achievement and certification of Final Completion, provided that Final Documents shall have been submitted. Payment shall be made by a check payable jointly to the Contractor and surety and shall be mailed to the surety. Owner shall process the Final Payment expeditiously as possible in accordance with the certification of the Design Professional, but interest shall not accrue until thirty (30) days have elapsed from receipt, unless error is found in the application or supporting documents.

6.5.5.1 Certification of Contractor. The Contractor shall certify, over his own signature, that the Work provided for by the Contract Documents has been completed under the terms and conditions thereof, and that the entire balance of the contract is due and payable.

6.5.5.2 Supporting Documentation.

6.5.5.2.1 Financial Data. The Contractor shall submit evidence satisfactory to the Design Professional that all payrolls, material bills, and other indebtedness connected with the work have been paid.

6.5.5.2.2 Affidavits and Bonds. The Contractor shall attach copies of the affidavits and bonds set forth in subparagraphs 6.4.2.2.1 and 2 above, execute the payment certification, and forward it directly to the Design Professional.

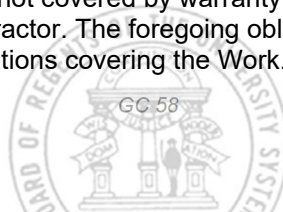
**6.5.6 Effect of Final Payment and Release of Claims.** Acceptance of Final Payment for Material Completion by the Contractor shall operate as settlement, waiver, release, discharge and payment in full of all claims against Owner of any nature arising out of the Project.

## **PART 6 CORRECTION OF WORK AFTER FINAL PAYMENT**

**6.6.1 Non-Compliant or Defective Work.** Neither the Design Professional's Certificate of Final Completion, nor any decision of the Design Professional, nor payment, nor any provision in the Contract shall relieve the Contractor of responsibility for faulty materials, faulty workmanship, or omission of contract work, and it shall remedy any defects or supply any omissions resulting therefrom and pay for any damage to other work resulting therefrom.

6.6.1.2 Notice of Non-Compliant or Defective Work. The Owner shall give notice of observed defects or omissions with reasonable promptness. Attached to or included within the notice shall be a Notice of Non-Compliant Work.

6.6.1.3 Correction of the Work. Within the space of time designated in Notices of Non-Compliant Work and without expense to the Owner, the Contractor shall correct, remedy, replace, re-execute, supply omitted work, or remove from the premises all work designated as non-compliant by the Design Professional. The Contractor shall give prompt notice in writing to the Design Professional, with copy to the Owner, upon completion of the supplying of any omitted work or the correction of any work designated as non-compliant by the Design Professional. In the absence of said notice, it shall be and is presumed under this Contract that there has been no correction of the non-compliant work or supplying of omitted work. If the Contractor does not remove, make good the deficiency, correct, or remedy faulty work, or supply any omitted work within the space of time designated in Notices of Non-Compliant Work, then the Owner, after ten days' notice in writing to the Contractor, may remove the work, correct the work, remedy the work or supply omitted work at the expense of the Contractor. In case of emergency involving health, safety of property, or safety of life the Owner may proceed at once with correction of the Work without waiving any rights of the Owner. Correction of defective work executed under the plans and specifications or supplying of omitted work whether or not covered by warranty of a subcontractor or supplier, remains the primary, direct responsibility of the Contractor. The foregoing obligation of the Contractor shall remain in effect until the expiration of the statute of limitations covering the Work.



**6.6.2 Warranty and Guaranty.** The Contractor warrants and guarantees that all work executed under the Contract Documents shall be free from defects of materials or workmanship for a period of one year from the date of Material Completion. Whenever a manufacturer's warranty or the Contract Documents call for written guaranties or warranties in excess of one year, the Contractor shall furnish them in such form as to permit direct enforcement by the Owner against any Subcontractor, Supplier, or manufacturer whose guaranty or warranty is called for. The Contractor further agrees to all of the following:

6.6.2.1 Jointly and Severally Liable. The Contractor is jointly and severally liable with such Subcontractors, Trade Contractors, Suppliers, or manufacturers;

6.6.2.2 Ratification of Warranties by the Contractor. The warranties and guaranties of the Subcontractors, Trade Contractors, Suppliers, and manufacturers are provided by the Contractor for purposes of performance under this article, and the Contractor, ratifies them by its warranty and guaranty;

6.6.2.3 Service of notice. Service of notice on the Contractor that there has been breach of any warranty or guaranty will be sufficient to invoke the terms of this article;

6.6.2.4 Bind Subcontractors, etc. The Contractor shall bind its Subcontractors, Trade Contractors, Suppliers, and manufacturers to the terms of this article; and

6.6.2.5 Warranties no Limitation. The calling for or the furnishing of written warranties shall in no way limit the contractual obligation of the Contractor to correct the work as set forth in this Part. The remedies stated in this article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies.

### **6.6.3 Warranty Complaint Item Procedure**

6.6.3.1 Notice of Warranty/Guaranty Complaint Items. The Owner and Using Agency may provide notice of warranty work by a warranty complaint letter, sent by statutory mail or facsimile to the Contractor. The letter should outline the complaint item in non-technical language. In emergency situations, the initial notification may be oral to a person or office designated by the Contractor. The Contractor shall respond promptly to all such notices.

6.6.3.2 Duty to Correct. During the one-year period of the warranty and guaranty, any defects of material or workmanship that become apparent shall be the responsibility of the Contractor until and unless the Contractor can show abuse or design defect. The Contractor shall immediately correct all defects that become known during the one-year period at no cost to the Owner unless notice is given to the Design Professional, Owner and Using Agency, prior to correcting the defect that the cause of the defect is the result of abuse or design deficiency.

6.6.3.2.1 Initial Response. When the Using Agency, the Owner, or the Design Professional notifies the Contractor of a defect, the Contractor will visit the site to review the complaint within five days and shall promptly correct the Work. If the Contractor fails to respond within this time limit, the Owner may correct the defect or malfunction and charge the Contractor for the Work. The Contractor shall give notice in writing to the Owner when corrections have been completed.

6.6.3.2.2 Design Defect or User Abuse. If the Contractor believes that a design defect or user abuse has caused the malfunction or defect, he will notify the Design Professional and the Design Professional will issue a formal decision in his capacity as Design Professional and initial interpreter of the conditions of the contract. If the Contractor disagrees with the Design Professional's response, he shall protest to the Owner in accordance with Section Five Part two. If it is determined the complaint is not the responsibility of the Contractor, the Contractor shall be promptly paid for the cost of the corrective work.

6.6.3.2.3 Emergency Situations. If the condition is an emergency, this will be communicated to the Contractor with the request that corrections are to be accomplished immediately. The Contractor shall respond to the notice in emergency situations within twenty-four hours. If the Contractor fails to respond within this time limit, the Owner may correct the defect and charge the Contractor for the Work. If it is determined the complaint is not the responsibility of the Contractor, the Contractor shall be promptly paid for the cost of the corrective work. The Contractor shall give notice in writing to the Owner when corrections have been completed

## SECTION 7 – FORMS

### FORMS INDEX:

Performance Bond  
Payment Bond  
Georgia Security and Immigration Compliance Act Affidavit(s)  
Non-Influence Affidavit  
Statutory Affidavit  
Five Year Bond on Roofs and Walls  
Specimen Certificate of Manufacturer  
Certificate of Insurance  
Bond to Discharge Claim  
Change Order Forms  
Application for Payment Form  
Subcontractor Retainage Release Certificate  
Final Certification of Costs



## PERFORMANCE BOND

Bond No. \_\_\_\_\_

Project No. Project Number

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_ as principal (hereinafter referred to as "Contractor"), and \_\_\_\_\_ as surety (hereinafter referred to as "Surety"), are held and firmly bound unto the Board of Regents of the University System of Georgia as Obligee (hereinafter referred to as "Owner") in the amount of and No/100 Dollars (\$ \_\_\_\_\_ .00), to which payment Contractor and Surety bind Themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with the Owner bearing date of Month, Day, Year for: Project Number and Description, Institution Name, City, State in accordance with drawings and specifications prepared by: LEGAL DP Firm Name which said contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform and comply with the terms and conditions of said contract; and shall indemnify and save harmless the Owner against and from all cost, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

(1) The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract, or to the work to be performed thereunder, or the specifications or drawings accompanying same, or the exercise of the Owner's right to do work pursuant to Articles 1.3.7, 1.7.8, or 5.3.5, or Paragraphs 3.4.1.4 or 5.3.2.3, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work or to the specifications or drawings. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Article 1.5.1, including Paragraph 1.5.1.3 for increases in the penal amount of this bond, and waives notice from the Owner of any such changes.

(2) If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract and the Owner has terminated the Contractor's right to complete the Contract, the Surety shall promptly perform this bond agreement in accordance with its terms and conditions. If Surety chooses to investigate, Owner shall cooperate with the Surety in its investigation and shall make all public project records available for inspection by Surety at no cost to Owner. It shall be the duty of the Surety to give an unequivocal notice in writing to the Owner, within twenty-five (25) days after receipt of such a declaration of default, of the Surety's election to either remedy the default or defaults promptly or to perform the Contract promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence, and it shall then be the duty of the Surety to give prompt notice in writing to the Owner immediately upon completion of (a) the remedy and/or correction of each default, (b) the remedy and/or correction or each item of condemned work, (c) the furnishing of each omitted item of work, and (d) the performance of the contract. The Surety shall not assert its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the default or defaults or perform the Contract.

(3) It is expressly agreed by the Principal and the Surety that the Owner, if he desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.

(4) 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 legal successors of the Owner.



(5) For the purposes of this bond, the name and address of the **responsible official of the Surety's claims department**, to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

TELEPHONE \_\_\_\_\_

(6) Further, this bond shall be the Performance Bond furnished under O.C.G.A. §§ 13-10-2, 13-10-20 and shall be subject to increase in the penal amount of the bond pursuant to such statutes and Article 1.5.1 of the Contract.

(7) No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

(NAME OF Contractor)

\_\_\_\_\_  
Secretary(\*)

By \_\_\_\_\_  
President

\_\_\_\_\_  
(SURETY) (\*) (\*)

\_\_\_\_\_  
(TITLE)

(\*) Please apply seal of Corporation over Secretary's Signature.

(\*)(\*) Please apply seal of Surety and arrange for countersignature by a "Georgia Licensed Agent" of Surety pursuant to O.C.G.A. §33-23-5. Kindly show title of the aforesaid agent as "Georgia Licensed Agent."

(\*) Attach Power of Attorney

# PAYMENT BOND

Bond No. \_\_\_\_\_

Project No. Project Number \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_ as Principal (hereinafter referred to as the  
(Legal Title and Address of the Contractor)

"Principal") and \_\_\_\_\_ as Surety (hereinafter referred  
(Legal Name and Address of the Surety)

to as "Surety"), are held and firmly bound unto the BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA as Obligee (hereinafter referred to as "Owner") for the use and benefit of claimants defined, hereinafter in the amount of \_\_\_\_\_ Dollars (\$) to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with Owner dated Month, Day, Year for Project Number and Description, Institution Name, City, State in accordance with the drawings and specifications prepared by: LEGAL DP Firm Name which contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and materials supplied in the prosecution of the work provided for in said Contract, then this obligation shall be void, otherwise it shall remain in full force and effect subject, however, to the following conditions:

- (1) The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the work to be performed thereunder, or the specifications or drawings accompanying same, or the exercise of the Owner's right to do work pursuant to Articles 1.3.7, 1.7.8 or 5.3.5 or Paragraphs 3.4.1.4 or 5.3.2.3, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work or to the specifications or drawings. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Article 1.5.1, including Paragraph 1.5.1.3, for increases in the penal amount of this bond and waives notice from the Owner of any such changes.
- (2) A claimant is defined as any subcontractor and any person supplying labor, materials, machinery, or equipment in the prosecution of the work provided for in said contract.
- (3) Every person entitled to the protection hereunder and who has not been paid in full for labor or materials furnished in the prosecution of the work referred to in said bond before the expiration of a period of ninety (90) days after the day on which the last of the labor was done or performed by him, or materials or equipment or machinery was furnished or supplied by him for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due him, provided, however, that any person having direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Contractor furnishing said payment bond shall have (a) given written notice to said Contractor within ninety (90) days from the day on which such person did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done; and (b) if the Contractor has filed a Notice of Commencement in accordance with the requirements of O.C.G.A. §13-10-62 and Articles 4.3.2 of the contract, given to said contractor a written Notice to Contractor within 30 days from the filing of the Notice of Commencement or 30 days following the first delivery of labor, materials, machinery or equipment, whichever is later, setting forth:
  - A) The name, address, and telephone number of the person providing labor, material, machinery, or equipment;
  - B) The name and address of each person at whose instance the labor, material, machinery or equipment is being furnished;
  - C) The name and the location of the public work; and
  - D) A description of the labor, material, machinery, or equipment being provided and, if known, the contract price or anticipated value of the labor, material, machinery, or equipment to be provided or the amount claimed to be due, if any.

It is provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by the depositing of a notice, certified mail, postage paid, duly addressed to the Contractor at any place he maintains an office or conducts his business, or his residence, in any post office or branch post office or any letter box under the control of the Post Office Department or notice may be served by statutory mail pursuant to O.C.G.A. §9-10-12 or in any manner in which the sheriffs of Georgia are authorized by law to serve summons or process. Every suit instituted under this section shall be brought in the name of the claimant without Owner being made a party thereof. The official who has custody of said bond is authorized and directed to furnish, to any person making application thereof who submits an affidavit that he has supplied labor or materials for such work and payment therefore has not been made, or that he is being sued on any such bond, a copy of such bond and the contract for which it was given, certified, by the official who has custody of said bond and contract shall be admitted in evidence without further proof. Applicants shall pay for such certified statements and such fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fixed fee exceed the fees that the clerks of the superior courts are permitted to charge for similar copies.

- (4) It is expressly agreed by the Principal and the Surety that the Owner, if he desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
- (5) For the purposes of this bond, the name and address of the **responsible official of the Surety's claims department**, to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

TELEPHONE \_\_\_\_\_

- (6) Further, this bond shall be the Payment Bond furnished under O.C.G.A. §§ 13-10-1, 13-10-60 *et seq.* and shall be subject to increase in the penal amount of the bond pursuant to such statutes and Article 1.5.1 of the Contract.
- (7) No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

ATTEST: (NAME OF Contractor)

\_\_\_\_\_  
Secretary(\*)

By \_\_\_\_\_  
President

\_\_\_\_\_  
(SURETY) (\*) (\*)

\_\_\_\_\_  
(TITLE)

(\*) Please apply seal of Corporation over Secretary's Signature.  
 (\*) (\*) Please apply seal of Surety and arrange for countersignature by a "Georgia Licensed Agent" of Surety pursuant to O.C.G.A. §33-23-5. Kindly show title of the aforesaid agent as "Georgia Licensed Agent."

(\*) Attach Power of Attorney

## GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT(S)

“Contractor” in the following Affidavits shall mean “General Contractor”/“Contractor” for the purpose of compliance with O.C.G.A. § 13-10-91, (b).

For the purpose of completing the attached Affidavits, please insert the following:

- **“Name of Public Employer” shall mean “Board of Regents of the University System of Georgia, Owner, for the use and benefit of Institution Name, Using Agency”**
- **“Name of Project” shall mean “Project No. Project Number and Description”**

**Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Board of Regents of the University System of Georgia for the use and benefit of **Institution Name**. Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Contractor

**Project Number and Description**

Name of Project

Board of Regents of the University System of Georgia

For the use and benefit of **Institution Name**

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
\_\_\_\_\_

**Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with \_\_\_\_\_ (name of contractor) on behalf of Board of Regents of the University System of Georgia for the use and benefit of **Institution Name**, Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Subcontractor

**Project Number and Description**

Name of Project

Board of Regents of the University System of Georgia  
For the use and benefit of **Institution Name**

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
\_\_\_\_\_

**Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)**

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract) and \_\_\_\_\_ (name of contractor) on behalf of Board of Regents of the University System of Georgia for the use and benefit of **Institution Name**, Using Agency (public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to \_\_\_\_\_ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Sub-subcontractor

**Project Number and Description**

Name of Project

Board of Regents of the University System of Georgia

For the use and benefit of **Institution Name**

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 20\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC  
My Commission Expires:

**NON-INFLUENCE AFFIDAVIT**

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

I do solemnly swear on my oath that as to the Contract dated \_\_\_\_\_, 20\_\_\_\_\_,  
between \_\_\_\_\_  
*(NAME OF CONTRACTOR)*

and the Owner, I have no knowledge of the exertion of any influence or the attempted exertion of any influence on the firm on behalf of which this affidavit is made in any way, manner, or form in the purchase of materials, equipment, or other items involved in construction, manufacture, or employment of labor under the aforesaid Contract by any employee, officer, or agent of the Owner, or any person connected with the State Government of Georgia in any way whatsoever.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature (L.S.)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Firm

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

Personally before me, the undersigned authority, appeared \_\_\_\_\_  
*(NAME OF PERSON SIGNING THE AFFIDAVIT)*

who is known to me to be an official of the firm of \_\_\_\_\_,  
*(NAME OF CONTRACTOR)*

and who, after being duly sworn, stated on his oath that he had read the above statement and that the same is true and correct.

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.



**STATUTORY AFFIDAVIT**

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

FROM: \_\_\_\_\_

Contractor

TO: \_\_\_\_\_

Owner

Re: Contract entered into the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, between the above-mentioned parties for the construction

of Project No. \_\_\_\_\_ located at \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS:**

1. The undersigned hereby certifies that all work required under the above Contract has been performed in accordance with the terms thereof, that all Subcontractors, Suppliers, Trade Contractors, mechanics, and laborers have been paid and satisfied in full, or will be paid and satisfied in full out of the proceeds of this payment as set forth in O.C.G.A. §13-10-80, and that there are no outstanding claims of any character [including disputed claims or any claims to which the Contractor has or will assert any defense] arising out of the performance of the Contract which have not been paid and satisfied in full except as listed herein below:.....

**Instructions to Contractor- ENTER THE WORD "NONE" OR LIST THE NAMES OF CLAIMANTS**

2. The undersigned further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, Subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a lien upon the property of the Owner.

3. The undersigned makes this affidavit for the purpose of receiving final payment in full settlement of all claims against the Owner arising under or by virtue of the contract, and acceptance of such payment is acknowledged as a release of the Owner from any and all claims arising under or by virtue of the contract.

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(L.S.)

Signature

Title

Firm

COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_

Personally before me, the undersigned authority, appeared \_\_\_\_\_  
(NAME OF PERSON SIGNING THE AFFIDAVIT)

who is known to me to be an official of the firm of \_\_\_\_\_,  
(NAME OF CONTRACTOR)

and who, after being duly sworn, stated on his oath that he had read the above statement and that the same is true and correct.

Notary Public

My Commission expires \_\_\_\_\_

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

# FIVE YEAR BOND ON ROOFS AND WALLS

STATE OF GEORGIA

COUNTY OF \_\_\_\_\_

**Firmly Bound.** Know all men by these presents, that we, \_\_\_\_\_ ("Contractor") as Principal, and (Name of Surety), as Surety, are held and firmly bound unto \_\_\_\_\_,

(Insert Name of Owner)

Owner, in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) for the payment of which well and truly to be made and done, we bind ourselves, our executors and administrators, our successors and assigns, jointly and severally, by these presents.

**Condition of Obligation.** The condition of the above obligation is such that WHEREAS Contractor has entered into a Contract with Owner dated \_\_\_\_\_ (enter date of contract), for construction of Project No. \_\_\_\_\_.

**Warranty.** WHEREAS, the said Contractor warrants with respect to the said work that for a period of five years from the date of the execution of the final certificate of the Design Professional, the roofs of the building (or buildings) and roofs of passages, including but not limited to the roof envelope, including but not limited to the roof decking; deck sheathing; material used as a roof base or insulation over which roof is applied; roofing materials; promenade decks or any other work on the surface of the roof; flashing; base flashing; counter flashing; metal work, gravel stops; or roof expansion joints shall be absolutely watertight and free from all leaks. At no expense to the Owner, the Contractor will make repairs to any defects that may develop in the work including but not limited to: blisters, exposed felts, ridges, wrinkles, splits, warped insulation, and loose flashing, in a manner compatible to the system and acceptable under industry standards and in accordance with the construction specifications. The Contractor also warrants that for the same five-year period the walls of the building (or buildings) and building envelope, including but not limited to: vertical and/or horizontal expansion joints, below and/or above grade waterproofing, below and/or above grade damp-proofing, thru-wall flashing, damp course flashing and waterproofing of joints at openings in walls including but not limited to door perimeters, window perimeters, vents and pipe openings shall be absolutely watertight and free from all leaks, seepage or dampness, and that he shall, at no expense to the Owner, make repairs to any defects that may develop in the work in a manner compatible to the system and acceptable under industry standards and in accordance with the construction specifications, Provided, however: That the following are excluded from the warranty:

- (a) Defects or failures resulting from abuse by the Owner, upon presentation of competent evidence of same by the Contractor.
- (b) Defects in design that the said Contractor shall produce competent evidence of having had provided clear written notice in writing to the Owner prior to commencing installation of the Work, except, however, that the Contractor shall not be responsible, insofar as liability under this bond is concerned, for bringing to the attention of the Owner defects in design involving failure of only the following three structural elements:
  - (1) Structural Frame
  - (2) Load bearing walls
  - (3) Foundations

nor shall the Contractor be responsible for correction of leaks resulting from said failure.

- (c) Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion upon presentation of competent evidence of same by the Contractor..
- (d) The Contractor is not an insurer nor is he a guarantor of the design. Any other provisions of this bond to the contrary notwithstanding, the Contractor shall not be required to remedy any errors or omissions of design.

**Leaks or Defects.** WHEREAS the said Contractor agrees that should any leaks or defects occur in the roof envelope or wall envelope of the said (Name and Number of Project) the said Contractor will promptly remedy the said leaks or defects and pay for any damage to other work of said Project resulting therefrom, except, however, that when this instrument is executed by a Trade Contractor this Contract, shall, insofar as the Trade Contractor is concerned, extend only to the work executed by said Trade Contractor.

**Notice to Surety.** If the Contractor shall have been given notice to remedy leaks or defects pursuant to the Contract Documents and has been declared in default by the Owner and the Owner has terminated the Contractor's right to complete the remedy, the Surety shall be notified in writing and shall promptly perform this bond agreement in accordance with its terms and conditions. If Surety chooses to investigate, Owner shall cooperate with the Surety in its investigation and shall make all public project records available for inspection by Surety at no cost to Owner. It shall be the duty of the Surety to give an unequivocal notice in writing to the Owner, within twenty-five (25) days after receipt of such notice, of the Surety's election to either remedy the leaks and defects promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence, and it shall then be the

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duty of the Surety to give prompt notice in writing to the Owner immediately upon completion of the remedy and/or correction of the leaks or defects. The Surety shall not assert its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the leaks or defects.

**Full Force and Effect.** NOW, THEREFORE, the condition of this obligation is such that if the Contractor shall in all things promptly and faithfully perform and comply with the terms and conditions hereinbefore set forth, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_ WITNESS  
Principal

By: \_\_\_\_\_

TITLE \_\_\_\_\_

\_\_\_\_\_ WITNESS  
Surety

By: \_\_\_\_\_

TITLE \_\_\_\_\_

(\* ) Attach Power of Attorney

Instructions for execution by Contractor

- (a) If the firm is a partnership, all members of the partnership must execute.
- (b) If the firm is a corporation, the president must sign, the secretary must attest, and the Seal of Corporation must be affixed.
- (c) If the firm operates as a sole proprietorship, the proprietor must execute.

## SPECIMEN CERTIFICATE OF MANUFACTURER

INSTRUCTIONS FOR PREPARATION OF CERTIFICATE: To be acceptable, the certificate must be prepared in the form indicated by this specimen on the official letterhead of the manufacturer. No portions of the certificate may be omitted. Attached is a copy of the Contract provision under which the certificate is required. The Authority needs only one copy of the certificate. If equipment of a manufacturer is not installed in strict compliance with the recommendations of the manufacturer or if in the design of the work the equipment is not applied in strict compliance with the recommendations of the manufacturer, a letter from the manufacturer should be forwarded to the Contractor [with copies to the Design Professional and the Owner] setting forth a list of the deviations from the recommendations of the manufacturer and stating what remains to be done in order to bring the work into strict compliance with the recommendations of the manufacturer. Prior to calling upon the representative of the manufacturer for performance of the services necessary to enable him to execute a certificate in accordance with this specimen, it is the obligation of the Contractor to have installed the work in strict compliance with the recommendations of the manufacturer [See Article 2.2.4 of the Contract], and it is likewise the obligation of the Contractor to have put the equipment in good operating condition in absolute and final readiness for the "start-up," "testing," and "placing into operation" as defined herein below by the representative of the manufacturer.

Date: \_\_\_\_\_

**Insert name and address of Owner**

Re: Certificate of **JOHN DOE CORPORATION** that equipment or components furnished by it has [or have, as the case may be] been installed in strict compliance with its recommendations and is [or are, as the case may be] operating properly at **PROJECT NO. \_\_\_\_\_**

Gentlemen:

1. We certify through our duly authorized and acting agent that the following item [or items, as the case may be] furnished by us to the Project named in the caption was [or were, as the case may be] started up, tested, and placed in operation by our authorized field representative on [enter the date on which the field representative performed the start-up, test, and placing into operation] and is [or are, as the case may be] operating properly:

[List the item or items furnished to the job. Show catalogue number or numbers.]

2. We certify further that the aforesaid equipment was installed in strict compliance with our recommendations as published by us in the following document [or documents, as the case may be]:

[Insert the date, name, or other positive means of identifying the exact document or documents in which the recommendations for installation and use of the item or items are published.] (\*)

3. A copy of the aforesaid document(s) is (are) attached hereto.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

JOHN DOE CORPORATION

By: \_\_\_\_\_  
Authorized Representative

(\*) The date must be shown

[See Article 6.4.1.2.5

DEFINITIONS:

1. "Start-up" is defined as putting the equipment into action.
2. "Testing" is defined as performing such testing as is stipulated in the Contract Documents to be performed.
3. "Placing into operation" is defined as operating the equipment for a sufficient period of time for the determination to be made that it is performing properly.



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
INSURED	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A :	
	INSURER B :	
	INSURER C :	
	INSURER D :	
INSURER E :		
INSURER F :		

**COVERAGES**                      **CERTIFICATE NUMBER:**                      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Includes XCU Coverage GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ 1,000,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPIOP AGG \$ 1,000,000 \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ 1,000,000 BODILY INJURY (Per accident) \$ 1,000,000 PROPERTY DAMAGE (Per accident) \$ 1,000,000 \$
	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED   RETENTION \$						If contract value: <\$5M: \$4,000,000 AGGREGATE \$5M+: \$10,000,000 AGGREGATE EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ ..... \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER statutory limits E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
	Builders Risk						Cost of Project

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
Insert Project No. and Project Name -or- "All Jobs"

<b>CERTIFICATE HOLDER</b>	<b>CANCELLATION</b>
Board of Regents of The University System of Georgia Email to: bor_facilities-contracts@usg.edu	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE

*THIS FORM IS FOR OPTIONAL USE TO RELEASE TO THE CONTRACTOR FUNDS WITHHELD FROM A PAY APPLICATION IN THE EVENT A SUBCONTRACTOR FILES A CLAIM AGAINST THE CONTRACT BALANCE HELD BY THE OWNER THAT REMAINS UNRESOLVED. THIS IS A SUBORDINATE DOCUMENT TO THE PAYMENT BOND FOR THE PROJECT, AND IS CALCULATED AGAINST THE PENAL AMOUNT OF THAT PAYMENT BOND. THERE ARE OTHER METHODS THAT MAY BE USED TO REMEDY SUCH SITUATIONS, HOWEVER, THIS FORM IS EFFECTIVE WHEN NONE OF THE PARTIES ARE ABLE TO REACH AGREEMENT UPON THE CLAIM.*

## BOND TO DISCHARGE CLAIM

WHEREAS, \_\_\_\_\_ (hereinafter referred to as "Claimant" has filed a claim against \_\_\_\_\_ (the "Contractor", hereinafter referred to as "Principal") on the following contract:

WHEREAS, the undersigned Principal and Surety have issued Payment Bond No. \_\_\_\_\_ (the "Primary Bond") to the Owner, as Obligee, on the Contract dated \_\_\_\_\_ for Project \_\_\_\_\_ ;

WHEREAS, the undersigned Principal and Surety dispute the Claimant's entitlement to all or part of the claim and expressly reserve all rights and defenses available at law in connection therewith;

WHEREAS, \_\_\_\_\_ as Principal and \_\_\_\_\_ as Surety, desire to continue to receiving payments from the Owner for work done on the above referenced project,

NOW THEREFORE, in consideration of these premises, the undersigned Principal and Surety do hold themselves firmly bond unto \_\_\_\_\_ as Claimant, in the total amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), representing double the amount of the claim.

The condition of this Bond to Discharge Claim is such that should the undersigned Principal or Surety pay to the Claimant the sum that may be found to be due to the Claimant upon the trial of any action that may be filed by said Claimant, or if Principal or Surety pay to the Claimant a sum agreeable to Claimant and Claimant accepts such payment, then this Bond shall be void; otherwise to remain in full force and effect.

The penal amount of the Primary Bond is conditionally reduced by the amount of this Bond to Discharge Claim, and upon payment of any sums to the Obligee under this Bond to Discharge Claim, the penal amount of the Primary Bond is reduced *instanter* by the amount of such payment.

No action can be instituted on this bond after one year from the date of Final Completion as determined pursuant to Article 6.2.2 of the Contract.

IN WITNESS WHEREOF, the said Principal and Surety have set their hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Principal

by: \_\_\_\_\_

\_\_\_\_\_  
Surety

by: \_\_\_\_\_

Attorney-in-Fact

\_\_\_\_\_  
Type Name Above

**CHANGE ORDER FORMAT  
(Lump Sum)**

**NOTE TO DESIGN PROFESSIONAL:**

Please prepare each Change Order in the form and wording given below, deleting inapplicable wording and adding such explanations as may be necessary. The wording in Paragraph 11 may not be changed or altered in any way by either the Design Professional or the Contractor. Send four copies, signed by you and the Contractor, to the Owner. *Do not forward a Change Order unless it is accompanied by a breakdown which has been certified by the Contract Compliance Specialist and Program Manager (if applicable).*

**CHANGE ORDER No.** \_\_\_\_\_

Note to Design Professional:  
*Please leave the Change Order number blank. The Owner will assign a number.*

Project Name: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Owner

Note to Design Professional: *No Change Order should be forwarded unless you have been furnished with a letter from the Owner authorizing same.*

1. Submission of this Change Order for consideration was authorized by letter from the Owner, dated \_\_\_\_\_, 20\_\_\_\_, Incumbrance Record No. \_\_\_\_\_.
2. The changes hereinafter described are applicable to the Contract for the construction of the above-referenced Project and amend the Contract Documents.
3. Description of Change:

Note to Design Professional: *Be sure to give a complete statement describing the changes in the work, including the specifications. If drawings are necessary, refer to them by date, etc., and state they are made a part of the Change Order. Copy of drawings should be attached to the Change Order.*

4. This Change Order is deemed necessary and originated with the (Design Professional) (Owner) (Contractor) (Using Agency). *(Indicate applicable entity.)*
5. This Change Order is necessary to:

Note to Design Professional: *Give a complete description of conditions which necessitate the change.*

6. The amount of the Change Order was determined by:

Choose one:  
a. Estimate and acceptance in lump sum.  
b. Unit prices stated in contract or subsequently agreed upon.  
c. Cost and percentage as described in general conditions.

7. A memorandum is attached showing cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).

8. We have verified the quantity and quality of all materials shown on the memorandum. We have verified that all prices are reasonable and do not exceed current costs for like services or materials, and we have verified that the quality of the materials meets the requirements of the Contract Documents.

*Note to Design Professional: Please observe that verification of quantities and prices means the Design Professional who signs the Change Order has personal knowledge that the quantities shown in the memorandum referred to under paragraph 7 above are correct, that he has personally satisfied himself that full credit has been extended for any work or materials deleted or omitted, and that he has conclusively established by such checking or inquire as may be necessary that the prices and allowances shown in the memorandum comparable with current costs for like services and materials.*

9. The contractor shall be allowed \_\_\_\_\_ additional calendar days for completion. The Material Completion and Occupancy Date is: \_\_\_\_\_.

*Note to Design Professional: Please insert the number of additional Days allowed and the new Material Completion and Occupancy Date, or, if no additional time is allowed, insert "0" for the Days and "No Change" for the date.*

10. The Contract Sum shall be (increased) (decreased) by \$ \_\_\_\_\_ on account of this change.

*Note to Design Professional: Please delete inapplicable language in parentheses and enter the dollar amount for this change. Insure that cost of the Work, percentage markup for profit, and the daily rate of general conditions costs is accurate and included in the amount of an additive change. If a deductive change, the amount is generally cost of the work only; however, consult with the owner in significant deductive Change Orders to determine if time or profit should be included in the deducted amount.*

11. SUMMARY (ADJUSTED CONTRACT PRICE)

Original Contract Sum.....			\$ _____
Change Order No.	Additions:	Deductions:	
1. 001	\$ _____	\$ _____	
2. 002	\$ _____	\$ _____	
3. 003	\$ _____	\$ _____	
4. Add additional lines as needed			
Net (addition or deduction) of all approved change orders			\$ _____
Total adjusted contract price prior to this change order			\$ _____
This Change Order No. ____ (Add or Deduct)			\$ _____
<b>TOTAL CURRENT ADJUSTED CONTRACT PRICE</b>			<b>\$ _____</b>

12. The payment and extension of time, if any, provided by this Change Order constitutes compensation in full to the Contractor and its Subcontractors, Suppliers, and Trade Contractors for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner and the Design Professional, and design consultants.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: LEGAL DP Firm Name

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_



APPROVED AND AGREED BY USING AGENCY:  
INSTITUTION NAME

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

Date approved by Owner: \_\_\_\_\_

**CHANGE ORDER FORMAT  
(Force Account or Indeterminate Units)**

**NOTE TO DESIGN PROFESSIONAL:**

Please prepare each Change Order in the form and wording given below, deleting inapplicable wording and adding such explanations as may be necessary. The wording in Paragraph 8 may not be changed or altered in any way by either the Design Professional or the Contractor. The wording in Paragraph 5 of the Final Cost Amendment may not be changed or altered in any way by either the Design Professional or the Contractor. Send four copies, signed by you and the Contractor, to the Owner. *Do not forward a Change Order unless it is accompanied by a breakdown which has been checked by the Contract Compliance Specialist and Program Manager (if applicable).*

**CHANGE ORDER No.** \_\_\_\_\_

Note to Design Professional:  
*Please leave the Change Order number blank. The Owner will assign a number.*

Project Name: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Owner

Note to Design Professional: *No Change Order should be forwarded unless you have been furnished with a letter from the Owner authorizing same.*

1. Submission of this Change Order for consideration was authorized by letter from the Owner, dated \_\_\_\_\_, 20\_\_\_\_, Incumbrance Record No. \_\_\_\_\_.
2. The changes hereinafter described are applicable to the Contract for the construction of the above-referenced Project and amend the Contract Documents..
3. Description of Change:

Note to Design Professional: *Be sure to give a complete statement describing the changes in the work, including the specifications. If drawings are necessary, refer to them by date, etc., and state they are made a part of the Change Order. Copy of drawings should be attached to the Change Order.*

4. This Change Order is deemed necessary and originated with the (Design Professional) (Owner) (Contractor) (Using Agency). *(Indicate applicable entity.)*
5. This Change Order is necessary to: Note to Design Professional: *Give a complete description of conditions which necessitate the change.*
6. The Maximum Allowable Cost of the Change Order was estimated by:

Choose one:

- a. Estimate in lump sum.
- b. Unit prices stated in contract or subsequently agreed upon, and an estimated number of units.
- c. Cost and percentage as described in general conditions.

7. A memorandum is attached showing the estimated cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).

8. The Maximum Allowed Cost for this Change Order is \$ \_\_\_\_\_, and is established as Incumbrance Record No. \_\_\_\_\_. This Maximum Allowed Cost may be amended by the Owner in the event the actual costs are expected to exceed the Maximum Allowed Cost, provided that Contractor shall give written notice of such fact prior to incurring actual costs in excess of ninety percent of the Maximum Allowable Cost. In no event shall actual costs be incurred in excess of the Maximum Allowed Cost, as it may be amended.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: LEGAL DP Firm Name

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_

APPROVED AND AGREED BY USING AGENCY:  
INSTITUTION NAME

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

Date approved by Owner: \_\_\_\_\_

**FINAL COST AMENDMENT  
TO  
CHANGE ORDER NO. \_\_\_\_\_**

1. A memorandum is attached showing cost breakdown of labor and materials by unit and quantities as prepared by the Contractor and checked by the Contract Compliance Specialist and Program Manager (if any).
2. We have verified the quantity and quality of all materials shown on the memorandum. We have verified that all prices are reasonable and do not exceed current costs for like services or materials, and we have verified that the quality of the materials meets the requirements of the Contract Documents.

*Note to Design Professional: Please observe the fact that verification of quantities and prices means the Design Professional who signs the Change Order has personal knowledge that the quantities shown in the memorandum referred to under paragraph 7 above are correct, that he has personally satisfied himself that full credit has been extended for any work or materials deleted or omitted, and that he has conclusively established by such checking or inquire as may be necessary that the prices and allowances shown in the memorandum comparable with current costs for like services and materials.*

3. The contractor shall be allowed \_\_\_\_\_ additional calendar days for completion. The Material Completion and Occupancy date is: \_\_\_\_\_.

*Note to Design Professional: Please insert the number of additional Days allowed and the new Material Completion and Occupancy Date, or, if no additional time is allowed, insert "0" for Days and "No Change" for the date.*

4. The Contract Sum shall be (increased) (decreased) by \$ \_\_\_\_\_ on account of this change.

*Note to Design Professional: Please delete inapplicable language in parentheses and enter the dollar amount for this change. Insure that cost of the Work, percentage markup for profit, and the daily rate of general conditions costs is accurate and included in the amount of an additive change. If a deductive change, the amount is generally cost of the work only; however, consult with the owner in significant deductive Change Orders to determine if time or profit should be included in the deducted amount.*

5. The payment and extension of time, if any, provided by this Change Order constitutes compensation in full to the Contractor and its Subcontractors, Suppliers, and Trade Contractors for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any Claims related thereto against the Owner and the Design Professional, and design consultants.

APPROVED AND AGREED BY CONTRACTOR:  
LEGAL GC Firm Name

RECOMMENDED FOR OWNER'S ACCEPTANCE  
DESIGN PROFESSIONAL: LEGAL DP Firm Name

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Contractor: \_\_\_\_\_

Date approved by Design Professional: \_\_\_\_\_

APPROVED AND AGREED BY USING AGENCY:  
INSTITUTION NAME

APPROVED AND AGREED BY OWNER:  
BOARD OF REGENTS OF THE UNIVERSITY

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name/Title)

Date approved by Using Agency: \_\_\_\_\_

Date approved by Owner: \_\_\_\_\_

**APPLICATION FOR PAYMENT**

APPLICATION FOR PAYMENT NO. \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

**CERTIFICATE OF THE CONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE**

To the best of my knowledge and belief, I certify that all items, units, quantities, and prices of work and material shown on this Application for Payment No. \_\_\_\_\_ are correct; that all work has been performed and materials supplied in full accordance with the terms and conditions of the Contract Documents between

(Owner)

and \_\_\_\_\_ dated \_\_\_\_\_  
(Contractor)

and all authorized changes thereto; and that the following is a true and correct statement of the contract account up to and including the last day of the period covered by this Application and that no part of the "amount due this Application" has been received.

- (a) Total amount earned for work in place (original contract) \$
- (b) Total amount earned for work in place (Change Orders) \$
- (c) Value of materials stored at site \$
- (d) Total amount earned ( (a) plus (b) plus (c) ) \$
- (e) Amount retained (5%) \$
- (f) Total earned less retained percentage ( (d) minus (e) ) \$
- (g) Total previously approved \$
- (h) Amount due THIS ESTIMATE ( (f) minus (g) ) \$
- (i) Retainage payment to Subcontractors per Paragraph 4 .1.2.5 of the General Conditions. \$
- (j) AMOUNT DUE Contractor ( (h) minus (i) ) \$

I further certify that all claims outstanding against the undersigned Contractor for labor, materials, and expendable equipment employed in the performance of said contract have been paid in full in accordance with the requirements of said contract, except such outstanding claims as are listed below or on the attached sheet, which statement contains all claims against the Contractor which are not yet paid, including all disputed claims and any claims to which the Contractor has or will assert any defense.

I further certify that all of the materials indicated on this Application for Payment as being stored on the Site, but not yet incorporated into the building, have been purchased, delivered, and are now stored on the Site for future incorporation into the building and until so incorporated the title to same is, upon payment of this statement, vested in the Owner. Furthermore, the undersigned Contractor assumes full responsibility for the existence, protection, and, if necessary, replacement of the above-mentioned materials until the completion of this contract.

Contractor \_\_\_\_\_

By

Date \_\_\_\_\_

Title

**STATEMENT OF THE CONTRACT COMPLIANCE SPECIALIST**

I have checked this Application for Payment and, to the best of my knowledge and belief, the statement of work performed and statement of materials stored on site by the Contractor are supported by my observations

Name \_\_\_\_\_ Contract Compliance Specialist.

Date:

**CERTIFICATE OF THE DESIGN PROFESSIONAL**

I certify that I have verified this Application for Payment and, to the best of my knowledge and belief, it is a true and correct statement of work performed and statement of materials stored on site by the Contractor and that the Contractor's certified statement of his account and the amount due him is correct and just. I further certify that all work has been performed and materials have been supplied in full accordance with the terms and conditions of the Contract Documents and authorized changes thereto.

Name \_\_\_\_\_ Design Professional.

Date:

## SCHEDULE OF CHANGE ORDERS

In support of Application for Payment No.

Project No. \_\_\_\_\_ Period Ending:

Contractor:

CHANGE ORDERS		ADDITIONS			DEDUCTIONS
Number (1)	Date (2)	Authorized Amount (3)	Amount this Period (4)	Completed Previous Periods (5)	Authorized Deductions (6)

**WORK PERFORMED TO DATE**

In support of Application for  
Payment Number: \_\_\_\_\_

For the period from: \_\_\_\_\_ thru \_\_\_\_\_ inclusive.

Project No.  
\_\_\_\_\_

Project Name and Address: \_\_\_\_\_

Contractor's Name and  
Address: \_\_\_\_\_

**WORK INCLUDED IN ORIGINAL CONTRACT**

DETAILED ESTIMATE				WORK PERFORMED TO DATE			
CSI Category and Description Item No. and Designation (1)	Number & Kind of Units (2)	Unit Price (3)	Actual Cost (4)	No. of Units (5)	Amount Earned to Date (6)	Value of Incomplete Work (7)	Percent Complete (8)
<b>Division 00 - Procurement and Contracting Requirements: *</b> a. b. c.							
<b>Division 1 - General Requirements *</b> a. b. c.							
<b>Division 2 - Existing Conditions **</b> (i) Building a. b. c. (ii) Infrastructure a. b. c.							
<b>Division 3 - Concrete *</b> a. b.							

c.

**Division 4 - Masonry \*\***

(i) Building

a.

b.

c.

(ii) Infrastructure

a.

b.

c.

**Division 5 - Metals \***

a.

b.

c.

**Division 6 - Wood, Plastics,  
Composites \***

a.

b.

c.

**Division 7 - Thermal and  
Moisture Protection \*\*\*\*\***

(i) Building

a.

b.

c.

(ii) Infrastructure

a.

b.

c.

Roof:

**Division 8 - Openings \***

a.

b.

c.

**Division 9 - Finishes \***

a.

b.

c.

**Division 10 - Specialties \***

a.

b.



c.

**Division 11 - Equipment \*\*\***

(i) Fixed or Built-in:

a.

b.

c.

(ii) Moveable:

a.

b.

c.

**Division 12 - Furnishings \*\*\***

(i) Fixed or Built-in:

a.

b.

c.

(ii) Moveable:

a.

b.

c.

**Division 13 - Special  
Construction \***

a.

b.

c.

**Division 14 - Conveying  
Equipment \***

a.

b.

c.

**Division 21 - Fire Suppression**

a.

b.

c.

**Division 22 - Plumbing**

a.

b.

c.

**Division 23 - HVAC \*\*\*\***

(i) Building

a.

b.

- c.
- (ii) Infrastructure
  - a.
  - b.
  - c.

**Division 25 - Integrated Automation**

- a.
- b.
- c.

**Division 26 - Electrical \*\***

- (i) Building
  - a.
  - b.
  - c.
- (ii) Infrastructure
  - a.
  - b.
  - c.

**Division 27 - Communications**

- a.
- b.
- c.

**Division 28 - Electronic Safety and Security**

- a.
- b.
- c.

**Division 31 - Earthwork**

- a.
- b.
- c.

**Division 32 - Exterior Improvements**

- a.
- b.
- c.

**Division 33 - Utilities**

- a.
- b.
- c.

**Division 34 - Transportation**

- a.
- b.
- c.

**Division 35 - Waterway and Marine Construction**

- a.
- b.
- c.

**Division 40 - Process Integration**

- a.
- b.
- c.

**Division 41 - Material Processing and Handling Equipment**

- a.
- b.
- c.

**Division 42 - Process Heating, Cooling, and Drying Equipment**

- a.
- b.
- c.

**Division 43 - Process Gas and Liquid Handling, Purification and Storage Equipment**

- a.
- b.
- c.

**Division 44 - Pollution and Waste Control Equipment**

- a.
- b.
- c.

**Division 45 - Industry-Specific Manufacturing Equipment**

- a.
- b.

c.						
<b>Division 46 - Water and Wastewater Equipment</b>						
a.						
b.						
c.						
<b>Division 48 - Electrical Power Generation</b>						
a.						
b.						
c.						
Total Amount of Original Contract			<b>0.00</b>		0.00	0.00
+ or - total previously approved Change Order No's _____ included						
+ or - Change Order No's _____ included approved during period covered by this est. _____						
Total Net Adjusted Amount			0.00		0.00	0.00

**NOTES: The following breakdowns must be accomplished in order to comply with Government Accounting requirements. Upon completion of the Project, the final Application for Payment must show all divisions and sections, and a Final Certification of Costs for Capital Asset Accounting completed and submitted with the Application for Final Payment.**

\* Report Items in each division, by CSI division and such other breakdown as is useful to the Contractor or Contract Compliance Specialist.

\*\* These items must be broken down into 2 categories, (i) Building and (ii) Infrastructure reported by specification section. Infrastructure for these purposes is defined as everything outside a line 5-feet from the building footprint.

\*\*\* These items must be broken down in to 2 categories; (i) fixed equipment & furnishings and (ii) Moveable equipment & furnishings and reported by specification section.

\*\*\*\* Division 23 - HVAC. This item must be broken down into 2 categories, (i) Building and (ii) Infrastructure, reported by specification section. Chillers and HVAC units that serve the facility to be included as a part of the Building, even if they are outside the 5-foot limit. Chillers and HVAC units that are outside the 5-foot limit and serve more than one facility, (i.e., equip. used in a central plant), to be included in Infrastructure.

\*\*\*\*\* Division 7 - Thermal & Moisture Protection of the Roof system should be reported as a separate line item. Generally, this includes components of Sections 7500 and 7600.

## SUMMARY OF MATERIALS STORED

In support Application for Payment No.

Project No. \_\_\_\_\_ Period Ending:

Contractor:

ITEM NO.	NAME <small>(Contractor or Subcontractor)</small>	TYPE OF MATERIAL	QUANTITY	AMOUNT <small>(Dollars)</small>
		TOTALS		

Prepared by \_\_\_\_\_ for \_\_\_\_\_  
(Contractor)

Date \_\_\_\_\_, and certified by him to be a true and accurate statement.

Checked:

By:

Contract Compliance Specialist

Date:

**SUBCONTRACTOR RETAINAGE RELEASE CERTIFICATE**

*(To be Originated by Subcontractor)*

TO: Board of Regents of the University System of Georgia, Owner  
Institution Name, Using Agency

RE: Project Name and Number: Project Number and Description, Institution Name, City, State:  
Certificate Regarding Subcontractor's Completed Work and Retainage Release

1. This is to certify that our work is one hundred percent complete for our subcontract number \_\_\_\_\_.  
Our retainage is due in accordance with the contract documents. Our scope of work included the  
\_\_\_\_\_. The total amount of retainage now due is \$\_\_\_\_\_.

2. The Subcontractor hereby certifies that all work required under the above contract has been performed in accordance with the terms thereof, that all materialmen, subcontractors, mechanics, and laborers have been paid and satisfied in full, and that there are no outstanding claims of any character (including disputed claims or any claims to which the subcontractor has or will assert any defense) arising out of the performance of the contract which have not been paid and satisfied in full except as listed hereinbelow, which exceptions apply only to the release in Paragraph 5, below:

**[Enter: "None" or List or Make Reference & Attach Exhibit A.]**

3. The Subcontractor further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a claim or lien upon the property of the Owner.

4. The Subcontractor has received final payment in full settlement of all claims against the Owner arising under or by virtue the contract, and acceptance of such payment is acknowledged as a release of the Owner from any and all claims arising under or by virtue of the contract. This release includes any claims set forth or excepted in Paragraph 2 above.

5. **[Strike out if not applicable]** The Subcontractor has received final payment in full settlement of all claims against the Contractor arising under or by virtue the contract, and acceptance of such payment is acknowledged as a release of the Contractor from any and all claims arising under or by virtue of the contract except as set forth in Paragraph 2 above.

6. Payments pursuant to this certificate shall in no way diminish, change, alter or affect the rights of the Owner under the contract documents.

SUBCONTRACTOR:

By: \_\_\_\_\_ Date: \_\_\_\_\_

CONTRACTOR:

By: \_\_\_\_\_ Date: \_\_\_\_\_

DESIGN PROFESSIONAL:

By: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTICE: OWNER MUST RECEIVE A COPY WITH ALL ORIGINAL SIGNATURES.**

**FINAL CERTIFICATION OF COSTS  
FOR CAPITAL ASSET ACCOUNTING**

Date: \_\_\_\_\_

To: \_\_\_\_\_ (Owner)

The following accounting of costs for Project No. \_\_\_\_\_, Project Name: \_\_\_\_\_  
\_\_\_\_\_ at \_\_\_\_\_

is submitted as follows, with the breakdown of costs as specified in the Final Pay Request attached hereto and incorporated herein, for the purposes of capital asset accounting pursuant to GASB 34 Accounting Statements:

1.	<b>BUILDING AND BUILDING IMPROVEMENTS: *</b>	\$ _____
2.	<b>INFRASTRUCTURE: **</b>	\$ _____
3.	<b>FURNISHINGS AND EQUIPMENT: ***</b>	\$ _____
		=====
	<b>TOTAL:</b>	\$ _____

**Notes:** (Contractor must ensure costs from all Change Orders are apportioned and included in each line item above)  
\* **Building:** Include totals from Items 00, 1, 3, 5, 6, 7, 8, 9, 10, 13, 14, 23 and "Building" portions of Items 2, 4, and 26.  
\*\* **Infrastructure:** Include totals from the "Infrastructure" portions of Items 2, 4 and 26.  
\*\*\* **Furnishing and Equipment:** Include totals from only the "moveable" portions of Items 11 and 12.

I certify to the best of my knowledge and belief that all of the amounts set forth on this Certificate are true and correct and are supported by the financial records for this project on file with the Contractor.

Contractor \_\_\_\_\_ By: \_\_\_\_\_  
Date \_\_\_\_\_ Title: \_\_\_\_\_

**CERTIFICATE OF THE DESIGN PROFESSIONAL**

I certify to the best of my knowledge, information and belief that the amounts certified by the Contractor are consistent with the estimates provided in my final Statement of Probable Cost for the Project; that the Building Improvement contains a footprint based upon a line 5 feet outside the building structure) of \_\_\_\_\_ square feet, a total of \_\_\_\_\_ gross square feet, and contains \_\_\_\_\_ floors (including basements). The building fire protection system is \_\_\_\_\_ (include type of system). The Certificate of Occupancy was issued on \_\_\_\_\_. I further certify that the design intent for this project is that the Building and Building Improvements are of Building Construction Class \_\_\_\_\_ and ISO Occupancy Type(s) \_\_\_\_\_ and have an expected useful life of \_\_\_\_\_ years from the date of this Certificate, and that my observations of the construction confirm these expectations. (See Exhibit J of Design Professional Contract.)

Name \_\_\_\_\_ Design Professional. Date: \_\_\_\_\_

**CERTIFICATE OF THE USING AGENCY OR OWNER**

*I certify that to the best of my knowledge, information, and belief that the cost of the real property covered by this project, to the boundaries on the final Site Plan, was \$ \_\_\_\_\_ and the cost of additional government-supplied furnishings and equipment acquired for this Project was \$ \_\_\_\_\_*

Name \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## SUPPLEMENTARY GENERAL CONDITIONS

1. The use of all forms of tobacco products on property owned, leased, rented, in the possession of, or in any way used by the USG or its affiliates is expressly prohibited. "Tobacco Products" is defined as cigarettes, cigars, pipes, all forms of smokeless tobacco, clove cigarettes and any other smoking devices that use tobacco such as hookahs or simulate the use of tobacco such as electronic cigarettes. (Board of Regents Policy Manual, 6.10 Tobacco and Smoke-Free Campuses: <https://www.usg.edu/policymanual/section6/C2663> ).

2. Design Builder may be required to use e-Builder, the BOR's Capital Program Management Software.

3. Contractor's Pollution Liability

Contractor shall procure and maintain a broad form contractor's pollution liability insurance policy when the Scope of Work involves removal, abatement, encapsulation or other treatment, disposal or remediation of asbestos or other hazardous materials or an exposure to pollutants or impairment of the environment. The policy shall provide coverage for third party liability, clean-up, and corrective action including assessment remediation and defense costs, bodily injury, property damage (including loss of use of damaged property or of property which has not been physically injured or destroyed), investigation, settlement of claims, caused by pollution conditions (including sudden and non-sudden pollution conditions) arising from the services and operations of Contractor or its subcontractors pursuant to this Agreement including pollution conditions which arise from encountering preexisting environmental conditions at the project site and for liability resulting from the transportation of hazardous wastes. The policy may be written on either an occurrence form or claims made with minimum limits of liability coverage of:

Each Occurrence	\$ 1,000,000
Aggregate	\$ 2,000,000
Umbrella Liability	\$ 2,000,000

If coverage is written on a claims-made basis, an extended reporting period, or tail coverage, shall be provided for one (1) year following completion of Contractor's work under the Agreement. The policy retroactive date shall be no later than the effective date of this Agreement. The policy shall be endorsed to name the Owner and Using Agency as additional insureds.



**SECTION 01 1000  
SUMMARY**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Access to site.
  - 4. Work restrictions.
  - 5. Coordination with occupants
  - 6. Specification and drawing conventions.
- B. Related Sections:
  - 1. Division 00 Section "Preliminary Schedules" for anticipated project construction schedule.
  - 2. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities, construction parking, construction fence, and project sign.

**1.02 PROJECT INFORMATION**

- A. Project Identification: J-381 Christenberry Field House Renovations, Augusta University, Augusta, Georgia.
- B. Project Location:
  - 1. Augusta University
  - 2. 3109 Wrightsboro Road
  - 3. Augusta, GA 30909
- C. Owner:
  - 1. Board of Regents of the University System of Georgia, In Care of Augusta University, 1120 15th Street, HS-3000Q, Augusta, GA, 30912
    - a. Owner's Representative:
      - 1) Joseph V. Gambill, Senior Architect & Planner, Augusta University
      - 2) Telephone Number: 706-721-7148
      - 3) jogambill@augusta.edu
- D. Design Professional: CPL, 615 Molly Lane, Suite 100, Woodstock, GA, 30189
  - 1. Contact Person: Scott Hughes
  - 2. Telephone Number: 678-318-1067
- E. Design Professional's Consultants: The Design Professional has or will retained the following design professionals who have prepared designated portions of the Contract Documents:
  - 1. Professional Estimator Consultant: TBD.
- F. Project Web Site: A project Web site administered by the Design Professional will be used for purposes of managing communication and documents during the construction stage.

**1.03 WORK COVERED BY CONTRACT DOCUMENTS**

- A. The Work of the Project is defined by the Contract Documents and consists of the following:
  - 1. ***The removal of approximately 40,000 sf of existing exterior EIFS finish system that is failing and replacement with a new exterior metal panel building veneer.***
  - 2. LED lighting upgrade to approximately 18,000 sf of the existing building areas.
  - 3. Add digital controls to the existing HVAC system and the replacement of existing air distribution equipment.

4. ***Existing structural framing remediation to repair over notched existing cold formed metal stud framing with supplemental cold formed metal stud framing to stiffen existing over notched cold formed metal stud framing members. This work scope is anticipated to be encountered at approximately 54 percent of the existing area covered by new exterior metal building skin installation areas and as identified in contract documents. Reference structural drawings for additional work scope information.***
5. ***Installation of supplemental metal stud bracing for the entire area covered by new exterior metal building skin installation as defined in contract documents. Reference structural drawings for additional work scope information.***
6. ***Repair by application of rust-inhibiting coating to exterior wall existing rusted galvanized cold-formed metal framing components where encountered. The work scope of this effort anticipated at head and sill conditions of exterior metal stud framed walls and at perimeter of exterior wall metal stud framed wall openings to be exposed with removal of existing exterior EIFS finish system.***
7. ***Infill of existing exterior wall opening with supplemental metal stud framing and interior gypsum board wall finish repair following removal of existing mechanical wall louver and mechanical exhaust fan units at multiple locations as defined in contract documents.***
8. ***Replacement of existing exterior operable window unit screens with new screens to match existing configurations.***

B. Type of Contract:

1. Project delivery method will be Design - Bid - Build.

**1.04 ACCESS TO SITE**

- A. General: Contractor shall have use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to occupy certain portions or the entire building for its intended use.
- B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- C. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of the Project site beyond areas in which the Work is indicated.
  1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to the Owner, Owner's employees, event attendees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

**1.05 WORK RESTRICTIONS**

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, except as otherwise indicated. Contractor's

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management personnel may be on-site during off-hours and Contractor may receive deliveries during off-hours but should not disrupt or interfere with local traffic and/or Augusta University operations.

1. School Vacations and Holidays: Work may occur at any time, as pre-approved by Owner.
  2. Weekend Hours: Work may occur at any time, as pre-approved by Owner.
  3. Special Events: The Owner will provide dates and times of special events that will restrict construction operations.
  4. The Contractor can establish alternate work hours as deemed necessary to meet project completion dates, provided the hours are pre-approved by the Owner.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than five (5) days in advance of proposed utility interruptions.
  2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than two (2) days in advance of proposed disruptive operations.
  2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building and Campus: Smoking is not permitted within the building or on the Campus. The policy applies to all employees, students, Contractor, subcontractors, and visitors and is applicable 24 hours a day, seven days a week. Also, all events hosted by a USG-entity or on behalf of the USG shall be tobacco and smoke free, according to the policy.

#### **1.06 COORDINATION WITH OCCUPANTS**

- A. Owner Occupancy: Owner will occupy the Christenberry Field House during the entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
- C. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- D. Maintain power, emergency power, data cabling, phone lines, water, HVAC, fire protection and alarm system, exit signs and means of egress continuously 24/7.
- E. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Material Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
1. Design Professional will prepare a Certificate of Material Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
  2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
  3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
  4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

### **1.07 SPECIFICATION AND DRAWING CONVENTIONS**

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  2. Specification requirements are to be performed by the Contractor unless specifically stated otherwise.
  3. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
  4. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
- B. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
1. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
  2. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

**PART 2 PRODUCTS (NOT APPLICABLE)**

**PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

**SECTION 01 2500  
SUBSTITUTION PROCEDURES**

**PART 1 GENERAL**

**1.01 GENERAL**

- A. Should the Contractor desire to substitute other articles, materials, apparatus, products or processes than those specified or approved as equal, the Contractor shall apply to the Design Professional in writing for approval of such substitution using the Substitution Request form attached to this section. It should be noted that the bid shall not be based on a substituted article, material, apparatus, product or process. With the application shall be furnished such information as required by the Design Professional to demonstrate that the article, material, apparatus, product or process he wishes to use is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended. The Contractor shall set forth the reasons for desiring to make the substitution and shall further state what difference, if any, will be made in the construction schedule and the contract price for such substitution should it be accepted; it being the intent hereunder that any savings shall accrue to the benefit of the Owner.
- B. The Design Professional shall reject any such desired substitution as not being specifically named in the contract, or if he shall determine that the adjustment in price in favor of the Owner is insufficient, the Contractor shall immediately proceed to furnish the designated article, material, apparatus, product or process.
- C. Request for substitutes shall conform to the requirements of this Article.
- D. Requests for substitutions shall include full information concerning differences in cost, and any savings in cost resulting from such substitutions shall be passed on to the Owner.
- E. Requests for utilization of substitutes will be reviewed during the course of the project. The impact on the project and the timeliness of submission will be of key consideration.
- F. The approval of utilization of a substitute is subject to the sole and final discretion of the Design Professional.

**1.02 SUMMARY**

- A. Section includes administrative and procedural requirements for substitutions.
- B. Substitution Request form.
- C. Related Sections:
  - 1. Division 01 Section "Alternates" for products selected under an alternate.
  - 2. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
  - 3. Division 01 Section "Submittals" for submittal procedures.
  - 4. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

**1.03 DEFINITIONS**

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
- B. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer an advantage to Contractor or Owner.
- C. Substitute Items (Or Equal): If in the Design Professional sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, it will not be

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considered a proposed substitute item. "Or Equal" substitutions will not be allowed beyond the manufacturers listed, unless requested by the Owner.

#### 1.04 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use facsimile of form provided at the end of this section.
  2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate Contractors that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. Certificates and qualification data, where applicable or requested.
    - g. List of similar installations for completed projects with project names and addresses and names and addresses of Design Professionals and owners.
    - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - i. Research reports evidencing compliance with building code in effect for Project.
    - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
    - k. Cost information, including a proposal of change, if any, in the Contract Sum.
    - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
    - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  3. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Design Professional will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or Seven days of receipt of additional information or documentation, whichever is later.
    - a. Forms of Acceptance: Change Order, Construction Change Directive, or Design Professional's Supplemental Instructions for minor changes in the Work.
    - b. Use product specified if Design Professional does not issue a decision on use of a proposed substitution within time allocated.

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## 1.05 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

## PART 2 PRODUCTS

### 2.01 SUBSTITUTION PROCEDURES (GENERAL)

- A. Conditions: After the "Notice of Award" and prior to the Contractor entering into a Formal Contract with the Owner, the Design Professional will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional will return requests without action, except to record noncompliance with these requirements:
  - 1. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 2. Substitution results in substantial cost savings to the Owner or substantial performance improvements.
  - 3. Substitution request is fully documented and properly submitted.
  - 4. Requested substitution will not adversely affect Contractor's construction schedule.
  - 5. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - 6. Requested substitution is compatible with other portions of the Work.
  - 7. Requested substitution has been coordinated with other portions of the Work.
  - 8. Requested substitution provides specified warranty.
  - 9. If requested substitution involves more than one subcontractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all the subcontractors involved.
- B. If the Contractor does not present "Substitutions" in the time frame noted above any future requests to substitute products will not be considered, unless the substitution is for cause.
- C. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

### 2.02 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Design Professional will consider Contractor's request for substitution when the following conditions are present.
    - a. The specified product is not available
    - b. The specified product cannot be delivered in the time frame required under the Project Schedule.
  - 2. Conditions: Design Professional will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Requested substitution provides sustainable design characteristics that specified product provided for achieving Georgia Peach Green Building Rating System Mandatory Requirements.
    - c. Substitution request is fully documented and properly submitted.
    - d. Requested substitution will not adversely affect Contractor's construction schedule.

- e. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - f. Requested substitution is compatible with other portions of the Work.
  - g. Requested substitution has been coordinated with other portions of the Work.
  - h. Requested substitution provides specified warranty.
  - i. If requested substitution involves more than one subcontractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all subcontractors involved.
- B. Substitutions for Convenience: Design Professional will consider requests for substitution if received within 60 days after the Notice of Award and based on the following
- 1. The proposed product substitution will result in a significant cost savings to the Owner.
  - 2. The proposed product has substantial performance improvements.
  - 3. The proposed product can be provided much earlier in the schedule enhancing the project completion date.
  - 4. The proposed product warranty is superior to the specified item.

### **2.03 DETAILED SUBSTITUTION REVIEW PROCEDURES**

- A. The Design Professional in addition to the requirements listed above will require compliance with the following requirements and procedures.
- 1. Requests for approval of substitutions will be received and considered from the Contractor only and not from manufacturers, suppliers, Subcontractors, or other third parties.
  - 2. If the materials and equipment submitted are offered as substitutions to the Contract Documents or approved equal, the Contractor shall advise the Owner and the Design Professional of the requested substitutions and comply with the requirements hereinafter specified in this Section.
  - 3. Where the acceptability of substitution is conditioned upon a record of and the proposed substitution does not fulfill this requirement, the Design Professional, at the Design Professional's sole discretion, may accept the substitution if the Contractor provides a bond or cash deposit which guarantees replacement at no cost to the Owner for any failure occurring within a specified time. The substitution item must meet all other technical requirements contained in the Specifications.
  - 4. The Contractor shall furnish such information as required by the Design Professional to demonstrate that the equal article, material, apparatus, product or process is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended and/or that it offers substantial benefits to the Owner in saving of time and/or cost. The Contractor shall set forth the reasons for desiring to make this substitution.
  - 5. Contractor shall submit:
    - a. For each proposed request for approved substitute sufficient details, complete descriptive literature and performance data together with samples of the materials, where feasible, to enable the Design Professional to determine if the proposed request for approval should be granted, including manufacturer's brand or trade names, model numbers, description of specification of item, performance data, test reports, samples, history of service, and other data as applicable.
    - b. Certified tests, where applicable, by an independent laboratory attesting to the performance of the substitute.
    - c. A list of installations where the proposed substitute equipment or materials is performing under similar conditions as specified.
  - 6. Where the approval of a substitute requires revision or redesign of any part of the Work, including that of other Subcontractors, all such revision and redesign, and all new drawings and details required therefore, shall be provided by the Contractor at its own



- cost and expense, and shall be subject to the approval of the Design Professional.
7. In the event that the Design Professional is required to provide additional services, then the Design Professional's charges for such additional services shall be paid by the Contractor to the Owner.
  8. Any modifications in the Work required under other contracts to accommodate the changed design will be incorporated in the appropriate contracts and any resulting increases in contract prices will be charged to the Contractor by the Owner who initiated the changed design.
  9. In all cases, the Design Professional shall be the judge as to whether a proposed substitute is to be approved. The Contractor shall be bound by the Design Professional's decision. No substitute items shall be used in the Work without written approval of the Design Professional.
  10. In making request for approval of substitute, Contractor represents that:
    - a. Contractor has investigated proposed substitute, and determined that it is equal to or superior in all respects to the product, manufacturer or method specified or offers other specified advantages to the Owner.
    - b. Contractor will provide the same or better warranties or bonds for proposed substitute as for product, manufacturer or method specified.
    - c. Contractor waives all claims for additional costs or extension of time related to proposed substitute that subsequently may become apparent.
    - d. Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Design Professional in considering a substitute proposed by the Contractor or by reason of failure of the Design Professional to approve a substitute proposed by the Contractor. Any delays arising out of consideration, approval, or utilization of a substitute shall be the sole responsibility of the Contractor requesting the substitute and it shall arrange its operations to make up the time lost.
  11. Proposed substitute will not be accepted if:
    - a. Acceptance will require substantial revision of Contract Documents.
    - b. Acceptance will substantially change design concepts or Technical Specifications.
    - c. Acceptance will delay completion of the Work, or the Work of other Contractors.
    - d. If the Substitute item is not accompanied by formal request for approval of substitute from Contractor it will not be considered.
  12. The Design Professional reserves the right to disapprove, for aesthetic reasons, any material or equipment on the basis of design or color considerations alone, without prejudice to the quality of the material or equipment, if the manufacturer cannot meet the required colors or design.
  13. All requests for approval of substitutes of materials or other changes from the contract requirements shall be accompanied by an itemized list of all other items affected by such substitution or change. The Design Professional shall have the right, if such is not done, to rescind any approvals for substitutions and to order such Work removed and replaced with Work conforming to the specified requirements of the contract, all at the Contractor's expense, or to assess all additional costs resulting from the substitution to the Contractor.
  14. Approval of a substitute will not relieve Contractor from the requirement to submit Shop Drawings or any of the provisions of the Contract Documents.
  15. In the event that the Design Professional is required to provide additional services as a result of a request for approval of a substitute results in changes by the Contractor in dimension, weight, power requirements, etc., of the equipment and accessories furnished, or as a result of Contractor's errors, omissions or failure to conform to the requirements of the Contract Documents or if the Design Professional is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, or for evaluation of deviations from Contract Documents, then the Design Professional's charges in connection with such additional services shall be paid by the Contractor.

16. Structural design shown on the Drawings is based upon the configuration of and maximum loading for major items of equipment as indicated on the Drawings and as specified. If the substituted equipment furnished differs from said features, the Contractor shall pay to the Owner all costs of redesign and for any construction changes required to accommodate the equipment furnished, including the Design Professional's charges in connection therewith.
- B. The Contractor shall respond to required submittals with complete information and with a degree of accuracy to achieve approvals within two (2) submissions. All costs to the Design Professional involved with subsequent submissions of Shop Drawings, Samples or other items requiring approval, will be paid by the Contractor to the Owner, by deducting such costs from payments due for Work completed. In the event an approved item is requested by the Contractor to be changed or substituted for, all costs involved in the reviewing and approval process will likewise be back charged to the Contractor unless determined by the Design Professional that the need for such substitution and/or deviation from Contract Documents is beyond the control of the Contractor.

**PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

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**SUBSTITUTION REQUEST**

SPECIFIED ITEM: \_\_\_\_\_

Section Line Number Paragraph Description: \_\_\_\_\_

The undersigned requests consideration of the following:

**PROPOSED SUBSTITUTION:**

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

The proposed substitution does not affect dimensions shown on drawings.

The undersigned will pay for changes to the building design, including engineering design, detailing, and construction cost caused by the request substitution.

The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.

Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

Submitted by: \_\_\_\_\_

Signature / Title \_\_\_\_\_

Address: \_\_\_\_\_

Date \_\_\_\_\_

Telephone \_\_\_\_\_

Cost Credits; \_\_\_\_\_

Attachments: \_\_\_\_\_

**NO SUBSTITUTION REQUEST IS APPROVED UNLESS IT IS INCLUDED IN THE CONTRACT DOCUMENTS BY CHANGE ORDER.**

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**SECTION 01 2600  
CONTRACT MODIFICATION PROCEDURES**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections:
  - 1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

**1.02 MINOR CHANGES IN THE WORK**

- A. Design Professional will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."
  - 1. Where Contractor considers Design Professional's action on ASI's warrants change to the Contract Time or the Contract Sum, Contractor shall submit a Change Proposal according to Division 01 Section "Contract Modification Procedures."
    - a. Contractor shall notify Design Professional in writing within 3 days of receipt of ASI response that a Change Proposal will be submitted.
    - b. Contractor shall submit Change Proposal within 7 days of receipt of ASI, and shall not proceed with change(s) until a Change Order has been approved.
    - c. If Contractor proceeds with change(s) prior to a Change Order being approved, change(s) shall be done at Contractor's own risk and Contractor shall assume change(s) are being done with no change in Contract Time or no change in Contract Sum ("zero cost").

**1.03 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Design Professional will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Design Professional are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request or 14 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Design Professional.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the

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- proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

#### **1.04 ADMINISTRATIVE CHANGE ORDERS**

- A. Alternate Adjustment: Refer to Division 01 Section "Alternates" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect alternates.

#### **1.05 CHANGE ORDER PROCEDURES**

- A. Upon Contractor's submittal of Change Order Proposal to Design Professional, Design Professional will review and execute a Change Order on AIA Document G701 to the Contractor for signature. Upon Contractor's signature Contractor shall forward to Owner for Owner's approval and signature. Owner will forward approved Change Orders to Design Professional for distribution.

#### **1.06 CONSTRUCTION CHANGE DIRECTIVE**

- A. Construction Change Directive: Design Professional may issue a Construction Change Directive on AIA Document G714.
- B. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- C. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

#### **PART 2 PRODUCTS (NOT APPLICABLE)**

#### **PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

**SECTION 01 2900  
PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

**1.02 RELATED SECTIONS:**

- A. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
- B. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
- C. Division 01 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.
- D. Division 01 Section "Sustainable Design Requirements" for administrative requirements governing submittal of cost breakdown information required for Georgia Peach Green Building Rating System.

**1.03 SCHEDULE OF VALUES**

- A. Coordination: Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
  - 1. Application for Payment forms with continuation sheets.
  - 2. Submittal schedule.
  - 3. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of subcontractor.
    - d. Name of manufacturer or fabricator.
    - e. Name of supplier.
    - f. Change Orders (numbers) that affect value.
    - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
      - 1) Labor.
      - 2) Materials.
      - 3) Equipment.
  - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts where appropriate.
  - 4. The following line items must be included on the continuation sheet.

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- a. Project Bonds and Insurances
  - b. Mobilization
  - c. Shop Drawings
  - d. Project Meetings
  - e. Temporary Heat (where applicable)
  - f. Progress Cleaning
  - g. Lawn and Tree Watering (where applicable to establish new lawns and trees)
  - h. Punch List
  - i. Final Cleaning
  - j. Close Out documents and Warranties
  - k. Include separate line items under Contractor and principal subcontracts for Georgia Peach Green Building Rating System requirement.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  6. Submit draft of AIA Document G703 Continuation Sheets.
  7. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
    - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
  8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### **1.04 APPLICATIONS FOR PAYMENT**

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  1. Initial Application for Payment, Application for Payment at time of Material Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment, or other forms as required by Owner.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
  4. The OWNER shall retain five percent (5%) of the amount due on each Application for both the work completed and materials stored. The OWNER reserves the right to retain a greater percentage in the event the CONTRACTOR fails to make satisfactory progress or in the event there is other specific cause for greater withholding.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. For materials stored off site provide photos of items.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede submittal of first Application for Payment include the following:
1. List of Substitutions.
  2. Contract or Notice to Proceed.
  3. Performance and Payment bonds.
  4. Liability, Auto, and Umbrella Insurance.
  5. Worker Compensation certificates.
- I. Initial Application for Payment: Administrative actions and submittals that must coincide submittal of first Application for Payment include the following:
1. Schedule of values.
  2. List of subcontractors.
  3. Contractors Safety Program.
  4. Contractor's construction schedule (preliminary if not final).
  5. Georgia Peach Green Building Rating System action plans.
  6. Submittal schedule (preliminary if not final).
    - a. First Payment WILL NOT be processed without a Submittal Schedule.
  7. Emergency Contacts List.
  8. Certified Payroll.
  9. Schedule of unit prices.
  10. List of Contractor's staff assignments.
  11. List of Contractor's principal consultants.
  12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  13. Report of preconstruction conference.
- J. Application for Payment at Material Completion: After issuing the Certificate of Material Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Administrative actions and submittals that shall precede or coincide with this application include:
    - a. Occupancy permits and similar approvals.



- b. List of incomplete Work, recognized as exceptions to Architect's Certificate of Material Completion.
  - c. Record Drawings and Specifications.
  - d. Operations and Maintenance Manuals.
  - e. Maintenance Instructions and Training.
  - f. Start-up performance reports.
  - g. Test/adjust/balance records.
  - h. Warranties (guarantees) and maintenance agreements.
  - i. Final Georgia Peach Green Building Rating System Documentation.
  - j. Final cleaning.
  - k. Change-over information related to Owner's occupancy, use, operation and maintenance.
  - l. Application for reduction of retainage and consent of surety.
  - m. Advice on shifting insurance coverages.
2. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  3. This application shall reflect Certificates of Partial Material Completion issued previously for Owner occupancy of designated portions of the Work.
- K. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707, "Consent of Surety to Final Payment."
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Material Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final liquidated damages settlement statement.
  10. Removal of temporary facilities and services.
  11. Removal of surplus materials, rubbish, and similar elements.
  12. Change of door locks to Owner's access.
  13. Owner's Affidavits.

**PART 2 PRODUCTS (NOT APPLICABLE)**

**PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

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**SECTION 01 3100  
PROJECT MANAGEMENT AND CORRINATION**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Administrative and supervisory personnel.
  - 3. Coordination drawings.
  - 4. Requests for Information (RFIs).
  - 5. Project meetings.
- B. The Contractor shall participate in coordination requirements.
- C. Related Sections:
  - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
  - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
  - 4. Division 01 Section "Sustainable Design Requirements" for Georgia Peach requirements.
  - 5. Division 01 Section "General Commissioning Requirements" for coordinating the Work with Owner's commissioning authority.

**1.02 DEFINITIONS**

- A. RFI: Request from Owner, Design Professional, or Contractor seeking information from each other during construction.

**1.03 INFORMATIONAL SUBMITTALS**

- A. Subcontractor list is required by AIA Document A201 to be submitted as soon as practical prior to award of the Contract. Coordinate with submittal requirements for subcontractor list in Procurement Requirements and Contracting Requirements if any.
- B. Subcontractor List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- C. Key Personnel Names: Within 7 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cell telephone numbers and e-mail addresses. Provide names, addresses, and cell numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
  - 1. Post copies of list in project meeting room, in temporary field office, on Project Web site, and by each temporary telephone. Keep list current at all times.

**1.04 COORDINATION**

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper

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installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: The Contractor shall coordinate its construction operations with those of other Contractors and entities, if any, to ensure efficient and orderly installation of each part of the Work. The Contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
  2. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
  9. Project closeout activities.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

#### **1.05 COORDINATION DRAWINGS**

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity. Revise Shop Drawings to reflect information documented by coordination drawings.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.

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- b. Coordinate the addition of trade-specific information to the coordination drawings by multiple Contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
  - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
  - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
  - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
  - f. Indicate required installation sequences.
  - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Design Professional indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
  2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
  3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
  4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
  5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Mechanical and Plumbing Work: Show the following:
    - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    - c. Fire-rated enclosures around ductwork.
  7. Electrical Work: Show the following:
    - a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
    - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
    - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
    - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
  8. Fire Protection System: Show the following:
    - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
  9. Review: Design Professional will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Design Professional determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Design

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Professional will so inform the Contractor, who shall make changes as directed and resubmit.

10. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 01 Section "Submittal Procedures."

#### **1.06 KEY PERSONNEL**

- A. Key Personnel Names: Within 5 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cell phone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
  1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### **1.07 REQUESTS FOR INFORMATION (RFI)**

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  1. Do not submit an RFI if information is readily available in the contract documents. Verify by contacting and questioning the Design Professional prior to submitting an RFI.
  2. Design Professional will return RFIs submitted to Design Professional by other entities controlled by Contractor with no response.
  3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of Subcontractor(s).
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Design Professional and Owner.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716.
- D. Design Professional's Action: Design Professional will review each RFI, determine action required, and respond. Allow ten working days for Design Professional's response for each RFI. RFIs received by Design Professional after 1:00 p.m. will be considered as received the following working day.
  1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.

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- c. Requests for coordination information already indicated in the Contract Documents.
  - d. Requests for adjustments in the Contract Time or the Contract Sum.
  - e. Requests for interpretation of Design Professional's actions on submittals.
  - f. Incomplete RFIs or inaccurately prepared RFIs.
2. Design Professional's action may include a request for additional information, in which case Design Professional's time for response will date from time of receipt of additional information.
  3. Design Professional's action on RFIs that may result in a change to the Contract Time or the Contract Sum and the Contractor may be eligible to submit a Change Proposal according to Division 01 Section "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Design Professional in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Design Professional and Owner.
  4. RFI number including RFIs that were dropped and not submitted.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Design Professional's response was received.
  8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Design Professional's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Design Professional within seven days if Contractor disagrees with response.
- a. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  - b. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

#### **1.08 PROJECT WEB SITE**

- A. Use the Design Professional's Project Web site for purposes of hosting and managing project communication and documentation until Final Completion. Project Web site shall include the following functions:
- a. Project directory.
  - b. Meeting minutes.
  - c. Drawing and specification document hosting, viewing, and updating.

#### **1.09 PROJECT MEETINGS**

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Design Professional of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Design Professional, within three days of the meeting.

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- B. Preconstruction Conference: Design Professional will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Design Professional, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
  2. Attendees: Authorized representatives of Owner, Design Professional, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.
    - i. Procedures for processing Applications for Payment.
    - j. Distribution of the Contract Documents.
    - k. Submittal procedures.
    - l. Sustainable design requirements.
    - m. Preparation of record documents.
    - n. Use of the premises and existing building.
    - o. Work restrictions.
    - p. Working hours.
    - q. Owner's occupancy requirements.
    - r. Responsibility for temporary facilities and controls.
    - s. Procedures for moisture and mold control.
    - t. Procedures for disruptions and shutdowns.
    - u. Construction waste management and recycling.
    - v. Parking availability.
    - w. Office, work, and storage areas.
    - x. Equipment deliveries and priorities.
    - y. First aid.
    - z. Security.
    - aa. Progress cleaning.
  4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Georgia Peach Green Building Rating System Coordination Conference: Design Professional will schedule and conduct a Peach Points coordination conference before starting construction, at a time convenient to Owner, Design Professional, and Contractor. Refer to Section - 01 8113: Sustainable Design Requirements.
1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Design Professional, and their consultants; Contractor and its superintendent and Peach Points coordinator; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect meeting requirements for Georgia Peach Green Building Rating System certification, including the following:
    - a. General requirements for Georgia Peach Green Building Rating System-related procurement and documentation.

- b. Project closeout requirements and GA Peach Points certification procedures.
      - c. Role of Georgia Peach Green Building Rating System coordinator.
      - d. Construction operations and Georgia Peach Green Building Rating System requirements and restrictions.
    3. Minutes: Design Professional will record and distribute meeting minutes.
  - D. Preinstallation Conferences: Contractor shall schedule and conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
    1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Design Professional of scheduled meeting dates.
    2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
      - a. Contract Documents.
      - b. Options.
      - c. Related RFIs.
      - d. Related Change Orders.
      - e. Purchases.
      - f. Deliveries.
      - g. Submittals.
      - h. Sustainable design requirements.
      - i. Review of mockups.
      - j. Possible conflicts.
      - k. Compatibility problems.
      - l. Time schedules.
      - m. Weather limitations.
      - n. Manufacturer's written recommendations.
      - o. Warranty requirements.
      - p. Compatibility of materials.
      - q. Acceptability of substrates.
      - r. Temporary facilities and controls.
      - s. Space and access limitations.
      - t. Regulations of authorities having jurisdiction.
      - u. Testing and inspecting requirements.
      - v. Installation procedures.
      - w. Coordination with other work.
      - x. Required performance results.
      - y. Protection of adjacent work.
      - z. Protection of construction and personnel.
    3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
    4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
    5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
  - E. OAC Progress Meetings: Design Professional will conduct progress meetings at regular intervals.
    1. Coordinate dates of meetings with preparation of payment requests.



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2. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority and Design Professional, Contractor, subcontractors, supplier, and other entities concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Contractor shall present for review the current and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Status of sustainable design documentation.
      - 5) Deliveries.
      - 6) Off-site fabrication.
      - 7) Access.
      - 8) Site utilization.
      - 9) Temporary facilities and controls.
      - 10) Progress cleaning.
      - 11) Quality and work standards.
      - 12) Status of correction of deficient items.
      - 13) Field observations.
      - 14) Status of RFIs.
      - 15) Status of proposal requests.
      - 16) Pending changes.
      - 17) Status of Change Orders.
      - 18) Documentation of information for payment requests.
  4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
    - a. Schedule Updating: Contractor shall revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- F. Coordination Meetings: Contractor shall conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as OAC progress meetings and preinstallation conferences.
1. Attendees: Contractor, subcontractors, suppliers, and other entities concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

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- a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
  - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
  - c. Review present and future needs of the Contractor
  - d. including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.
    - 3) Status of submittals.
    - 4) Pending and potential RFI's.
    - 5) Deliveries.
    - 6) Off-site fabrication.
    - 7) Access.
    - 8) Site utilization.
    - 9) Temporary facilities and controls.
    - 10) Work hours.
    - 11) Hazards and risks.
    - 12) Progress cleaning.
    - 13) Quality and work standards.
    - 14) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.
- a. Provide a copies of the meeting reports to the Owner and Design Professional.
- G. Project Closeout Conference: Schedule and conduct a Project closeout conference, at a time convenient to Owner and Design Professional, but no later than 60 days prior to the scheduled date of Material Completion.
1. Contractor shall conduct the conference to review requirements and responsibilities related to Project closeout.
  2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority Design Professional, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Procedures required prior to inspection for Material Completion and for final inspection for acceptance.
    - b. Procedures for processing Applications for Payment at Material Completion and for final payment.
    - c. Preparation of Contractor's punch list.
    - d. Responsibility for removing temporary facilities and controls.
    - e. Requirements for preparing, completing and submitting sustainable design documentation.
    - f. Requirements for preparing operations and maintenance data.
    - g. Requirements for the Submittal of written warranties.

- h. Requirements for demonstration and training.
  - i. Requirements for submission of record documents, record specifications and record submittals.
  - j. Owner's partial occupancy requirements.
  - k. Coordination of separate contracts for owner related work prior to occupancy.
  - l. Installation of Owner's furniture, fixtures, and equipment.
  - m. Responsibility and schedule for final cleaning.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

**PART 2 PRODUCTS (NOT APPLICABLE)**

**PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

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**SECTION 01 3200  
CONSTRUCTION PROGRESS DOCUMENTATION**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Start-up construction schedule.
  - 2. Contractor's construction schedule.
  - 3. Daily construction reports.
  - 4. Material location reports.
  - 5. Field condition reports.
  - 6. Special reports.
- B. Related Sections:
  - 1. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
  - 2. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

**1.02 DEFINITIONS**

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Design Professional.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
    - a. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
    - b. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

**1.03 INFORMATIONAL SUBMITTALS**

- A. Format for Submittals: Submit required submittals in the following format[s]:
  - 1. PDF electronic file.

- B. Start-up construction schedule.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- D. Daily Construction Reports: Submit at weekly intervals.
- E. Field Condition Reports: Submit at time of discovery of differing conditions.
- F. Special Reports: Submit at time of unusual event.

#### **1.04 QUALITY ASSURANCE**

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
  - B. Review software limitations and content and format for reports.
  - C. Verify availability of qualified personnel needed to develop and update schedule.
  - D. Discuss constraints, including phasing, area separations, interim milestones and partial Owner occupancy.
  - E. Review delivery dates for Owner-furnished products.
  - F. Review schedule for work of Owner's separate contracts.
  - G. Review time required for review of submittals and resubmittals.
  - H. Review requirements for tests and inspections by independent testing and inspecting agencies.
  - I. Review time required for completion and startup procedures.
  - J. Review and finalize list of construction activities to be included in schedule.
  - K. Review submittal requirements and procedures.
  - L. Review procedures for updating schedule.

#### **1.05 COORDINATION**

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Subcontractors.
  - 1. Secure time commitments for performing critical elements of the Work from entities involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

### **PART 2 PRODUCTS**

#### **2.01 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL**

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Design Professional.

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2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  4. Startup and Testing Time: Include not less than 15 days for startup and testing.
  5. Material Completion: Indicate completion in advance of date established for Material Completion, and allow time for Design Professional's administrative procedures necessary for certification of Material Completion.
  6. Punch List and Final Completion: Include not more than 30 days for punch list and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
  2. Work under More Than One Contract: Include a separate activity for each contract.
  3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
  5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
  6. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Material Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Subcontract awards.
    - b. Submittals.
    - c. Purchases.
    - d. Mockups.
    - e. Fabrication.
    - f. Sample testing.
    - g. Deliveries.
    - h. Installation.
    - i. Tests and inspections.
    - j. Adjusting.
    - k. Curing.
    - l. Startup and placement into final use and operation.
  8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

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- a. Structural completion.
  - b. Permanent space enclosure.
  - c. Completion of mechanical installation.
  - d. Completion of electrical installation.
  - e. Material Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Material Completion, and final completion.
  - E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
    1. See Division 01 "Payment Procedures" for cost reporting and payment procedures.
  - F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
    1. Unresolved issues.
    2. Unanswered RFIs.
    3. Rejected or unreturned submittals.
    4. Notations on returned submittals.
  - G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
  - H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

## **2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)**

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. Startup Network Diagram: At time of Preconstruction Conference submit preliminary schedule for Owner's review and comment. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

## **2.03 CPM SCHEDULE: PREPARE CONTRACTOR'S CONSTRUCTION SCHEDULE USING A TIME-SCALED CPM NETWORK ANALYSIS DIAGRAM FOR THE WORK.**

- A. Submit CPM schedule so it can be accepted for approval no later than 30 days after date established for the Notice to Proceed.
  1. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Design Professional's approval of the schedule.
- B. Conduct educational workshops to train and inform key Project personnel, including subcontractor's personnel, in proper methods of providing data and using CPM schedule information.
- C. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
- D. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- E. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

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1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - a. Preparation and processing of submittals.
    - b. Mobilization and demobilization.
    - c. Purchase of materials.
    - d. Delivery.
    - e. Fabrication.
    - f. Utility interruptions.
    - g. Installation.
    - h. Work by Owner that may affect or be affected by Contractor's activities.
    - i. Testing and commissioning.
    - j. Punch list and final completion.
    - k. Activities occurring following final completion.
  2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
  3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
  4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
  5. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain Design Professional's approval prior to assigning costs to fabrication and delivery activities. Assign costs under main subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, Georgia Peach Green Building Rating System documentation, and demonstration and training (if applicable).
    - a. Each activity cost shall reflect an appropriate value subject to approval by Design Professional.
    - b. Total cost assigned to activities shall equal the total Contract Sum.
  - F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
  - G. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
    1. Contractor or Subcontractor and the Work or activity.
    2. Description of activity.
    3. Main events of activity.
    4. Immediately preceding and succeeding activities.
    5. Early and late start dates.
    6. Early and late finish dates.
    7. Activity duration in workdays.
    8. Total float or slack time.
    9. Average size of workforce.
    10. Dollar value of activity (coordinated with the schedule of values).



- H. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
  2. Changes in early and late start dates.
  3. Changes in early and late finish dates.
  4. Changes in activity durations in workdays.
  5. Changes in the critical path.
  6. Changes in total float or slack time.
  7. Changes in the Contract Time.

## **2.04 REPORTS**

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of Subcontractors at Project site.
  2. Approximate count of personnel at Project site.
  3. Equipment at Project site.
  4. Material deliveries.
  5. High and low temperatures and general weather conditions, including presence of rain or snow.
  6. Accidents.
  7. Meetings and significant decisions.
  8. Unusual events (refer to special reports).
  9. Stoppages, delays, shortages, and losses.
  10. Meter readings and similar recordings.
  11. Emergency procedures.
  12. Orders and requests of authorities having jurisdiction.
  13. Change Orders received and implemented.
  14. Construction Change Directives received and implemented.
  15. Services connected and disconnected.
  16. Equipment or system tests and startups.
  17. Partial completions and occupancies.
  18. Material Completions authorized.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## **2.05 SPECIAL REPORTS**

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

## **PART 3 EXECUTION**

### **3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Design Professional, Owner, separate Contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

**END OF SECTION**

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**SECTION 01 3300  
SUBMITTAL PROCEDURES**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. This Section explains the procedures for electronic submittals when using the Design Professional's FTP website.

**1.02 DEFINITIONS**

- A. Action Submittals: Written and graphic information and physical samples that require Design Professional's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Design Professional's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

**1.03 ACTION SUBMITTALS**

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Design Professional and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontractors, the schedule of values, and Contractor's construction schedule.
  - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
  - 4. Format: Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Specification Section number and title.
    - c. Submittal category: Action; informational.
    - d. Name of subcontractor.
    - e. Description of the Work covered.
    - f. Scheduled date for Design Professional's final release or approval.
    - g. Scheduled date of fabrication.
    - h. Scheduled dates for purchasing.

- i. Scheduled dates for installation.
- j. Activity or event number.
- 5. See Article 1.4 for additional requirements.

#### **1.04 SUBMITTAL ADMINISTRATIVE REQUIREMENTS**

- A. The Contractor shall prepare a Submittal Log containing the information required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Design Professional. The Design Professional will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute an approval for the submittal, shop drawings and sample submissions to commence. No Submittals or Shop Drawings will be reviewed by the Design Professional until an approved Submittal Log is in place.
  - 1. The Submittal Schedule shall be coordinated with the overall Project Schedule to ensure that submittals are submitted and reviewed as not to delay the Project Schedule. The Contractor shall allow adequate processing time for the Design Professional's review of the initial submittal and equivalent time to review re-submissions
  - 2. The Design Professional will not be responsible to ensure that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals are the Contractor's sole responsibility.
- B. Design Professional's Digital Data Files for Contractor's use: Refer to Section 01 3900.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Design Professional reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Design Professional's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
  - 1. Initial Review: Allow 10 Calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Design Professional will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Re-submittal Review: Allow 10 Calendar days for review of each re-submittal.
  - 4. Sequential Review: Where sequential review of submittals by Design Professional's consultants, Owner, or other parties is indicated, allow 21 Calendar days for initial review of each submittal.
  - 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Design Professional and to Design Professional's consultants, allow 15 Calendar days for review of each submittal. Submittal will be returned to Design Professional before being returned to Contractor.

6. Where submittals are required to be approved that are part of an assembly or for items such as finishes where color selections are required. The submittal will be retained until all of the information related to these systems and color selections is provided and accepted.
- E. Options: Identify options requiring selection or action by Design Professional.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Design Professional on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

### 1.05 ELECTRONIC SUBMITTALS

- A. All submittals shall be submitted electronically unless otherwise indicated.
  1. Submittals and Shop Drawings sent by mail or hand carried will not be accepted and may be discarded.
  2. The Contractor is responsible for all costs of creating electronic files for the submittal process. The Design Professional will not provide this service.
  3. A Submittal Cover Sheet shall be used for all Submittals.
    - a. The Submittal cover sheet template form, as a Word Document, (.doc) is available from the Design Professional upon request.
  4. The Submittal Cover sheet, when scanned to a PDF, shall be the first document viewed in the individual file.
    - a. Each Product Submitted shall have a Submittal Cover sheet attached.
    - b. Each Submittal Cover sheet shall be filled in completely. Files that are sent with the Submittal Cover Sheet missing or not filled in correctly will be rejected. The Design Professional will send a notice that the submittal is missing information. If the Contractor fails to correct or provide the proper submittal within 15 days, notice will be provided and the submittal will be removed from the Design Professionals FTP site.
  5. The Contractor(s) will be provided with a folder location to upload files to the Design Professionals FTP site. This folder location and a "log in" will be provided to the Contractor(s) at the Pre-Construction Meeting.
  6. The Contractor upon uploading the files shall send a corresponding email notifying the Design Professional that files have been uploaded to the Design Professionals FTP site. Web Addresses for the Design Professionals FTP site will be provided at the Pre-Construction Meeting
  7. A read only Record Submittal Log will be available at the Design Professionals FTP site for the Contractors reference in checking the status of the submittals and shop drawings.
  8. File Naming (for uploading): Each submittal or shop drawing file uploaded to the designated folder on the FTP site shall have in the file name, the specification section number followed by a numerical reference to each product that is submitted. For re-submissions a space will be entered followed by the re-submission number. This will be followed by a space and the following letter reference. (without parenthesis) Include the following information as keywords in the electronic submittal file metadata:

(IS)	Incoming Submittal
(ISD)	Incoming Shop Drawing
(R1 or R2)	Revision 1, 2 etc.

Example:

<u>Spec Sec</u>	<u>Product in Section</u>	<u>Re-submittal (if required)</u>	<u>Incoming Submittal</u>
10 2113	01	R1	IS

---

The file name should appear as follows: 10 2113 01 R1 IS pdf

- B. The Design Professional will review the submittals and shop drawings that are uploaded to the Design Professionals FTP Site.
1. When the review is completed for each submittal, the submittal will be uploaded to the Design Professionals FTP site in an "Outgoing Folder". An email notice will be sent out to the Contractor stating the submittal has been reviewed and is available for download from Design Professionals FTP Site.
  2. The file name will be the same without incoming (IS), (ISD) designations indicated in the upload instructions. An ("O" Outgoing) will be inserted indicating that the submittal was uploaded to the Design Professionals FTP site.
  3. The Design Professional will add in the file name preceded by spaces the following designations. (without parenthesis)
    - (A) No exception Taken
    - (FC) Furnish as Corrected
    - (RR) Revise and Resubmit
    - (R) Rejected

Example:

<u>Spec</u>	<u>Sec</u>	<u>Product</u> <u>in Section</u>	<u>Re-submittal</u> <u>if required.</u>	<u>Outgoing</u>	<u>Action as</u> <u>indicated in</u> <u>In Para. 3</u>
10	2113	01	R1	O	FC

The file name should appear as follows: 10 2113 01 R1 O FC pdf

- C. Re-submittals: Make re-submittals in same electronic form as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked with a "No Exception Taken" or "Furnish as Corrected" notation from Design Professional's action.
- D. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- E. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Design Professional's action stamp.

#### 1.06 SAMPLES

- A. Only samples requiring color selection, verification of a sample or review of an assembled product should be submitted to The Design Professionals office for review. A Submittal Cover Sheet, completely filled in, is to be provided with all submitted samples. If samples are delivered with product data, only the samples will be reviewed. The Product Data must be uploaded to the Design Professionals FTP site.
- B. Once the samples are received they will be logged in to the Design Professionals FTP Submittal log folder and reviewed accordingly. When action has been taken on the sample(s) only the Submittal Cover Sheet will be uploaded to the Design Professional's FTP site with the corresponding color or selection noted.

## **PART 2 PRODUCTS**

### **2.01 SUBMITTAL PROCEDURES**

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Post all submittals as PDF electronic files directly to Design Professionals FTP site specifically established for Project unless otherwise indicated.
    - a. Design Professional will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  - 2. Certificates and Certifications Submittals: Provide an electronic statement that includes digital signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before or concurrent with Samples.
  - 6. Product Data shall be submitted in the following format:
    - a. PDF electronic file uploaded to the Design Professional's FTP site
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  - 2. Shop Drawings shall be submitted in the following format:
    - a. PDF electronic file uploaded to the Design Professionals FTP site

- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed. Samples shall be hand delivered or mailed with the Contractor having the responsibility that Design Professional receives samples in the time frame established by the contract.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
    - e. Specification paragraph number and generic name of each item.
  3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record through the Design Professionals FTP site.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional will return submittal with options selected.
  6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit three sets of Samples. Design Professional and Construction Coordinator will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  2. Manufacturer and product name, and model number if applicable.



3. Number and name of room or space.
  4. Location within room or space.
  5. Submit product schedule in the following format:
    - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 01 3100 "Project Management and Coordination."
- G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
- H. Contractor's Construction Schedule: Comply with requirements specified in Section 01 3200 "Construction Progress Documentation."
- I. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 2900 "Payment Procedures."
- J. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 4300 "Testing Laboratory Services".
- K. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 7700 "Closeout Procedures".
- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Design Professionals and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

Include the following information:

1. Name of evaluation organization.
  2. Date of evaluation.
  3. Time period when report is in effect.
  4. Product and manufacturers' names.
  5. Description of product.
  6. Test procedures and results.
  7. Limitations of use.
- U. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- V. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- X. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
1. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

## **2.02 DELEGATED-DESIGN SERVICES**

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Design Professional.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional in compliance with the State law applicable to the project site.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## **PART 3 EXECUTION**

### **3.01 CONTRACTOR'S REVIEW**

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Design Professional.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 7700 "Closeout Procedures."

- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.02 DESIGN PROFESSIONAL'S ACTION

- A. Action Submittals: Design Professional will review each submittal, make marks to indicate corrections or revisions required, and return it. Design Professional will respond to each submittal indicating one of the following actions required:
1. **No Exceptions Taken:** Design Professional takes no exception to the submittal. This part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
  2. **Furnish as Corrected:** No exceptions taken except what is identified by the Design Professional. The part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
  3. **Revise and Re-Submit:** Revise the submittal based on the Design Professionals comments and resubmit the submittal. Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
    - a. Do not permit submittals marked "Revise and Resubmit" to be used at the Project Site, or elsewhere where Work is in progress.
  4. **Rejected:** The submittal is rejected. See Design Professionals comments on why submittal was rejected.
    - a. Submittal has not been reviewed by the Contractor and so noted.
    - b. Submittal has been prepared without due regard for information called for or logically implied by the Contract Documents.
    - c. Information is not sufficiently complete or accurate to verify that work represented is in accordance with the Contract Documents.
    - d. Do not permit submittals marked "Rejected" to be used at the Project Site, or elsewhere where Work is in progress.
- B. Informational Submittals: Design Professional will review each submittal and will not return it, or will return it if it does not comply with requirements. Design Professional will post the action to the Design Professionals FTP site.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Design Professional. The action will be posted to the Design Professionals FTP site, noted as a partial review until a full submittal can be receive action.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Design Professional without action.

**END OF SECTION**

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**SECTION 01 3900  
ELECTRONIC DELIVERABLES RELEASE**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

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

**1.02 SUMMARY**

- A. The electronic media (EM), and therefore any and all electronic deliverable, described herein is considered as original design of a building or site and is subject to the copyright protection as an "Design Professional work" under Section 102 of the Copyright Act, 17 U.S.C., amended on October 27, 2000.
- B. This Section includes the policy and requirements to be followed to allow the Contractor to purchase EM from CPL. Included are specifications, CAD electronic files of drawings, and the general provisions for transmittal of document in machine readable form. Since most e-mail carriers are limited to 2 to 3 MB files, the transfer of large drawing and specification files will be limited to USB Thumb Drives. Since the preparation of EM require time and expense and since the information included thereon is copyrighted material representing professional services, the Contractor shall be charged for this reproduction service.
- C. Drawing files shall be in AutoCAD 2021 or previous years or Revit 2022. Additional formats may be provided at an additional cost.
- D. This section consists of a "Release" that is to be copied in full, signed by the Contractor, Subcontractor, or Vendor, and returned to CPL with the applicable payment for the EM.
- E. Design Professional's Plans shall be released for background purposes if requested by the Contractor. Civil, Structural, Mechanical, Plumbing, Fire Protection and Electrical drawings shall not be released electronically.

**1.03 RELEASE CONDITIONS**

- A. The documents in machine-readable or EM form were prepared by CPL, solely for the purpose of the specified project. They are not intended or authorized for use on any other project. CPL makes no representation as to suitability for any other use.
- B. CPL provides these machine-readable documents with no warranty or guarantee, express, implied, or statutory, as to the accuracy, reliability, suitability, or fitness for a particular purpose. Documents delivered in machine-readable form may vary from those contained on paper copies of the documents. Variances may be due to the use of different software, hardware, or output devices by the recipient or others from those used by CPL for original preparation and printing of the documents. Variances may also be the result of undocumented changes or modifications made to the machine-readable documents, whether inadvertently or otherwise, and whether made by recipient or others. CPL, therefore, reserves the right to retain the machine-readable media upon which the documents were originally prepared, and to retain paper or reproducible copies of all documents delivered to recipient in machine readable form, that shall govern in the event of any inconsistency or discrepancy between the two. CPL also reserves the right to remove from machine readable copies provided to recipient all identification reflecting the involvement of CPL in their preparation.
- C. All documents in machine readable form prepared by CPL are instruments of professional service in respect to the project. These documents are and shall remain the property of CPL; however, recipient shall be permitted to use machine readable copies of the documents for information and reference in connection with recipient's use and occupancy of the project.
- D. Recipient acknowledges that the automated conversion of documents from the system or format employed by CPL to that of recipient or others cannot be accomplished without the

introduction of inconsistencies, anomalies, and errors. In the event documents provided to recipient in machine readable form are so converted, recipient agrees to assume all risks associated therewith and to the fullest extent permitted by law, to hold harmless and indemnify CPL from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting therefrom. Furthermore, recipient agrees not to use CPL EM for any other project or to give or sell CPL EM to any other party, person, or organization for any purpose whatsoever.

- E. Since this is copyrighted material recipient may make and retain copies of documents for information and reference in connection with the coordination, use, and occupancy of this project only; however, such documents are not to be reused by recipient or others on extensions of this project or on any other project. Any reuse without written verification or adaptation by CPL for the specific purpose intended will be at recipient's sole risk and without liability or legal exposure to CPL and recipient shall hold harmless and indemnify from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting therefrom.
- F. CPL warrants that, for a period of ninety (90) days from the date of delivery to recipient of the machine-readable documents, the media on which the documents are furnished will be free from defects in materials and workmanship under normal use.

**1.04 ITEMS REQUESTED**

- A. The following is a detailed listing of the material requested:
  - 1. Drawings: \_\_\_\_\_
  - 2. \_\_\_\_\_
  - 3. \_\_\_\_\_
  - 4. \_\_\_\_\_
  - 5. Specifications Sections: \_\_\_\_\_
  - 6. \_\_\_\_\_

**1.05 REIMBURSABLE COST**

- A. The Contractor, Subcontractor or Vendor shall reimburse CPL for the cost of the EM based on the following schedule:
  - 1. Drawings: The cost for each CAD drawing requested shall be \$100 per drawing with a minimum charge of \$300 for the processing of the EM order.
  - 2. Specifications: The cost for a specification EM shall be \$100.
- B. Payment shall be made prior to the forwarding of any EM. The normal preparation time frame from the receipt of the order to forwarding is 2 to 3 working days.

**1.06 PAYMENT**

- A. The undersigned includes with this request the following payment in full:

CAD or Revit Files:			
	1 through 3 drawings @ \$300 (MINIMUM FEE) =	\$	300
	additional drawing @ \$100 each=	\$	
	Subtotal:	\$	
Specification Files:			
	MS Word doc @ \$100 per section =	\$	
	Total Enclosed:	\$	

**1.07 RELEASE**

A. I certify that I am an officer of and authorized by same to provide and agree to the above terms and conditions:

	(Print Name)
	(Title)
	(Date)
	(Corporate Name)
	(Corporate Shipping Address - No P.O. Box numbers)
	email address to send documents to

**PART 1 PRODUCTS (NOT USED)**

**PART 1 EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 4000  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Contractor is to hire and pay for a Testing Agency.
  - 1. Submit name and qualifications of Testing Agency to Architect for approval prior to entering into a contract with the Testing Agency.
  - 2. The emphases of the testing will be on watertightness of the exterior renovations of this project. Testing Agency selected for approval shall have extensive knowledge and experience in this area of construction.
- C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional, Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.
- D. Related Sections:
  - 1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
  - 2. Division 01 Section "Testing Laboratory Services" for tests and inspections ordered by the Owner.
  - 3. Divisions 02 through 33 Sections for specific test and inspection requirements.

**1.02 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Design Professional.
- C. Mockups: Mockups are constructed to demonstrate the watertightness of the exterior construction of the project specifically for the Architect's and the Testing Agency's review and approval. Mock-ups are also constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### **1.03 CONFLICTING REQUIREMENTS**

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Design Professional for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Design Professional for a decision before proceeding.

### **1.04 ACTION SUBMITTALS**

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
  - 1. Indicate manufacturer and model number of individual components.
  - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

### **1.05 INFORMATIONAL SUBMITTALS**

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.



9. Unique characteristics of each quality-control service.

#### **1.06 REPORTS AND DOCUMENTS**

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  1. Name, address, and telephone number of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
  1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

#### **1.07 QUALITY ASSURANCE**

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. **Specialists:** Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. **Testing Agency Qualifications:** An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor's responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - f. When testing is complete, remove test specimens, assemblies, mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Design Professional.
  2. Demonstrate the proposed range of aesthetic effects and workmanship.
  3. All components of mockups shall be tested by a third-party independent qualified testing agency to verify components meet individual requirements specified.
  4. Obtain Design Professional's and third party testing agency's written approval of mockups before starting work, fabrication, or construction.
  5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  6. Demolish and remove mockups when directed, unless otherwise indicated.

#### **1.08 QUALITY CONTROL**

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, the Design Professional will engage a qualified testing agency to perform these services.
1. Design Professional will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
  6. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed

portions of the Work, and submittal of written reports.

- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Owner, Design Professional and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Design Professional and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of the Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 6. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## **PART 2 PRODUCTS (NOT APPLICABLE)**

## **PART 3 EXECUTION**

### **3.01 TEST AND INSPECTION LOG**

- A. Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Design Professional.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Design Professional's reference during normal working hours.

### **3.02 REPAIR AND PROTECTION**

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are the Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION**

**SECTION 01 4200  
REFERENCES**

**PART 1 GENERAL**

**1.01 KEY DEFINITIONS**

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

**1.02 DEFINITIONS**

- A. Air Handling Unit: A blower or fan used for the purpose of distributing supply air to a room, space or area.
- B. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved according to the requirements established in this Section and as required by the Code Official having jurisdiction over this project.
- C. Design Professional: Other terms including "Architect", "Architect/Engineer" and "Engineer" have the same meaning as "Design Professional".
- D. Company Field Adviser: An employee of the Company which lists and markets the primary components of the system under the name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation, and serving of the required products. Personnel involved solely in sales do not qualify.
- E. Concealed Location: A location that cannot be accessed without damaging permanent parts of the building structure or finish surface. Spaces above, below or behind readily removable panels or doors shall not be considered as concealed.
- F. Concealed Piping: Piping that is located in a concealed location. (See "concealed location".)
- G. Connect: A term contraction and unless otherwise specifically noted is to mean "The labor and materials necessary to join or attach equipment, materials or systems to perform the functions"

intended”.

- H. Drain: Any pipe that carries wastewater or water-borne wastes in a building drainage system.
- I. Drainage Fittings: Type of fitting or fittings utilized in the drainage system. Drainage fittings are similar to cast-iron fittings, except that instead of having a bell and spigot, drainage fittings are recessed and tapped to eliminate ridges on the inside of the installed pipe.
- J. Drainage System: Piping within a public or private premise that conveys sewage, rainwater or other liquid wastes to a point of disposal. A drainage system does not include the mains of a public sewer system or a private or public sewage treatment or disposal plant.
  - 1. Building Gravity: A drainage system that drains by gravity into the building sewer.
  - 2. Sanitary: A drainage system that carries sewage and excludes storm, surface and ground water.
  - 3. Storm: A drainage system that carries rainwater, surface water, condensate, cooling water or similar liquid wastes.
- K. Duct: A tube or conduit utilized for conveying air. The air passages of self-contained systems are not to be construed as air ducts.
- L. Duct System: A continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans and accessory air-handling equipment and appliances.
- M. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- N. Headroom: Minimum clearance between the floor and the underside of the point of lowest installed mechanical construction above. In case of stairways and walkways, the minimum clearance between the step or surface of the walkway and the lowest installed mechanical construction above the stairway or the walkway.
- O. Include: When used in any form other than "inclusive", is non-limiting and is not intended to mean "all-inclusive."
- P. Indicated: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- Q. Inspection Certificate: Identification applied on a product by an approved agency containing the name of the manufacturer, the function and performance characteristics, and the name and identification of an approved agency that indicates that the product or material has been inspected and evaluated by an approved agency.
- R. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
- S. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
- T. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

- U. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.
- V. Label: An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency.
- W. Location:
  - 1. Damp Location: Partially protected locations under canopies, marquees, roofed open porches and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns and some cold-storage warehouses.
  - 2. Dry Location: A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.
  - 3. Wet Location: Installations underground or in concrete slabs or masonry in direct contact with the earth and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.
- X. Manufacturer's Designation: Identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection Certificate," "Label" and "Mark").
- Y. Mark: An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection Certificate," "Label" and "Manufacturer's Designation").
- Z. Mechanical: Other terms including "HVAC", "Plumbing", "Sprinkler", "Laboratory Equipment", "Food Service Equipment", "Laundry Equipment", and "Refrigeration" have the same meaning as "Mechanical".
- AA. Piping: This term includes pipe, tube and appurtenant fittings, flanges, valves, traps, hangers and supports.
- BB. Piping, Concealed: Piping built into construction and not accessible without removal of construction Work such as masonry, plaster or other finish material, and piping installed in floors, furred spaces, suspended ceilings, non-walk-in tunnels, conduits, and behind removable panels and cabinet doors.
- CC. Piping, Distribution: Domestic water supply piping, starting with a connection to service piping, and continuing throughout the building to point of connection to equipment and fixture supply piping.
- DD. Piping, Exposed: Piping directly accessible by normal accesses without removal of any construction Work or material.
- EE. Piping, Service: Underground domestic water supply piping with a connection to a water main or supply as noted, and continuing to and into a building and terminating with the exposed fitting inside the building.
- FF. Piping, Tunnel: Piping installed in walk-in or non-walk-in tunnels or conduits up to first shut-off valve inside building.
- GG. Plumbing System: Includes the water supply and distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil, waste and vent pipes; and sanitary and storm sewers and building drains, in addition to their respective connections, devices and appurtenances within a structure or premises.
- HH. Product: As used includes materials, systems and equipment.



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- II. Registered Design Professional: An individual who is currently a registered architect (RA) or a currently licensed professional engineer (PE) in the state of Georgia.
  - JJ. Space, Finished: A space which has a finishing material applied to walls or ceilings, such as paint, plaster, ceramic tile, enamel glazing, face brick, vinyl wall covering, etc. to provide a finished appearance or which will have such finishes applied under a related Contract.
  - KK. Space, Unfinished: A space which does not meet the definition of a finished space.
  - LL. Special Inspection: Inspection as herein required of the materials, installation, fabrication, erection, or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards.
  - MM. Steam-Heating Boiler: A boiler operated at pressures not exceeding 15 psi for steam.
  - NN. Supplier: Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design.
  - OO. Utility: Any gas, steam, water, sanitary sewer, storm sewer, electrical or other such service.
  - PP. Water Supply System: The water service pipe, water distribution pipes, and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the structure or premises.
    - 1. Chilled: Water-cooled by refrigeration.
    - 2. Cold: Water with at temperature between 33 degrees F and 80 degrees F and which is neither cooled nor heated mechanically.
    - 3. Domestic: Water for use in buildings, except water used in connection with space heating and space cooling.
    - 4. High Temperature: Water with a supply water temperature above 350 degrees.
    - 5. Hot: Water at a temperature greater than or equal to 110°F.

### 1.03 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
  - 1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.
- D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.04 ABBREVIATIONS AND ACRONYMS

AA	Aluminum Association, Inc. (The)
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AABC	Associated Air Balance Council
AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (part of CPA)
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
ARI	Air-Conditioning & Refrigeration Institute
ASCE	American Society of Civil Engineers

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ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International
AWCMA	American Window Covering Manufacturers Association (WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
CBM	Certified Ballast Manufacturers
CCC	Carpet Cushion Council
CDA	Copper Development Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CMAA	Contractor's Association of America
CPA	Composite Panel Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSI	Cast Stone Institute

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CSI	Construction Specifications Institute (The)
CTI	Cooling Technology Institute
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FM Approvals	Factory Mutual Approvals
FSA	Fluid Sealing Association
GA	Gypsum Association
GANA	Glass Association of North America
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association
HPVA	Hardwood Plywood & Veneer Association
IBC	International Building Code
ICEA	Insulated Cable Engineers Association, Inc
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)

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IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
IPCEA	Insulated Power Cable Engineer Associates
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LEED	Leadership in Energy and Environmental Design
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International
NADCA	National Air Duct Cleaners Association
NAIMA	North American Insulation Manufacturers Association
NCMA	National Concrete Masonry Association

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NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	National Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	National Fire Protection Association
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NWWDA	National Wood Window and Door Association (WDMA)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America

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PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWRI	Sealant, Waterproofing, & Restoration Institute

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TCA	Tile Council of America, Inc.

**1.05 FEDERAL GOVERNMENT AGENCIES:**

- A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers
CPSC	Consumer Product Safety Commission
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDA	Food and Drug Administration
GSA	General Services Administration
HUD	Department of Housing and Urban Development
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration
PHS	Office of Public Health and Science
SD	State Department
TRB	Transportation Research Board
USDA	Department of Agriculture



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USPS	Postal Service
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- B. Codes, Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications and Standards
FS	Federal Specification
MILSPEC	Military Specification and Standards

**1.06 GEORGIA STATE GOVERNMENT AGENCIES:**

- A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

GADOE	Georgia Department of Education
BOR	Board of Regents / University System of Georgia

**1.07 OTHER TERMS OR ACRONYMS:**

- A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name in the following list.

ACM	Asbestos Containing Materials
ACT	Acoustical Ceiling Tile
ICRA	Infection Control Risk Assessment
RVT	Resilient Vinyl Tile
SAT	Suspended Acoustical Tile
SFRM	Spray on Fire Resistive Materials
TSI	Thermal Systems Insulation
VAT	Vinyl Asbestos Tile
VCT	Vinyl Composition Tile

**PART 2 PRODUCTS (NOT APPLICABLE)**

**PART 3 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

**SECTION 01 4500  
SPECIAL INSPECTIONS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section includes Requirements for Special Inspections.
- B. Attachment of Appendix A - Special Inspections Forms prepared by the structural engineer.
- C. The services of the testing company performing the Special Inspections will be paid for by the Owner.
- D. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Construction Manager of responsibility for compliance with the Contract Documents requirements.
  - 1. Requirements for the Construction Manager to provide quality-control services required by Architect or Authorities Having Jurisdiction (AHJ) are not limited by provisions of this section.

**1.02 DEFINITIONS**

- A. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved.
  - 1. Independent: An approved agency shall be objective and competent. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed.
  - 2. Equipment: An approved agency shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.
  - 3. Personnel: An approved agency shall employ experienced personnel educated in conducting, supervising and evaluating tests and/or inspections.
- B. Special Inspection, Continuous: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.
- C. Special Inspection, Periodic: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.
- D. Quality-Assurance Services: Activities, actions and procedures performed before and during execution of the work to guard against defects and deficiencies and ensures that proposed construction complies with requirements.

**1.03 REFERENCES**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
  - 1. ACI International (ACI)
    - a. ACI 318/318R Building Code Requirements for Structural Concrete and Commentary
    - b. ACI 318M Metric Building Code Requirements for Structural Concrete and Commentary
    - c. ACI 530/530.1 Building Code Requirements for Masonry Structures
  - 2. American Institute of Steel Construction (AISC)
    - a. AISC 341 Seismic Provisions for Structural Steel Building
    - b. AISC 350 Load and Resistance Factor Design Specification for Structural Steel Buildings
  - 3. American Society for Testing and Materials (ASTM)
    - a. ASTM A 435/A 435M Straight-Beam Ultrasonic Examination of Steel Plates
    - b. ASTM A 615/A 615M Deformed and Plain Billet-steel Bars for Concrete Reinforcement

- c. ASTM A 898/A 898M Straight Beam Ultrasonic Examination of Rolled Steel Structural Shapes

#### **1.04 QUALITY ASSURANCE**

- A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Georgia and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- B. Special Inspector: Provide a Special Inspector at the work site for each of the areas of responsibilities, specified below, who shall assist and report to the Owner, Engineer of record and who shall have no duties other than their assigned quality control duties. Special Inspectors are required to be physically present at the construction site to perform the phases of control and prepare documentation for each definable feature of work in their area of responsibility at the frequency specified. Special Inspectors shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for Special Inspectors shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.
    - a. Concrete:
    - b. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
    - c. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I.
    - d. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
  - 2. Smoke Control Systems:
    - a. Personnel conducting field tests shall be qualified in fire protection engineering, mechanical engineering, and certification as air balancer certified by AABC Test and Balance Technician.
  - 3. Structural Steel: Registered Structural Engineer, (P.E.) in Georgia with a minimum of 5-years experience.
  - 4. Welding
    - a. Personnel conducting field tests shall be qualified as Certified Welding Inspector (CWI) according to AWS QC1 or an equivalent certification program.

#### **1.05 SPECIAL INSPECTIONS**

- A. Inspection of fabricators. Where fabrication of structural load-bearing members and assemblies is being performed on the premises of a fabricator's shop, special inspection of the fabricated items shall be required by this section and as required elsewhere in the code.
- B. Steel construction. The special inspections for steel elements of buildings and structures shall be as required by Section 1704.3 and Table 1704.3 of the 2018 International Building Code, with Georgia state amendments. Where required special inspection of steel shall also comply with Section 1715 of the 2018 International Building Code.
- C. Concrete construction. The special inspections and verifications for concrete construction shall be as required by this Section 1704.4 and Table 1704.4 of 2018 International Building Code, with Georgia state amendments.
- D. Masonry construction. Masonry construction shall be inspected and evaluated in accordance with the requirements of 2018 International Building Code, with Georgia state amendments, depending on the classification of the building or structure or nature of occupancy, as defined by the 2018 International Building Code (see Table 1604.5 and Table 1617.6 of 2018 International Building Code).

- E. Soils. The special inspections for existing site soil conditions fill placement and load-bearing requirements shall follow Section 1704.7.1 through 1704.7.3 of 2018 International Building Code, with Georgia state amendments. The approved soils report, required by Section 1802.2 of the 2018 International Building Code, shall be used to determine compliance.
- F. Special cases. Special inspections shall be required for proposed work that is, in the opinion of the code enforcement official, unusual in its nature, such as, but not limited to, the following examples:
  - 1. Construction materials and systems that are alternatives to materials and systems prescribed by this code.
  - 2. Unusual design applications of materials described in this code.
  - 3. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in this code or in standards referenced by this code.
- G. Smoke Control systems. Smoke control systems shall be tested by a special inspector.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 SPECIAL INSPECTION REPORTS**

- A. Report requirement: Special Inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the code enforcement official, and to the registered design professional in responsible charge.
  - 1. Reports shall indicate that work inspected was done in conformance to approved construction documents.
  - 2. Discrepancies shall be brought to the immediate attention of the Construction Manager for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the code enforcement official and to the registered design professional in responsible charge prior to the completion of that phase of the work.
- B. Periodic Report: On the first day of each month, the special inspector shall furnish to the Architect five copies of the combined progress reports of the special inspector's observations. These progress reports shall list all special inspections of construction or reviews of testing performed during that month, note all uncorrected deficiencies, and describe the corrections made both to these deficiencies and to previously reported deficiencies.
  - 1. Each monthly report shall be signed by all special inspectors who performed special inspections of construction or reviewed testing during that month, regardless of whether they reported any deficiencies.
  - 2. Each monthly report shall be signed by the Construction Manager.
- C. Final Report: At completion of construction, each special inspector shall prepare and sign a final report attesting that all work they inspected and all testing and test reports they reviewed were completed in accordance with the approved construction documents and that deficiencies identified were satisfactorily corrected.
  - 1. The Special Inspector shall submit a combined final report containing the signed final reports.
  - 2. The Construction Managers shall sign the combined final report attesting that all final reports of special Inspectors that performed work to comply with these construction documents are contained therein, and that the Construction Manager has reviewed and approved all of the individual inspector's final reports.

**3.02 ATTACHMENT**

- A. Appendix A - Special Inspections Forms prepared by the structural engineer follows this section. .

**END OF SECTION**

# APPENDIX A

## STATEMENT OF SPECIAL INSPECTIONS

PROJECT: J-381 Augusta University – Christenberry Field House

LOCATION: Augusta, GA

PERMIT APPLICANT: TBD

APPLICANT'S ADDRESS: TBD

ARCHITECT OF RECORD: Scott Gordon AIA

STRUCTURAL ENGINEER OF RECORD: Larry Werts, PE

MECHANICAL ENGINEER OF RECORD: Greg Kyzer, PE

ELECTRICAL ENGINEER OF RECORD: Tom Bucher, PE

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: Larry Werts, PE

This Statement of Special Inspections is submitted in accordance with Section 1704.3 of the 2018 International Building Code. It includes a *Schedule of Special Inspection Services* applicable to the above-referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes *Special Inspections for Seismic Resistance* and/or *Special Inspections for Wind Resistance*.

Are *Special Inspections for Seismic Resistance* included in the *Statement of Special Inspections*?  Yes  No

Are *Special Inspections for Wind Resistance* included in the *Statement of Special Inspections*?  Yes  No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work. A *Final Report of Special Inspections* documenting required special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Registered Design Professional in Responsible Charge:

Weekly  Bi-Weekly  Monthly  Other; specify: \_\_\_\_\_

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Statement of Special Inspections Prepared by:

Larry Werts, PE  
Type or print name  
*Larry D. Werts, P.E.* 08/23/2023  
Signature Date

Building Official's Acceptance:

\_\_\_\_\_  
Signature Date

Permit Number:



## Special Inspections for Seismic Resistance

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See the Schedule of Special Inspections for inspection and testing requirements

**Seismic Design Category:**     C    

**Special Inspections for Seismic Resistance Required (Yes/No):** No

**Description of seismic force-resisting system subject to special inspection and testing for seismic resistance:**

(Where required per IBC Sections 1705.12.1, 1705.12.2, and 1705.12.3) (Special inspections for seismic resistance of structural steel, where required, shall be in accordance with AISC 341)

N/A

**Description of designated seismic systems subject to special inspection and testing for seismic resistance:**

(Required for architectural, electrical and mechanical systems and their components that require design in accordance with Chapter 13 of ASCE 7, have a component importance factor,  $I_p$ , greater than one and are in Seismic Design Categories C, D, E or F.)

See specification sections 23 0548 Vibration and Seismic Controls for HVAC Piping and Equipment, and 26 0548 Seismic Controls for Electrical Systems.

**Description of additional seismic systems and components requiring special inspections:**

(Required for systems noted in IBC Section 1705.12.5, 1705.12.6, 1705.12.7, and 1705.12.8.)

N/A

**Description of additional seismic systems and components requiring testing:**

(Where required per IBC Section 1705.13)

N/A

**Statement of Responsibility:**

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

## Special Inspections for Wind Resistance

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See the Schedule of Special Inspections for inspection and testing requirements

**Allowable Stress Design Wind Speed,  $V_{asd}$ : 94 M.P.H.**

**Wind Exposure Category: B**

**Special Inspection for Wind Resistance Required (Yes/No): No**

(Required in wind exposure Category B, where the allowable stress design wind speed,  $V_{asd}$ , is 120 miles per hour or greater. Required in wind exposure Category C or D, where the allowable stress design wind speed,  $V_{asd}$ , is 110 miles per hour or greater.)

N/A

**Description of structural wood and cold-formed steel light frame construction main windforce-resisting system subject to special inspections for wind resistance:**

(Required for systems noted in IBC Section 1705.11.1 and 1705.11.2).

N/A

**Description of windforce-resisting components subject to special inspections for wind resistance:**

(Required for systems and components noted in IBC Section 1705.11.3)

N/A

**Statement of Responsibility:**

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.



**FINAL REPORT OF SPECIAL INSPECTIONS**

**PROJECT:** J-381 Augusta University – Christenberry Field House City of Cartersville – Cartersville Water Department Complex

**LOCATION:** Cartersville Augusta, GA

**PERMIT APPLICANT:** TBD

**APPLICANT’S ADDRESS:** TBD

**ARCHITECT OF RECORD:** Scott Gordon AIA

**STRUCTURAL ENGINEER OF RECORD:** Larry Werts, PE

**MECHANICAL ENGINEER OF RECORD:** Greg Kyzer, PE Ray Velazquez, PE

**ELECTRICAL ENGINEER OF RECORD:** Tom Bucher, PE Josh Anderson, PE

**REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:** Larry Werts, PE

To the best of my information, knowledge, and belief, which are based upon observations or diligent supervision of our inspection services for the above-referenced Project, I hereby state that the special inspections or testing required for this Project, and designated for this Agent in the *Schedule of Special Inspection Services*, have been completed in accordance with the Contract Documents.

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Interim reports submitted prior to this final report and numbered \_\_\_ to \_\_\_ form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated \_\_\_\_\_ have been corrected:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(Attach 8 1/2"x11" continuation sheet(s) if required to complete the description of corrections)*

**Prepared By:**

\_\_\_\_\_  
Special Inspection Agent/Firm

\_\_\_\_\_  
Type or print name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
<b>1704.2.5 Inspection of Fabricators</b>					
Verify fabrication/quality control procedures	In-plant review (3)	Y	Periodic		
<b>1705.1.1 Special Cases</b> (work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements - add additional rows as needed.)	Submittal review, shop (3) and/or field inspection	Y			
1. Inspection of anchors post-installed in solid grouted masonry: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, masonry unit, grout, masonry compressive strength, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source		
2. Aggregate Pier Inspection: The special inspector's responsibilities include, but are not limited to, review of the aggregate pier designer's use of soil parameters as presented in the project soils report, and during construction, verification of aggregate properties, type and number of lifts of aggregate, hole size and depths and top elevations of the pier elements, and applied energy. Additionally, results of qualitative tests on production aggregate pier elements such as modulus load testing, uplift pull-out testing, bottom stabilization tests and dynamic cone penetration tests, shall be reviewed to verify compliance with design specifications.	Field inspection	N	Periodic or as required by the research report issued by an approved source		
<b>1705.2.1 Structural Steel Construction</b>					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, Section N 3.2 for compliance with construction documents)	Submittal Review	N	Each submittal	1,2	
2. Material verification of structural steel	Shop (3) and field inspection	N	Periodic	1	
3. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	N	Observe or Perform as noted (4)	1	

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-2)	Shop (3) and field inspection	N	Observe (4)	1	
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Shop (3) and field inspection	N	Observe or Perform as noted (4)	1	
d. Nondestructive testing (NDT) of welded joints: <i>see Commentary</i>					
1) Complete penetration groove welds 5/16" or greater in <i>risk category III or IV</i>	Shop (3) or field ultrasonic testing - 100%	N	Periodic		
2) Complete penetration groove welds 5/16" or greater in <i>risk category II</i>	Shop (3) or field ultrasonic testing - 10% of welds minimum	N	Periodic		
3) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1	Shop (3) or field radiographic or Ultrasonic testing	N	Periodic		
4) Fabricator's NDT reports when fabricator performs NDT	Verify reports	N	Each submittal (5)		
4. Structural steel bolting:	Shop (3) and field inspection				
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)		N	Observe or Perform as noted (4)	1	
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)		N	Observe (4)	1	
1) Pre-tensioned and slip-critical joints					
a) Turn-of-nut with matching markings		N	Periodic		
b) Direct tension indicator		N	Periodic		
c) Twist-off type tension control bolt		N	Periodic		
d) Turn-of-nut without matching markings		N	Continuous		
e) Calibrated wrench		N	Continuous		
2) Snug-tight joints		N	Periodic	1	
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)		N	Perform (4)	1	
5. Visual inspection of exposed cut surfaces of galvanized structural steel main members and exposed corners of the rectangular HSS for cracks subsequent to galvanizing	Shop (3) or field inspection	N	Periodic		
6. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection	N	Periodic		
7. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection	N	Periodic	1	

**1705.2.2 Cold-Formed Steel Deck**

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
1. Manufacturer documents (Verify reports and certificates as listed in SDI QA/QC, Section 2, Paragraphs 2.1 and 2.2 for compliance with construction documents)	Submittal Review	N	Each submittal	1,2	
2. Material verification of steel deck, mechanical fasteners and welding materials	Shop (3) and field inspection	N	Periodic	1	
3. Cold-formed steel deck placement:	Shop (3) and field inspection				
a. Inspection tasks Prior to Deck Placement (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.1)		N	Perform (4)	1	
b. Inspection tasks After Deck Placement (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.2)		N	Perform (4)	1	
4. Cold-formed steel deck welding:	Shop (3) and field inspection				
a. Inspection tasks Prior to Welding (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.3)		N	Observe (4)	1	
b. Inspection tasks During Welding (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.4)		N	Observe (4)	1	
c. Inspection tasks After Welding (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.5)		N	Perform (4)	1	
5. Cold-formed steel deck mechanical fastening:	Shop (3) and field inspection				
a. Inspection tasks Prior to Mechanical Fastening (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.6)		N	Observe (4)		
b. Inspection tasks During Mechanical Fastening (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.7)		N	Observe (4)		
c. Inspection tasks After Mechanical Fastening (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.8)		N	Perform (4)		
<b>1705.2.3. Open-Web Steel Joists and Joist Girders</b>					
1. Installation of open-web steel joists and joist girders.					
a. End connections - welding or bolted.	per SJI CJ or SJI 100	N	Periodic		
b.. Bridging - horizontal or diagonal.		N			
1) Standard bridging.	per SJI CJ or SJI 100	N	Periodic		
2) Bridging that differs from the specifications listed in SJI CJ or SJI 100.		N	Periodic		
<b>1705.2.4. Cold-Formed Steel Trusses Spanning 60 feet or Greater</b>					
Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection	N	Periodic		
<b>1705.3 Concrete Construction</b>					

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
1. Inspection and placement verification of reinforcing steel and prestressing tendons.	Shop (3) and field inspection	Y	Periodic	1	
2. Reinforcing bar welding:					
a. Verification of weldability of bars other than ASTM A706.		N	Periodic		
b. Inspection of single-pass fillet welds 5/16 or less in size.		N	Periodic		
c. Inspection of all other welds.		N	Continuous		
3. Inspection of anchors cast in concrete.	Shop (3) and field inspection	Y	Periodic		
4. Inspection of anchors post-installed in hardened concrete members per research reports, or, if no specific requirements are provided, requirements shall be provided by the registered design professional and approved by the building official, including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	1	
a. Adhesive anchors installed in horizontal or upward-inclined orientation that resist sustained tension loads.		Y	Continuous		
b. Mechanical and adhesive anchors note defined in 4a.		Y	Periodic	1	
5. Verify use of approved design mix	Shop (3) and field inspection	Y	Periodic	1	
6. Prior to placement, fresh concrete sampling, perform slump and air content tests and determine temperature of concrete and perform any other tests as specified in construction documents.	Shop (3) and field inspection	Y	Continuous	1	
7. Inspection of concrete and shotcrete placement for proper application techniques	Shop (3) and field inspection	Y	Continuous	1	
8. Verify maintenance of specified curing temperature and techniques	Shop (3) and field inspection	Y	Periodic	1	
9. Inspection of prestressed concrete:	Shop (3) and field inspection				
a. Application of prestressing force		N	Continuous		
b. Grouting of bonded prestressing tendons		N	Continuous		
10. Inspect erection of precast concrete members		N	Periodic		
11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Review field testing and laboratory reports	N	Periodic		
12. Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
13. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic	1	
<b>1705.4 Masonry Construction</b>					
<b>MINIMUM VERIFICATION REQUIREMENTS</b>					
<b>(A) Level 1, 2 and 3 Quality Assurance:</b>					
1. Prior to construction, verification of compliance of submittals	Submittal Review	Y	Prior to Construction	1	
<b>(B) Level 2 &amp; 3 Quality Assurance:</b>					
1. Prior to construction verification of $f'_m$ and $f'_{AAC}$ except where specifically required by the code	Testing by unit strength method or prism test method	N	Prior to Construction	1	
2. During construction, verification of Slump Flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to project site.	Testing by unit strength method or prism test method	N	Periodic	1	
<b>(C) Level 3 Quality Assurance:</b>					
1. During construction, verification of $f'_m$ and $f'_{AAC}$ for every 5,000 SF	Testing by unit strength method or prism test method	N	Periodic		
2. During construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout.	Field inspection	N	Periodic		
<b>MINIMUM SPECIAL INSPECTION REQUIREMENTS</b>					
<b>(D) Levels 2 and 3 Quality Assurance:</b>					
<b>1. As masonry construction begins, verify that the following are in</b>					
a. Proportions of the site-prepared mortar	Field inspection	N	Periodic		
b. Grade and size of prestressing tendons and anchorages	Field Inspection	N	Periodic		
c. Grade, type, and size of reinforcement, anchor bolts, and prestressing tendons and anchorages	Field Inspection	Y	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
d. Prestressing technique	Field Inspection	N	Periodic		
e. Properties of thin-bed mortar for AAC masonry	Field Inspection	N	Level 2 - Continuous <sup>(b)</sup> Level 2 - Periodic <sup>(c)</sup>		
(b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet		N	Level 3 - Continuous		
f. Sample panel construction	Field Inspection	N	Level 2 - Periodic		
		N	Level 3 - Continuous		
<b>2. Prior to grouting, verify that the following are in compliance:</b>					
a. Grout space	Field Inspection	N	Level 2 - Periodic	1	
		N	Level 3 - Continuous		
b. Placement of prestressing tendons and anchorages	Field Inspection	N	Periodic		
c. Placement of reinforcement, connectors, and anchor bolts	Field inspection	N	Level 2 - Periodic	1	
		N	Level 3 - Continuous		
d. Proportions of site-prepared grout and prestressing grout for bonded tendons	Field Inspection	N	Periodic		
<b>3. Verify compliance of the following during construction:</b>					
a. Materials and procedures with the approved submittals	Field inspection	Y	Periodic	1	
b. Placement of masonry units and mortar joint construction	Field Inspection	N	Periodic	1	
c. Size and location of structural members	Field inspection	N	Periodic	1	
d. Type, size, location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Field inspection	Y	Level 2 - Periodic	1	
		N	Level 3 - Continuous		
e. Welding of reinforcement	Field inspection	N	Continuous		
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field inspection	N	Periodic		
g. Application and measurement of prestressing force	Field testing	N	Continuous		
h. Placement of grout and prestressing grout for bonded tendons is in compliance	Field inspection	N	Continuous		
i. Placement of AAC masonry units and construction of thin-bed mortar joints	Field inspection	N	Level 2 - Continuous <sup>(b)</sup> Level 2 - Periodic <sup>(c)</sup>		
(b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet		N	Level 3 - Continuous		
4. Observe preparation of grout specimens, mortar specimens, and/or prisms	Field inspection	N	Level 2 - Periodic	1	
		N	Level 3 - Continuous		
<b>1705.5 Wood Construction</b>					
1. For prefabricated wood structural elements, inspection of the fabrication process and assemblies in accordance with Section 1704.2.5.	In-plant review (3)	N	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

<b>PROJECT</b>		<b>J-381 Augusta University – Christenberry Field House</b>			
<b>MATERIAL / ACTIVITY</b>	<b>SERVICE</b>	<b>APPLICABLE TO THIS PROJECT</b>			
		<b>Y/N</b>	<b>EXTENT</b>	<b>AGENT*</b>	<b>DATE COMPLETED</b>
2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans.	Field inspection	N	Periodic		
3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agree with approved building plans	Field inspection	N	Periodic		



**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
4. Metal-plate-connected wood trusses:					
a. Verification that permanent individual truss member restraint/bracing has been installed in accordance with the approved truss submittal package when the truss height is greater than or equal to 60".	Field inspection	N	Periodic		
b. For trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection	N	Periodic		
<b>1705.6 Soils</b>					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic	1	
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic	1	
3. Perform classification and testing of compacted fill materials.	Field inspection	Y	Periodic	1	
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous	1	
5. Prior to placement of controlled fill, inspect subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic	1	
<b>1705.7 Driven Deep Foundations</b>					
1. Verify element materials, sizes and lengths comply with requirements	Field inspection	N	Continuous		
2. Determine capacities of test elements and conduct additional load tests, as required	Field inspection	N	Continuous		
3. Inspect driving operations and maintain complete and accurate records for each element	Field inspection	N	Continuous		
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	Field inspection	N	Continuous		
5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2	N	See Section 1705.2		
6. For concrete elements and concrete-filled elements, perform tests and additional inspections per Section 1705.3	See Section 1705.3	N	See Section 1705.3		
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection	N	In accordance with construction documents		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
<b>1705.8 Cast-in-Place Deep Foundations</b>					
1. Inspect drilling operations and maintain complete and accurate records for each element	Field inspection	N	Continuous		
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	Field inspection	N	Continuous		
3. For concrete elements, perform tests and additional inspections in accordance with Section 1705.3	See Section 1705.3	N	See Section 1705.3		
<b>1705.9 Helical Pile Foundations</b>					
Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other installation data as required by construction documents.	Field inspection	N	Continuous		
<b>1705.10 Fabricated items</b>					
1. List of fabricated items requiring special inspection during fabrication:	Shop inspection	Y	As noted in each applicable shop activity		
2. List of fabricated items to be fabricated on the premises of a fabricator approved to perform such work without special inspection (including name of approved agency providing periodic auditing):		Y			
<b>1705.11.1 Structural Wood Special Inspections For Wind Resistance</b>					
1. Inspection of field gluing operations of elements of the main windforce-resisting system	Field inspection	N	Continuous		
2. Inspection of nailing, bolting, anchoring and other fastening of components within the main windforce-resisting system, including wood shear walls, wood diaphragms, drag struts, braces and hold-downs.	Shop (3) and field inspection	N	Periodic		
<b>1705.11.2 Cold-formed Steel Special Inspections For Wind Resistance</b>					
1. Inspection during welding operations of elements of the main windforce-resisting system	Shop (3) and field inspection	N	Periodic		
2. Inspection of screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.	Shop (3) and field inspection	N	Periodic		
<b>1705.11.3 Wind-resisting Components</b>					
1. Roof covering, roof deck and roof framing connections.	Shop (3) and field inspection	Y	Periodic	1	

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
2. Exterior wall covering and wall connections to roof and floor diaphragms.	Shop (3) and field inspection	Y	Periodic	1	
<b>1705.12.1 Structural Steel Special Inspections for Seismic Resistance</b>					
1. Seismic force-resisting systems in SDC B, C, D, E, or F.	Shop (3) and field inspection	N	In accordance with AISC 341	1	
2. Structural steel elements in SDC B, C, D, E, or F other than those in Item 1. including struts, collectors, chords and foundation elements.	Shop (3) and field inspection	N	In accordance with AISC 341		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
<b>1705.12.2 Structural Wood Special Inspections for Seismic Resistance</b>					
1. Field gluing operations of elements of the seismic-force resisting system for SDC C, D, E or F.	Field inspection	N	Continuous		
2. Nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system including wood shear walls, wood diaphragms, drag struts, shear panels and hold-downs for SDC C, D, E or F.	Shop (3) and field inspection	N	Periodic		
<b>1705.12.3 Cold-formed Steel Light-Frame Construction Special Inspections for Seismic Resistance</b>					
1. During welding operations of elements of the seismic-force-resisting system for SDC C, D, E or F.	Shop (3) and field inspection	N	Periodic		
2. Screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs for SDC C, D, E or F.	Shop (3) and field inspection	N	Periodic		
<b>1705.12.4 Designated Seismic Systems Verification Special Inspections for Seismic Resistance</b>					
For SDC C, D, E or F, inspect and verify that that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with ASCE 7 Section 13.2.2.	Field inspection	Y	Periodic		
<b>1705.12.5 Architectural Components Special Inspections for Seismic Resistance</b>					
1. For SDC D, E or F, inspection during the erection and fastening of exterior cladding and interior or exterior veneer more than 30 feet above grade or walking surface and weighing more than 5 psf.	Field inspection	N	Periodic	1	
2. For SDC D, E or F, inspection during the erection and fastening of interior nonbearing walls more than 30 feet above grade or walking surface and weighing more than 15 psf.	Field inspection	N	Periodic		
3. For SDC D, E or F, inspection during the erection and fastening of exterior nonbearing walls more than 30 feet above grade or walking surface.		N			
4. For SDC D, E or F, inspection during anchorage of access floors	Field inspection	N	Periodic		
<b>1705.12.6 Plumbing, Mechanical and Electrical Components Special Inspections for Seismic Resistance</b>					
1. Inspection during the anchorage of electrical equipment for emergency or standby power systems in SDC C, D, E or F	Field inspection	Y	Periodic		
2. Inspection during the anchorage of other electrical equipment in SDC E or F	Field inspection	N	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

<b>PROJECT</b>		<b>J-381 Augusta University – Christenberry Field House</b>			
<b>MATERIAL / ACTIVITY</b>	<b>SERVICE</b>	<b>APPLICABLE TO THIS PROJECT</b>			
		<b>Y/N</b>	<b>EXTENT</b>	<b>AGENT*</b>	<b>DATE COMPLETED</b>
3. Inspection during installation and anchorage of piping systems designed to carry hazardous materials, and their associated mechanical units in SDC C, D, E or F	Field inspection	Y	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT		J-381 Augusta University – Christenberry Field House			
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
4. Inspection during the installation and anchorage of HVAC ductwork designed to contain hazardous materials in SDC C, D, E or F	Field inspection	Y	Periodic		
5. Inspection during the installation and anchorage of vibration isolation systems in SDC C, D, E or F where nominal clearance of 1/4 inch or less is required by the approved construction documents	Field inspection	Y	Periodic		
6. Inspection during installation of mechanical and electrical equipment, including duct work, piping systems and their structural supports, where automatic fire sprinkler systems are installed in structures assigned to SDC C, D, E, or F to verify one of the following unless flexible sprinkler hose fittings are used:	Field inspection	Y	Periodic		
a. ASCE/SEI 7, Section 13.2.3 minimum required clearances have been provided.	Field inspection	Y	Periodic		
b. A three inch or greater nominal clearance has been provided between fire protection sprinkler system drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping.	Field inspection	Y	Periodic		
<b>1705.12.7 Storage Racks Special Inspections for Seismic Resistance</b>					
Inspection during the anchorage of storage racks 8 feet or greater in height in structures assigned to SDC D, E or F.	Field inspection	N	Periodic		
<b>1705.12.8 Seismic Isolation Systems</b>					
Inspection during the fabrication and installation of isolator units and energy dissipation devices used as part of the seismic isolation system in structures assigned to SDC B, C, D, E or F.	Shop and field inspection	Y	Periodic		
<b>1705.12.9 Cold-formed Steel Special Bolted Moment Frames</b>					
Inspection of installation of cold-formed steel special bolted moment frames in the seismic force-resisting systems in structures assigned to SDC D, E or F.	Field inspection	N	Periodic		
<b>1705.13.1 Structural Steel Testing for Seismic Resistance</b>					
1. Nondestructive testing of structural steel in the seismic force-resisting systems in accordance with AISC 341 in structures assigned to SDC B, C, D, E or F.	Field test	N	Periodic		

**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

PROJECT	J-381 Augusta University – Christenberry Field House				
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
2. Nondestructive testing of structural steel elements in the seismic force-resisting systems not covered in 1 above including struts, collectors, chords and foundation elements in accordance with AISC 341 in structures assigned to SDC B, C, D, E or F.	Field test	N	Periodic		

SCHEDULE OF SPECIAL INSPECTIONS SERVICES					
PROJECT	J-381 Augusta University – Christenberry Field House				
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
<b>1705.13.2 Seismic Certification of Nonstructural Components</b>					
Review certificate of compliance for designated seismic system components in structures assigned to SDC B, C, D, E or F.	Certificate of compliance review	Y	Each submittal		
<b>1705.13.3 Seismic Certification of Designated Seismic Systems</b>					
Review certificate of compliance for designated seismic system components in structures assigned to SDC C, D, E or F	Certificate of compliance review	Y	Each submittal		
<b>1705.13.4 Seismic Isolation Systems</b>					
Test seismic isolation system in accordance with ASCE 7 Section 17.8 in structures assigned to SDC B, C, D, E or F.	Prototype testing	Y	Per ASCE 7		
<b>1705.14 Sprayed Fire-resistant Materials</b>					
1. Verify surface condition preparation of structural members	Field inspection	Y	Periodic		
2. Verify minimum thickness of sprayed fire-resistant materials applied to structural members	Field inspection	Y	Periodic		
3. Verify density of the sprayed fire-resistant material complies with approved fire-resistant design	Field inspection and testing	Y	Per IBC Section 1705.14.5		
4. Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection and testing	Y	Per IBC Section 1705.14.6		
5. Condition of finished application	Field inspection	Y	Periodic		
<b>1705.15 Mastic and Intumescent Fire-Resistant Coatings</b>					
Inspect and test mastic and intumescent fire-resistant coatings applied to structural elements and decks per AWCI 12-B	Field inspection and testing	N	Periodic		
<b>1705.16 Exterior Insulation and Finish Systems (EIFS)</b>					
Inspection of water-resistive barrier over sheathing substrate	Field inspection	N	Periodic		
<b>1705.17 Fire-Resistant Penetrations and Joints</b>					
1. Inspect penetration firestop	Field testing	Y	Per ASTM E2174		
2. Inspect fire-resistant joint systems	Field testing	Y	Per ASTM E2393		
<b>1705.18 Smoke Control Systems</b>					
1. Leakage testing and recording of device locations prior to concealment	Field testing	N	Periodic		
2. Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing	N	Periodic		
<b>* INSPECTION AGENTS</b>					
<b>FIRM</b>	<b>ADDRESS</b>		<b>TELEPHONE NO.</b>		
1. TBD					
3.					
4.					
<p>Notes: 1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.</p> <p>2. The list of Special Inspectors may be submitted as a separate document, if noted so above.</p> <p>3. Shop Inspections of fabricated items are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.1 and listed in activity 1709.2.</p> <p>4. Observe: Observe on a random basis, operations need not be delayed pending these inspections. Perform: These tasks shall be performed for each welded</p>					



**SCHEDULE OF SPECIAL INSPECTIONS SERVICES**

<b>PROJECT</b>		<b>J-381 Augusta University – Christenberry Field House</b>			
<b>MATERIAL / ACTIVITY</b>	<b>SERVICE</b>	<b>APPLICABLE TO THIS PROJECT</b>			
		<b>Y/N</b>	<b>EXTENT</b>	<b>AGENT*</b>	<b>DATE COMPLETED</b>
<i>joint, bolted connection, or steel element.</i> 5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N6.					
Are Special Inspections for Seismic Resistance included in the Statement of Special Inspections?					<b>No</b>
Are Special Inspections for Wind Resistance included in the Statement of Special Inspections?					<b>No</b>
DATE:					8/23/2023

## Contractor's Statement of Responsibility

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Each contractor responsible for the construction or fabrication of a main wind or seismic force-resisting system, designated seismic system or wind or seismic-resisting component listed in the Statement of Special Inspections, Special Inspections for Seismic or Wind Resistance, must submit a Statement of Responsibility.

Project: **J-381 Augusta University – Christenberry Field House**

Contractor's Name: \_\_\_\_\_

Address: \_\_\_\_\_

License No.: \_\_\_\_\_

Description of building systems and components included in Statement of Responsibility:

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### Contractor's Acknowledgement of Special Requirements

I hereby acknowledge that I have received, read, and understand the Statement of Special Inspections and Special Inspection program:

I hereby acknowledge that control will be exercised to obtain conformance with the approved construction documents.

\_\_\_\_\_  
Name and Title (type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Fabricator's Certificate of Compliance

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Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2.5.1 of the International Building Code must submit *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: **J-381 Augusta University – Christenberry Field House**

Fabricator's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Certification or Approval Agency: \_\_\_\_\_

Certification Number: \_\_\_\_\_

Date of Last Audit or Approval: \_\_\_\_\_

Description of structural members and assemblies that have been fabricated:

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I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

\_\_\_\_\_  
Name and Title (type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual.

<input type="checkbox"/>	<input type="checkbox"/>

# SPECIAL INSPECTION DAILY REPORT

<b>PROJECT NAME / ADDRESS:</b> J-381 Augusta University – Christenberry Field House 3109 Wrightsboro Road Augusta, GA 30909	
<b>INSPECTION TYPE(S) COVERAGE</b>  <div style="display: flex; justify-content: space-around;"> <span><input type="checkbox"/> CONTINUOUS</span> <span><input type="checkbox"/> PERIODIC</span> </div> TIME BEGINNING INSPECTION: _____ TIME ENDING INSPECTION: _____	
DESCRIBE INSPECTIONS MADE, INCLUDING LOCATIONS:   	
LIST TESTS MADE:   	
LIST ITEMS REQUIRING CORRECTIONS, CORRECTIONS OF PREVIOUSLY LISTED ITEMS AND PREVIOUSLY LISTED UNCORRECTED ITEMS: PROVIDE COPIES OF DISCREPANCY NOTICES:   	
COMMENTS:   	
TO THE BEST OF MY KNOWLEDGE, WORK INSPECTED WAS IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.	
PRINTED FULL NAME _____	
NOTE BY "SPECIAL INSPECTOR" OR _____	
SIGNED: _____	DATE: _____
CERTIFICATION: _____	NUMBER: _____

One copy of this report to remain at job site with the contractor for review upon request.

# SPECIAL INSPECTION INTERIM REPORT

PROJECT NAME / ADDRESS: J-381 Augusta University – Christenberry Field House 3109 Wrightsboro Road Augusta, GA 30909								
INSPECTION TYPE(S) COVERAGE								
<input type="checkbox"/> CONTINUOUS <input type="checkbox"/> PERIODIC TIME BEGINNING INSPECTION:                      TIME ENDING INSPECTION:								
DESCRIBE INSPECTIONS MADE, INCLUDING LOCATIONS:								
LIST TESTS MADE:								
TOTAL INSPECTION TIME EACH DAY	DATE							
	HOURS							
LIST ITEMS REQUIRING CORRECTIONS, CORRECTIONS OF PREVIOUSLY LISTED ITEMS AND PREVIOUSLY LISTED UNCORRECTED ITEMS: PROVIDE COPIES OF DISCREPANCY NOTICES:								
COMMENTS:								
TO THE BEST OF MY KNOWLEDGE, WORK INSPECTED WAS IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.								
PRINTED FULL NAME								
NOTE BY "SPECIAL INSPECTOR" OR PROVIDE NAME OF TESTING AGENCY								
SIGNED:						DATE:		
CERTIFICATION:						NUMBER:		

One copy of this report to remain at job site with the contractor for review upon request.

**SPECIAL INSPECTION DISCREPANCY NOTICE**

PROJECT NAME / ADDRESS: J-381 Augusta University – Christenberry Field House 3109 Wrightsboro Road Augusta, GA 30909		
INSPECTION TYPE(S) COVERAGE  <input type="checkbox"/> CONTINUOUS <input type="checkbox"/> PERIODIC		
AREA INSPECTED	TYPE OF INSPECTION	
NOTICE DELIVERED TO:  <input type="radio"/> CONTRACTOR  <input type="radio"/> ENGINEER/ARCHITECT  <input type="radio"/> OWNER	DATE:	TIME:
MAKE THE FOLLOWING CORRECTIONS AND SECURE INSPECTION APPROVAL PRIOR TO PROCEEDING WITH THIS PHASE OF THE WORK.		
PRINTED FULL NAME		
NOTE BY "SPECIAL INSPECTOR" OR PROVIDE NAME OF TESTING AGENCY		
SIGNED:	DATE:	
CERTIFICATION:	NUMBER:	

One copy of this report to remain at job site with the contractor for review upon request.

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**SECTION 01 5000  
TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Water service and distribution.
  - 2. Temporary electric power and light.
  - 3. Temporary heat.
  - 4. Ventilation and Humidity Control
  - 5. Telephone service.
  - 6. Sanitary facilities, including drinking water.
  - 7. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
  - 1. Field offices and storage containers.
  - 2. Temporary roads and paving.
  - 3. Dewatering facilities and drains.
  - 4. Temporary partitions and enclosures.
  - 5. Hoists and temporary elevator use.
  - 6. Temporary project identification sign and project signage.
  - 7. Waste disposal services and dumpsters.
  - 8. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. Temporary fire protection.
  - 2. Barricades, warning signs, and lights.
  - 3. Environmental protection.
  - 4. Tree and plant protection.
  - 5. Security enclosure and lockup.
  - 6. Temporary enclosures.
  - 7. Temporary partitions.
  - 8. Sidewalk Bridge for maintaining legal exits.
  - 9. Enclosure fence for the work site.
  - 10. Environmental protection.
- E. Related Sections:
  - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

**1.02 INFORMATIONAL SUBMITTALS**

- A. Temporary Utilities: The Contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule. The Contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- D. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent



- E. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- F. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage, including delivery, handling, and storage provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
  - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- G. Dust-Control and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust-control and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
  - 1. Locations of dust-control partitions at each phase of the work.
  - 2. HVAC system isolation schematic drawing.
  - 3. Location of proposed air filtration system discharge.
  - 4. Other dust-control measures.
  - 5. Waste management plan.

### 1.03 DEFINITIONS

- A. Temporary Enclosure: As determined by Design Professional, temporary roofing is complete, insulated, all exterior wall openings are closed with temporary closures.
- B. Permanent Enclosure: As determined by Design Professional, permanent roofing is complete, insulated, and weather tight; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.
- C. Temporary Facilities: Construction, fixtures, fittings, and other built items required to accomplish the work but which are not incorporated into the finished work.
- D. Temporary Utilities: A type of temporary facility, primary sources of electric power, water, natural gas supply, etc., obtained from public utilities, other main distribution systems, or temporary sources constructed for the project, but not including the fixtures and equipment served.
- E. Temporary Services: Activities required during construction, which do not directly accomplish the work.

### 1.04 QUALITY ASSURANCE

- A. Regulations: The Contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
  - 1. Building code requirements.
  - 2. Health and safety regulations.
  - 3. Utility company regulations.
  - 4. Police, fire department and rescue squad rules.
  - 5. Environmental protection regulations.

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- B. Standards: The Contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
  - C. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
  - D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
  - E. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

#### **1.05 USE CHARGES**

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Design Professional, testing agencies, and authorities having jurisdiction.
  - 1. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
  - 2. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
  - 3. Gas Service from Existing System: Gas Service from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
  - 4. Remove all temporary utility connections, pipes, valves, etc. after permanent connection are operational.
- B. Cost or use charges for temporary facilities are not chargeable to the Owner or the Design Professional. The Design Professional will not accept a prime Contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- C. Other entities using temporary services and facilities include, but are not limited to, the following:
  - 1. Other nonprime Contractors.
  - 2. The Owner's work forces.
  - 3. Occupants of the Project.
  - 4. The Design Professional.
  - 5. Testing agencies.
  - 6. Personnel of government agencies.

#### **1.06 PROJECT CONDITIONS**

- A. Temporary Utilities: The Contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary

conditions, or public nuisances to develop or persist on-site.

- C. Temporary Use of Permanent Facilities: If the Owner permits temporary use of the permanent facilities the Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails. Install privacy/windscreen polypropylene fabric material. Provide fabric with repeating full color logos of the Contractor, Design Professional, and name of Owner and name of project. Submit artwork to Design Professional for approval. Location shall be preapproved by the Owner.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 9-gauge thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete bases for supporting posts. Install privacy/windscreen polypropylene fabric material. Provide fabric with repeating full color logos of the Contractor, Design Professional, and name of Owner and name of project. Submit artwork to Design Professional for approval. Location shall be preapproved by the Owner.
- C. General: The Contractor shall provide new materials. If acceptable to the Design Professional, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- D. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
  - 1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
  - 2. For fences and vision barriers, provide minimum 3/8-inch- thick exterior plywood.
  - 3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch thick exterior plywood.
- E. Gypsum Wallboard: Provide 5/8 type x gypsum wallboard on interior walls of temporary offices or temporary partitions.
- F. Paint: Comply with requirements of Division 09 Section "Interior and Exterior Painting."
- G. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.

### **2.02 TEMPORARY FACILITIES**

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading. Location shall be preapproved by the Owner.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Location shall be preapproved by the Owner.
  - 1. Store combustible materials apart from building.

### **2.03 EQUIPMENT**

- A. General: The Contractor shall provide new equipment. If acceptable to the Design Professional undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Electrical Power Cords: Provide grounded extension cords that comply with OSHA standards. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors

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to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio. Do not remove ground from plugs. Immediately remove from service any extension cord that becomes frayed, cut or damaged or has the ground prong removed from the plug(s).

- C. Lamps and Light Fixtures: Provide general service lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- D. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- E. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- F. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
  - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- G. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction and clean HVAC system as required in Division 01 Section "Closeout Procedures".
- H. Air Filtration Units: HEPA primary and secondary filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work. Location shall be preapproved by the Owner.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

#### **3.02 TEMPORARY UTILITY INSTALLATION**

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - 2. Provide adequate capacity at each stage of construction.
- B. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

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- C. The Contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
  - D. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - E. Sanitary Facilities: The Contractor will provide temporary toilets for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - F. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Material Completion, restore these facilities to condition existing before initial use.
  - G. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
    - 1. Connect temporary service to Owner's existing power source, as directed by Owner.
  - H. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics at each building addition and maintain them during construction period. Include overload-protected disconnects, automatic ground-fault interrupters.
    - 1. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
    - 2. Install electric power service underground, except where overhead service must be used.
    - 3. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 V, ac 20 ampere rating, and lighting circuits may be nonmetallic-sheathed cable where overhead and exposed for surveillance.
    - 4. Provide temporary power in the areas of renovation where the existing receptacles have been removed and the proximity to power source exceeds 50'.
  - I. Temporary Lighting: When an overhead floor or roof deck has been installed, provide temporary lighting with local switching.
    - 1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
    - 2. Operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
      - a. Security lighting for building exteriors shall be continuously operational and maintained.
      - b. Temporary lighting shall be maintained in accordance with OSHA standards for power and foot candle levels in all areas while workers occupy the space.
    - 3. Provide temporary lighting in the areas of renovation where the existing fixtures have been removed and the new lighting has not been installed.
  - J. Temporary Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption. Direct fired propane or Kerosene salamanders will not be permitted.
    - 1. Temporary Heat: Provide temporary heat in all existing areas that are under construction and/or have their permanent heat temporarily or permanently shut off for construction reasons.
    - 2. Provide temporary heat in all new construction areas as soon as each area of new construction is fully enclosed: walls, temporary roofs, and either windows and doors or

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- temporary windows and doors.
3. Temporary heat provided shall be sufficient to maintain all areas of new, fully enclosed construction (and renovated areas of existing construction that, due to construction, are temporarily without permanent heat), including concealed ceiling or chase spaces, to a minimum 500F, 24 hours a day, in winter weather as cold as 150F outside.
  4. Temporary heat must not damage any materials, new or existing, within or without the Project limits, on school property, nor shall it cause noxious odors or fumes or some other nuisance.
  5. Temporary heat must be installed, operated, maintained, and dismantled in a safe, legal manner.
  6. Provide adequate ventilation as required by Codes and labor laws in all areas of Project limits as part of the work of this Section.
- K. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, indirect fired, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control.
1. Use of direct-fired Kerosene-burning space heaters, open flame, or salamander-type heating units is prohibited.
  2. Protect all permanent equipment put into services from dust, dust infiltration and soiling by installing filtering media at each supply and return outlet. Filters shall be changed in all air handling equipment including unit vents prior to owner occupancy. Failure to provide the necessary protection to the equipment may result in the Contractor to be charged to clean the equipment and associated ductwork.
- L. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- a. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- M. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
1. Prior to commencing work, isolate the HVAC system in area where work is to be performed in accordance with approved coordination drawings.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust containment devices.
  3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- N. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail and high-speed Internet service in the field office.

### **3.03 SUPPORT FACILITIES INSTALLATION**

- A. General: Comply with the following:
1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.

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2. Maintain support facilities until Design Professional schedules Material Completion inspection. Remove before Material Completion. Personnel remaining after Material Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
  3. Locate field offices, storage trailers, sanitary facilities, and other temporary construction and support facilities for easy access.
  4. Maintain support facilities until near Material Completion. Remove prior to Material Completion. Personnel remaining after Material Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
  5. Refer to the drawings for locations of storage/containers or trailers.
- B. Temporary Roads and Paved Areas: Locate temporary roads and paved areas as indicated on Drawings. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
  2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
  3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
  4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Material Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Temporary Parking: Use designated areas of Owner's existing parking areas for construction personnel. Location shall be preapproved by the Owner.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
  2. Remove snow and ice as required to minimize accumulations.
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements. Location shall be preapproved by the Owner.
- H. Temporary Elevator Use: Refer to Division 14 Section 14 2400 "Hydraulic Elevators" for temporary use of new elevators.
- a. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work (at no cost to the Owner) so no evidence remains of correction work. Return items that cannot be

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refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- K. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Material Completion, restore stairs to condition existing before initial use.
  - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- L. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Material Completion.

#### **3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION**

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
  - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
  - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
  - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
  - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- F. Enclosure Fence: When excavation begins will install an enclosure fence with lockable entrance gates. Install in a manner that will prevent the public and animals from easily entering the site, except by the entrance gates.
  - 1. Provide open-mesh, 6' high chain link fence with posts.
  - 2. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 3. Provide min. 2 double swing access gates and man gates. Each gate is to have a chain and padlock.



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4. Provide (2) keys for each lock to the Owner.
  5. Remove fence upon completion of all exterior activities or sooner if directed by Design Professional.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Material Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- I. Project Signs: Prepare one project sign. Submit artwork to Design Professional for approval. Location shall be preapproved by the Owner.
1. Engage an experienced sign painter to apply graphics for Project identification signs.
  2. Construct signs of exterior-type MDF. Support with 4 x 4 posts and 2 x 4 braces.
    - a. Size: 4-feet by 8-feet by 3/4-inch thick.
  3. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
    - a. Name of Owner and Logo and Name of Project in 4" high upper case letters.
    - b. Name, address and logo of Design Professional in 1-1/2" high letters.

Design Professional:  
CPL  
1615 Molly Lane, Suite 100  
Woodstock , GA, 30189
    - c. Name, address and logo of Contractor in 1-1/2" high letters.
- J. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors for each site.
1. For construction traffic control/flow at entrances/exits, as designated by the Owner.
  2. For warning signs as required (Construction Area, hard hats required).
  3. Per OSHA standards as necessary.
  4. For trailer identification.
  5. For "No Smoking" safe work site at multiple locations.
  6. Emergency Contact(s).
- K. At end of project remove all sign completely
- L. Do not permit installation of unauthorized signs
- M. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- N. Temporary Enclosures: Provide temporary enclosure for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
  2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. or less with plywood or similar materials.
  3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
  4. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use UL labeled, fire-retardant-treated material for framing and main sheathing.

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5. Temporary closures for specific openings for a prime Contractor to perform their work are the responsibility of Contractor creating the opening and shall be installed to protect building from exterior elements.
- O. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
1. Temporary partitions shall be installed at all openings where additions connect to existing buildings, and where required to protect areas, spaces, property, personnel, students, and faculty; to separate and control dust, debris, noise, access, sight, fire areas, safety and security and to separate phased construction areas per the phasing plan. Construction material and methods to suit need as determined by the Design Professional.
    - a. Temporary partitions shall be installed, maintained, and removed as directed by the Design Professional.
  2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
  3. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  4. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
  5. Insulate partitions to control noise transmission to occupied areas.
  6. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  7. Protect air-handling equipment.
  8. Provide walk-off mats at each entrance through temporary partition.
- P. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Prohibit smoking in construction areas.
  2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
- Q. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

### **3.05 MOISTURE AND MOLD CONTROL**

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
  2. Protect stored and installed material from flowing or standing water.
  3. Keep porous and organic materials from coming into prolonged contact with concrete.

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4. Remove standing water from decks.
  5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before Permanent Enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  2. Keep interior spaces reasonably clean and protected from water damage.
  3. Periodically collect and remove waste containing cellulose or other organic matter.
  4. Discard or replace water-damaged material.
  5. Do not install material that is wet.
  6. Discard, replace or clean stored or installed material that begins to grow mold.
  7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the permanent building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  2. The Contractor is to provide temporary dehumidification and ventilation until the building systems are operational and the spaces are substantially completed.
  3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
    - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Design Professional.
    - c. Remove materials that cannot be completely restored to their manufactured moisture level 48 hours.

### **3.06 OPERATION, TERMINATION, AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Material Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Material Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Material Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

**END OF SECTION**

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**SECTION 01 6000  
PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 01 2300 "Alternates" for products selected under an alternate.
  - 2. Section 01 2500 "Substitution Procedures" for requests for substitutions.
  - 3. Section 01 4200 "References" for applicable industry standards for products specified.

**1.02 DEFINITIONS**

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

**1.03 ACTION SUBMITTALS**

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  - 2. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Design Professional will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Section 01 3300 "Submittal Procedures."
    - b. Use product specified if Design Professional does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 3300 "Submittal Procedures." Show compliance with requirements.

#### **1.04 QUALITY ASSURANCE**

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
  - 1. The Contractor is responsible for providing products and construction methods compatible with products and construction methods of other Contractors.
  - 2. If a dispute arises over concurrently selectable but incompatible products, Design Professional will determine which products shall be used.

#### **1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  - 6. Protect stored products from damage and liquids from freezing.
  - 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

#### **1.06 PRODUCT WARRANTIES**

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. **Manufacturer's Warranty:** Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  - 2. **Special Warranty:** Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution.
  - 1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 7700 "Closeout Procedures."

## **PART 2 PRODUCTS**

### **2.01 PRODUCT SELECTION PROCEDURES**

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Design Professional will make selection.
  5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  6. "Or Equal" product substitution are not allowed: For non-Basis-of-Designed products specified by name and accompanied by the term "approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an alternate listed product.
- B. Product Selection Procedures:
  1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  3. Products:
    - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
  4. Manufacturers:
    - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
    - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
  5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or

indicated product or a comparable product by one of the other named manufacturers.

Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Matching Specification: Where Specifications require "match Design Professional's sample", provide a product that complies with requirements and matches Design Professional's sample. Design Professional's decision will be final on whether a proposed product matches.
  - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Design Professional from manufacturer's full range" or similar phrase, select a product that complies with requirements. Design Professional will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## **2.02 EQUIVALENT PRODUCTS**

- A. Conditions for Consideration: Design Professional will consider Contractor's request for equivalent product when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - 3. Evidence that proposed product provides specified warranty.
  - 4. List of similar installations for completed projects with project names and addresses and names and addresses of Design Professionals and owners, if requested.
  - 5. Samples, if requested.

## **PART 3 EXECUTION (NOT USED)**

**END OF SECTION**



## **SECTION 01 7300 EXECUTION**

### **PART 1 GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.02 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. Installation of the Work.
  - 4. Coordination of Owner-installed products.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.
  - 8. Correction of the Work.
- B. Related Sections:
  - 1. Division 01 Section "Cutting and Patching" for cutting and patching of selected portions of the Work.
  - 2. Division 02 Section "Selective Demolition" for demolition and removal of selected portions of the Work.
  - 3. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

#### **1.03 QUALITY ASSURANCE**

- A. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

#### **1.04 CODES AND WARRANTIES**

- A. Existing Codes and Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to violate Codes and void existing warranties.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Design Professional for the visual and functional performance of in-place materials.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location of electrical services, and other utilities.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  4. Proceed with installation only after unsatisfactory conditions have been corrected.  
Proceeding with the Work indicates acceptance of surfaces and conditions.

### **3.02 PREPARATION**

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Design Professional according to requirements in Division 01 Section "Project Management and Coordination."

### **3.03 CONSTRUCTION LAYOUT**

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to existing benchmarks. If discrepancies are discovered, notify Design Professional promptly.
- B. Building Lines and Levels: Locate and lay out control lines and levels for building components, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels.
- C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Design Professional.

### **3.04 FIELD ENGINEERING**

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Owner and Design Professional. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Design Professional before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

### 3.05 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Material Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
1. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
  2. loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Design Professional.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### **3.06 OWNER-INSTALLED PRODUCTS**

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### **3.07 PROGRESS CLEANING**

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Utilize containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
- B. Site: Maintain Project site free of waste materials and debris. Continuously, on a daily bases, remove waste materials and debris and keep a clean, safe and organized construction site.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Material Completion.
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Material Completion.
- H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure

operability without damaging effects.

- I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### **3.08 STARTING AND ADJUSTING**

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

### **3.09 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Material Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### **3.10 CORRECTION OF THE WORK**

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
  1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

**END OF SECTION**

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**SECTION 01 7329  
CUTTING AND PATCHING**

**PART 1 – GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following;
  - 1. Divisions 02 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

**1.03 DEFINITIONS**

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.
- C. Matching: Match adjacent material texture, finish and color.

**1.04 QUALITY ASSURANCE**

- A. Prior to starting any work including demo: The Contractor shall test all existing systems that apply (lighting, HVAC, fire protection, fire alarm, phone, data, thermostats, temperature sensors, intercom, security system, etc.) and issue a report of their findings. Any system component not noted as not working shall be assumed to have been operation before construction started and will be the Constructions Manager's responsibility to repair and/or replace to make the system operational again.
- B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- C. Operation Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:
  - 1. Primary operational systems and equipment.
  - 2. Air or smoke barriers.
  - 3. Fire-suppression systems.
  - 4. Mechanical systems piping and ducts.
  - 5. Control systems.
  - 6. Plumbing and piping.
  - 7. Electrical wiring systems.
- D. Building Elements: Do not cut and patch building elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- E. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
  - 1. Water, moisture, or vapor barriers.
  - 2. Membranes and flashings.
  - 3. Equipment supports.

4. Piping, ductwork, vessels, and equipment.
  5. Noise-and vibration-control elements and systems.
- F. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

### **1.05 WARRANTY**

- A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.
1. The in-effect warranties and integrity of the existing roof system shall be maintained.

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.
- C. Existing Roof.
1. Roofing System and Flashing Membrane: Match existing or, if existing material is no longer available, provide alternate product acceptable to the Owner and Existing roofing manufacturer.
  2. If alternate product is required, submit product data and information for Architect's approval prior to any roof work.
  3. Roofing applicator shall have three years' experience installing this type roofing system, shall be approved by the existing roof manufacturer, and have successfully completed three projects of similar using the system specified.

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- B. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- C. Existing Utility Services and mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- D. Test any existing system, device, or equipment that is to remain in operation and verify it is operating correctly. Document any item that is found not be operating and bring this to the

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attention of the Design Professional. Proceed with work on any non-operating item only after receiving direction from the Design Professional. Any item or system ( fire alarm system for example) that is found not to be operating later will be the responsibility of the Contractor to correct.

### 3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
  - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
  - 1. Inspections: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retrained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  - 4. Ceilings: Patch, repair or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.



5. Sprinkler Heads: Where existing sprinkler heads are removed and re-installed, coordinate installation of retro-fit escutcheon plates so as not to delay review and approval of Fire Marshal.
  6. Remove any existing nail, pipe, bolt or other projecting item that is exposed or becomes exposed. Patch hole to match adjacent material.
  7. If part of an existing system is to be removed and the remaining existing system is not to be used, then the entire existing system shall be removed including support brackets, hanging rods, clamps and other attachment devices and screws.
  8. Exterior Building Enclosure: patch components in a manner that restores enclosure to weather-tight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
- E. When cutting or patching inside a building, the area where the work is to be done must be sealed off to prevent dust and smoke from entering the HVAC, electrical, fire alarm, and security systems.
- F. Existing systems that are damaged as a result of the above work must be repaired and returned to their original operational condition.

**END OF SECTION**

## SECTION 01 7700 CLOSEOUT PROCEDURES

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Material Completion procedures. – Contractor's & Design Professional's Punch Lists.
  - 2. Final completion procedures.
  - 3. Warranties Manuals.
  - 4. O & M Manuals.
  - 5. As-Built Survey.
  - 6. Final cleaning.
  - 7. Repair of the Work.
- B. Related Requirements:
  - 1. Section 01 7300 "Execution" for progress cleaning of Project site.
  - 2. Section 01 7839 "Project Record Documents" for submitting Record As-Built Drawings.
  - 3. Section 01 7900 "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 4. Section 02 4119 "Selective Demolition" for specific closeout and special cleaning requirements.

#### 1.02 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Material Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

#### 1.03 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

#### 1.04 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

#### 1.05 MATERIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Contractor is to prepare and submit a list of items to be completed and corrected (Contractor's punch list). The Design Professional will not perform a punch list inspection until the Contractor's punch list has been worked off, the Contractor has **signed off on each item**, and it has been sent to and accepted by the Design Professional.
- B. Design Professional's Punch List: Design Professional will prepare a punch list and prepare the Certificate of Material Completion. Design Professional will attach their punch list to the Certificate of Material Completion, assigning a value of 2 times the estimated cost for each item.
  - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
    - a. The Design Professionals basic services include (1) initial punch list and (1) follow-up punch list inspection to insure all corrective action and or incomplete work has been finished. The Contractor is responsible to the Owner for all costs incurred by the Design Professional for additional services to provide multiple punch lists for the same work area. The cost for these additional services, may be deducted from the

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- Contractors Contract by deduct Change Order.
2. Results of completed inspection will form the basis of requirements for final completion.
- C. Submittals Prior to Material Completion: Complete and submit the following a minimum of seven days prior to requesting inspection for determining date of Material Completion.
1. Certificate of Occupancy: Obtain and submit Certificate of Occupancy (CO) from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities.
  2. Submit closeout submittals specified in other Division 01 Sections, including warranties and bonds, operation and maintenance manuals, as-built survey, project record documents final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Design Professional. Label with manufacturer's name and model number where applicable.
    - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Design Professional's signature for receipt of submittals.
  5. Submit test and balance report.
  6. Submit sustainable design submittals required in Section 01 8113 "Sustainable Design Requirements" – Georgia Peach Green Building Rating System.
  7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- D. Procedures Prior to Material Completion: Complete the following a minimum of seven days prior to requesting inspection for determining date of Material Completion. List items below that are incomplete at time of request.
1. Prepare and complete the Contractor's punch list.
  2. Complete startup and testing of systems and equipment.
  3. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  4. Perform preventive maintenance on equipment used prior to Material Completion.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 7900 "Demonstration and Training."
  6. Complete final cleaning requirements, including touchup painting

#### **1.06 FINAL COMPLETION PROCEDURES**

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 01 2900 "Payment Procedures."
  2. Certified List of Incomplete Items: Submit certified copy of Design Professional's Material Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Design Professional. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  5. Advise Owner of pending insurance changeover requirements.
  6. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
  9. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  10. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  11. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
- B. Inspection: Submit a written request for final inspection to determine acceptance, a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### **1.07 SUBMITTAL OF PROJECT WARRANTIES**

- A. ALL WARRANTIES SHALL COMMENCE ON THE DATE OF THE CERTIFICATE OF MATERIAL COMPLETION. WARRANTIES WILL BE REJECTED IF THEY DO NOT COMPLY WITH THIS REQUIREMENT.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual. Include:
- a. The Contractor's Warranty.
  - b. Subcontractor's Warranties.
  - c. Major Equipment Warranties.
2. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  3. Provide a table of contents for the entire binder, heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  4. Identify each binder on the front and spine with the typed or printed title "WARRANTIES". Indicate the project name at a minimum.
  5. Submit 3 hard copies of each binder and one flash drive with a. single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document of the Warranty Manual(s).
- C. Provide additional copy of each warranty and include in operation and maintenance manuals.

#### **1.08 OPERATION & MAINTENANCE MANUALS**

- A. O & M Manuals: Provide a table of contents for the entire binder, heavy paper dividers with plastic-covered tabs for each separate section. Organize maintenance and operating manual

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information into suitable sets of manageable sizes, and bind into individual binders identified and indexed (thumb-tabbed); examples: Air Conditioning Equipment Maintenance, Roof Maintenance. Include emergency instructions, spare part listing, warranties, guarantees, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set in a heavy duty 3-ring vinyl-covered binder and include pocket folders for folded sheet information.

- B. Identify each binder on the front and spine with the typed or printed title "O & M Manual". Indicate the project name and the major contents of the binder at a minimum.
- C. Include a list of all subContractors with their contact information in the front of each binder.
- D. Submit 3 hard copies of each binder and one flash drive with a. single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document of the O & M Manuals.

### **1.09 AS-BUILT SURVEY**

- A. The Contractor shall submit to the Design Professional an As-Built survey for use in verifying that the work performed complies with the requirements of the contract for the Storm Water Detention Facility and new storm pipes and structures that were added or modified per this Work. The survey shall be performed by an independent, Georgia Licensed land surveyor selected and paid for by the Contractor and approved by the Design Professional.
- B. Surveyor shall provide a detailed As-Built Storm Water Detention Facility and utility survey. The requirements for the survey shall include:
  - 1. Locate all features required to show compliance with contract documents. Locate horizontal features as follows:
    - a. +/- 0.10' for drainage and utility structures.
- C. Survey data shall be furnished to the Design Professional utilizing both printed and electronic file formats.
  - 1. Provide 1 original and 3 copies. Each sheet shall contain an original surveyor's seal and signature.
  - 2. Provide one flash drive with a PDF of the As-Built Survey drawing(s).
- D. Upon receipt of survey data, the Design Professional will verify that grades, elevations, lines and inverts comply with the contract provisions.
- E. Where results of required survey prove unsatisfactory and do not indicate compliance of related work with requirements of Contract Documents, re-surveys will be the responsibility of the Contractor.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## **PART 3 EXECUTION**

### **3.01 FINAL CLEANING**

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Material Completion for entire Project or for a designated portion of Project:
  - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, including rust stains, and other foreign deposits.
  - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - g. Sweep concrete floors broom clean in unoccupied spaces. Remove all debris and trash from electrical and mechanical rooms.
  - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
  - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - j. Remove labels that are not permanent. Remove manufacturer's tags off of the blinds.
  - k. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure. Remove manufacture's labels.
  - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
  - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
  - p. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 01 5000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 5000 "Temporary Facilities and Controls."

### **3.02 REPAIR OF THE WORK**

- A. Complete repair and restoration operations before requesting inspection for determination of Material Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
  - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

**END OF SECTION**

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**SECTION 01 7839  
PROJECT RECORD DOCUMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Miscellaneous record submittals.
  - 4. Final Certification of Costs for Capital Asset Accounting.
- B. Related Requirements:
  - 1. Section 01 7700 "Closeout Procedures" for general closeout procedures.

**1.02 CLOSEOUT SUBMITTALS**

- A. Record As-Built Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit colored PDF electronic files of the following:
        - (a) Marked-up record prints.
        - (b) Corrected record digital data files.
      - 2) Design Professional will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Submit one colored paper-copy set and colored PDF electronic file of marked-up record prints, and one set of colored plots and colored PDF electronic file from corrected record digital data files.
      - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy and annotated PDF electronic files of Project's Record Specifications, including addenda and contract modifications.
- C. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy and annotated PDF electronic files and directories of each submittal.

**PART 2 PRODUCTS**

**2.01 RECORD DRAWINGS**

- A. Record As-Built Prints: Maintain one set of marked-up prints of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  - 1. Preparation: Mark As-Built Record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.



- b. Revisions to details shown on Drawings.
- c. Depths of foundations below first floor.
- d. Locations and depths of underground utilities.
- e. Revisions to routing of piping and conduits.
- f. Revisions to electrical circuitry.
- g. Actual equipment locations.
- h. Manufacturer's name and model numbers if the bases of design manufacturer equipment or product was not use.
- i. Duct size and routing.
- j. Locations of concealed internal utilities.
- k. Changes made by Change Order or Construction Change Directive.
- l. Changes made following Design Professional's written orders or details not on the original Contract Drawings. (copies of ASI's or RFI's should be taped to the prints, if appropriate).
- m. Field records for variable and concealed conditions.
- n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record set with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location. Also, areas where changes have been made should be clouded with a red pencil.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, ASI numbers, RFI numbers and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Material Completion, Contractor is to review marked-up record prints with Design Professional. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
  1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
  2. Format: DWG Version AutoCAD Architecture 2016 or newer, or Revit Architecture 2016 or newer, for Microsoft Windows operating system.
  3. Incorporate changes and additional information previously marked on Record As-Built Prints. Delete, redraw, and add details and notations where applicable. Incorporate all addenda, CO's, ASI's, RFI's, etc.
  4. Refer instances of uncertainty to Design Professional for resolution.
  5. Design Professional will furnish Contractor one set of digital data files of the Contract Drawings for use in recording as-built information.
    - a. See Section 01 3300 "Submittal Procedures" for requirements related to use of Design Professional's digital data files.
    - b. Design Professional will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD AS-BUILT DRAWINGS" in a prominent location.
  1. Record Prints: Submit one set of Record As-Built Prints.
  2. Format: Submit record Drawings as annotated PDF electronic file with comment function enabled and DWG Autocad format.
  3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.

4. Identification: As follows:
  - a. Project name.
  - b. Date.
  - c. Designation "PROJECT RECORD AS-BUILT DRAWINGS."
  - d. Name of Design Professional and Owner.
  - e. Name of Contractor.

## 2.02 RECORD SPECIFICATIONS

- A. Preparation: Maintain one set of Specifications on site with Record As-Built Drawings. Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications (CO's, ASI's, RFI's, etc.).
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  5. Note related Change Orders, record Product Data, and record Drawings where applicable.
  6. Include all addenda.
- B. Format: Submit 3 sets of marked up specifications and one PDF copy on a flash drive with the designation on the cover "PROJECT RECORD SPECIFICATIONS".

## 2.03 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as three paper copies and scanned PDF electronic file(s) of marked-up paper copy of Product Data.
  1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

## 2.04 CAPITAL COST ACCOUNTING

- A. The Contractor shall provide a Final Certification of Costs for Capital Asset Accounting as part of the required close out documents. A blank copy of this form is attached at the end of this section. Contractor is to complete and sign the top section of this form and submit to Design Professional for completion. Should there be any disagreement with the categorization of any cost between the Contractor and the Design Professional, both should consult the Owner.

## PART 3 EXECUTION

### 3.01 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to As-Built Record prints as they occur. The Design Professional will inspect the As-Built Record prints and Record Specifications prior to approving each month's pay application to verify that they are being kept up to date. If As-Built Record prints and Record specifications are not up to date this may delay the approval of the monthly pay app.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record

documents for Design Professional's and Owner's reference during normal working hours.

- C. Upon completion and approval of Record Documents, Contractor shall upload all documents to GSFIC e-Builder.

**END OF SECTION**

**SECTION 01 7900  
DEMONSTRATION AND TRAINING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

**1.02 COORDINATION**

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Design Professional.

**PART 2 PRODUCTS**

**2.01 INSTRUCTION PROGRAM**

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component. Provide on-site training and instruction for the following as applicable to the system, equipment, or component:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    - a. System, subsystem, and equipment descriptions.
    - b. Performance and design criteria if Contractor is delegated design responsibility.
    - c. Operating standards.
    - d. Regulatory requirements.
    - e. Equipment function.
    - f. Operating characteristics.
    - g. Limiting conditions.
    - h. Performance curves.
  - 2. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project record documents.
    - e. Identification systems.
    - f. Warranties and bonds.
    - g. Maintenance service agreements and similar continuing commitments.
  - 3. Emergencies: Include the following, as applicable:
    - a. Instructions on meaning of warnings, trouble indications, and error messages.
    - b. Instructions on stopping.
    - c. Shutdown instructions for each type of emergency.
    - d. Operating instructions for conditions outside of normal operating limits.
    - e. Sequences for electric or electronic systems.

- f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
  - a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.
  - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
8. Repairs: Include the following:
  - a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 7823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

### **3.02 INSTRUCTION**

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - 1. Owner will furnish the Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

**END OF SECTION**

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**SECTION 02 4100  
DEMOLITION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Selective and structural demolition.
- B. Selective demolition of building elements for alteration purposes.
- C. Salvage of existing items to be reused or recycled.
- D. Floor Protection during construction.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 1000 - Summary: Sequencing and staging requirements.
- C. Section 07 0150.19 - Preparation for Re-Roofing: Removal of existing roofing, roof insulation, flashing, trim, and accessories.

**1.03 REFERENCE STANDARDS**

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Qualification Data: For refrigerant recovery technician or company, if required.
- C. Statement of Refrigerant Recovery, if any: Signed by refrigerant recovery company's technician who recovered the refrigerant indicating that all refrigerant was recovered and that recovery was performed according to EPA guidelines. Include name, company name and address of technician and the date that the refrigerant was recovered.
- D. Pre-demolition Videos or Photographs: Submittal must be made prior to Work commencing.
  - 1. Document any existing damaged conditions.
- E. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

**1.05 PROJECT CONDITIONS**

- A. Owner will occupy portions of buildings immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Owner and Architect of any discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Storage or sale of removed items or materials on-site is not permitted.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. VCT locations: Heavy Duty Temporary Floor Protection.
  - 1. Basis of Design: "Ram Board" Temporary Floor Protection
    - a. Or approved equal.
  - 2. Seam Tape of same manufacturer as HD Temporary Floor Protection.

- B. Wood Gym Floor Protection:
  - 1. 7/16" OSB with polyvinyl underlayment.
    - a. Or approved equal.
- C. Carpet locations: "Peel and stick" carpet protection film at all heavily traveled locations (at doors, circulation pathways, etc.); paper, or a similar product, at all other carpeted locations.

### **PART 3 EXECUTION**

#### **3.01 SCOPE**

- A. Remove portions of existing building as indicated.
- B. Remove other items indicated.

#### **3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
  - 1. Obtain required permits.
  - 2. Comply with applicable requirements of NFPA 241.
  - 3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
  - 4. Provide, erect, and maintain temporary barriers and security devices.
  - 5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
  - 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
  - 7. Do not close or obstruct roadways or sidewalks without permit.
  - 8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Protect existing structures and other elements that are not to be removed.
  - 1. Provide bracing and shoring.
  - 2. Prevent movement or settlement of adjacent structures.
  - 3. Stop work immediately if adjacent structures appear to be in danger.
- D. Contractor to pump out existing refrigerants and turn over to Owner.
- E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

#### **3.03 EXISTING UTILITIES**

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.



- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

### **3.04 SELECTIVE DEMOLITION FOR ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
  - 1. Provide, erect, and maintain temporary dustproof partitions.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
- E. Services (Including but not limited to ): Remove existing systems and equipment as indicated.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
  - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
  - 3. Verify that abandoned services serve only abandoned facilities before removal.
  - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Light Fixtures: Remove light fixtures and dispose of as specified or indicated.
- G. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
  - 4. Patch as specified for patching new work.

### **3.05 DEBRIS AND WASTE REMOVAL**

- A. Remove debris, junk, and trash from site and legally dispose of them.
- B. Burning: Do not burn demoed materials.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**

**SECTION 02 5000  
BUILDING REMEDIATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Cleaning existing split-faced and smooth faced concrete block and existing exposed concrete.
- B. Pointing existing split-faced and smooth faced concrete block.
- C. Cleaning existing exterior concrete including but not limited to the existing columns, concrete building walls and exposed concrete between existing finish grade and metal panels.
- D. Repair of existing cementitious parge coating along existing building foundation at grade where identified in Construction Documents.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 9113 - Exterior Painting

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product and Equipment: Submit product data on the chemicals, mortar, and other materials to be used. Submit information on the equipment to be used.
- C. Manufacturer's Instructions: Submit instructions on the use of and the conditions under which the chemicals and other materials are to be used.

**1.04 MOCK-UPS**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Construct mock-up of both the block pointing and cleaning and the concrete cleaning.
- C. Size and location: As directed by the Architect.
- D. Mock-up may remain as part of work.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Polymer Modified Cement Waterproofing: Existing foundation cementitious parge coating repair and refinish.
- B. Zinc Rust Repair Coating: Rust repair of existing galvanized cold-formed metal stud framing members.

**2.02 SYSTEMS**

- A. Manufacturers:
  - 1. Sika Polymer Modified Cement Waterproofing (Basis of Design)..
  - 2. Approved Equal..
  - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Manufacturers:
  - 1. ZRC Cold Galvanizing Compound (Basis of Design)..
  - 2. Approved Equal..
  - 3. Substitutions: See Section 01 6000 - Product Requirements.

---

## **PART 3 EXECUTION**

### **3.01 CLEANING**

- A. Existing exterior split-faced and smooth faced block and existing exterior concrete including but not limited to the existing columns, concrete building walls and exposed concrete between existing finish grade and metal panels.
  - 1. Soft wash: Use a soft wash system and a mixture of bleach, water, and cleaning surfactant. Remove existing dirt, mold, and mildew.

### **3.02 POINTING**

- A. Pointing existing split-faced and smooth faced concrete block joints.
- B. Include in the Scope of Work: Pointing 50% of the area of the existing split-faced and smooth faced concrete block.

### **3.03 COLD-FORMED GALVANIZED METAL STUD FRAMING RUST REPAIR**

- A. *Examination: Inspect existing cold-formed metal stud framing following removal of existing exterior building EIFS veneer finish, giving particular attention to framing members at the head and sill of exterior walls and around through-wall openings. Identify areas of existing metal stud framing to be prepared and coated with rust repair coating.*
- B. *Environmental Conditions: Do not apply rust repair coating if it is raining or snowing or if such conditions appear to be imminent. Follow rust repair coating manufacturer's printed instruction for coating application requirements and protection.*
- C. *Protection: Precautions should be taken to avoid damage to any surface neat the work zone due to mixing and handling of the rust repair coating material.*
- D. *Surface Preparation: Substrate must be prepared in compliance with rust repair coating manufacturer's printed instructions.*
- E. *When applying the rust repair coating, never stop the application until the entire surface of the repair area has been coated. Follow coating manufacturer's printed instructions for application and protection.*

### **3.04 CEMENTITIOUS PARGE COAT**

- A. *Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 50 deg F (10 deg C) and rising.*
- B. *Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.*
- C. *Surface Preparation: Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. An open-textured, sandpaper-like substrate is ideal. Substrate shall be in accordance with ICRI Guideline No. 310.2 for coatings, minimum CSP-3. All surfaces must be Saturated Surface Dry (SSD\_, with no standing water at time of application.*
- D. *Mixing and Application*
  - 1. *Mixing: Under normal circumstances, the full quantities of both components are mixed together, a slurry consistency will result. For a trowelable consistency adjust liquid accordingly. Mix in a clean container by slowly adding the powder component to the liquid component and mixing with a slow speed (400-600 rpm) drill and mixing paddle.*
  - 2. *Application: Apply with magic trowel, notched trowel, or stiff bristle brush. Work material into the prepared substrates, filling all pores and voids.*
  - 3. *For Brush Grade: Apply first coat with horizontal brush strokes and leave to harden (approximately 4 hours). Apply second coat with vertical brush strokes.*

4. *For Trowel Consistency: Apply the first coat with a notched trowel and leave to harden (approximately 4 hours). Apply the second coat with a flat trowel.*
  5. *For Rolled Application: Use a magic trowel application to spread the product. Back roll the second coat to achieve a texture.*
- E. When applying the coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45 deg angle to an edge, corner, or joint.
  - F. Adhere to all limitations and cautions for the polymer-modified cement coating in the manufacturer's printed literature.
  - G. Cleaning: The uncured polymer-modified Portland cement coating can be cleaned from tools with water. The cured polymer-modified Portland cement coating can be removed mechanically.
  - H. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

### **3.05 PREPARATION**

- A. Protection of In-Place Conditions including adjacent materials, landscaping and concrete sidewalks and pads.

**END OF SECTION**

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**SECTION 03 3000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete formwork.
- B. Concrete for footings.
- C. Concrete reinforcement.

**1.02 REFERENCE STANDARDS**

- A. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- B. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement 2019.
- C. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars 2022.
- D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2022.
- E. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- F. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.
- H. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2023, with Editorial Revision.
- I. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- J. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars 2021.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix Design: Submit proposed concrete mix design.
  - 1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
  - 2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.

**PART 2 PRODUCTS**

**2.01 FORMWORK**

- A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.

**2.02 REINFORCEMENT MATERIALS**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
  - 1. Type: Deformed billet-steel bars.
  - 2. Finish: Unfinished, unless otherwise indicated.

3. Finish: Galvanized in accordance with ASTM A767/A767M, Class I, unless otherwise indicated.
  4. Finish: Epoxy coated in accordance with ASTM A775/A775M, unless otherwise indicated.
- B. Reinforcement Accessories:
1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.

### **2.03 CONCRETE MATERIALS**

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Calcined Pozzolan: ASTM C618, Class N.
- E. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

### **2.04 CONCRETE MIX DESIGN**

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
- C. Normal Weight Concrete:
  1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4,000 pounds per square inch.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

### **3.02 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS**

- A. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963/D3963M.
- B. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

### **3.03 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 304R.

### **3.04 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.

### **3.05 DEFECTIVE CONCRETE**

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

**END OF SECTION**

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**SECTION 05 4000  
COLD-FORMED METAL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Remediation of existing CFMF aka LGMF.
- B. Appendix A - Letter addressed to Mr. Fred Ricketson, Senior Panning & Design Manager, dated October 8, 2013, Re: 2013-13.01 EIFS Condition Report prepared by 2KM Architects.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wall sheathing.
- B. Section 07 2100 - Thermal Insulation: Insulation within framing members.
- C. Section 07 2726 - Fluid Applied Membrane: Fluid applied membrane.
- D. Section 07 4213 - Flat Seamed and Corrugated Panels: Metal panels, trim, hat cannels and 30# felt.

**1.03 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2020).
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.
- D. ASTM C955 - Standard Specification for Cold-Formed Steel Structural Framing Members 2018, with Editorial Revision.
- E. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020.
- F. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2021.
- G. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2023).
- H. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018, with Errata (2022).
- I. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 2004.
- J. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with work of other sections that is to be installed in or adjacent to the metal framing system.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on framing members; describe materials and finish, product criteria, and limitations.
- C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before the start of scheduled welding work.

**1.06 QUALITY ASSURANCE**

- A. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M and dated no more than 12 months before start of scheduled welding work.



### 1.07 PREINSTALLATION MEETING

- A. Hold a Preinstallation Meeting prior to constructing the mock-up required below.
- B. Meeting to be conducted by the Contractor and attended by the Contractor's project manager, superintendent, the subcontractor, the Architect and the Owner's Rep.

### 1.08 MOCK-UP

- A. Provide mock-up of existing exterior framed wall, including components specified elsewhere, including but limited to insulation, both batt and rigid, sheathing, fluid applied membrane, 30# felt underlayment and metal panels.
- B. Mock-up to include remediation of existing framing and the additional CFMF studs, purlins, clips and bracing required to strengthen the existing framing to acceptable code compliance.
- C. Location: Coordinate mock-up location with mock-up required in Section 07 4213 - Flat Seamed and Corrugated Panel and as directed by Architect.
- D. Approved mock-up may remain as part of the Work.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Cold Formed Metal Framing (CFMF):
  - 1. Clark Dietrich: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
  - 2. Marino: [www.marinoware.com/#sle](http://www.marinoware.com/#sle).
  - 3. Dale/Incor.
- B. Framing Connectors and Accessories:
  - 1. Same manufacturer as metal framing.

### 2.02 EXISTING CONDITIONS

- A. Refer to the attached Appendix A for a description of the condition of the existing LGMF (Light Gauge Metal Framing).

### 2.03 FRAMING SYSTEM

- A. Refer to Appendix A for minimum augmentation, remediation, and reinforcement of the existing LGMF system anticipated for this project. Contractor to include in the scope of the work the labor and materials to install primary and secondary framing members, bridging, bracing, purlins, plates, tubes, gussets, clips, fittings, reinforcement, and fasteners as required to provide a complete rigid and structurally compliant framing system that addresses all of the existing framing deficiencies and failures identified in Appendix A at all locations where they are exposed by the demo of the existing exterior materials including insulation, sheathing and EIFS finish system.
- B. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
- C. Able to accommodate construction tolerances, deflection of building structural members, and clearances of openings.

### 2.04 FRAMING MATERIALS

- A. Studs and Track: ASTM C955; studs formed to channel, C- or Sigma-shaped with punched web; U-shaped track in matching nominal width and compatible height.
  - 1. Gauge and Depth: As required to meet specified performance levels, unless otherwise indicated.
  - 2. Galvanized in accordance with ASTM A653/A653M, G90/Z275 coating.
- B. Framing Connectors: Factory-made, formed steel sheet.

1. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gauge, 0.1345 inch, and factory punched holes and slots.
2. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100.
3. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.
4. Wall Stud Bridging Connections: Provide mechanical load-transferring devices that accommodate wind load torsion and weak axis buckling induced by axial compression loads.

## **2.05 FASTENERS**

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.
- C. Welding: Comply with AWS D1.1/D1.1M.

## **2.06 ACCESSORIES**

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Plates, Gussets, Tubes, Clips, etc.: Formed Sheet Steel, thickness determined for conditions encountered; finish to match framing components.
- C. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- D. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

### **3.02 INSTALLATION OF STUDS**

- A. Install components in accordance with manufacturers' instructions.
- B. Augment, remediate and reinforce the existing studs as described above at all locations where they are exposed by the demo of the existing exterior materials including insulation, sheathing and EIFS as indicated.

### **3.03 TOLERANCES**

- A. Maximum Variation from True Position: 1/8 inch.
- B. Maximum Variation of any Member from Plane: 1/8 inch.

**END OF SECTION**

# APPENDIX A



2KM ARCHITECTS, INC.  
529 Greene Street  
Augusta, Georgia 30901  
Ph: (706) 736-3333  
www.2kmarchitects.com

October 8, 2013

Mr. Fred Ricketson, Senior Planning & Design Manager  
Georgia Regents University  
1120 15<sup>th</sup> Street, BBM-520  
Augusta, Georgia 30912

Re: **2013-13.01 EIFS Condition Assessment Report**  
**Williamson & Associates, dated 9/23/2013**  
**2KM Comments & Structural Retrofit Assessment**  
**Christenberry Field House (West Campus) – GRU -Forest Hills**

Dear Fred,

We appreciate the opportunity to provide review & comment on EIFS Condition Assessment prepared by Williamson & Associates (W&A) along with 2KM Architects, Inc.'s Field Observations & Reports. W&A was copied with all 2KM Architectural Field Reports and 2KM was copied with W&A reports via GRU-SC. 2KM issued email commentary to W&A with recommended "amendments" to address concealed conditions. My review comments are as follows:

**A. Investigation, Select Demolition & EIFS Replacement:**

1. 2KM has reviewed concealed conditions with Facilities & Department representatives, Williams & Associates, RCN General Contractor, and Cliatt Construction, to determine extent of non-conforming work with the following concealed conditions being uncovered:
  - a. Existing substrates of EIFS have failed. (M/R GPDW sheathing)
    - 1) Total delamination of EIFS was corrected in 36'x40' section of level 2 & 3 of Gym exterior wall.
    - 2) M/R Gypsum sheathing had failed due to water entry into wall assembly at mid-height of wall reveal joint.
    - 3) Joints aligned in sheathing, EPS Board, and EIFS horizontal "reveal joint" (unsealed to induce cracking), this condition does not conform to required EIFS installation details.
    - 4) Aligned substrate joint condition is likely to exist on other high-bay walls.
  - b. EIFS replacement on Gym walls is recommended & required to allow substrate access & repairs to non-conforming structural stud framing regardless of EIFS integrity:
    - 1) 6" LGMF studs are notched, unbraced and inadequately secured to structure.
    - 2) 6" LGMF studs are ~20ga. with no interior sheathing or bracing. Structural analysis indicates this gauge stud will not free-span the 36'

wall height and is limited to ~16' clear-span with an interior sheathing membrane (not present on gym wall).

- 3) Structural drawings call for bracing of back flange of studs at 4'-0" o.c.
  - a) Bracing not installed as detailed and noted on drawings.
  - b) References are Addendum notation & shown with partial Architectural wall section cut without spacing being identified; structural note indicates spacing)
  - c) A quick structural assessment of LGMF Stud span-charts indicates studs are structurally inadequate per observed conditions and applications. At minimum the horizontal bracing should be present at mid-span of each section of LGMF stud span. To meet IBC 2006 & current LGMF Manufacturer span charts, the 4'-0" o.c. vertical, horizontal bracing is required.
- 4) Existing LGMF studs were exposed to reveal extensive non-conforming LGMF stud work. Defects in installed workmanship included:
  - a) Studs being extensively notched at beam flange mid-span, and at all structural steel cross-bracing. (conflicts with studs near anchor points, top & bottom attachment)
  - b) In the 36'x40' area there was \$4400 of additional T&M retrofit work required to add: bracing; reinforce stud web & back flanges; add structural "slip-clips" at mid-span beam attachment; add structural shot-pin anchors at top, bottom & mid-span of LGMF studs to Structural steel beams & concrete slab/beam.
  - c) Retrofit reinforcement of notched stud web and flanges. (2.5", 16ga. studs were installed)
  - d) Anchorage shot-pins failed at top, bottom and mid-span of studs attachments to structure and structural steel beams.
  - e) W&A Photo #19 of Report shows custom stud clip at beam attachment. Deficiencies not noted in W&A report include clip not tight to stud or beam web; inadequate number of screws and shot-pin anchors; clip is too light (thin) to stabilize and structurally anchor studs.
- d. Top of parapet has concealed water damage to MR sheathing under EIFS cap & concealed by new Metal Coping. Previous wind damage has revealed that coping anchorage is unreliable and anchor clips are spaced too far apart per SMACNA manual recommendations, details, & wind-force design. Exterior top section of parapet wall (~6'h.) has notched LGMF, 25ga. "hat-channel" framing. 2KM recommends the following retrofit work along entire gym parapet wall:
  - 1) Removal of coping & rebuild underlying materials with P.T. wood blocking and properly spaced coping attachment cleats.
  - 2) Remove & reinstall metal coping & roof flashing along with "Lightning Protection System". (Requires salvage, reinstall, retesting & recertification)
  - 3) Install 2.5", 20ga. LGMF framing at 16"o.c. per span and IBC 2006.
  - 4) Install R-30 Batt insulation on un-insulated roof metal decking. (Thermal by-pass/thermal short-circuit identified; non-conforming per code)
  - 5) Reinstall Densglas sheathing, W/P barrier coating and water managed EIFS finish system per 2KM's Scope of Work outline for Emergency Repair. (Performed at S-E corner)
- e. Horizontal Expansion Joints were not provided at stud to slab transition at base of EIFS wall system. Sealant Joints had failed per W&A report. 2KM does not concur with their recommendation of reinstalling sealant joint. Install through-wall flashing joint at top of slab elevation. (See 2KM wall section)

- 1) This flashing joint to address excess EIFS span and high movement joint (Studs to concrete).
  - 2) Water entering EIFS System will remain trapped in wall assembly.
  - 3) Replace all EIFS at bottom ~3' of wall over concrete Level 2 floor beam.
  - 4) Add weep drip sill at bottom edge of EIFS.
2. 2KM has documented conditions and researched possible solutions:
    - a. Photographed and issued Field Reports of observations and non-conforming work.
    - b. Researched and presented repair options for budgeting and Owner consideration.
    - c. Reviewed and commented on W&A Assessment Reports.
  3. 2KM recommends retrofit details be developed for Structural LGMF stud retrofit/reinforcing & EIFS replacement on the upper wall sections of the building. (Gym, Level 2 & 3 as installed in the S-E corner retrofit/repair)
  4. Recoating EIFS finish:
    - a. Recoating on Level 2, East wing exterior wall EIFS and short-span sections above level 2 roof up to roof beam elevation is a viable approach for these specific areas as outlined in W&A's report.
    - b. The top 6' h. section of wall at roof parapet is required to be reframed, cavity insulated, and roof parapet rebuilt as noted above.
      - 1) Replace parapet coping blocking and EIFS Cap termination.
      - 2) Insulate parapet cavity roof deck. (R-30 batts)

**B. Exterior Windows & Sealant Replacement:**

1. 2KM has reviewed the W&A report of observed conditions and with Facilities & Department representatives to determine extent of failed & non-conforming work with the following conditions being noted in report along with 2KM comments:
  - a. Existing EIFS Sealant Joints: Sealant joints have failed & are in poor condition.
    - 1) 2KM has observed open cracks have been shown to allow excess water into wall system & M/R sheathing becomes deteriorated. Same condition should be anticipated at all cracked open horizontal & vertical EIFS Joints.
    - 2) 2KM noted select corner vertical joints are neoprene expansion joints with sealant & paint cap-seal. Expansion Joint was found to be poorly anchored and is subject to excessive movement for sealant to be successfully applied on neoprene & perform properly.
    - 3) W&A defines a remedy for making several joints wider & thus requiring reconfiguration of joints & recoating application to substrate prior to reapplication of "low-modulus sealant material". Surface repairs will not allow substrate repairs to address water damaged substrate and LGMF structural retrofit.
    - 4) W&A recommends smearing silicone sealant in small width cracks.
      - a) 2KM recommends installing relief joint and true sealant joints since cracks are at stress points in EIFS.
  - b. Existing Windows: Window assembly has failed sealant joints at perimeter and aluminum framing intersections.
    - 1) Open cracks have been shown to allow excess water into wall system & M/R sheathing becomes deteriorated. Same deteriorated condition should be anticipated in substrate at all open window sealant joints.
    - 2) Window anchorage and glazing seals have failed.
    - 3) There are varied reports of underlying window/wall flashing conditions.
    - 4) As noted in W&A report, GRU-SC plans to replace many of the existing window systems due to failed structural & water barrier integrity.
      - a) Budget reflashing head, jamb, and sill, along with cavity wall repair for all such work.
      - b) Window areas replaced were "falling out of wall assembly."

With the W&A report ignoring underlying structural stud conditions identified in 2KM's report, we must take exception to the minimal EIFS & sealant repair approach noted in report. We conclude and recommend that the entire upper wall EIFS assembly will require removal to permit code required structural stud repair & retrofit to conform with original building assembly design and provide structural integrity to LGMF stud wall system. Observed failed structural stud attachment to structural frame indicates system is over-stressed and has actually structurally "failed" (not "catastrophic", but failed per building code criteria). The fact that wall assembly did not fall off the building is likely due to system not having experienced the design & code required "sustained wind-speed of 95mph" actually on the building wall assembly over an extended time frame:

1. Building was designed for 110mph wind speed, Typical of hurricane wind speed, or micro-burst thunderstorm.
2. Current code requires 95mph with gusts per exposure category (Engineered coping anchorage design required).
3. W& A Report recommends "hand or tap testing" all areas EIFS to identify delaminated areas.
  - a. 2KM recommends this be done on areas of EIFS to be recoated at Level 2 East Wing walls & Level 3 wall above roof to 6' below top of roof parapet.

We appreciate the opportunity to provide this Review Assessment, and to continue the restoration & maintenance of these Campus buildings on the GRU – Forest Hills Campus.

Please call if you have any questions or comments regarding this proposal or if you require additional information.

Sincerely,



Robert L. Mauldin, NCARB, AIA  
Principal Architect, GA-RA-05958

cc: 2KM File



Williamson & Associates, Inc.  
Building Exterior Consultants

6100 Lake Forrest Drive, Suite 375  
Atlanta, Georgia 30328  
Office: (404) 256-2388  
Fax: (404) 256-1457

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July 16, 2013

Email: [fricketson@gru.edu](mailto:fricketson@gru.edu)

Mr. Fred Ricketson  
Georgia Regents University  
1120 15th Street  
BBM 520  
Augusta, GA 30912  
Tel: (706) 721-4551

**RE: Christenberry Field House  
Emergency EIFS Repairs, S.E Corner  
Georgia Regent University  
Wrightsboro Road  
Augusta, GA  
(W&A- 213294)**

Dear Mr. Ricketson:

Williamson & Associates, Inc. (W&A) visited the referenced project on July 10th, 2013. We met Mr. Rob Mauldin with 2KM Architects, Inc., Mr. Fred Ricketson with Georgia Regent University, and Mr. Tony Bright with Georgia Regent University. The purpose of the meeting was to review the current condition of the EIFS. A large section of EIFS had delaminated from the S.E. corner of the building, east elevation. The delaminated EIFS had been temporarily reattached to the building with large fasteners and washers, attached into metal stud wall framing behind the EIFS. We gathered information of the project history, discussed findings where delamination had occurred, discussed proposed repairs, and reviewed schematic repair documents developed by 2KM Architects, Inc. Final drawings have not been received or reviewed.

#### Project History

The Project Architect was IPG Architects & Planners from Valdosta Georgia. The construction drawings were developed circa 1987. The property was retained and opened circa 1990, becoming the Physical Education Building & Gymnasium for Augusta College. The building was clad with EIFS and has varying sized windows. **Photos 1 through 4**, show general overviews of the building. The photos were taken from the east, south, and west elevations. The original roof was reportedly a single ply roof assembly, white in color, material type unknown. The roof parapet was of EIFS construction, no metal coping cap was provided.

In 2005, the original roof was over laid with a new single ply PVC roof membrane, manufactured by Sarnafil. Mr. Ricketson reported that a cover board was mechanically attached over the existing roof underneath the new roof membrane. During the re-roofing project, a metal coping cap was fabricated and installed, over the original EIFS parapet cap, the EIFS was not removed. Mr. Mauldin reported that the parapet cap was wrapped with roof flashing before installation of the metal coping. Mr. Mauldin reported that in circa 2012 coping damage had occurred during a strong thunderstorm. The coping was ripped by

wind from the parapet on the south and west elevation of the building. Mr. Mauldin reported that the cause of failure was from inadequate fastener attachment into wood blocking below the EIFS.

Circa 2007, the exterior EIFS walls were painted to address a severely oxidized façade, with an exterior grade acrylic paint to restore the exterior appearance. Mr. Ricketson reported that the walls were cleaned, primed, and painted. Within 18 months of application, the paint started to peel. The manufacturer was contacted about the peeling. The manufacturer said that the peeling was not a product defect. The peeling was a result of poor surface prep. The painting contractor returned and repainted the walls. Additional peeling has occurred and continues to be a reoccurring problem. The walls are repainted periodically to address peeling paint.

Mr. Mauldin reported that various window replacement projects have occurred to address poorly attached windows and windows that leaked. The timing and number of windows replaced was not discussed.

The most recent problem (2013) is the delamination of the EIFS on the east elevation, S.E. corner of the building. This requires emergency repairs.

#### Delaminating EIFS

**Photo 5** shows a general view, east elevation of the building, S.E. corner where the EIFS has delaminated. **Photo 6** shows a closer view of fasteners and washers placed through the EIFS façade for temporary reattachment to the building until repairs can be made. The fasteners were inserted through the EIFS and attach to the heavy gauge metal stud framing behind. Mr. Mauldin and Mr. Bright reported that the EIFS had pulled away from the metal framing/gypsum sheathing approximately 3". Prior to reattachment the following was found as reported by Mr. Mauldin:

1. The EIFS was attached to an exterior grade paper-faced gypsum sheathing with adhesive dabs. The back of the EPS boards were not scratch coated with adhesive for full contact of the EPS to the gypsum board. The EIFS was 3" thick.
2. The EIFS was also attached to the thickened slab edge with adhesive dabs. The EIFS there was 2" thick.
3. A failed sealant joint (horizontal) was present at the change in substrate.
4. Vertical control joints had failed sealant.
5. The paper facing had peeled away from the gypsum sheathing.
6. The gypsum boards were tongue and groove or lap jointed.
7. The gypsum board joints were not sealed.
8. The gypsum board had no weather barrier (i.e., the original EIFS is a "barrier" system and not a "drainable" system).
9. The gypsum board was deteriorated and brittle, saturated with water.
10. The metal framing and gypsum board set back from the slab edge approximately 1".
11. The metal framing had minor corrosion present.

A majority of the findings by Mr. Mauldin were depicted in the original drawings, reference **Attachment "A"**. **Photos 7 through 9** shows the horizontal joint placed at the substrate change, concrete to metal framing and gypsum board. The joint had been sealed with sealant, sealant residue remained. While onsite, we checked the EIFS thickness with a flat metal tool and verified 2" EIFS at the thickened slab and 3" EIFS at the metal framing with gypsum board. At each location where the tool was inserted through the 3" EIFS above the horizontal joint we found water present. This indicates possible EIFS failures higher in the EIFS cladding. With barrier EIFS, water should not be present above the failed horizontal joint. There were no horizontal sealant joints visible from the ground above this condition. The



joints visible all appear to be “V” joints (reveals). There was however 1 vertical control joint with sealant failure present near the building corner, this joint carries to the roof and is approximately 20 feet away from where the tool was inserted.

#### Additional Items

We found additional items of concern related to the south facing wall and the concrete columns penetrating the lower level and suspended soffit. The lower level walls set inward. It had rained the morning of our arrival. Water was observed draining from the column where water had penetrated the EIFS soffit, **Photo 10**. This was typical along the elevation. **Photo 11** shows an area of concrete next to one of the columns, indicating a leak from above. **Photos 12 and 13** show water dripping from the intake louvers suspended in the EIFS soffits set between columns. The water penetration is likely a result of sealant failure in the horizontal control joint at the substrate change. As depicted in **Attachment “A”**, the underside of the thickened slab is treated with metal framing, gypsum board and EIFS. Water penetrating the EIFS above will allow water to migrate into the EIFS soffit and result in leakage. The water penetrating the system may lead to corrosion of metal framing, deterioration of the gypsum board, and delamination of the EIFS.

Throughout the exterior walls we observed paint delamination. The delamination may be related only to poor surface prep or may be a result of water entry into the barrier EIFS system. An evaluation of the EIFS is needed to determine the source(s) of water penetration, which should include exploratory openings through the EIFS cladding.

#### Schematic Design

Onsite we discussed the urgent repairs proposed by 2KM Architects. 2KM Architects is proposing removing and replacing the EIFS in the area outlined in red on **Photo 5**. The plan is to change from a barrier system to a drainable system, using STO “Sto Therm Next” system as the basis of design. **Attachment “B”**, 5 pages sent to us by 2KM Architects shows the proposed system details. Changing to a drainable EIFS system will require adding jamb flashings where abutting the existing barrier EIFS and will change slightly the cosmetic appearance between new and old. Flashings and starter strips will be visible in the repair area.

**Attachment “B”**, Page 1, has hand and computer generated comments representing the schematic repair approach. The following was obtained from onsite discussions and from review of the document. W&A comments are included as recommendations.

1. The existing EIFS and sheathing will be removed to the extent indicated on **Photo 5**.
  - W&A agrees.
2. The stud cavity will be filled with R-19 batt insulation.
  - W&A has not reviewed the thermal performance for the building.
  - The existing drawings already depict 1-1/2” rigid insulation behind CMU and R-19 insulation behind interior wall board.
  - If batt insulation is added, increase in R-value only occurs at repair area.
  - Adding further insulation should be confirmed by 2KM Architects or its Mechanical Engineer.

3. New DensGlass Gold sheathing will be installed.
  - W&A agrees.
4. The sheathing will be treated with StoGuard air/water barrier.
  - This is STO's propriety system. Install in accordance with manufacturers published guidance. W&A agrees.
5. Flashings will be installed. **Attachment "B"** Page 2, Detail 10.00, at base of thickened slab/soffit.
  - Starter track will be visible only at repair area. W&A agrees.
6. Flashing installed. Page 3, Detail 10.41d, at substrate change.
  - Flashing will be visible only at repair area. W&A agrees.
7. Reinstalling a 1/4" caulk joint.
  - W&A recommends a 3/4" joint for construction tolerance.
  - W&A recommends using low modulus silicone sealant, such as DC-790 or equivalent.
8. Page 4, not indicated on Page 1.
  - W&A recommends clarifying where this detail would be used.
9. Page 5, not indicated on Page 1.
  - This detail is STO's standard detail for a roof parapet and needs adaptation to existing conditions.
  - Revised detail needed. We recommend 2KM re-draw and clarify this detail. The "flexible membrane" on the STO Detail 10.64 would be the existing roof membrane.
10. Additional comments:
  - Details need to be developed to include vertical jamb flashings to isolate the existing barrier EIFS from the new drainable EIFS.
  - The "Owner" needs to understand the cosmetic appearance change the drainable system creates.
  - In our opinion changing to a drainable EIFS system will improve performance at the repair area if the air/water barrier, flashings, and system components are installed correctly, but there will be a minor change in building appearance. To improve the remaining barrier EIFS watertightness, and the re-clad area, a silicone elastomeric coating could be applied over the acrylic textured finish. Dow Corning AllGuard or G.E. SilShield silicone elastomeric coatings are recommended for their superior performance.

- It was discussed while we were on-site, and we recommend, that W&A return to the facility after the urgent EIFS re-clad area is complete. The purpose of our return visit will be to perform a condition evaluation of the remaining original EIFS, and provide our recommendations for additional repairs as may be appropriate.

We appreciate the opportunity to provide our building exterior consulting services on this project for Georgia Regents University.

Please contact us with any questions you may have regarding the attached report, or our services in general

Sincerely,

WILLIAMSON & ASSOCIATES, INC.

*Michael C. Allen*

Michael C. Allen  
Senior associate

Cc: Rob Mauldin, 2KM Architects, Inc. (robmauldin.2kmarchitects@comcast.net)

Attachments:

Photographs (13)  
Attachments "A" & "B" (6 pages)



Photo 1



Photo 2



Photo 3



Photo 4

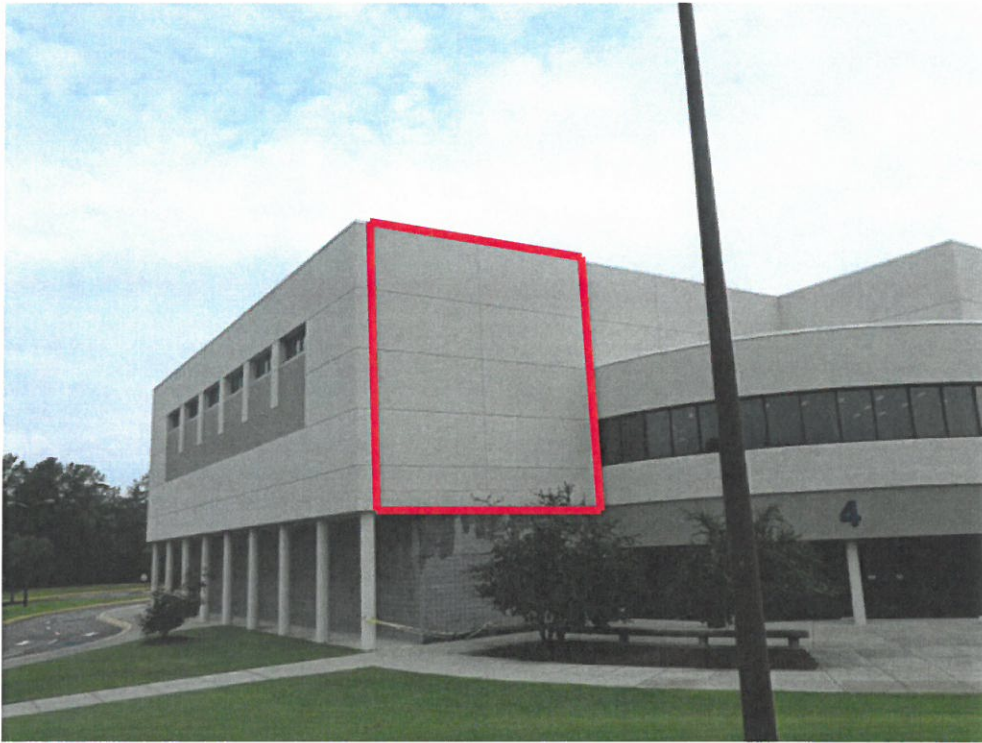


Photo 5



Photo 6



Photo 7



Photo 8

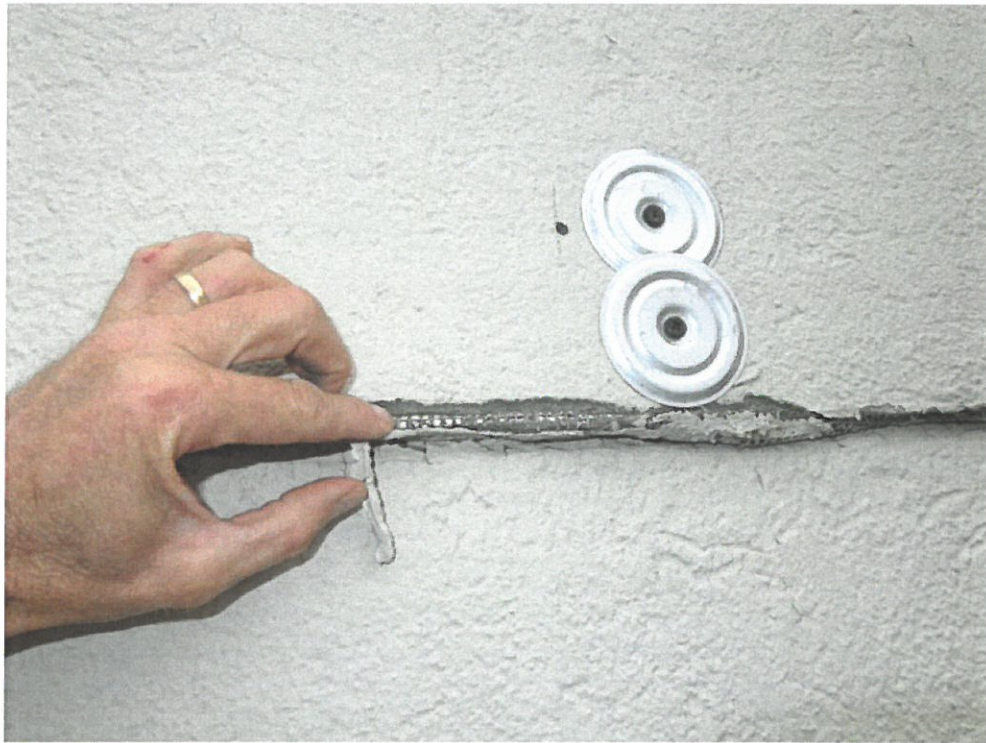


Photo 9

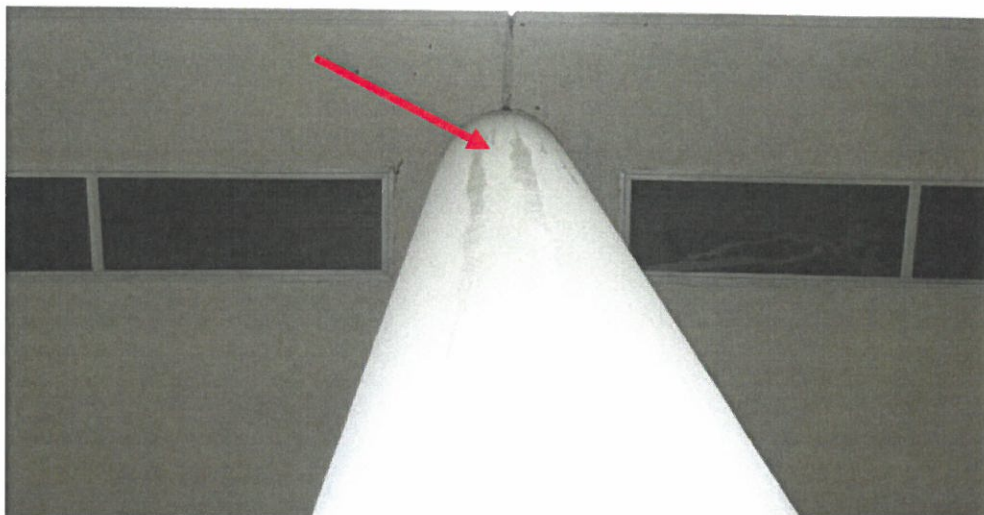


Photo 10





Photo 11

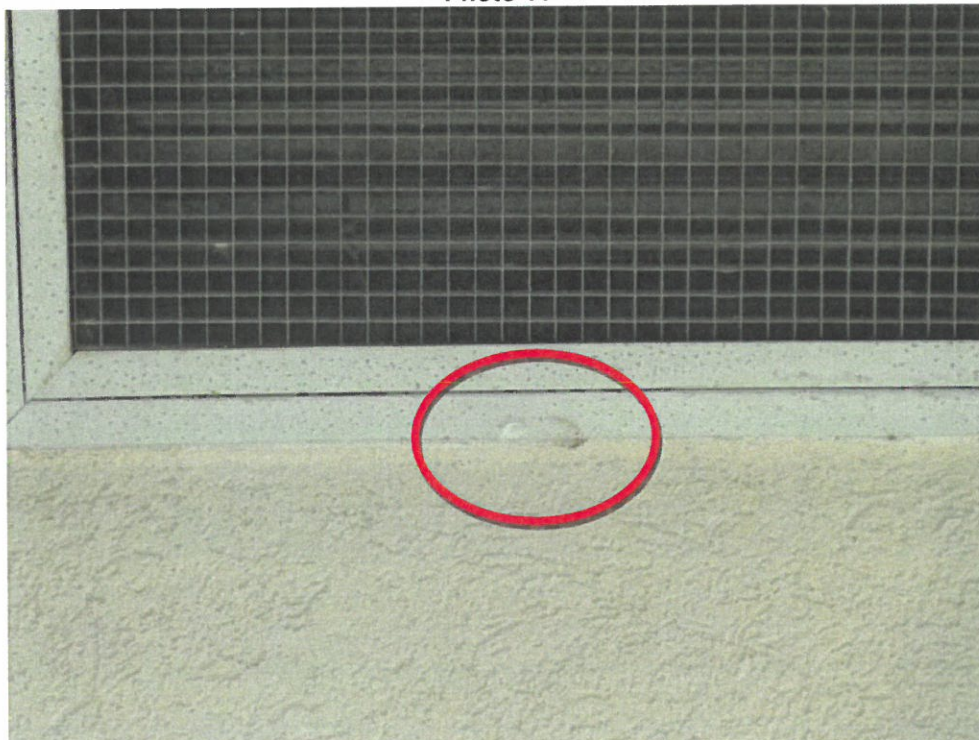
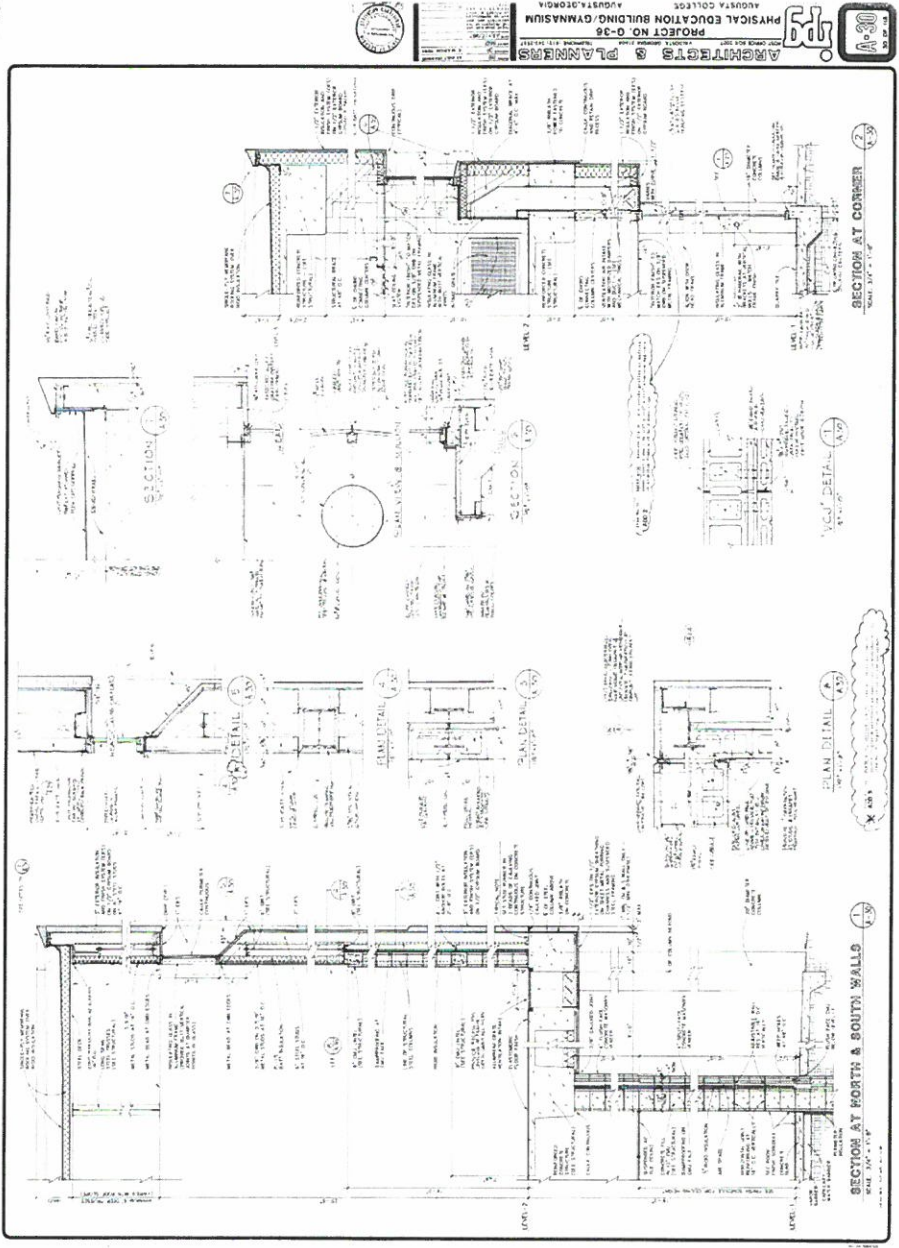


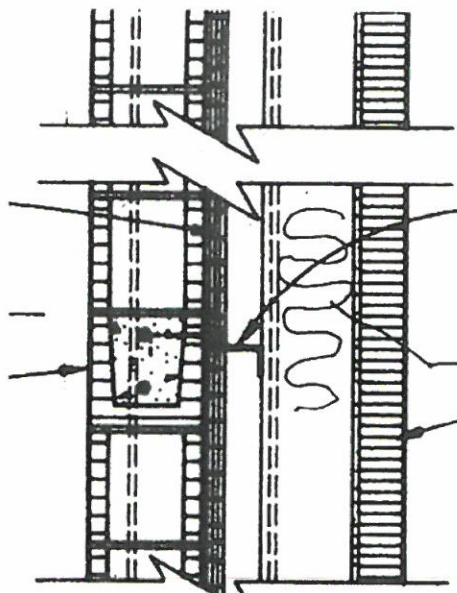
Photo 12



Photo 13

ATTACHMENT "A"



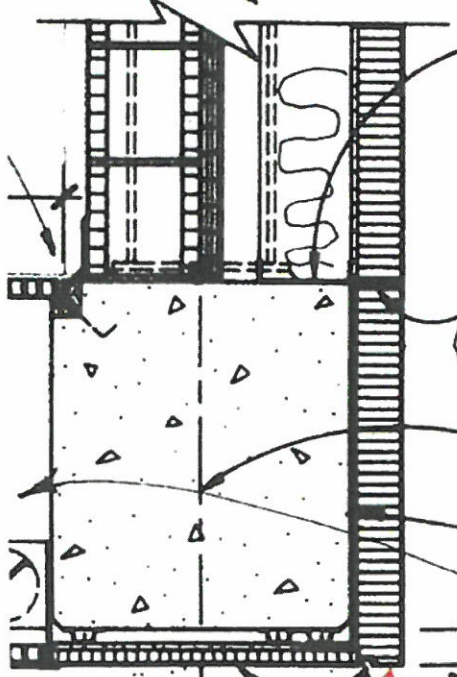


Z - GIRT WITH 1/2" ANCHOR BOLTS AT 2'-8" O.C. (Existing)

INSTALL R-19 Batt INSUL. IN STUD CAVITY, TYP.

3" EXTERIOR INSULATION (F.V.) AND FINISH SYSTEM (EIFS) ON 1/2" ~~GYP SUM BOARD~~ Dens glass Sheathing

NE  
C  
FV  
C  
C



TYPICAL NOTE:  
SET STUD RUNNER IN 2 BEADS OF CAULKING CONTINUOUS ON CONCRETE STRUCTURE

1/4" CONTINUOUS SEALANT CAULKED JOINT, TYP. Expansion

Ø OF STEEL COLUMN ABOVE

3/8" RIBLATH ON CONCRETE

Note: Install R-19 Batt INSULATION IN ABANDONED VENTS IN FLOOR

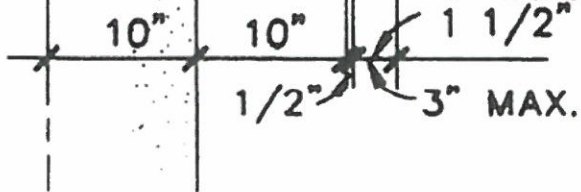
1 1/2" EIFS ON 1/2" EXTERIOR GYPSUM SHEATHING ON SHEET METAL FURRING CHANNELS AND SUSPENDED STEEL FRAMING

STO DETAIL 10.41d

STO DETAIL 10.00

SILL TRACK W/ WEEPS

1" MIN. (N & S WALL ONLY - 1 1/2" MIN. OTHERWISE)

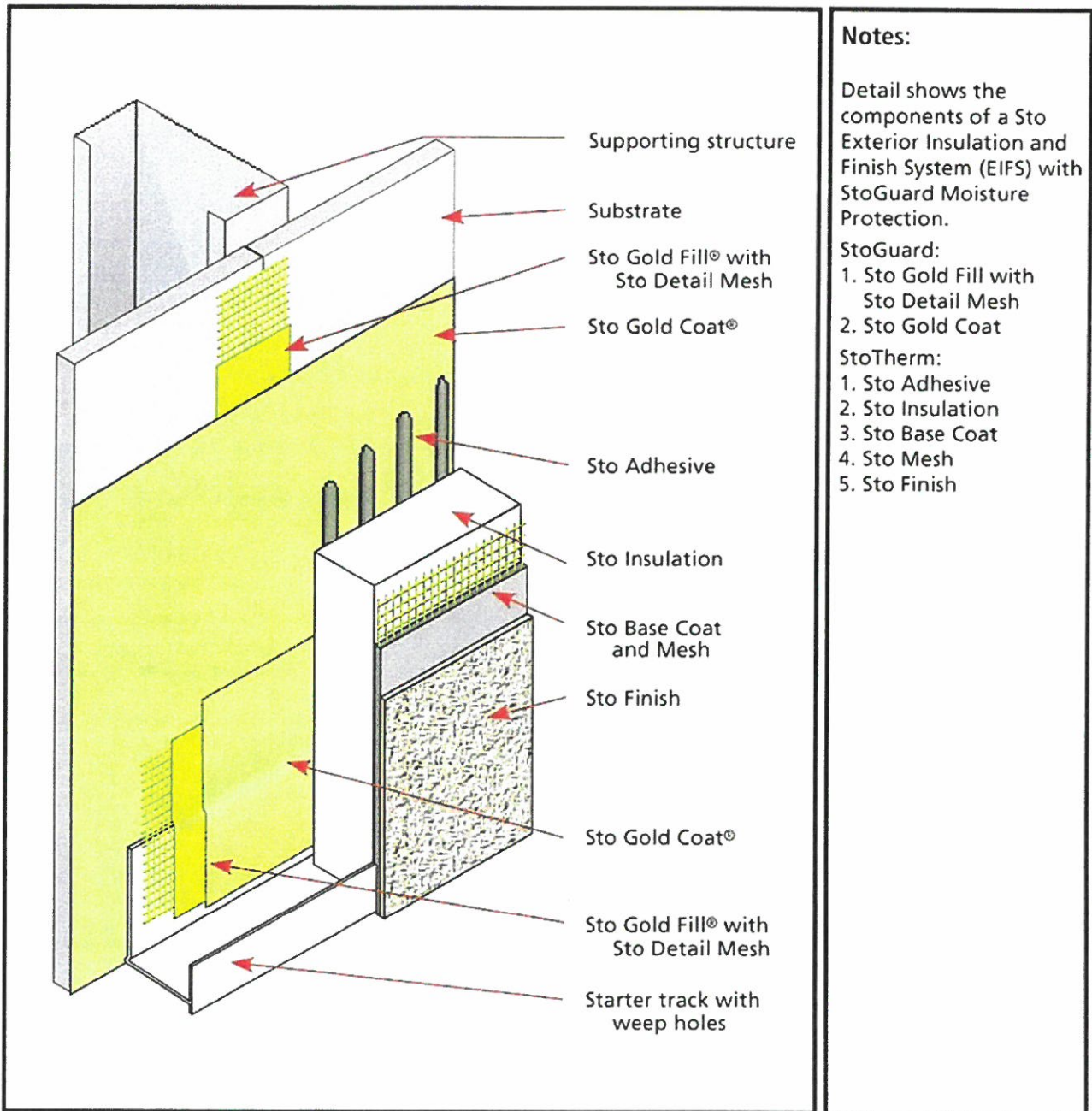


3/4" = 1'-0" NE ATTACHMENT "B" (5 PAGES)

# StoTherm™ NExT System Components

Detail No.: 10.00

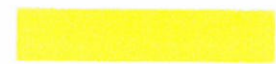
Date: September 2007



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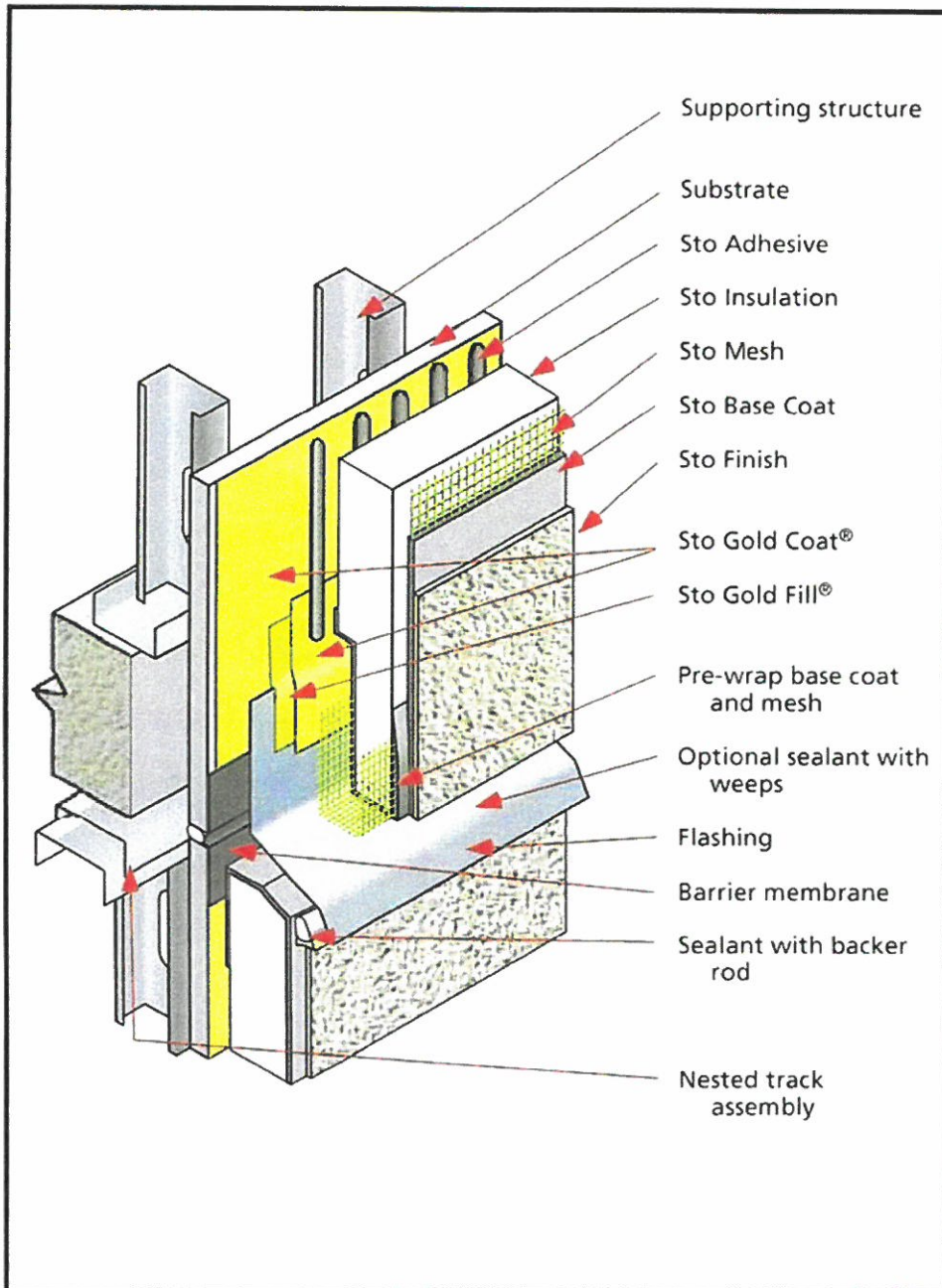
[www.stocorp.com](http://www.stocorp.com)



**StoTherm™ NExt  
Floor Line with Joint:  
Noncombustible Construction**

Detail No.: 10.41d

Date: September 2007



**Notes:**

- 1) Pre-wrap the insulation board with base coat and mesh prior to installation. Rasp back of insulation to ensure the pre-wrapped insulation board will permit water to drain freely.
- 2) Do not attach upper sheathing to nested track. Only attach lower sheathing to nested track.
- 3) The maximum allowable sheathing span at the floor line is 8" (200 mm) or as recommended by the sheathing manufacturer.
- 4) A barrier membrane is installed over the joint in the sheathing to provide air barrier continuity and secondary weather protection at the joint location.
- 5) Install metal flashing to drain outboard of the cladding and integrate it into the StoGuard.
- 6) Provide a minimum 3/4" (20 mm) joint to accommodate deflection of the floor slab.

**ATTENTION**

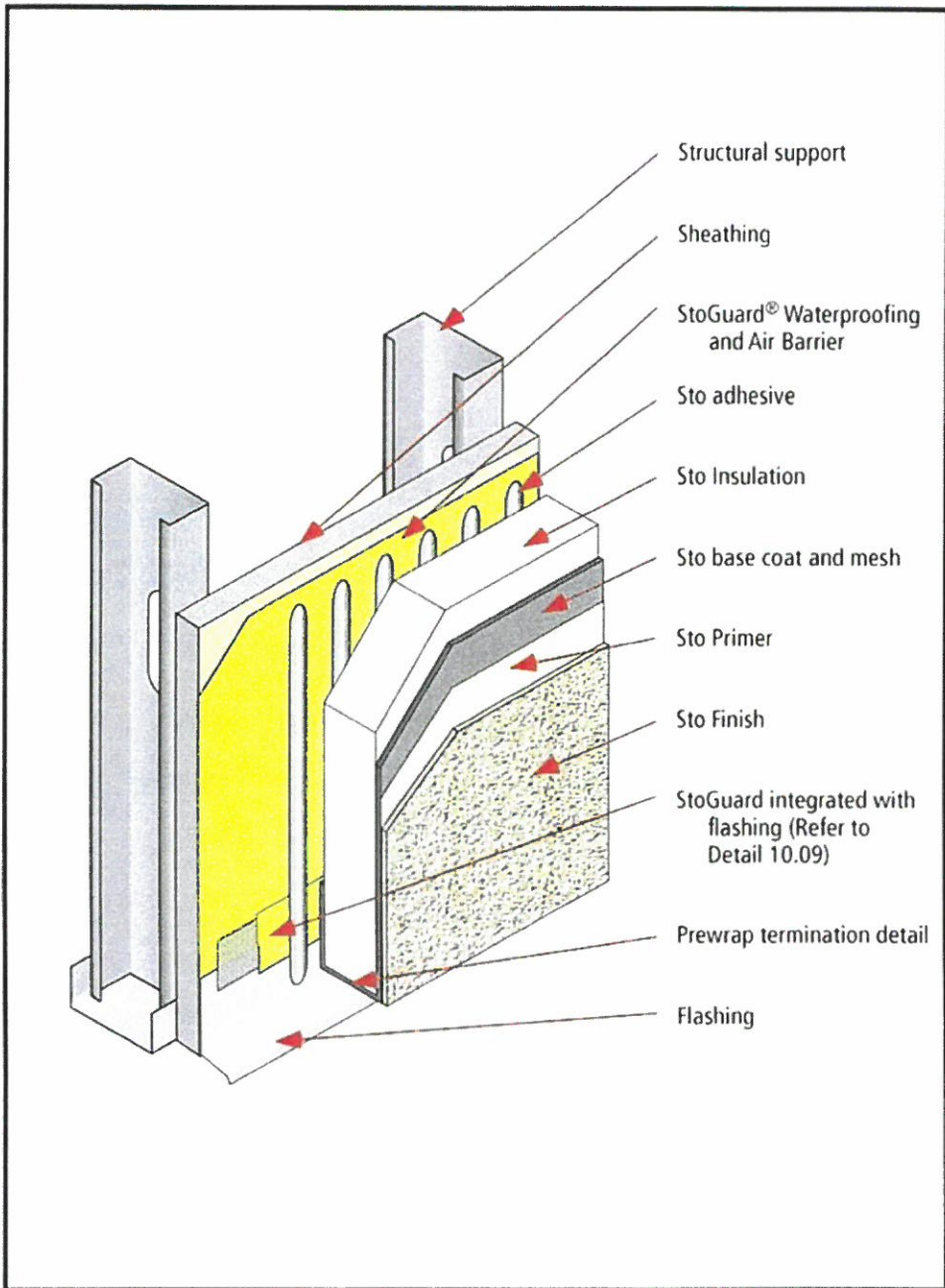
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[www.stocorp.com](http://www.stocorp.com)

**StoTherm NExT®**  
**System Components with Base Flashing**

Detail No.: 10.01A

Date: March 2010



**Notes:**

- 1) Detail illustrates components of StoTherm NExT® incorporating a flashing at the base of the wall or at a termination where water is to be deflected from the wall.

**Attention**

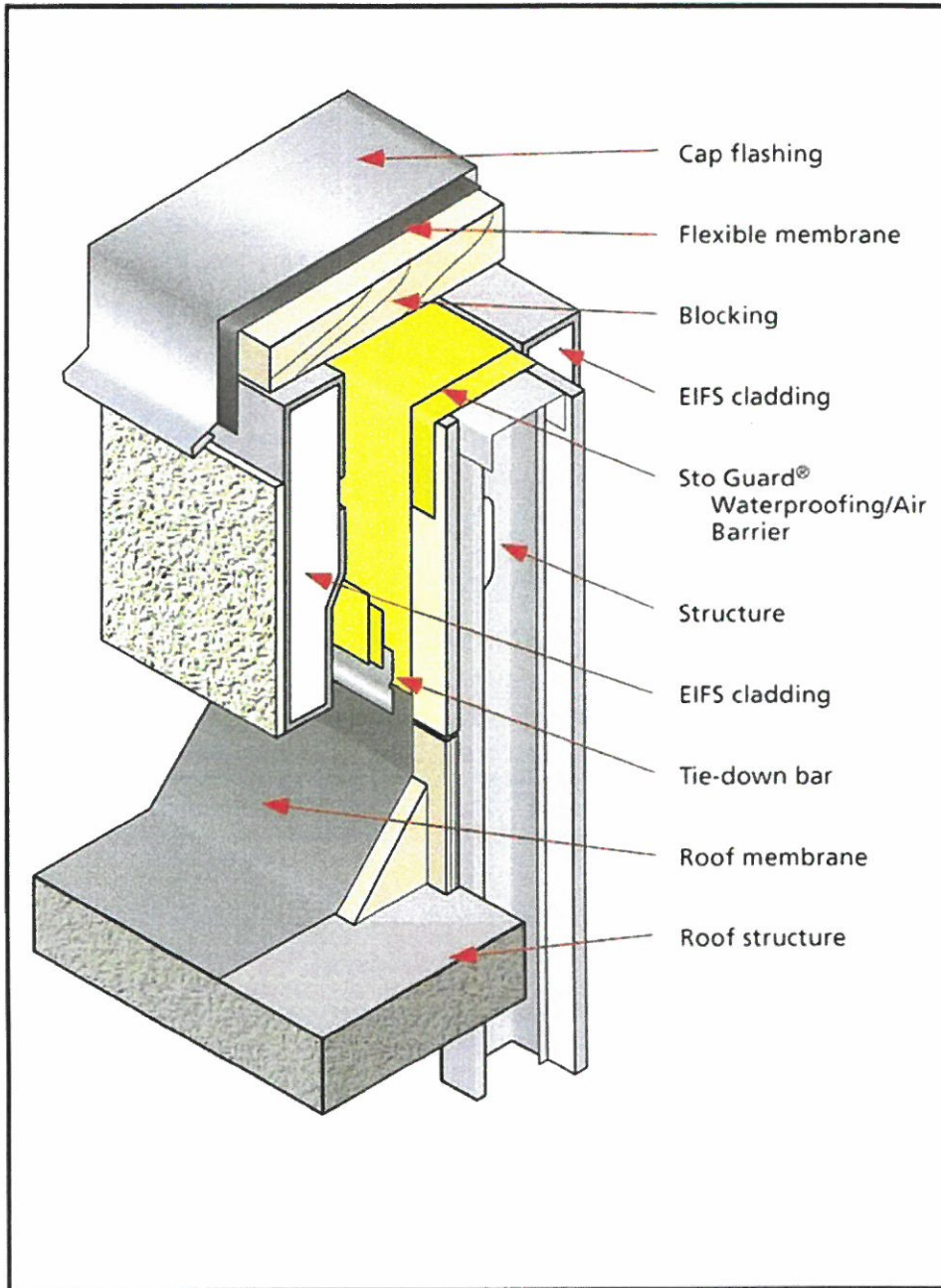
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**Sto EIFS NExT®  
Roofing Termination at Parapet**

Detail No.: 10.64

Date: November 2005



**Notes:**

- 1) Detail shows the termination of Sto EIFS over a roof membrane on the back side of a parapet.
- 2) Maintain a continuous plane of air tightness between the vertical elements of the Sto Guard® and the roof membrane with a roofing tie-down bar or other method as recommended by the roof membrane manufacturer.

Sto details are illustrations of construction. They are guidelines, intended for use by the design/construction professional, to assist in developing project specific details. They should be modified where necessary to accommodate individual project conditions. Refer to appropriate Sto specification for design requirements. Refer to local building code for any special requirements.





# ASSESSMENT REPORT

PROJECT: EIFS & Structural Repair at CFH  
 OWNER: GRU-Forest Hills  
 PROJECT NO.: Pp2013-042  
 DATE/TIME: September 12, 2013

ASSESSMENT REPORT NO.: #1  
 PRESENT AT SITE: R. Mauldin; F. Ricketson, RCN/Cliatt  
 WEATHER: Clear; Warm

	<b>PHOTO #1</b>	<b>S-E Corner, East Wall (5/8/13)</b>
	<ol style="list-style-type: none"> <li>1. EIFS pulled away from sheathing.</li> <li>2. Emergency retrofit contract issued.</li> </ol>	
	<b>PHOTO #2</b>	<b>S-E Corner (5/8/13)</b>
	<ol style="list-style-type: none"> <li>1. Note chunks of GPDW sheathing in void.</li> <li>2. Note dark colored material at bottom of EPS.</li> <li>3. Emergency retrofit contract issued.</li> </ol>	



**PHOTO #3**

**EIFS Soffit (8/27/13)**

1. M/R Sheathing in poor condition? ~2' back from edge?
2. South side soffit (east edge).



**PHOTO #4**

**Cavity/Studs (8/27/13)**




1. Install added stud to reinforce transition stud.
2. Clean and prime minor rust spots on sill track.
3. Secure and brace stud transitions; re-anchor to slab (loose & missing or failed shot-pin anchors).



**PHOTO #5**

**Notched Stud Retrofit (8/29/13)**

1. Add 16ga. steel tube screwed to LGMF.
2. Add heavy-duty slip-clip anchor screwed to stud & steel beam flange.
3. Add Hilti shot-pin anchors. (Failed)

	<table border="1"> <tr> <th>PHOTO #6</th> <th>Stud Notch/Clip (8/29/13)</th> </tr> <tr> <td colspan="2"> <ol style="list-style-type: none"> <li>1. Clip missing/shot pins failed.</li> <li>2. Stud notched 50 to 60% of 6" depth.</li> <li>3. Non-conforming work (Typical condition).</li> </ol> </td> </tr> </table>	PHOTO #6	Stud Notch/Clip (8/29/13)	<ol style="list-style-type: none"> <li>1. Clip missing/shot pins failed.</li> <li>2. Stud notched 50 to 60% of 6" depth.</li> <li>3. Non-conforming work (Typical condition).</li> </ol>	
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	<table border="1"> <tr> <th>PHOTO #7</th> <th>View of Notched Studs (8/29/13)</th> </tr> <tr> <td colspan="2"> <ol style="list-style-type: none"> <li>1. Retrofit pending at notched LGMF.</li> <li>2. No horizontal bracing; beam notched studs – poor condition and non-conforming per design.</li> <li>3. Clips have failed and sheared/shot-pins failed.</li> </ol> </td> </tr> </table>	PHOTO #7	View of Notched Studs (8/29/13)	<ol style="list-style-type: none"> <li>1. Retrofit pending at notched LGMF.</li> <li>2. No horizontal bracing; beam notched studs – poor condition and non-conforming per design.</li> <li>3. Clips have failed and sheared/shot-pins failed.</li> </ol>	
PHOTO #7	View of Notched Studs (8/29/13)				
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	<table border="1"> <tr> <th>PHOTO #8</th> <th>Parapet Framing (9/5/13)</th> </tr> <tr> <td colspan="2"> <ol style="list-style-type: none"> <li>1. 3 1/2" LGMF at 24" o.c. forms parapet angled decking (roof side).</li> <li>2. Notched LGMF hat channel framing is set between 2 1/2" structural steel. (24" o.c.)</li> <li>3. Retrofit with 2 1/2" 16ga. LGMF studs, 16" o.c., and brace to steel angle.</li> </ol> </td> </tr> </table>	PHOTO #8	Parapet Framing (9/5/13)	<ol style="list-style-type: none"> <li>1. 3 1/2" LGMF at 24" o.c. forms parapet angled decking (roof side).</li> <li>2. Notched LGMF hat channel framing is set between 2 1/2" structural steel. (24" o.c.)</li> <li>3. Retrofit with 2 1/2" 16ga. LGMF studs, 16" o.c., and brace to steel angle.</li> </ol>	
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**PHOTO #9**

**Hat & Steel Channels (9/5/13)**

1. Typical detail; roof deck and edge angle.
2. Retrofit 2 1/2" 16ga. LGMF in-fill studs at 16"o.c.
3. Roof deck and wall to roof un-insulated. Retrofit required.



**PHOTO #10**

**Parapet Cap (9/5/13)**

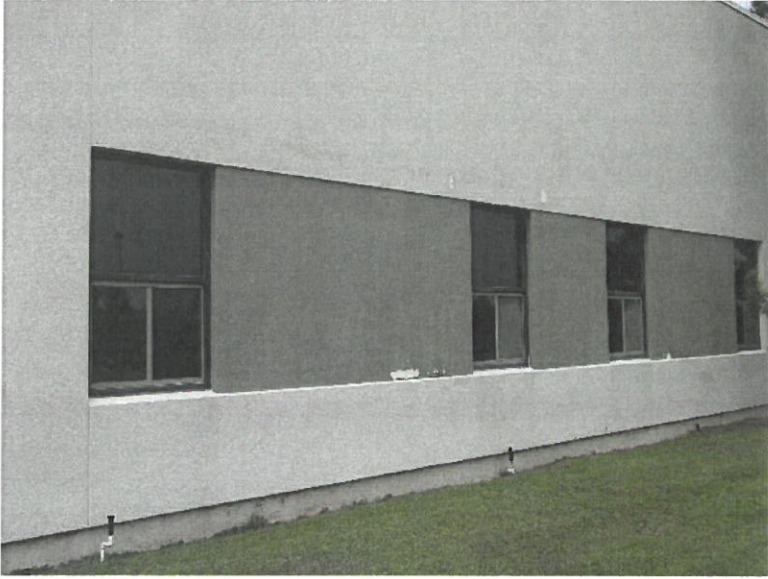


1. M/R sheathing was stopped ~2" short of top steel channel.
2. GPDW runs across top of blocking with EIFS wedge adhered.
3. Fiberglass mesh is on top of M/R GPDW.
4. Replace angled foam with P.T. wood 2x4 blocking, cut to profile.
5. Extend new EIFS system under coping.
6. Wrap roof membrane over new work.
7. Reinstall coping and add continuous cleats.




**PHOTO #11**

**S-E Wall Repair (9/6/13)**

1. Upper wall repair ongoing.
2. Studs installed at top 6' of wall.
3. Work is required on balance of Gym exterior wall.

	<p><b>PHOTO #12</b>      <b>North Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate.</li> <li>2. Underlying coating chalked &amp; poor adhesion.</li> <li>3. Prepare &amp; re-coat finish.</li> </ol>
	<p><b>PHOTO #13</b>      <b>North Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate. (Water managed system)</li> <li>2. High wall areas have structural stud defects.</li> <li>3. Remove and re-frame.</li> <li>4. Replace sheathing.</li> <li>5. Replace EIFS finish.</li> </ol>
	<p><b>PHOTO #14</b>      <b>West Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate. (Water managed system)</li> <li>2. High wall areas have structural stud defects.</li> <li>3. Remove and re-frame.</li> <li>4. Replace sheathing.</li> <li>5. Replace EIFS finish.</li> </ol>

	<b>PHOTO #15</b>	<b>South Elevation (9/17/13)</b>
<ol style="list-style-type: none"> <li>1. Paint peeling from EIFS substrate.</li> <li>2. Prepare surfaces &amp; re-coat radius EIFS.</li> <li>3. Remove system &amp; high wall areas. (LGFM)</li> <li>4. Replace EIFS &amp; Re-coat.</li> </ol>		

**OBSERVATIONS:**

**A. EIFS:**

1. Water has infiltrated numerous areas of EIFS system.
  - a. Water streaming down columns at south soffit columns/overhand.
  - b. S-E corner system had total delamination and substrate failure. (40'w.x30'h.; level 2 & 3)
  - c. Horizontal joints have allowed water to enter system.
    - 1) Mid height joint failed at S-E corner.
    - 2) Other joint conditions unknown (water exiting system at columns/base of wall/soffit).
  - d. EIFS thickness is 2" and not 3" per W&A report; or 1.5" per wall sections.
  - e. M/R GPDW sheathing was found to be severely deteriorated at S-E corner (long-term infiltration to point of total system failure). DensGlass & W/P membrane is more reliable.
  - f. Adhesive is spot applied and not vertical ribbon applied.

**B. Concealed Conditions:**

1. Soffit water damage to M/R GPDW sheathing observed (south side).
2. Rusted track, 6" LGMF.
  - a. Shot pin anchors failed or missing.
  - b. Loose track at corner transition.
3. LGMF studs have no bracing or membrane sheathing (add bracing per design).
4. Studs are notched at structural steel cross bracing (retrofit required).
5. Studs are 20ga.; rated for ~18' span (currently notched and span ~36'h.).
6. Studs notched at mid-height structural steel horizontal beam flange.
  - a. Reinforced web required.
7. Clip anchors have failed at mid beam attachment.
  - a. Shot pins inadequate and sheared.
  - b. Structural clips; do not allow for expansion and structural movement (slip/bypass required).
  - c. Retrofit clips required with engineered anchorage.
  - d. Studs notched at upper "x" bracing (structural retrofit required).
  - e. Parapet framing is non-conforming with design. (7/8" 25ga. hat) Fully notched at top and bottom shot-pin attachments (replace with 2.5", 16ga. LGMF.)
  - f. Parapet cap has inadequate P.T. wood or metal blocking for coping attachment.
    - 1) Remove and replace.
    - 2) Extend DensGlass sheathing to top of blocking.

- 
- 3) Extend EIFS to top of blocking.
  - 4) Option: Change coping profile for 10" vs. 5" leg on exterior face.
  - g. Parapet cavity is un-insulated at roof deck and edge of wall/roof juncture.
    - 1) Retrofit with R-30 batts and R-19 in wall cavity.

C. CMU wall stained:

1. Mold and mildew is present on CMU at base of EIFS (bottom edge).
  - a. Clean and treat; pressure wash wall.

D. Exterior paint coating:

1. Paint coating is cracking and peeling from the EIFS substrate.
  - a. Remove peeling paint, clean substrate, re-apply exterior finish and proper seal.

Approved by:

*Robert L. Mauldin*

Robert L. Mauldin  
Principal Architect, GA-RA-05958



2KM ARCHITECTS, INC.  
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Augusta, Georgia 30901  
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October 8, 2013

Mr. Fred Ricketson, Senior Planning & Design Manager  
Georgia Regents University  
1120 15<sup>th</sup> Street, BBM-520  
Augusta, Georgia 30912

Re: **2013-13.01 EIFS Condition Assessment Report  
Williamson & Associates, dated 9/23/2013  
2KM Comments & Structural Retrofit Assessment  
Christenberry Field House (West Campus) – GRU -Forest Hills**

Dear Fred,

We appreciate the opportunity to provide review & comment on EIFS Condition Assessment prepared by Williamson & Associates (W&A) along with 2KM Architects, Inc.'s Field Observations & Reports. W&A was copied with all 2KM Architectural Field Reports and 2KM was copied with W&A reports via GRU-SC. 2KM issued email commentary to W&A with recommended "amendments" to address concealed conditions. My review comments are as follows:

**A. Investigation, Select Demolition & EIFS Replacement:**

1. 2KM has reviewed concealed conditions with Facilities & Department representatives, Williams & Associates, RCN General Contractor, and Cliatt Construction, to determine extent of non-conforming work with the following concealed conditions being uncovered:
  - a. Existing substrates of EIFS have failed. (M/R GPDW sheathing)
    - 1) Total delamination of EIFS was corrected in 36'x40' section of level 2 & 3 of Gym exterior wall.
    - 2) M/R Gypsum sheathing had failed due to water entry into wall assembly at mid-height of wall reveal joint.
    - 3) Joints aligned in sheathing, EPS Board, and EIFS horizontal "reveal joint" (unsealed to induce cracking), this condition does not conform to required EIFS installation details.
    - 4) Aligned substrate joint condition is likely to exist on other high-bay walls.
  - b. EIFS replacement on Gym walls is recommended & required to allow substrate access & repairs to non-conforming structural stud framing regardless of EIFS integrity:
    - 1) 6" LGMF studs are notched, unbraced and inadequately secured to structure.
    - 2) 6" LGMF studs are ~20ga. with no interior sheathing or bracing. Structural analysis indicates this gauge stud will not free-span the 36'



wall height and is limited to ~16' clear-span with an interior sheathing membrane (not present on gym wall).

- 3) Structural drawings call for bracing of back flange of studs at 4'-0" o.c.
  - a) Bracing not installed as detailed and noted on drawings.
  - b) References are Addendum notation & shown with partial Architectural wall section cut without spacing being identified; structural note indicates spacing)
  - c) A quick structural assessment of LGMF Stud span-charts indicates studs are structurally inadequate per observed conditions and applications. At minimum the horizontal bracing should be present at mid-span of each section of LGMF stud span. To meet IBC 2006 & current LGMF Manufacturer span charts, the 4'-0" o.c. vertical, horizontal bracing is required.
- 4) Existing LGMF studs were exposed to reveal extensive non-conforming LGMF stud work. Defects in installed workmanship included:
  - a) Studs being extensively notched at beam flange mid-span, and at all structural steel cross-bracing. (conflicts with studs near anchor points, top & bottom attachment)
  - b) In the 36'x40' area there was \$4400 of additional T&M retrofit work required to add: bracing; reinforce stud web & back flanges; add structural "slip-clips" at mid-span beam attachment; add structural shot-pin anchors at top, bottom & mid-span of LGMF studs to Structural steel beams & concrete slab/beam.
  - c) Retrofit reinforcement of notched stud web and flanges. (2.5", 16ga. studs were installed)
  - d) Anchorage shot-pins failed at top, bottom and mid-span of studs attachments to structure and structural steel beams.
  - e) W&A Photo #19 of Report shows custom stud clip at beam attachment. Deficiencies not noted in W&A report include clip not tight to stud or beam web; inadequate number of screws and shot-pin anchors; clip is too light (thin) to stabilize and structurally anchor studs.
- d. Top of parapet has concealed water damage to MR sheathing under EIFS cap & concealed by new Metal Coping. Previous wind damage has revealed that coping anchorage is unreliable and anchor clips are spaced too far apart per SMACNA manual recommendations, details, & wind-force design. Exterior top section of parapet wall (~6'h.) has notched LGMF, 25ga. "hat-channel" framing. 2KM recommends the following retrofit work along entire gym parapet wall:
  - 1) Removal of coping & rebuild underlying materials with P.T. wood blocking and properly spaced coping attachment cleats.
  - 2) Remove & reinstall metal coping & roof flashing along with "Lightning Protection System". (Requires salvage, reinstall, retesting & recertification)
  - 3) Install 2.5", 20ga. LGMF framing at 16"o.c. per span and IBC 2006.
  - 4) Install R-30 Batt insulation on un-insulated roof metal decking. (Thermal by-pass/thermal short-circuit identified; non-conforming per code)
  - 5) Reinstall Densglas sheathing, W/P barrier coating and water managed EIFS finish system per 2KM's Scope of Work outline for Emergency Repair. (Performed at S-E corner)
- e. Horizontal Expansion Joints were not provided at stud to slab transition at base of EIFS wall system. Sealant Joints had failed per W&A report. 2KM does not concur with their recommendation of reinstalling sealant joint. Install through-wall flashing joint at top of slab elevation. (See 2KM wall section)

- 1) This flashing joint to address excess EIFS span and high movement joint (Studs to concrete).
  - 2) Water entering EIFS System will remain trapped in wall assembly.
  - 3) Replace all EIFS at bottom ~3' of wall over concrete Level 2 floor beam.
  - 4) Add weep drip sill at bottom edge of EIFS.
2. 2KM has documented conditions and researched possible solutions:
    - a. Photographed and issued Field Reports of observations and non-conforming work.
    - b. Researched and presented repair options for budgeting and Owner consideration.
    - c. Reviewed and commented on W&A Assessment Reports.
  3. 2KM recommends retrofit details be developed for Structural LGMF stud retrofit/reinforcing & EIFS replacement on the upper wall sections of the building. (Gym, Level 2 & 3 as installed in the S-E corner retrofit/repair)
  4. Recoating EIFS finish:
    - a. Recoating on Level 2, East wing exterior wall EIFS and short-span sections above level 2 roof up to roof beam elevation is a viable approach for these specific areas as outlined in W&A's report.
    - b. The top 6' h. section of wall at roof parapet is required to be reframed, cavity insulated, and roof parapet rebuilt as noted above.
      - 1) Replace parapet coping blocking and EIFS Cap termination.
      - 2) Insulate parapet cavity roof deck. (R-30 batts)

**B. Exterior Windows & Sealant Replacement:**

1. 2KM has reviewed the W&A report of observed conditions and with Facilities & Department representatives to determine extent of failed & non-conforming work with the following conditions being noted in report along with 2KM comments:
  - a. Existing EIFS Sealant Joints: Sealant joints have failed & are in poor condition.
    - 1) 2KM has observed open cracks have been shown to allow excess water into wall system & M/R sheathing becomes deteriorated. Same condition should be anticipated at all cracked open horizontal & vertical EIFS Joints.
    - 2) 2KM noted select corner vertical joints are neoprene expansion joints with sealant & paint cap-seal. Expansion Joint was found to be poorly anchored and is subject to excessive movement for sealant to be successfully applied on neoprene & perform properly.
    - 3) W&A defines a remedy for making several joints wider & thus requiring reconfiguration of joints & recoating application to substrate prior to reapplication of "low-modulus sealant material". Surface repairs will not allow substrate repairs to address water damaged substrate and LGMF structural retrofit.
    - 4) W&A recommends smearing silicone sealant in small width cracks.
      - a) 2KM recommends installing relief joint and true sealant joints since cracks are at stress points in EIFS.
  - b. Existing Windows: Window assembly has failed sealant joints at perimeter and aluminum framing intersections.
    - 1) Open cracks have been shown to allow excess water into wall system & M/R sheathing becomes deteriorated. Same deteriorated condition should be anticipated in substrate at all open window sealant joints.
    - 2) Window anchorage and glazing seals have failed.
    - 3) There are varied reports of underlying window/wall flashing conditions.
    - 4) As noted in W&A report, GRU-SC plans to replace many of the existing window systems due to failed structural & water barrier integrity.
      - a) Budget reflashing head, jamb, and sill, along with cavity wall repair for all such work.
      - b) Window areas replaced were "falling out of wall assembly."

With the W&A report ignoring underlying structural stud conditions identified in 2KM's report, we must take exception to the minimal EIFS & sealant repair approach noted in report. We conclude and recommend that the entire upper wall EIFS assembly will require removal to permit code required structural stud repair & retrofit to conform with original building assembly design and provide structural integrity to LGMF stud wall system. Observed failed structural stud attachment to structural frame indicates system is over-stressed and has actually structurally "failed" (not "catastrophic", but failed per building code criteria). The fact that wall assembly did not fall off the building is likely due to system not having experienced the design & code required "sustained wind-speed of 95mph" actually on the building wall assembly over an extended time frame:

1. Building was designed for 110mph wind speed, Typical of hurricane wind speed, or micro-burst thunderstorm.
2. Current code requires 95mph with gusts per exposure category (Engineered coping anchorage design required).
3. W& A Report recommends "hand or tap testing" all areas EIFS to identify delaminated areas.
  - a. 2KM recommends this be done on areas of EIFS to be recoated at Level 2 East Wing walls & Level 3 wall above roof to 6' below top of roof parapet.

We appreciate the opportunity to provide this Review Assessment, and to continue the restoration & maintenance of these Campus buildings on the GRU – Forest Hills Campus.

Please call if you have any questions or comments regarding this proposal or if you require additional information.

Sincerely,



Robert L. Mauldin, NCARB, AIA  
Principal Architect, GA-RA-05958

cc: 2KM File



Williamson & Associates, Inc.  
Building Exterior Consultants

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Atlanta, Georgia 30328  
Office: (404) 256-2388  
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July 16, 2013

Email: [fricketson@gru.edu](mailto:fricketson@gru.edu)

Mr. Fred Ricketson  
Georgia Regents University  
1120 15th Street  
BBM 520  
Augusta, GA 30912  
Tel: (706) 721-4551

**RE: Christenberry Field House  
Emergency EIFS Repairs, S.E Corner  
Georgia Regent University  
Wrightsboro Road  
Augusta, GA  
(W&A- 213294)**

Dear Mr. Ricketson:

Williamson & Associates, Inc. (W&A) visited the referenced project on July 10th, 2013. We met Mr. Rob Mauldin with 2KM Architects, Inc., Mr. Fred Ricketson with Georgia Regent University, and Mr. Tony Bright with Georgia Regent University. The purpose of the meeting was to review the current condition of the EIFS. A large section of EIFS had delaminated from the S.E. corner of the building, east elevation. The delaminated EIFS had been temporarily reattached to the building with large fasteners and washers, attached into metal stud wall framing behind the EIFS. We gathered information of the project history, discussed findings where delamination had occurred, discussed proposed repairs, and reviewed schematic repair documents developed by 2KM Architects, Inc. Final drawings have not been received or reviewed.

#### Project History

The Project Architect was IPG Architects & Planners from Valdosta Georgia. The construction drawings were developed circa 1987. The property was retained and opened circa 1990, becoming the Physical Education Building & Gymnasium for Augusta College. The building was clad with EIFS and has varying sized windows. **Photos 1 through 4**, show general overviews of the building. The photos were taken from the east, south, and west elevations. The original roof was reportedly a single ply roof assembly, white in color, material type unknown. The roof parapet was of EIFS construction, no metal coping cap was provided.

In 2005, the original roof was over laid with a new single ply PVC roof membrane, manufactured by Sarnafil. Mr. Ricketson reported that a cover board was mechanically attached over the existing roof underneath the new roof membrane. During the re-roofing project, a metal coping cap was fabricated and installed, over the original EIFS parapet cap, the EIFS was not removed. Mr. Mauldin reported that the parapet cap was wrapped with roof flashing before installation of the metal coping. Mr. Mauldin reported that in circa 2012 coping damage had occurred during a strong thunderstorm. The coping was ripped by

wind from the parapet on the south and west elevation of the building. Mr. Mauldin reported that the cause of failure was from inadequate fastener attachment into wood blocking below the EIFS.

Circa 2007, the exterior EIFS walls were painted to address a severely oxidized façade, with an exterior grade acrylic paint to restore the exterior appearance. Mr. Ricketson reported that the walls were cleaned, primed, and painted. Within 18 months of application, the paint started to peel. The manufacturer was contacted about the peeling. The manufacturer said that the peeling was not a product defect. The peeling was a result of poor surface prep. The painting contractor returned and repainted the walls. Additional peeling has occurred and continues to be a reoccurring problem. The walls are repainted periodically to address peeling paint.

Mr. Mauldin reported that various window replacement projects have occurred to address poorly attached windows and windows that leaked. The timing and number of windows replaced was not discussed.

The most recent problem (2013) is the delamination of the EIFS on the east elevation, S.E. corner of the building. This requires emergency repairs.

#### Delaminating EIFS

**Photo 5** shows a general view, east elevation of the building, S.E. corner where the EIFS has delaminated. **Photo 6** shows a closer view of fasteners and washers placed through the EIFS façade for temporary reattachment to the building until repairs can be made. The fasteners were inserted through the EIFS and attach to the heavy gauge metal stud framing behind. Mr. Mauldin and Mr. Bright reported that the EIFS had pulled away from the metal framing/gypsum sheathing approximately 3". Prior to reattachment the following was found as reported by Mr. Mauldin:

1. The EIFS was attached to an exterior grade paper-faced gypsum sheathing with adhesive dabs. The back of the EPS boards were not scratch coated with adhesive for full contact of the EPS to the gypsum board. The EIFS was 3" thick.
2. The EIFS was also attached to the thickened slab edge with adhesive dabs. The EIFS there was 2" thick.
3. A failed sealant joint (horizontal) was present at the change in substrate.
4. Vertical control joints had failed sealant.
5. The paper facing had peeled away from the gypsum sheathing.
6. The gypsum boards were tongue and groove or lap jointed.
7. The gypsum board joints were not sealed.
8. The gypsum board had no weather barrier (i.e., the original EIFS is a "barrier" system and not a "drainable" system).
9. The gypsum board was deteriorated and brittle, saturated with water.
10. The metal framing and gypsum board set back from the slab edge approximately 1".
11. The metal framing had minor corrosion present.

A majority of the findings by Mr. Mauldin were depicted in the original drawings, reference **Attachment "A"**. **Photos 7 through 9** shows the horizontal joint placed at the substrate change, concrete to metal framing and gypsum board. The joint had been sealed with sealant, sealant residue remained. While onsite, we checked the EIFS thickness with a flat metal tool and verified 2" EIFS at the thickened slab and 3" EIFS at the metal framing with gypsum board. At each location where the tool was inserted through the 3" EIFS above the horizontal joint we found water present. This indicates possible EIFS failures higher in the EIFS cladding. With barrier EIFS, water should not be present above the failed horizontal joint. There were no horizontal sealant joints visible from the ground above this condition. The

joints visible all appear to be “V” joints (reveals). There was however 1 vertical control joint with sealant failure present near the building corner, this joint carries to the roof and is approximately 20 feet away from where the tool was inserted.

#### Additional Items

We found additional items of concern related to the south facing wall and the concrete columns penetrating the lower level and suspended soffit. The lower level walls set inward. It had rained the morning of our arrival. Water was observed draining from the column where water had penetrated the EIFS soffit, **Photo 10**. This was typical along the elevation. **Photo 11** shows an area of concrete next to one of the columns, indicating a leak from above. **Photos 12 and 13** show water dripping from the intake louvers suspended in the EIFS soffits set between columns. The water penetration is likely a result of sealant failure in the horizontal control joint at the substrate change. As depicted in **Attachment “A”**, the underside of the thickened slab is treated with metal framing, gypsum board and EIFS. Water penetrating the EIFS above will allow water to migrate into the EIFS soffit and result in leakage. The water penetrating the system may lead to corrosion of metal framing, deterioration of the gypsum board, and delamination of the EIFS.

Throughout the exterior walls we observed paint delamination. The delamination may be related only to poor surface prep or may be a result of water entry into the barrier EIFS system. An evaluation of the EIFS is needed to determine the source(s) of water penetration, which should include exploratory openings through the EIFS cladding.

#### Schematic Design

Onsite we discussed the urgent repairs proposed by 2KM Architects. 2KM Architects is proposing removing and replacing the EIFS in the area outlined in red on **Photo 5**. The plan is to change from a barrier system to a drainable system, using STO “Sto Therm Next” system as the basis of design. **Attachment “B”**, 5 pages sent to us by 2KM Architects shows the proposed system details. Changing to a drainable EIFS system will require adding jamb flashings where abutting the existing barrier EIFS and will change slightly the cosmetic appearance between new and old. Flashings and starter strips will be visible in the repair area.

**Attachment “B”, Page 1**, has hand and computer generated comments representing the schematic repair approach. The following was obtained from onsite discussions and from review of the document. W&A comments are included as recommendations.

1. The existing EIFS and sheathing will be removed to the extent indicated on **Photo 5**.
  - W&A agrees.
2. The stud cavity will be filled with R-19 batt insulation.
  - W&A has not reviewed the thermal performance for the building.
  - The existing drawings already depict 1-1/2” rigid insulation behind CMU and R-19 insulation behind interior wall board.
  - If batt insulation is added, increase in R-value only occurs at repair area.
  - Adding further insulation should be confirmed by 2KM Architects or its Mechanical Engineer.

3. New DensGlass Gold sheathing will be installed.
  - W&A agrees.
4. The sheathing will be treated with StoGuard air/water barrier.
  - This is STO's propriety system. Install in accordance with manufacturers published guidance. W&A agrees.
5. Flashings will be installed. **Attachment "B"** Page 2, Detail 10.00, at base of thickened slab/soffit.
  - Starter track will be visible only at repair area. W&A agrees.
6. Flashing installed. Page 3, Detail 10.41d, at substrate change.
  - Flashing will be visible only at repair area. W&A agrees.
7. Reinstalling a 1/4" caulk joint.
  - W&A recommends a 3/4" joint for construction tolerance.
  - W&A recommends using low modulus silicone sealant, such as DC-790 or equivalent.
8. Page 4, not indicated on Page 1.
  - W&A recommends clarifying where this detail would be used.
9. Page 5, not indicated on Page 1.
  - This detail is STO's standard detail for a roof parapet and needs adaptation to existing conditions.
  - Revised detail needed. We recommend 2KM re-draw and clarify this detail. The "flexible membrane" on the STO Detail 10.64 would be the existing roof membrane.
10. Additional comments:
  - Details need to be developed to include vertical jamb flashings to isolate the existing barrier EIFS from the new drainable EIFS.
  - The "Owner" needs to understand the cosmetic appearance change the drainable system creates.
  - In our opinion changing to a drainable EIFS system will improve performance at the repair area if the air/water barrier, flashings, and system components are installed correctly, but there will be a minor change in building appearance. To improve the remaining barrier EIFS watertightness, and the re-clad area, a silicone elastomeric coating could be applied over the acrylic textured finish. Dow Corning AllGuard or G.E. SilShield silicone elastomeric coatings are recommended for their superior performance.

- It was discussed while we were on-site, and we recommend, that W&A return to the facility after the urgent EIFS re-clad area is complete. The purpose of our return visit will be to perform a condition evaluation of the remaining original EIFS, and provide our recommendations for additional repairs as may be appropriate.

We appreciate the opportunity to provide our building exterior consulting services on this project for Georgia Regents University.

Please contact us with any questions you may have regarding the attached report, or our services in general

Sincerely,

WILLIAMSON & ASSOCIATES, INC.

*Michael C. Allen*

Michael C. Allen  
Senior associate

Cc: Rob Mauldin, 2KM Architects, Inc. (robmauldin.2kmarchitects@comcast.net)

Attachments:

Photographs (13)  
Attachments "A" & "B" (6 pages)





Photo 1



Photo 2



Photo 3



Photo 4

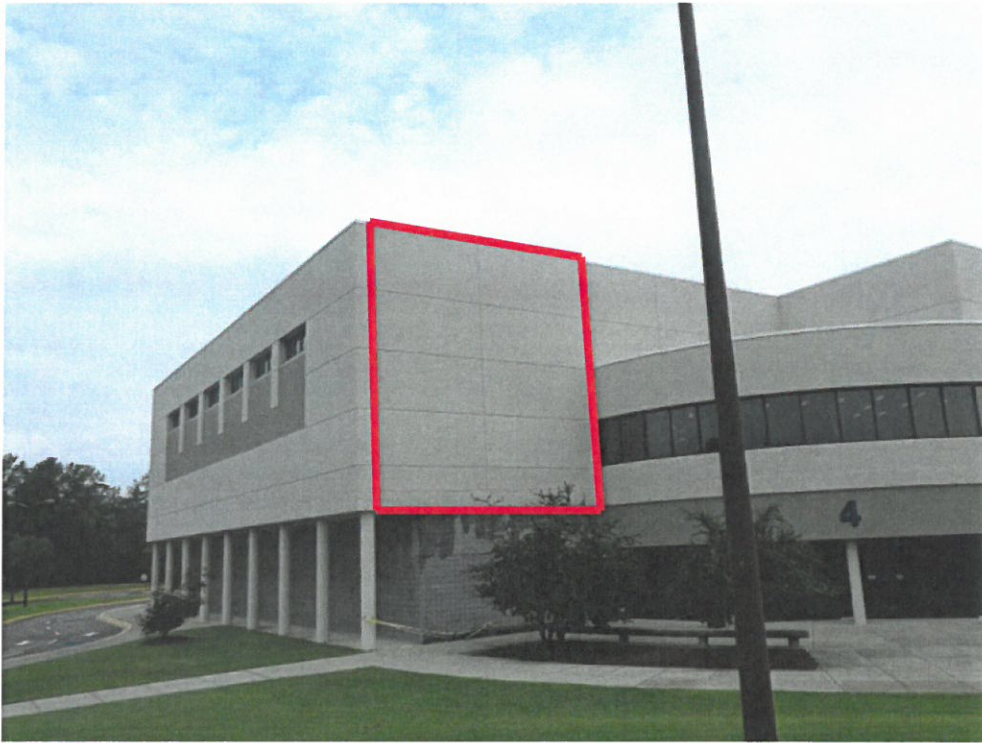


Photo 5



Photo 6



Photo 7



Photo 8

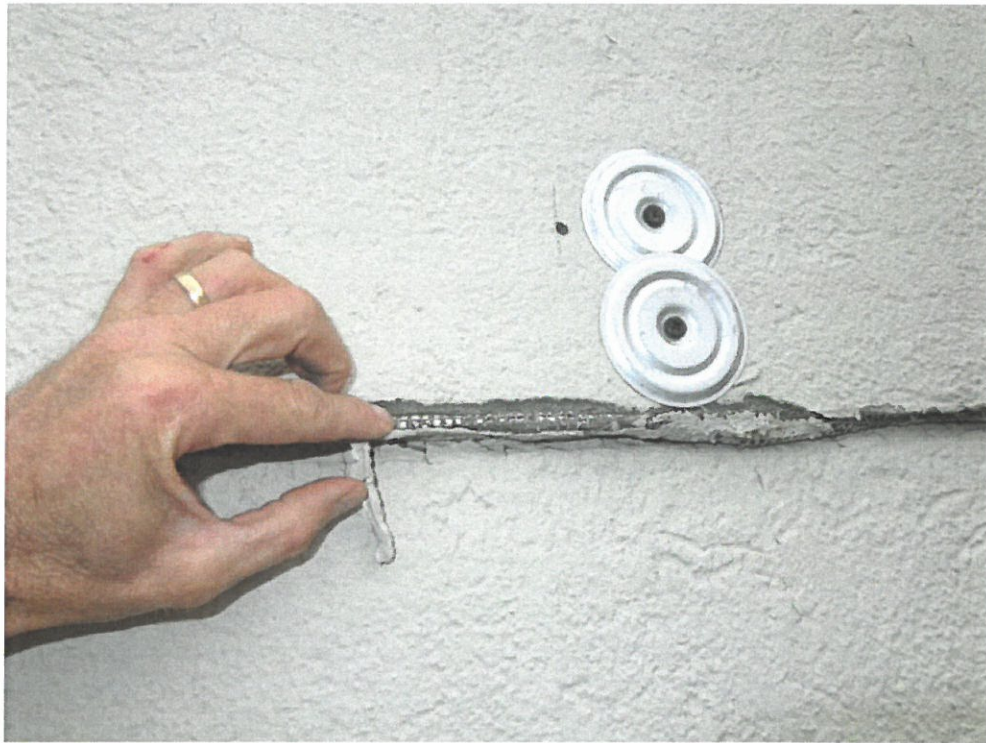


Photo 9

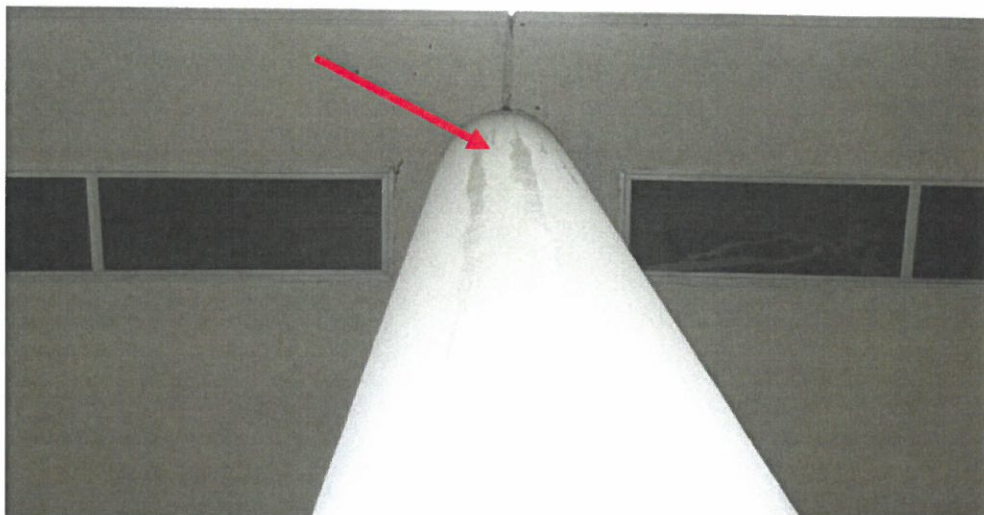


Photo 10



Photo 11

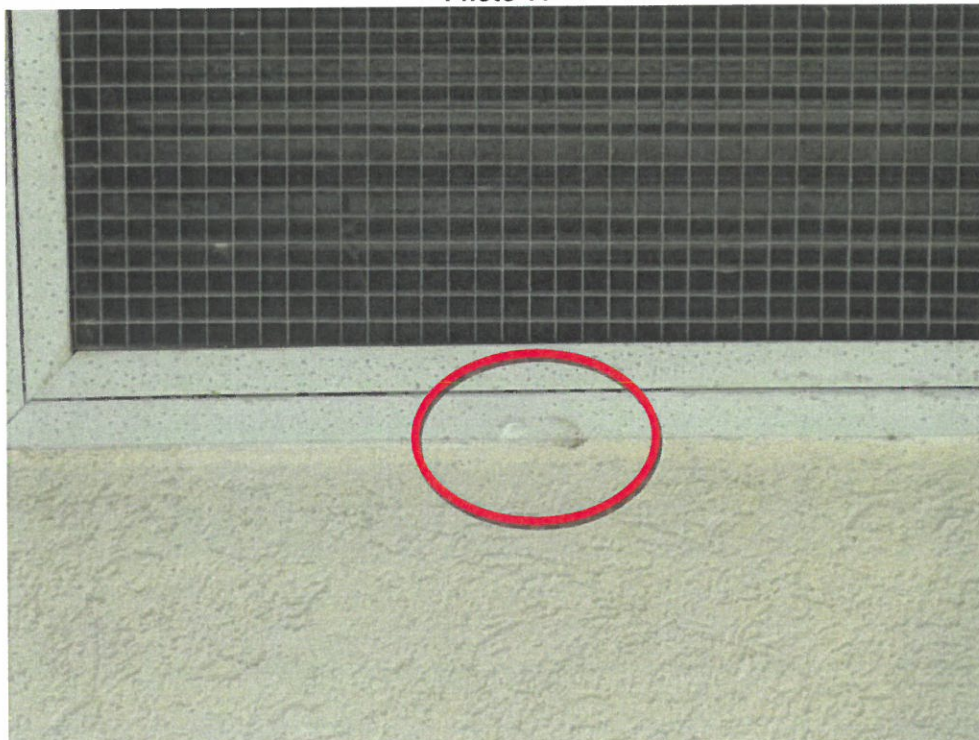


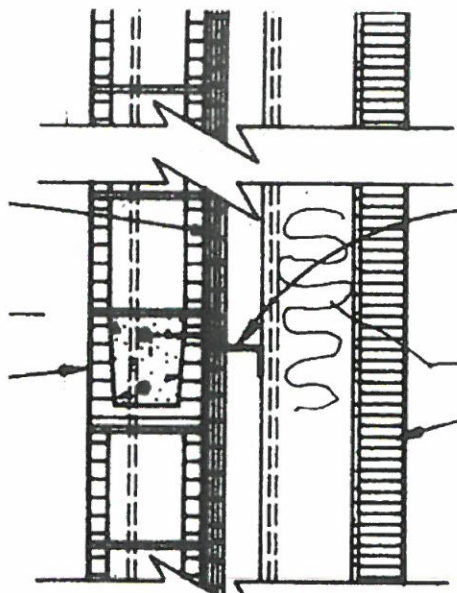
Photo 12



Photo 13





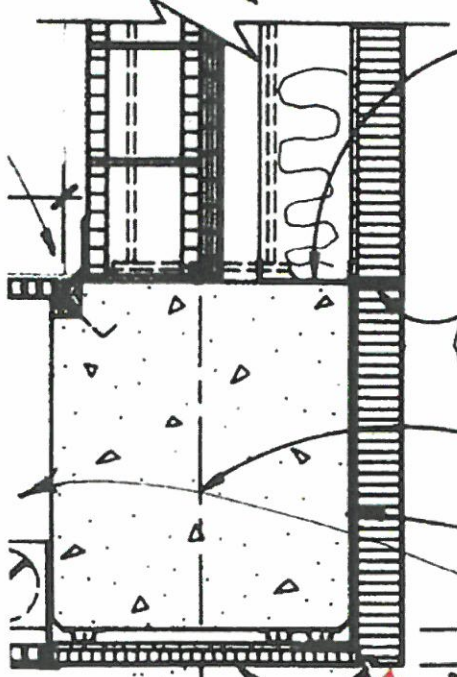


Z - GIRT WITH 1/2" ANCHOR BOLTS AT 2'-8" O.C. (Existing)

INSTALL R-19 Batt INSUL. IN STUD CAVITY, TYP.

3" EXTERIOR INSULATION (F.V.) AND FINISH SYSTEM (EIFS) ON 1/2" ~~GYP SUM BOARD~~ Dens glass Sheathing

NE  
C  
FV  
C  
C



TYPICAL NOTE:  
SET STUD RUNNER IN 2 BEADS OF CAULKING CONTINUOUS ON CONCRETE STRUCTURE

1/4" CONTINUOUS SEALANT CAULKED JOINT, TYP. Expansion

Ø OF STEEL COLUMN ABOVE

3/8" RIBLATH ON CONCRETE

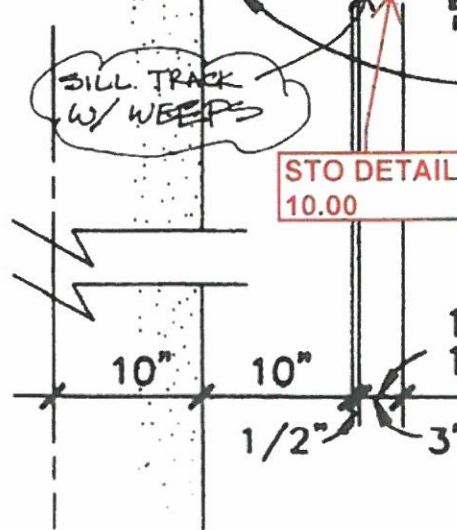
Note: Install R-19 Batt INSULATION IN ABANDONED VENTS IN FLOOR

1 1/2" EIFS ON 1/2" EXTERIOR GYPSUM SHEATHING ON SHEET METAL FURRING CHANNELS AND SUSPENDED STEEL FRAMING

STO DETAIL 10.41d

STO DETAIL 10.00

SILL TRACK W/ WEEPS



1" MIN. (N & S WALL ONLY - 1 1/2" MIN. OTHERWISE)

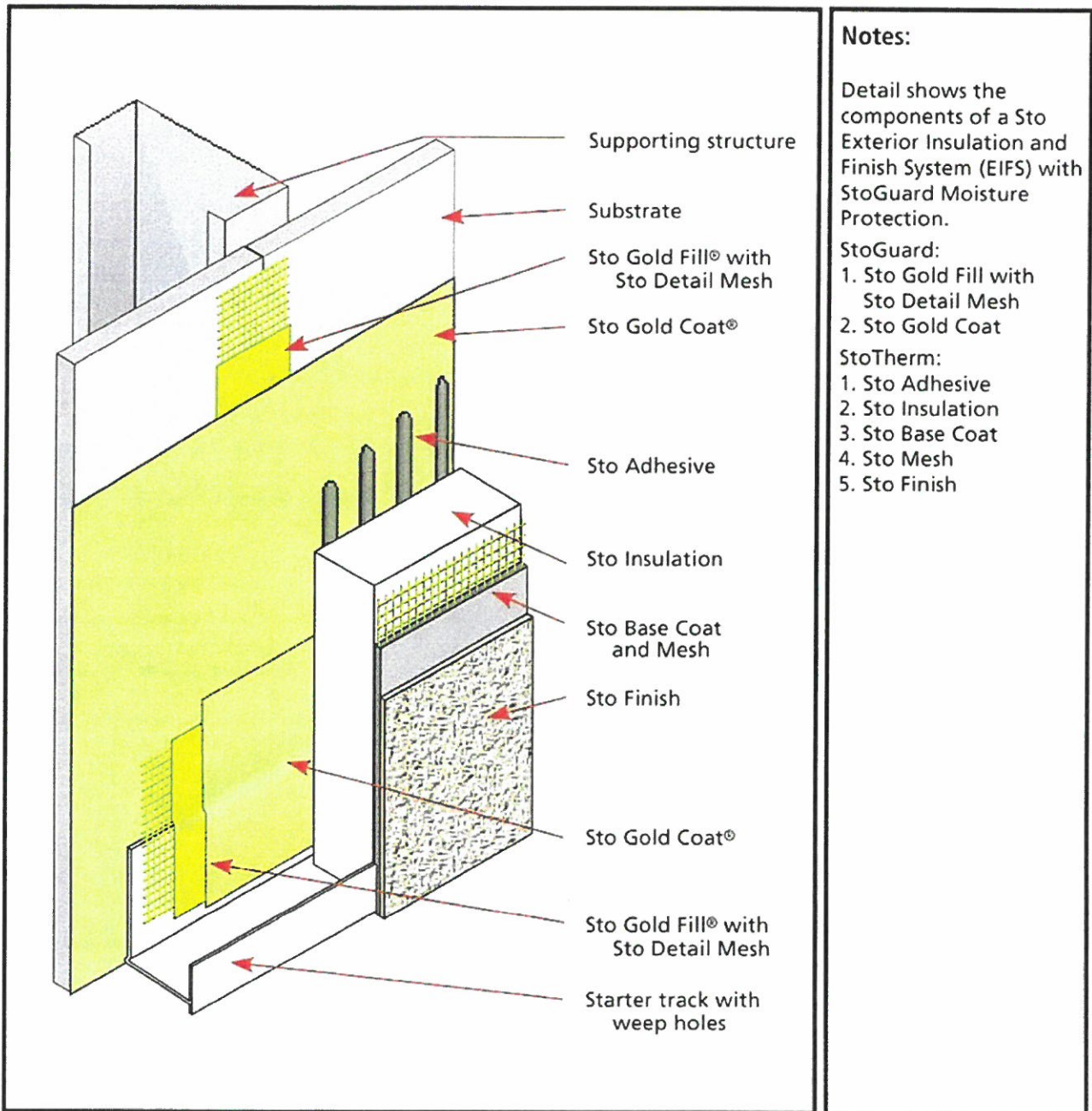
10" 10" 1/2" 3" MAX.

3/4" = 1'-0" NE ATTACHMENT "B" (5 PAGES)

# StoTherm™ NExT System Components

Detail No.: 10.00

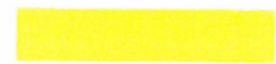
Date: September 2007



**ATTENTION**

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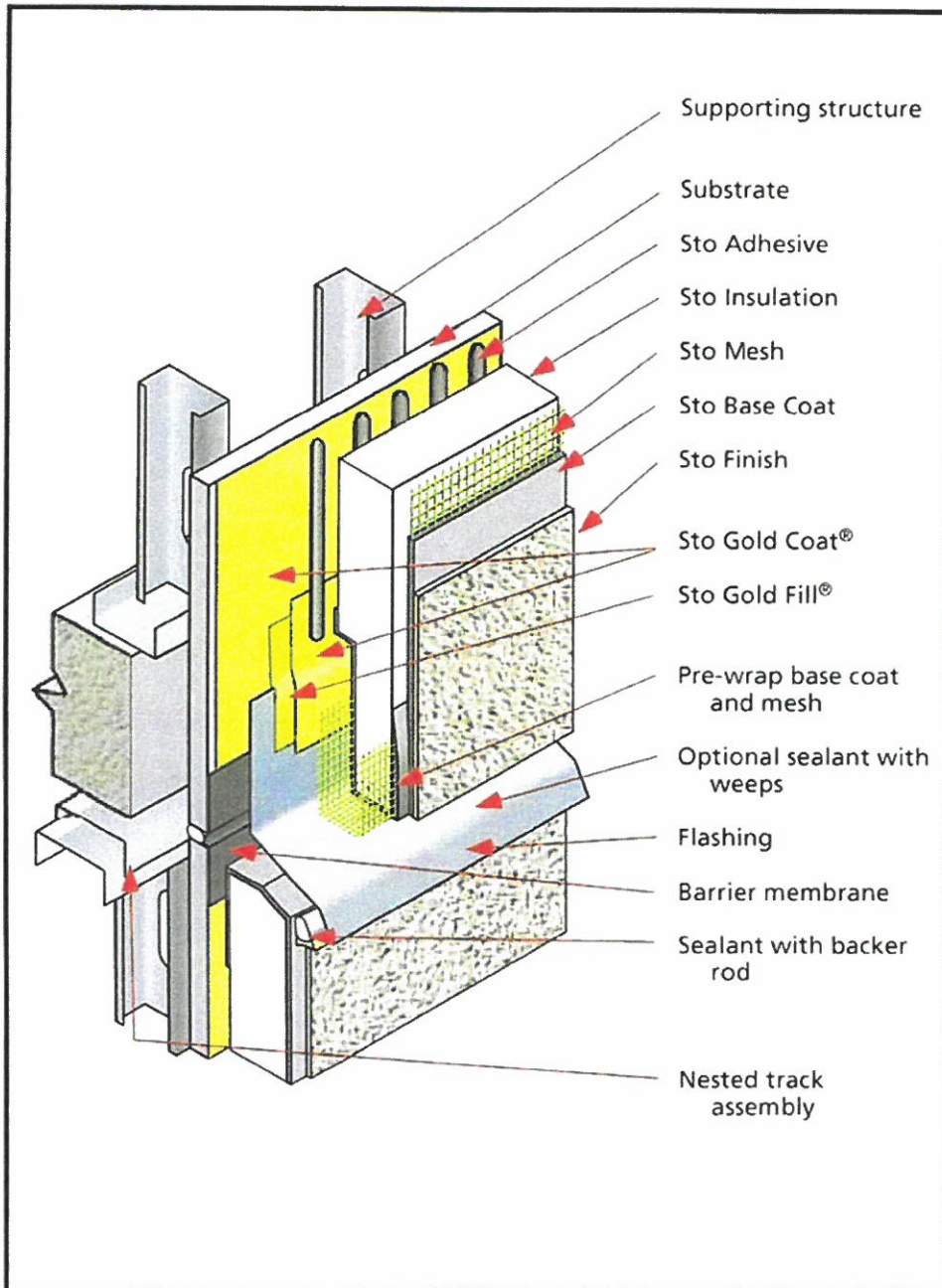
[www.stocorp.com](http://www.stocorp.com)



**StoTherm™ NExt  
Floor Line with Joint:  
Noncombustible Construction**

Detail No.: 10.41d

Date: September 2007



**Notes:**

- 1) Pre-wrap the insulation board with base coat and mesh prior to installation. Rasp back of insulation to ensure the pre-wrapped insulation board will permit water to drain freely.
- 2) Do not attach upper sheathing to nested track. Only attach lower sheathing to nested track.
- 3) The maximum allowable sheathing span at the floor line is 8" (200 mm) or as recommended by the sheathing manufacturer.
- 4) A barrier membrane is installed over the joint in the sheathing to provide air barrier continuity and secondary weather protection at the joint location.
- 5) Install metal flashing to drain outboard of the cladding and integrate it into the StoGuard.
- 6) Provide a minimum 3/4" (20 mm) joint to accommodate deflection of the floor slab.

**ATTENTION**

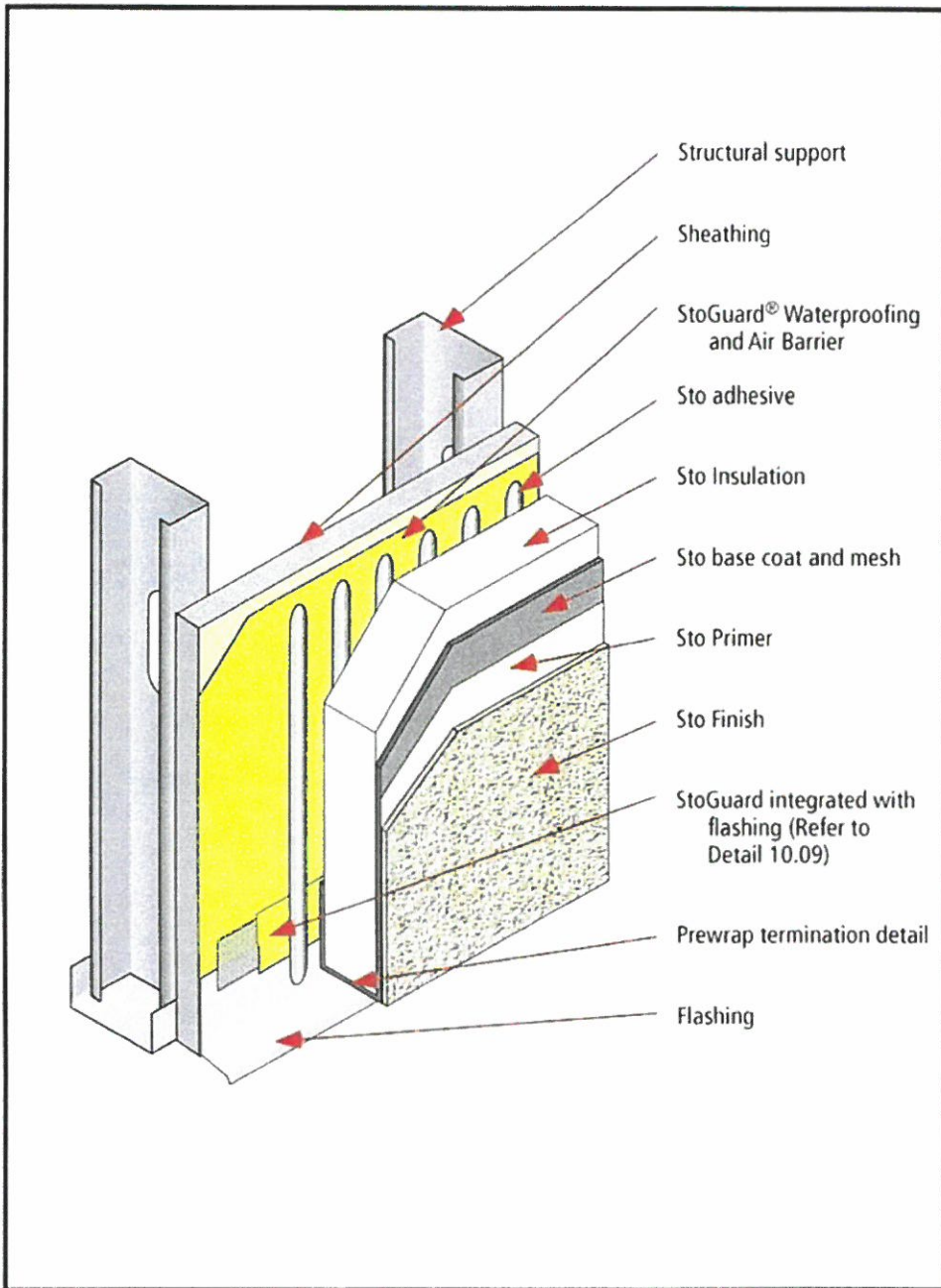
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[www.stocorp.com](http://www.stocorp.com)

**StoTherm NExT®**  
**System Components with Base Flashing**

Detail No.: 10.01A

Date: March 2010



**Notes:**

- 1) Detail illustrates components of StoTherm NExT® incorporating a flashing at the base of the wall or at a termination where water is to be deflected from the wall.

**Attention**

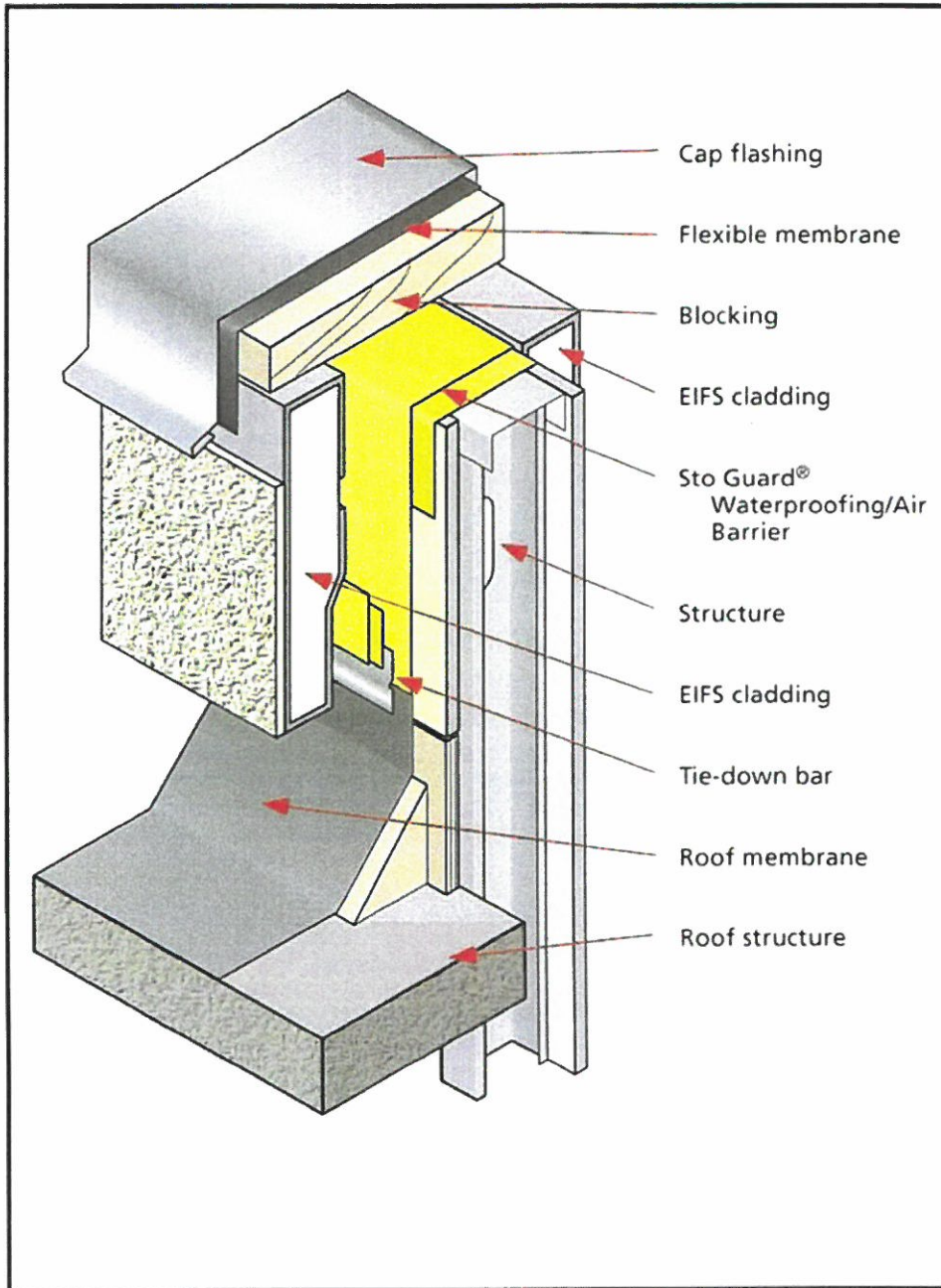
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**Sto EIFS NExT®  
Roofing Termination at Parapet**

Detail No.: 10.64

Date: November 2005



**Notes:**

- 1) Detail shows the termination of Sto EIFS over a roof membrane on the back side of a parapet.
- 2) Maintain a continuous plane of air tightness between the vertical elements of the Sto Guard® and the roof membrane with a roofing tie-down bar or other method as recommended by the roof membrane manufacturer.

Sto details are illustrations of construction. They are guidelines, intended for use by the design/construction professional, to assist in developing project specific details. They should be modified where necessary to accommodate individual project conditions. Refer to appropriate Sto specification for design requirements. Refer to local building code for any special requirements.



# ASSESSMENT REPORT

PROJECT: EIFS & Structural Repair at CFH  
 OWNER: GRU-Forest Hills  
 PROJECT NO.: Pp2013-042  
 DATE/TIME: September 12, 2013

ASSESSMENT REPORT NO.: #1  
 PRESENT AT SITE: R. Mauldin; F. Ricketson, RCN/Cliatt  
 WEATHER: Clear; Warm

	<b>PHOTO #1</b>	<b>S-E Corner, East Wall (5/8/13)</b>
	<ol style="list-style-type: none"> <li>1. EIFS pulled away from sheathing.</li> <li>2. Emergency retrofit contract issued.</li> </ol>	
	<b>PHOTO #2</b>	<b>S-E Corner (5/8/13)</b>
	<ol style="list-style-type: none"> <li>1. Note chunks of GPDW sheathing in void.</li> <li>2. Note dark colored material at bottom of EPS.</li> <li>3. Emergency retrofit contract issued.</li> </ol>	



**PHOTO #3**

**EIFS Soffit (8/27/13)**

1. M/R Sheathing in poor condition? ~2' back from edge?
2. South side soffit (east edge).



**PHOTO #4**

**Cavity/Studs (8/27/13)**




1. Install added stud to reinforce transition stud.
2. Clean and prime minor rust spots on sill track.
3. Secure and brace stud transitions; re-anchor to slab (loose & missing or failed shot-pin anchors).



**PHOTO #5**

**Notched Stud Retrofit (8/29/13)**

1. Add 16ga. steel tube screwed to LGMF.
2. Add heavy-duty slip-clip anchor screwed to stud & steel beam flange.
3. Add Hilti shot-pin anchors. (Failed)

	<table border="1"> <tr> <th>PHOTO #6</th> <th>Stud Notch/Clip (8/29/13)</th> </tr> <tr> <td colspan="2"> <ol style="list-style-type: none"> <li>1. Clip missing/shot pins failed.</li> <li>2. Stud notched 50 to 60% of 6" depth.</li> <li>3. Non-conforming work (Typical condition).</li> </ol> </td> </tr> </table>	PHOTO #6	Stud Notch/Clip (8/29/13)	<ol style="list-style-type: none"> <li>1. Clip missing/shot pins failed.</li> <li>2. Stud notched 50 to 60% of 6" depth.</li> <li>3. Non-conforming work (Typical condition).</li> </ol>	
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**PHOTO #9**

**Hat & Steel Channels (9/5/13)**

1. Typical detail; roof deck and edge angle.
2. Retrofit 2 1/2" 16ga. LGMF in-fill studs at 16"o.c.
3. Roof deck and wall to roof un-insulated. Retrofit required.



**PHOTO #10**

**Parapet Cap (9/5/13)**

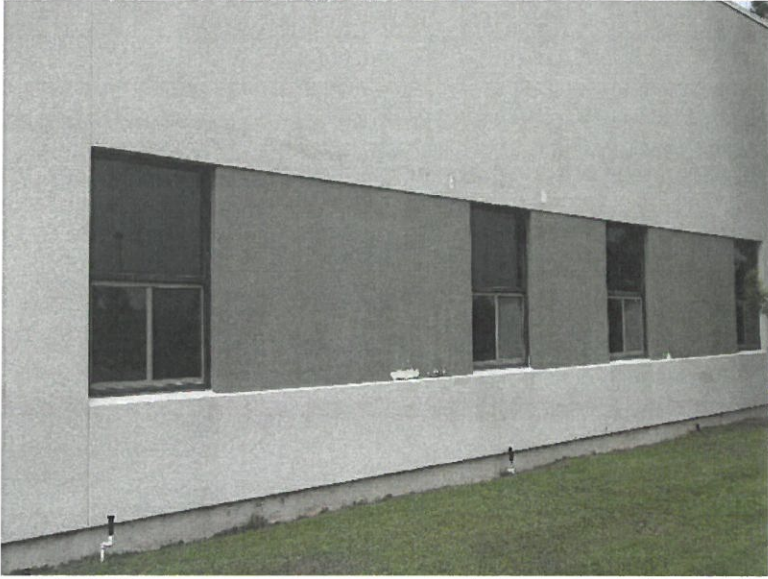


1. M/R sheathing was stopped ~2" short of top steel channel.
2. GPDW runs across top of blocking with EIFS wedge adhered.
3. Fiberglass mesh is on top of M/R GPDW.
4. Replace angled foam with P.T. wood 2x4 blocking, cut to profile.
5. Extend new EIFS system under coping.
6. Wrap roof membrane over new work.
7. Reinstall coping and add continuous cleats.




**PHOTO #11**

**S-E Wall Repair (9/6/13)**

1. Upper wall repair ongoing.
2. Studs installed at top 6' of wall.
3. Work is required on balance of Gym exterior wall.

	<p><b>PHOTO #12</b>      <b>North Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate.</li> <li>2. Underlying coating chalked &amp; poor adhesion.</li> <li>3. Prepare &amp; re-coat finish.</li> </ol>
	<p><b>PHOTO #13</b>      <b>North Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate. (Water managed system)</li> <li>2. High wall areas have structural stud defects.</li> <li>3. Remove and re-frame.</li> <li>4. Replace sheathing.</li> <li>5. Replace EIFS finish.</li> </ol>
	<p><b>PHOTO #14</b>      <b>West Elevation (9/17/13)</b></p>
	<ol style="list-style-type: none"> <li>1. Paint peeling from EFIS substrate. (Water managed system)</li> <li>2. High wall areas have structural stud defects.</li> <li>3. Remove and re-frame.</li> <li>4. Replace sheathing.</li> <li>5. Replace EIFS finish.</li> </ol>

	<b>PHOTO #15</b>	<b>South Elevation (9/17/13)</b>
<ol style="list-style-type: none"> <li>1. Paint peeling from EIFS substrate.</li> <li>2. Prepare surfaces &amp; re-coat radius EIFS.</li> <li>3. Remove system &amp; high wall areas. (LGFM)</li> <li>4. Replace EIFS &amp; Re-coat.</li> </ol>		

## OBSERVATIONS:

### A. EIFS:

1. Water has infiltrated numerous areas of EIFS system.
  - a. Water streaming down columns at south soffit columns/overhand.
  - b. S-E corner system had total delamination and substrate failure. (40'w.x30'h.; level 2 & 3)
  - c. Horizontal joints have allowed water to enter system.
    - 1) Mid height joint failed at S-E corner.
    - 2) Other joint conditions unknown (water exiting system at columns/base of wall/soffit).
  - d. EIFS thickness is 2" and not 3" per W&A report; or 1.5" per wall sections.
  - e. M/R GPDW sheathing was found to be severely deteriorated at S-E corner (long-term infiltration to point of total system failure). DensGlass & W/P membrane is more reliable.
  - f. Adhesive is spot applied and not vertical ribbon applied.

### B. Concealed Conditions:

1. Soffit water damage to M/R GPDW sheathing observed (south side).
2. Rusted track, 6" LGMF.
  - a. Shot pin anchors failed or missing.
  - b. Loose track at corner transition.
3. LGMF studs have no bracing or membrane sheathing (add bracing per design).
4. Studs are notched at structural steel cross bracing (retrofit required).
5. Studs are 20ga.; rated for ~18' span (currently notched and span ~36'h.).
6. Studs notched at mid-height structural steel horizontal beam flange.
  - a. Reinforced web required.
7. Clip anchors have failed at mid beam attachment.
  - a. Shot pins inadequate and sheared.
  - b. Structural clips; do not allow for expansion and structural movement (slip/bypass required).
  - c. Retrofit clips required with engineered anchorage.
  - d. Studs notched at upper "x" bracing (structural retrofit required).
  - e. Parapet framing is non-conforming with design. (7/8" 25ga. hat) Fully notched at top and bottom shot-pin attachments (replace with 2.5", 16ga. LGMF.)
  - f. Parapet cap has inadequate P.T. wood or metal blocking for coping attachment.
    - 1) Remove and replace.
    - 2) Extend DensGlass sheathing to top of blocking.

- 
- 3) Extend EIFS to top of blocking.
  - 4) Option: Change coping profile for 10" vs. 5" leg on exterior face.
  - g. Parapet cavity is un-insulated at roof deck and edge of wall/roof juncture.
    - 1) Retrofit with R-30 batts and R-19 in wall cavity.

C. CMU wall stained:

1. Mold and mildew is present on CMU at base of EIFS (bottom edge).
  - a. Clean and treat; pressure wash wall.

D. Exterior paint coating:

1. Paint coating is cracking and peeling from the EIFS substrate.
  - a. Remove peeling paint, clean substrate, re-apply exterior finish and proper seal.

Approved by:

*Robert L. Mauldin*

Robert L. Mauldin  
Principal Architect, GA-RA-05958

**SECTION 05 7500  
DECORATIVE FORMED METAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Exterior fabrications made of formed prefinished aluminum sheet, secondary supports, and anchors to structure, including:
  - 1. Prefinished break metal fabrications.
  - 2. Closures, trim, end caps and filler panels.

**1.02 RELATED REQUIREMENTS**

- A. 07 4213 - Flat Seamed and Corrugated Panels - Exterior wall panels.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Flashing and trim.

**1.03 REFERENCE STANDARDS**

- A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- B. ASTM D523 - Standard Test Method for Specular Gloss 2014 (Reapproved 2018).
- C. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates 2023.
- D. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films 2007 (Reapproved 2015).
- E. NAAMM AMP 500-06 - Metal Finishes Manual 2006.

**1.04 SUBMITTALS**

- A. Section 01 3300 for submittal procedures.
- B. Product Data - Sheet Metal Material: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Specimen warranty.
- C. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, number of anchors, supports, reinforcement, trim, flashings, and accessories.
  - 1. Differentiate between shop and field fabrication.
  - 2. Indicate substrates and adjacent work with which the fabrications must be coordinated.
  - 3. Include large-scale details of anchorages and connecting elements.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Installer's Qualification Statement.
- F. Maintenance Data: Care of finishes and warranty requirements.
- G. Executed Warranty: Submit warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section.

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### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
  - 1. Protect finishes by applying heavy duty removable plastic film during production.
  - 2. Package for protection against transportation damage.
  - 3. Provide markings to identify components consistently with drawings.
  - 4. Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.
- B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - 1. Store in well-ventilated space out of direct sunlight.
  - 2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
  - 3. Store at a slope to ensure positive drainage of accumulated water.
  - 4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F.
  - 5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

### 1.07 MOCK UP

- A. Install break metal, closer, trim and filler panels in mock-up specified in Section [07 4213 - Flat Seamed and Corrugated Panels.]

### 1.08 WARRANTY

- A. Section 01 6000 for additional warranty requirements.
- B. Sheet Manufacturer's Finish Warranty: Provide manufacturer's written warranty stating that the finish will perform as follows for minimum of 5 years:
  - 1. Chalking: No more than that represented by a No.8 rating based on ASTM D4214.
  - 2. Color Retention: No fading or color change in excess of 5 Hunter color difference units, calculated in accordance with ASTM D2244.
  - 3. Gloss Retention: Minimum of 30 percent gloss retention, when tested in accordance with ASTM D523.

## PART 2 PRODUCTS

### 2.01 PREFINISHED BREAK METAL

- A. Shop Assembly: Preassemble items to greatest extent possible. Minimize field splices and field assembly. Disassemble only as necessary for transportation and handling. Mark items clearly for assembly and installation.
- B. Coordination: Match dimensions and attachment of formed metal items to adjacent construction. Produce integrated assemblies. Closely fit joints; align edges and flat surfaces unless indicated otherwise.
- C. Forming: Profiles indicated. Maximize lengths. Fold exposed edges to form hem indicated or ease edges to radius indicated with concealed stiffener. Provide flat, flush surfaces without cracking or grain separation at bends.
- D. Reinforcement: Increase metal thickness; use concealed stiffeners, backing materials or both. Provide stretcher leveled standard of flatness and stiffness required to maintain flatness and hold adjacent items in flush alignment.
- E. Anchors: Straps, plates and anchors as required to support and anchor items to adjacent construction.
- F. Supports: Miscellaneous framing, mounting, clips, sleeves, fasteners and accessories required for installation.

- G. Welding and Brazing: Weld or braze joints continuously. Grind, fill or dress to produce smooth, flush, exposed surfaces. Do not discolor metal. Grind smooth, polish, and restore damaged finishes to required condition.

## **2.02 PREFINISHED FORMED METAL FABRICATIONS**

- A. Closures, Trim and Fill Panels:
1. Form closures from type and thickness of metal indicated.
  2. Conceal fasteners when possible.
  3. Drill and tap holes for securing to other surfaces.
  4. Provide gaskets where indicated or needed for continuous seal at adjacent surfaces.
  5. Miter or cope at corners and reinforce with bent metal plate. Form tight joints.

## **2.03 MATERIALS**

- A. General: Provide without pitting, seam marks, roller marks, stains, discolorations, or other imperfections exposed to view on finished units.
- B. Formed Aluminum: 0.063 inch thick, coil coated finish.
- C. Joint Sealer, Exterior: ASTM C920; elastomeric silicone sealant; of type, grade, class, and use classifications required to seal joints in decorative formed metal and remain weathertight; and as recommended in writing by decorative formed metal manufacturer.

## **2.04 FINISHES**

- A. Finishes, General:
1. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; two coat, thermally cured fluoropolymer coil coated finish system.
  2. Color as selected by Architect from manufacturer's full range of standard colors.
  3. Complete mechanical finishes before fabrication. After fabrication, finish joints, bends, abrasions and surface blemishes to match sheet.
  4. Protect mechanical finishes on exposed surfaces from damage.
  5. Apply organic and anodic finishes to formed metal after fabrication unless otherwise indicated.
  6. Appearance: Limit variations in appearance of adjacent pieces to one-half of range represented in approved samples. Noticeable variations in same piece are not acceptable. Install components within range of approved samples to minimize contrast.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and interfaces with other work.
- B. Verify substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Notify Architect in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.

### **3.02 INSTALLATION**

- A. Locate and place decorative formed sheet metal items level and plumb; align with adjacent construction. Cut, bend, drill and fit as required to install.
- B. Locate and place braces and supports to maintain flat and smooth surfaces.
- C. Do not cut or abrade sheet metal finishes that cannot be completely restored in the field. Return such items to manufacturer or fabricator for required alterations and refinishing or provide new items.

- D. Use concealed anchorages where possible. Provide washers where needed on bolts or screws to protect metal surfaces and make weathertight connection.
- E. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers indicated.
- F. Install gaskets, joint fillers, insulation, sealants, and flashings as work progresses.
  - 1. Make exterior decorative formed sheet metal items weatherproof.
  - 2. Make interior decorative formed metal items soundproof or lightproof as required.
- G. Corrosion Protection: Apply permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with incompatible substrate materials. Prevent corrosion damage to material and finish.

### **3.03 FIELD QUALITY CONTROL**

- A. Testing Agency: Testing agency to perform tests and inspections and prepare test reports. Testing agency to follow these requirements:
  - 1. Provide testing and inspection required by ABAA QAP.
  - 2. Allow access to work areas and staging.
  - 3. Do not cover work until tested, inspected, and accepted.

### **3.04 CLEANING**

- A. Restore finishes damaged during installation and construction period. Return items that cannot be refinished in the field to manufacturer or fabricator. Refinish entire unit or provide new units.
- B. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.
- C. Remove temporary coverings and protection of adjacent work areas.
- D. Clean installed products in accordance with manufacturer's instructions.

**END OF SECTION**



**SECTION 06 1000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nonstructural dimension lumber framing.
- B. Sheathing.
- C. Preservative treated wood materials.
- D. Concealed wood blocking, nailers, and supports.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 2500 - Weather Barriers: Air barrier over sheathing.

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- C. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.
- D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- E. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies 2018.
- F. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples 2021.
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- H. AWPA U1 - Use Category System: User Specification for Treated Wood 2023.
- I. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. PS 1 - Structural Plywood 2019.
- K. PS 20 - American Softwood Lumber Standard 2021.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. General: Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: S-P-F and/or SYP.
  - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at [www.alsc.org](http://www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

### **2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.
  - 2. Boards: Standard or No. 3.

### **2.03 CONSTRUCTION PANELS**

- A. Wall Sheathing: Glass mat faced gypsum with integral water-resistive and air barrier, ASTM C1177/C1177M, 5/8 inch thick.
  - 1. Edges: Square.
  - 2. Water Vapor Permeance: 1 perm, minimum, when tested in accordance with ASTM E96/E96M.
  - 3. Air Permeance, Sheathing: 0.001 cfm per square foot, maximum, when tested in accordance with ASTM E2178.
  - 4. Air Permeance, Assembly: 0.04 cfm per square foot, maximum, when tested in accordance with ASTM E2357.
  - 5. Fluid-Applied Flashing: Approved by sheathing manufacturer.
  - 6. Warranty:
    - a. Exposure: Manufacturer's standard; 12 months, against exposure damage, and dated from installation of product.
    - b. Defect: Manufacturer's standard; 5 years, against manufacturing defects, and dated from purchase of product.
    - c. Material: Manufacturer's standard; 5 years, dated from Date of Substantial Completion.
    - d. Effective Drainage Warranty: 12 years, dated from installation of product, when sheathing is used as substrate under approved, water-managed exterior insulation finish system (EIFS).
  - 7. Install sheathing in mock-up specified in Section [07 4213 - Flat Seamed and Corrugated Panels.]
  - 8. Manufacturers:
    - a. Products: Subject to compliance with requirements, provide one of the following:
      - 1) CertainTeed Corporation; GlasRoc.
      - 2) G-P Gypsum Corporation; Dens-Glass Gold.
      - 3) Temple-Inland Inc.; GreenGlass.
      - 4) United States Gypsum Co.; Securock.

### **2.04 ACCESSORIES**

- A. Fasteners and Anchors; Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture:
  - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B117.
  - a. For steel framing from 0.033 to 0.112-inch-thick, use screws that comply with ASTM C954.
- B. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.

## **2.05 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS**

- A. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.
  1. Sheathing Tape: Self-adhering glass-fiber tape, minimum two inches wide, 10 by 10 threads/inch, of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.

## **2.06 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
  2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - GENERAL**

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
  1. Chapter 23, "Fastening Schedule" in Building Code of New York State.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.
- H. Select material sizes to minimize waste.
- I. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

- J. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.02 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

### **3.03 AIR-BARRIER AND WATER-RESISTANT GLASS-MAT GYPSUM SHEATHING**

- A. Install accessory materials according to sheathing manufacturer's written instructions and details to form a seal with adjacent construction, to seal fasteners, and ensure continuity of air and water barrier.
  - 1. Coordinate the installation of sheathing with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
  - 2. Install transition strip on roofing membrane or base flashing, so that a minimum of 3 inches of coverage is achieved over each substrate.
- B. Connect and seal sheathing material continuously to air barriers specified under other Sections as well as to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- C. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges
- D. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip, so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames, with not less than 1 inch of full contact.
  - 1. Transition Strip: Roll firmly to enhance adhesion.
  - 2. Preformed Silicone Extrusion: Set in full bed of silicone sealant applied to walls, frame, and air-barrier material.
- E. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, doors, and miscellaneous penetrations of sheathing material with foam sealant.
- F. Seal strips and transition strips around masonry reinforcing or ties and penetrations with termination mastic.
- G. Repair punctures, voids, and deficient lapped seams in strips and transition strips extending 6 inches beyond repaired areas in strip direction.
- H. Inspections: Air-barrier and water-resistant glass-mat gypsum sheathing, accessories, and installation are subject to inspection for compliance with requirements. Inspections may include the following:
  - 1. Continuity of air-barrier system has been achieved throughout the building envelope with no gaps or holes.
  - 2. Termination mastic has been applied on cut edges.
  - 3. Strips and transition strips have been firmly adhered to substrate.
  - 4. Compatible materials have been used.
  - 5. Transitions at changes in direction and structural support at gaps have been provided.
  - 6. Connections between assemblies (sheathing and sealants) have complied with requirements for cleanliness, surface preparation and priming, structural support, integrity, and continuity of seal.
  - 7. All penetrations have been sealed.

**3.04 CLEANING**

- A. Comply with applicable regulations.
- B. Do not burn scrap on project site.
- C. Do not burn scraps that have been pressure treated.
- D. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- E. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION 061000**

**SECTION 06 1000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nonstructural dimension lumber framing.
- B. Sheathing.
- C. Preservative treated wood materials.
- D. Concealed wood blocking, nailers, and supports.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 2500 - Weather Barriers: Air barrier over sheathing.

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- C. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.
- D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- E. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies 2018.
- F. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples 2021.
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- H. AWPA U1 - Use Category System: User Specification for Treated Wood 2023.
- I. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. PS 1 - Structural Plywood 2019.
- K. PS 20 - American Softwood Lumber Standard 2021.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. General: Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: S-P-F and/or SYP.
  - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at [www.alsc.org](http://www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

### **2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.
  - 2. Boards: Standard or No. 3.

### **2.03 CONSTRUCTION PANELS**

- A. Wall Sheathing: Glass mat faced gypsum with integral water-resistive and air barrier, ASTM C1177/C1177M, 5/8 inch thick.
  - 1. Edges: Square.
  - 2. Water Vapor Permeance: 1 perm, minimum, when tested in accordance with ASTM E96/E96M.
  - 3. Air Permeance, Sheathing: 0.001 cfm per square foot, maximum, when tested in accordance with ASTM E2178.
  - 4. Air Permeance, Assembly: 0.04 cfm per square foot, maximum, when tested in accordance with ASTM E2357.
  - 5. Fluid-Applied Flashing: Approved by sheathing manufacturer.
  - 6. Warranty:
    - a. Exposure: Manufacturer's standard; 12 months, against exposure damage, and dated from installation of product.
    - b. Defect: Manufacturer's standard; 5 years, against manufacturing defects, and dated from purchase of product.
    - c. Material: Manufacturer's standard; 5 years, dated from Date of Substantial Completion.
    - d. Effective Drainage Warranty: 12 years, dated from installation of product, when sheathing is used as substrate under approved, water-managed exterior insulation finish system (EIFS).
  - 7. Install sheathing in mock-up specified in Section [07 4213 - Flat Seamed and Corrugated Panels.]
  - 8. Manufacturers:
    - a. Products: Subject to compliance with requirements, provide one of the following:
      - 1) CertainTeed Corporation; GlasRoc.
      - 2) G-P Gypsum Corporation; Dens-Glass Gold.
      - 3) Temple-Inland Inc.; GreenGlass.
      - 4) United States Gypsum Co.; Securock.

### **2.04 ACCESSORIES**

- A. Fasteners and Anchors; Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture:
  - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B117.
  - a. For steel framing from 0.033 to 0.112-inch-thick, use screws that comply with ASTM C954.
- B. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.

## **2.05 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS**

- A. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.
  1. Sheathing Tape: Self-adhering glass-fiber tape, minimum two inches wide, 10 by 10 threads/inch, of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.

## **2.06 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
  2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - GENERAL**

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
  1. Chapter 23, "Fastening Schedule" in Building Code of New York State.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.
- H. Select material sizes to minimize waste.
- I. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.



- J. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.02 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

### **3.03 AIR-BARRIER AND WATER-RESISTANT GLASS-MAT GYPSUM SHEATHING**

- A. Install accessory materials according to sheathing manufacturer's written instructions and details to form a seal with adjacent construction, to seal fasteners, and ensure continuity of air and water barrier.
  - 1. Coordinate the installation of sheathing with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
  - 2. Install transition strip on roofing membrane or base flashing, so that a minimum of 3 inches of coverage is achieved over each substrate.
- B. Connect and seal sheathing material continuously to air barriers specified under other Sections as well as to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- C. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges
- D. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip, so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames, with not less than 1 inch of full contact.
  - 1. Transition Strip: Roll firmly to enhance adhesion.
  - 2. Preformed Silicone Extrusion: Set in full bed of silicone sealant applied to walls, frame, and air-barrier material.
- E. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, doors, and miscellaneous penetrations of sheathing material with foam sealant.
- F. Seal strips and transition strips around masonry reinforcing or ties and penetrations with termination mastic.
- G. Repair punctures, voids, and deficient lapped seams in strips and transition strips extending 6 inches beyond repaired areas in strip direction.
- H. Inspections: Air-barrier and water-resistant glass-mat gypsum sheathing, accessories, and installation are subject to inspection for compliance with requirements. Inspections may include the following:
  - 1. Continuity of air-barrier system has been achieved throughout the building envelope with no gaps or holes.
  - 2. Termination mastic has been applied on cut edges.
  - 3. Strips and transition strips have been firmly adhered to substrate.
  - 4. Compatible materials have been used.
  - 5. Transitions at changes in direction and structural support at gaps have been provided.
  - 6. Connections between assemblies (sheathing and sealants) have complied with requirements for cleanliness, surface preparation and priming, structural support, integrity, and continuity of seal.
  - 7. All penetrations have been sealed.

**3.04 CLEANING**

- A. Comply with applicable regulations.
- B. Do not burn scrap on project site.
- C. Do not burn scraps that have been pressure treated.
- D. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- E. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION 061000**

**SECTION 07 2100  
THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Foam Plastic Board Rigid Insulation
- B. Glass-fiber blankets.
- C. Insulation for Miscellaneous Voids

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2723 - Cavity Wall Unit Masonry: Masonry walls enclosing insulation.
- B. Section 07 5400 - Thermoplastic Membrane Roofing: Insulation specified as part of roofing system.
- C. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

**1.03 REFERENCE STANDARDS**

- A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 2023.
- B. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2022.
- C. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2022.
- D. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2023.
- F. ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics 2016 (Reapproved 2023).
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- H. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).
- I. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C 2022.
- J. ASTM E1414/E1414M - Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Insulation Inside Masonry Cavity Walls: Extruded-Polystyrene Board Insulation.
- B. Insulation Over Metal Stud Framed Walls, Continuous:
- C. Insulation in Metal Framed Walls: Batt insulation.

**2.02 FOAM BOARD INSULATION MATERIALS**

- A. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578.

1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88) per 1 inch thickness at 75 degrees F mean temperature.
5. Board Edges: Square.
6. Thickness: 2"
7. Products:
  - a. Dow Chemical Company; STYROFOAM HIGHLOAD 40:  
[www.dowbuildingsolutions.com/#sle](http://www.dowbuildingsolutions.com/#sle).
  - b. Kingspan Insulation LLC; GreenGuard XPS Type IV, 25 psi:  
[www.kingspan.com/#sle](http://www.kingspan.com/#sle).
  - c. Owens Corning Corporation; FOAMULAR Extruded Polystyrene (XPS) Insulation:  
[www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).

### **2.03 BATT INSULATION MATERIALS**

- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
  1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
  4. R -Values: Maximum R-value possible for wall cavity depth.
  5. Facing: FSK
  6. Products:
    - a. CertainTeed Corporation: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
    - b. Johns Manville: [www.jm.com/#sle](http://www.jm.com/#sle).
    - c. Owens Corning Corporation: [www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).
    - d. Approved equal.
- B. Insulation for Miscellaneous Voids:
  1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
  2. Spray Polyurethane Foam Insulation: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

### **3.02 BOARD INSTALLATION AT EXTERIOR CAVITY WALLS**

- A. Comply with insulation manufacturer's written instructions.
- B. Install boards horizontally on walls.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- D. CONTRACTOR IS CAUTIONED NOT TO CRUSH THE INSULATION WITH THE FASTENERS WHEN ATTACHING THE INSULATION.

### **3.03 BATT INSTALLATION**

- A. Install insulation in accordance with manufacturer's written instructions.

- B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- C. Friction fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

**3.04 MISCELLANEOUS VOIDS:**

- A. Insulate miscellaneous voids and cavity spaces to prevent gaps in insulation using the following materials:
- B. Glass-Fiber Insulation: Compact into void.
- C. Spray Polyurethane Insulation: Apply according to manufacturer's instructions.

**3.05 PROTECTION**

- A. Do not permit installed insulation to be damaged prior to its concealment.

**END OF SECTION**

**SECTION 07 2500  
WEATHER BARRIERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Peel and Stick Weather Barrier: Materials to make exterior walls and wall openings, water vapor resistant and airtight.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Testing Agency to be hired and paid for by the Contractor.
- B. Section 07 4213 - Flat Seamed and Corrugated Panels: Metal Panels.
- C. Section 07 6200 - Sheet Metal Flashing and Trim: Sheet metal flashings.
- D. Section 07 9200 - Joint Sealants: Sealing building expansion joints.

**1.03 DEFINITIONS**

- A. ABAA: Air Barrier Association of America.
- B. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.
- C. Air Barrier: Airtight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
- D. Vapor Retarder: Airtight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
  - 1. Water Vapor Permeance: For example:  $57.2 \text{ ng}/(\text{Pa s sq m}) = 1 \text{ perm}$ .
- E. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture resistant, to the degree specified, intended to be installed to shed water without sealed seams.

**1.04 REFERENCE STANDARDS**

- A. AATCC Test Method 127 - Test Method for Water Resistance: Hydrostatic Pressure 2018, with Editorial Revision (2019).
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).
- E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- F. ICC-ES AC308 - Acceptance Criteria for Water-Resistive Barriers 2016, with Editorial Revision (2021).

**1.05 SUBMITTALS**

- A. Product Data: Provide data on material characteristics.
- B. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- C. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

- 
- D. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification; keep copies of each contractor accreditation and installer certification on site during and after installation, and present on-site documentation upon request.

### 1.06 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle):
1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
  2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

### 1.07 MOCK-UP

- A. Install peel and stick weather barrier materials in mock-up specified in Section 07 4213 - Flat Seamed and Corrugated Panels.

### 1.08 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before and during installation.

## PART 2 PRODUCTS

### 2.01 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

- A. Air Barrier Membrane, Self-Adhered (Peel and Stick):
1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
  2. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure A (Desiccant Method) at 73.4 degrees F.
  3. Ultraviolet (UV) and Weathering Resistance: Approved in writing by manufacturer for up to 90 days of weather exposure.
  4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less (Class A), when tested in accordance with ASTM E84.
  5. Seam and Perimeter Tape: As recommended by sheet manufacturer.
- B. Manufacturer:
1. Henry Company: Blue Skin VP 160
  2. WR Meadows: SMP
  3. GCP: Perm-A-Barrier

### 2.02 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Peel and Stick Weather Barrier and Sealing Peel and Stick Weather Barrier Adjacent Substrates: As specified or as recommended by Peel and Stick Weather Barrier manufacturer.
1. Self-adhering flexible/stretchable tape.
    - a. Manufacturer:
      - 1) As recommended by Peel and Stick Weather Barrier manufacturer or Huber ZIP System Stretch Tape for doors and windows (10" x 75' rolls) if none is recommended.
- B. Joint Reinforcing Strip: As specified or as recommended by Peel and Stick Weather Barrier.
- C. Substrate Patching Membrane: As specified by or recommended by Peel and Stick Weather Barrier.
- D. Thinners and Cleaners: As specified or recommended by Peel and Stick Weather Barrier manufacturer.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready to accept the work of this section.

#### **3.02 PREPARATION**

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive self-adhering air barrier in accordance with manufacturer's instructions.

#### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's instructions.
- B. Peel and Stick Weather Barrier:
  - 1. Prepare substrate in manner recommended by membrane manufacturer; fill and tape joints in substrate and between dissimilar materials.
  - 2. Lap membrane shingle-fashion to shed water and seal laps air tight.
  - 3. Once Peel and Stick Weather Barrier is in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
  - 4. Use same material, or other material approved by Peel and Stick Weather Barrier manufacturer for the purpose, to seal to adjacent construction and as flashing.
  - 5. At wide joints, install self-adhering flexible/stretchable tape allowing for joint movement.
- C. Openings and Penetrations:
  - 1. Install Peel and Stick Weather Barrier , covering entire sill, jambs and head of openings extending at least 9 inches onto weather barrier on all sides of each opening. Install self-adhering flexible/stretchable tape at all opening corners over the top of the self-adhering membrane.
  - 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 9 inches wide; do not seal sill flange.
  - 3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using membrane at least 9 inches wide, covering entire depth of framing.
  - 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing. Install self-adhering flexible/stretchable tape at all opening corners.
  - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
  - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface with self-adhering flexible/stretchable tape .

#### **3.04 FIELD QUALITY CONTROL**

- A. Testing Agency: Testing agency to perform tests and inspections and prepare test reports. Testing agency to follow these requirements:
  - 1. Provide testing and inspection required by ABAA QAP.
  - 2. Allow access to Peel and Stick Weather Barrier work areas and staging.
  - 3. Do not cover Peel and Stick Weather Barrier work until tested, inspected, and accepted.
- B. Obtain approval of installation procedures by the Peel and Stick Weather Barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.

#### **3.05 PROTECTION**

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

**END OF SECTION**



**SECTION 07 2726  
FLUID-APPLIED MEMBRANE AIR BARRIERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fluid-applied membrane air barrier, vapor retarding.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Testing Agency to be hired and paid for by the Contractor.
- B. Section 06 1000 - Rough Carpentry: Exterior wall sheathing.
- C. Section 07 9200 - Joint Sealants: Sealants applied to adjacent work.

**1.03 DEFINITIONS**

- A. Air Barrier: Airtight barrier made of material that is relatively air impermeable but water vapor permeable, both to degree specified, with sealed seams and with sealed joints to adjacent surfaces.

**1.04 REFERENCE STANDARDS**

- A. ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method 1983 (Reapproved 2018).
- B. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers 2022.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Georgia Peach Green Building Rating System Submittals:
  - 1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this this information.
  - 2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project. Refer to Section 01 8113.
- C. Product Data: Provide data on material characteristics, performance criteria, and limitations.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.
- F. Warranty Documentation: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to project site in original packaging with seals unbroken and properly labeled.
- B. Store materials in their original undamaged packaging within clean, dry, and protected location at a temperature less than 90 degrees F.

### 1.08 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by materials manufacturer before, during, and after installation.
  - 1. Do not apply air barrier products when air or substrate temperatures are above 100 degrees F or below 20 degrees F.
  - 2. Allow wet substrates to dry prior to applying air barrier products.

### 1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Fluid-Applied, Vapor-Retarding Membrane Air and Water Barrier: Elastomeric, liquid silicone coating
  - 1. GE Elemax 2600 AWB Silicone Air & Water Barrier System.
  - 2. Dow Corning Silicone DefendAir 200 Air & Water Barrier System.
  - 3. Pecora XL-Perm Ultra VP Fluid Applied STPU System.

### 2.02 FLUID-APPLIED MEMBRANE AIR BARRIER ASSEMBLY

- A. Applications:
  - 1. Apply to the exterior wall sheathing.
  - 2. Install fluid applied membrane in mock-up specified in Section [07 4213 - Flat Seamed and Corrugated Panels.]
- B. Fluid-Applied Membrane Air Barrier: Single-component, vapor permeable, 100 percent silicone elastomeric air barrier.
  - 1. Tensile Elongation: Not less than 542 per cent, ASTM D412.
  - 2. Tensile Strength: Not less than 175 psi, ASTM D412
  - 3. Peel Adhesion: ASTM D4541, not less than the following:
  - 4. 44 psi, due to substrate failure, on exterior grade gypsum sheathing substrate.
  - 5. 126 psi on concrete substrate.
  - 6. Water Vapor Permeability: Not more than 10.5 Perms, ASTM E96.
  - 7. Air Permeance: Not more than 0.00004 cfm/ft<sup>2</sup> of area at 1.57 psf pressure differential, ASTM E-2178.
  - 8. Resistance to Wind Driven Rain: ASTM D6904, must pass test.
  - 9. Self Sealability around Nails: ASTM D1970, must pass test.
  - 10. Crack Bridging Ability: 1/16", ASTM C1305, must pass test.
  - 11. Surface Burning: ASTM E84, Flame Spread: 15, Smoke Developed: 95, NFPA Class A, UBC Class 1.
  - 12. UV and Weathering Resistance: No degradation after 5,000 hours, ASTM G154.

### 2.03 ACCESSORIES

- A. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Primer: Liquid waterborne or solvent-borne primer recommended for substrate by manufacturer of air barrier material.
- C. Liquid Flashing (Detail Sealant/Adhesive): GE Elemax 5000 Liquid Flashing, GE SCS2000 SilPruf, GE SCS2700 SilPruf LM, GE SCS9000 SilPruf NB or GE SWS, for conditions as recommended by the air barrier manufacturer.
- D. Joint Reinforcing Strip: Air barrier manufacturer's reinforcing fabric.

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- E. Substrate Patching Membrane: Manufacturer's standard substrate filler.
  - F. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
  - G. Sheet Flashing: GE Elemax SS Flashing, in 6", 12", 18", 24" or 36" widths, as recommended by manufacturer's details.
  - H. Silicone Transition Membrane: GE UST2200 UltraSpan, available in 3", 6", or 12" widths, as recommended by manufacturer's details.
  - I. Pre-cured silicone molded corners: GE USM UltraSpan inside and outside corners, as recommended by manufacturer's details.
  - J. Joint Sealant: ASTM C 920, single-component, neutral-curing silicone; Class 100/50 (low-modulus), Grade NS, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O. Comply with Division 07 Section "Joint Sealants."
    - 1. Thinners and Cleaners: As recommended by material manufacturer.
    - 2. Crack Fillers: Provide substrate manufacturer's recommended crack fillers or sealants compatible with air barrier assembly components and adjacent materials.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready to accept work of this section.
- B. Verify that surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, excess alkalinity, and other conditions affecting performance of this work.
- C. Verify that new concrete and mortar to receive coating application has cured in accordance with substrate and air barrier coating manufacturer's instructions.
- D. Preinstallation Testing: Prior to application of air barrier coatings, perform following tests to verify condition of substrate in accordance with manufacturer's instructions.
  - 1. Adhesion: Perform field adhesion tests in accordance with ASTM D4541 to determine if primer is required to adhere air barrier coatings to substrates.
  - 2. Alkalinity: Verify substrate is within alkalinity range acceptable to manufacturer.
  - 3. Moisture Level: Verify substrate moisture content is acceptable to manufacturer, and substrate is visibly dry and free of moisture.
    - a. Test for capillary moisture by plastic sheet method in accordance with ASTM D4263.
- E. Proceed with work once conditions comply with air barrier coating manufacturer's recommendations.

#### **3.02 PREPARATION**

- A. Protect work of other trades against damage from application of air barrier coatings.
- B. Protect adjacent surfaces not designated to receive air barrier coatings; provide protection for pedestrians, vehicles, landscaping, and surrounding areas to prevent contact with coating materials.
- C. Clean substrates to remove contaminants and foreign material by pressure cleaning, wire brushing, grinding or other method recommended by air barrier coatings manufacturer.
- D. Prepare substrates in accordance with air barrier coating manufacturer's written instructions.
- E. Repair deteriorated or damaged substrates, repair masonry joints, and fill cracks, voids, honeycombs, and other defects using materials as recommended by air barrier coating manufacturer and allow patching materials to fully cure.
  - 1. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

2. Fill cracks larger than 1/16 inch wide using applicable joint sealant, and fill cracks larger than 1 inch wide using joint sealant and compatible bond breaker where movement is expected.
- F. Primer: Apply primer to substrates where required based upon preinstallation testing and air barrier coating manufacturer's recommendations, using application methods and rate of application recommended by manufacturer; allow primer to fully dry prior to application of air barrier coating.

### **3.03 APPLICATION**

- A. Apply air barrier system materials in accordance with manufacturer's instructions.
- B. Transition Strips and Silicone Sealants: Install with approved sealants in accordance with manufacturer's written instructions.
1. Form sealed joints to windows, wall framing systems, door and louver frames, roofing system perimeters, and at interface with other adjacent materials utilizing compatible components that form air barrier assembly.
  2. Ensure laps and bonds are adhered to substrates.
- C. Air Barrier Coating: Apply air barrier coating using application methods and rate of application recommended by manufacturer, using nap roller or airless sprayer, in accordance with requirements of authorities having jurisdiction (AHJ).
1. Provide wet application not less than 30 mils, 0.030 inch thick, or more as required by substrate conditions, with dry film thickness (DFT) not less than 15 mils, 0.015 inch thick.
  2. Apply additional coats as required to provide uniform, continuously cured, airtight and watertight film.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Do not cover installed air barriers until required inspections have been approved.
- C. Testing agency to perform the following tests:
1. Verification that substrate preparation meets requirements.
  2. Testing and certification that coating materials comply with requirements for thickness and continuity.
  3. Testing of application for compliance with adhesion and film thickness requirements.
- D. If testing indicates products or current installation does not meet requirements, Contractor is to have materials removed from substrates that are not in compliance, and have other necessary corrections made to ensure application meets designated requirements.
- E. Obtain approval of installation procedures by fluid applied membrane manufacturer based on mock-up installed in place, prior to proceeding with remainder of installation.

### **3.05 CLEANING**

- A. During completion of this work, remove overspray and excess material, using materials and methods approved by manufacturer that will not damage adjacent materials.
- B. Clean and repair adjacent surfaces damaged by air barrier coating application.

### **3.06 PROTECTION**

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.
- B. Allow air barrier coatings to fully cure before exposure to traffic or other construction operations.
- C. Prevent damage to coatings from construction operations or other causes.
- D. Replace damaged air barrier coatings prior to concealment behind subsequent construction.

**END OF SECTION**

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**SECTION 07 4213  
FLAT SEAMED AND CORRUGATED PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured preformed and prefinished metal panels with miscellaneous, flashing, drip flashing, accessories and fastening devices.
- B. Hat Channels.
- C. Felt Underlayment.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Testing Agency to be hired and paid for by the Contractor.
- B. Section 05 4000-Cold-Formed Metal Framing: Wall panel substrate.
- C. Section 05 7500 - Decorative Formed Metal: Break metal, closure, trim, end caps and filler panels.
- D. Section 06 1000 - Rough Carpentry: Sheathing.
- E. Section 07 2726 - Fluid Applied Membrane.
- F. Section 07 6200 - Sheet Metal Flashing and Trim: Flashing and trim.
- G. Section 07 2500 - Weather Barriers: Peel and Stick weather barrier around existing exterior windows and penetrations.
- H. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- D. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2023.
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
  - 1. Physical characteristics of components shown on shop drawings.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation instructions and recommendations.
- C. Shop Drawings: Indicate dimensions, layout, joints, construction details,, expansion joints, flashing, sealant locations and methods of anchorage.
- D. Samples: Submit two samples of wall panel and soffit panel, 12 inches by 12 inches in size illustrating finish color, sheen, and texture.

- E. Installer's qualification statement.
- F. Example of Installer's Warranty as required below in paragraph 1.09.D.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in installing products specified in this section with minimum three years of documented experience.

#### **1.06 PREINSTALLATION MEETING**

- A. Hold a Preinstallation meeting prior to constructing the Mock-Up required below.
- B. Meeting to be conducted by the Contractor and attended by the Contractor's Project Manager, Superintendent, the subcontractor, the Architect and the Owner's rep.

#### **1.07 MOCK-UPS**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Construct mock-ups of:
  - 1. Flat seamed panels include vertical, soffit and curved installations.
  - 2. Corrugated panels include horizontal installations.
  - 3. Include sheathing, fluid applied membrane, 30# felt and 7/8" hat channels. Also, include replacement of batt insulation, flashing, and sealants.
- C. Coordinate the location with the mock-up required in Section 05 4000 -Cold Formed Metal Framing. Locate to include an existing exterior window as directed by the Architect.
- D. Approved mock-ups may remain as part of work.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

#### **1.09 FIELD CONDITIONS**

- A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.

#### **1.10 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 20-year manufacturer warrant from date of Material Completion against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.
- C. Special Warranty: Provide 2-year warranty from date of Material Completion covering water tightness and integrity of seals of metal wall panels. Complete forms in Owner's name and register with warrantor.
- D. Installation Warranty: Installer of metal panels (including sheathing, fluid applied membrane, 30# felt underlayment and 7/8" hat channels to provide 10-year warranty from date of Material Completion that includes coverage for watertightness, defective materials and/or workmanship. This warranty will also clearly include materials, equipment, and labor, necessary to access these areas, and the removal of any materials to effect repairs and restore to watertight conditions.

## **PART 2 PRODUCTS**

### **2.01 PANELS**

- A. Curved, Soffit and Horizontal Flat Seamed Panels - Concealed Fasteners:
  - 1. Basis of Design: Berridge Manufacturing Company - Curved Flat Seam, [www.berridge.com/#sle](http://www.berridge.com/#sle).
  - 2. ATAS International Inc,
  - 3. Englert, Inc; B4000 [www.englertinc.com/#sle](http://www.englertinc.com/#sle).
- B. Panel System: Factory fabricated prefinished metal panel system, site assembled.
  - 1. Material: 24 Gauge Steel.
  - 2. Coverage: 8".
  - 3. Texture: Smooth.
  - 4. Finish: Kynar 500 or Hylar 5000.
  - 5. Fasteners: Concealed.
  - 6. Accessories:
  - 7. Finish color: As selected by the Architect from manufacturer's standard and premium colors.
- C. Corrugated Panels:
  - 1. Basis of Design: ATAS International, Inc - 12 Metafor, [www.atas.com/#sle](http://www.atas.com/#sle).
  - 2. Berridge Manufacturing Company: [www.berridge.com/#sle](http://www.berridge.com/#sle).
  - 3. Englert, Inc; B4000 [www.englertinc.com/#sle](http://www.englertinc.com/#sle).
- D. Panel System: Factory fabricated prefinished metal panel system, site assembled.
  - 1. .032 aluminum.
  - 2. Texture: Smooth.
  - 3. Coverage: 12"
  - 4. Depth: 5/8"
  - 5. Finish: 70% PVDF resin-based coatings.
  - 6. Fasteners: Concealed.
  - 7. Finish color: As selected by the Architect from manufacturer's standard and premium colors.

### **2.02 PANEL REQUIREMENTS**

- A. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
- B. Fire Performance: Tested in accordance with, and complying with acceptance criteria of NFPA 285.
- C. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
- D. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
- E. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
- F. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
- G. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- H. Expansion Joints: Same material, thickness and finish as panels; manufacturer's standard brake formed type, of profile to suit system.

- I. Trim, Closure Pieces, End Caps and other accessories for a complete and watertight installation: Same material, thickness and finish as panels; brake formed to required profiles.
- J. Anchors: As recommended by the panel manufacturer.

### **2.03 ACCESSORIES**

- A. Hat channels.
  - 1. Size: 7/8"
  - 2. 20 Gauge.
  - 3. Spacing: 16" on center max.
- B. Felt underlayment.
  - 1. 30#.
  - 2. ASTM D 226 Type II

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that building framing is ready to receive panels.
- B. Beginning installation of substrates and/or panels indicates acceptances of framing and substrates.

### **3.02 PREPARATION**

- A. Install hat channels perpendicular to panel length, securely fastened to substrates and **shimmed and leveled to uniform plane**, and spaced at intervals indicated.
- B. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

### **3.03 INSTALLATION**

- A. Install panels on walls and soffits in accordance with manufacturer's instructions.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Testing Agency: Testing agency to perform tests and inspections and prepare test reports. Testing agency to follow these requirements:
  - 1. Verification that substrate preparation meets requirements.
  - 2. Testing and certification that panels, flashing and sealants comply with requirements for thickness, continuity and watertightness.
- C. If testing indicates products or installation do not meet requirements including watertightness, Construction Manager is to have materials removed that are not in compliance, and make corrections to ensure installation meets designated requirements. And then re-test.
- D. Obtain approval of installation procedures by panel manufacturers based on mock-ups installed in place, prior to proceeding with remainder of installation.

### **3.05 CLEANING**

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.

### **3.06 PROTECTION**

- A. Protect metal wall panels until completion of project.
- B. Touch-up, repair, or replace damaged wall panels or accessories before Date of Substantial Completion.

**END OF SECTION**



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**SECTION 07 6200  
SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fabricated sheet metal items, including flashing, and counter flashing.
- B. Sealants for joints within sheet metal fabrications.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wood nailers for sheet metal work.
- B. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- D. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- E. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- F. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- H. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Samples: Submit two samples in size illustrating metal finish color.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

**1.06 WARRANTY**

- A. Special Warranty on Finishes: Manufacturer agrees to repair or replace flashing, trim, gutters and downspouts that show evidence of deterioration of factory-applied finish within warranty period.
  - 1. Finish deterioration:
    - a. Color fading in excess 5 Hunter units when tested per ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested per ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 PERFORMANCE REQUIREMENTS**

- A. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

### **2.02 SHEET MATERIALS**

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, (0.0239 inch) thick base metal.
- B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.
  1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
  2. Color: As selected by Architect from manufacturer's standard colors.
- C. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 0.063 thick; plain finish shop pre-coated.
  1. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
  2. Color: As selected by Architect from manufacturer's standard colors.

### **2.03 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

### **2.04 ACCESSORIES**

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Concealed Sealants: Non-curing butyl sealant.
- D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- E. Plastic Cement: ASTM D4586/D4586M, Type I.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

### **3.02 INSTALLATION**

- A. Secure flashings in place using concealed fasteners only where permitted.

- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

**END OF SECTION**

**SECTION 07 7100  
ROOF SPECIALTIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured roof specialties, including prefinished coping, fascia, gutters, and downspouts.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Testing Agency to be hired and paid for by the Contractor.
- B. Section 07 2500 - Weather Barriers: Peel and stick weather barrier applied under coping.

**1.03 REFERENCE STANDARDS**

- A. NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- C. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- D. NRCA (RM) - The NRCA Roofing Manual 2023.
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.
- B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.
- C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
- D. Samples: Submit two appropriately sized samples of required components.

**1.05 WARRANTY**

- A. See Section 01 6000 for additional warranty requirements.
- B. Special Warranty on Finishes: Manufacturer agrees to repair or replacerroof specialties that show evidence of deterioration of factory-applied finish within warranty period.
  - 1. Finish deterioration:
    - a. Color fading in excess of 5 Hunter units when tested per ASTM D 2244.
    - b. Chalking in excess of No. 8 rating when tested per ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 30 years non-prorated from date of Substantial Completion.

**PART 2 PRODUCTS**

**2.01 COMPONENTS**

- A. ROOF-EDGE FASCIA - PREFINISHED: Manufactured, flush panels Provide matching corner piece, splice plates, flashing and trim.
  - 1. Material: Prefinished aluminum, 12" flush smooth panels.
  - 2. Thickness: 032
  - 3. Optional concealed stainless steel clips.
  - 4. Color: As selected by Architect from 36 stocked colors.

- a. Manufacturers:
  - 1) Pac-Clad Peterson a Carlisle Company
  - 2) Approved Equal.
- B. COPINGS - PREFINISHED: Factory fabricated to sizes required; corners mitered; concealed fasteners.
  1. Formed to actual wall width with continuous cleats on both sides. Sloped to drain with joint covers and welded corners.
  2. Manufactured in section lengths not exceeding 12 feet with extended vertical leg terminating in drip-edges.
  3. Formed Aluminum: 0.063 inch thick, coil coated finish.
  4. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
  5. Finish: 70 percent polyvinylidene fluoride.
  6. Manufacturers:
    - a. Hickman Company, W. P.
    - b. Metal-Era, Inc.
    - c. Carlisle Syntec Systems – SecurEdge Series
    - d. Approved Equal
- C. REGLETS AND COUNTER FLASHINGS - PREFINISHED:
  1. Reglets: Manufactured to interlock reglet and counterflashing:
    - a. Formed Aluminum: 0.063 inch thick, coil coated.
    - b. Corners: Factory mitered, clinched and sealed watertight.
    - c. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, and with channel along top edge for sealant.
    - d. Masonry-Embedded Type: Provide reglets for embedment in masonry mortar joint with channel along top edge for sealant.
  2. Counterflashings: Manufactured of heights to overlap top edges of base flashing by minimum of 4 inches and not longer than 12 feet. Formed to snap into reglets and compress against base flashings with lapped joints.
    - a. Formed Aluminum: 0.063 inch thick, coil coated.
  3. Accessories:
    - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber retainer to secure flexible flashing into reglet where reglet is provided separate from the metal counter flashing or where clearance does not permit use of standard metal counterflashing.
  4. Manufacturers
    - a. Castle Metal Products.
    - b. Cheney Flashing Company.
    - c. Fry Reglet Corporation.
    - d. Hickman Company, W. P.
    - e. Metal-Era, Inc.
    - f. Approved Equal.
- D. ROOF-EDGE DRAINAGE SYSTEMS - PREFINISHED
  1. Manufacturers:
    - a. [Hickman Company, W. P.](#)
    - b. [Metal-Era, Inc.](#)
    - c. [Perimeter Systems; a division of SAF.](#)
    - d. Approved equal.
  2. Gutters: Manufactured in lengths not exceeding 12 feet, with matching corner pieces, and required accessories. Elevate back edge a minimum of 1 inch above front edge. Fabricate and furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint

- covers. Color to match gutters and downspouts.
- a. Aluminum Sheet: 0.063 inch thick, coil coated.
- b. Finish: Two-coat fluoropolymer.
- c. Color as selected by Architect from manufacturer's full range of standard colors.
- d. Gutter Profile: As indicated according to SMACNA's "Architectural Sheet Metal Manual" – Style "A", rectangular profile.
- e. Corners: Factory mitered and continuously welded.
- f. Joints:
  - 1) Rivet joints together.
  - 2) Seal metal joints with sealant.
- g. Gutter Supports: Manufacturer's standard supports. Color to match gutters and downspouts.
- 3. Downspouts: Plain rectangular shape with mitered elbows. Furnish with metal hangers, made of same material as downspouts, and anchors.
  - a. Formed Aluminum: 0.063 inch thick, coil coated.
- 4. Downspout to Storm Drain Connector: Reuse existing.

## **2.02 FINISHES**

- A. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; two coat, thermally cured fluoropolymer coil coated finish system.
- B. Color as selected by Architect from manufacturer's full range of standard colors.
- C. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as indicated.

## **2.03 ACCESSORIES**

- A. Sealant for Joints in Linear Components: As recommended by component manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that deck, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

### **3.02 INSTALLATION**

- A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Seal joints within components when required by component manufacturer.
- C. Comply with SMACNA (ASMM) drawing details.
- D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.
- E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.
- F. Install peel and stick weather barrier continuously under coping.

### **3.03 FIELD QUALITY CONTROL**

- A. Testing Agency: Testing agency to perform tests and inspections and prepare test reports. Testing agency to follow these requirements:
  - 1. Provide testing and inspection required by ABAA QAP.
  - 2. Allow access to Peel and Stick Weather Barrier work areas and staging.
  - 3. Do not cover Peel and Stick Weather Barrier work until tested, inspected, and accepted.

- B. Obtain approval of installation procedures by the Peel and Stick Weather Barrier manufacturer prior to proceeding with installation of coping.

**END OF SECTION**

**SECTION 07 8400  
FIRESTOPPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Firestopping systems.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 2116 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

**1.03 REFERENCE STANDARDS**

- A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2023a.
- C. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus 2023a.
- D. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015, with Editorial Revision (2021).
- E. ITS (DIR) - Directory of Listed Products Current Edition.
- F. FM (AG) - FM Approval Guide Current Edition.
- G. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2022).
- H. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.
- I. UL (FRD) - Fire Resistance Directory Current Edition.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Installer Qualification: Submit qualification statements for installing mechanics.

**1.05 QUALITY ASSURANCE**

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
  - 1. Listing in UL (FRD) will be considered as constituting an acceptable test report.

**1.06 FIELD CONDITIONS**

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Firestopping Manufacturers:
  - 1. 3M Fire Protection Products: [www.3m.com/firestop/#sle](http://www.3m.com/firestop/#sle).
  - 2. A/D Fire Protection Systems Inc: [www.adfire.com/#sle](http://www.adfire.com/#sle).
  - 3. Hilti, Inc: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
  - 4. Passive Fire Protection Partners: [www.firestop.com/#sle](http://www.firestop.com/#sle).



5. Specified Technologies Inc: [www.stifirestop.com/#sle](http://www.stifirestop.com/#sle).
6. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
7. USG - Fire Stop Systems

## **2.02 MATERIALS**

- A. Firestopping Materials: Any materials meeting requirements.
- B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
- C. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
- D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- E. Fire Ratings: Refer to drawings for required systems and ratings.

## **2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS**

- A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
- B. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.

## **2.04 FIRESTOPPING SYSTEMS**

- A. Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
- B. Joints in or between Fire-Resistance-Rated Construction: Provide fire-resistive joint systems with ratings determined per ASTM E 1966 or UL 2079:
  1. Joints include those installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies, and roofs or roof/ceiling assemblies.\
- C. Joints in Smoke Barriers: Provide fire-resistive joint systems with ratings determined per UL 2079.
  1. L-Rating: Not exceeding 5.0 cfm/ft of joint at 0.30 inch wg at both ambient and elevated temperatures.
- D. Firestopping Between Edge of Floor Slab and Curtain Wall (without Penetrations): Fiber firestopping with smoke seal coating; UL Design No. [CW-S-2001 or CW-S-2002], T Rating 3/4 hour.
- E. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of construction they will join.
- F. Firestopping: Any material meeting requirements.
  1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.

**3.02 INSTALLATION**

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

**3.03 CLEANING**

- A. Clean adjacent surfaces of firestopping materials.

**3.04 PROTECTION**

- A. Protect adjacent surfaces from damage by material installation.

**END OF SECTION**

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**SECTION 07 9200  
JOINT SEALANTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Division 09 Section "Acoustical Panel Ceilings" for sealing edge moldings at perimeters with acoustical sealant.
- B. Section 09 3000 - Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.

**1.03 REFERENCE STANDARDS**

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C834 - Standard Specification for Latex Sealants 2017 (Reapproved 2023).
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016 (Reapproved 2023).
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2022.
- F. ASTM C1311 - Standard Specification for Solvent Release Sealants 2022.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
  - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  - 2. List of backing materials approved for use with the specific product.
  - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  - 4. Substrates the product should not be used on.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- D. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
  - 1. Dow Chemical Company: 790 & 795: [consumer.dow.com/en-us/industry/ind-building-construction.html/#sle](http://consumer.dow.com/en-us/industry/ind-building-construction.html/#sle).
  - 2. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
  - 3. Pecora Corporation: [www.pecora.com/#sle](http://www.pecora.com/#sle).
  - 4. Sika Corporation: SikaSil-C99: [www.usa-sika.com/#sle](http://www.usa-sika.com/#sle).
  - 5. Tremco Commercial Sealants & Waterproofing: Spectrem 1. [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).

### **2.02 JOINT SEALANT APPLICATIONS**

- A. Scope:
  - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
    - a. Wall expansion and control joints.
    - b. Joints between door, window, and other frames and adjacent construction.
    - c. Joints between different exposed materials.
    - d. Openings below ledge angles in masonry.
    - e. Other joints indicated below.
  - 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
    - a. Joints between door, window, and other frames and adjacent construction.
    - b. Other joints indicated below.
  - 3. Do not seal the following types of joints.
    - a. Intentional weepholes in masonry.
    - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
    - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
    - d. Joints where installation of sealant is specified in another section.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
  - 1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.
  - 2. Lap Joints between Manufactured Metal Panels: Butyl rubber, non-curing.
  - 3. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant.
- C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
  - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
  - 2. Wall and Ceiling Joints in Wet Areas: Non-sag polyurethane sealant for continuous liquid immersion.
  - 3. Floor Joints in Wet Areas: Non-sag polyurethane "non-traffic-grade" sealant suitable for continuous liquid immersion.
  - 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
- D. Interior Wet Areas: ; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, other similar items, and vanity tops..

### 2.03 JOINT SEALANTS - GENERAL

- A. Colors of Exposed Joint Sealants: Custom color or from manufacturer's full range of standard colors as selected by Architect.

### 2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  - 1. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
  - 2. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
  - 1. Color: White.
- C. Tamper-Resistant, Silyl-Terminated Polyether (STPE) and Polyurethane (STPU) Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 25 percent, minimum
  - 2. Hardness Range: 50 to 60, Shore A, when tested in accordance with ASTM C661.
  - 3. Color: To be selected by Architect from manufacturer's standard range.
  - 4. Manufacturers:
    - a. Pecora Corporation; DynaFlex SC (Security Sealant): [www.pecora.com/#sle](http://www.pecora.com/#sle).
- D. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
- E. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
  - 1. Movement Capability: Plus and minus 35 percent, minimum.
- F. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
- G. Non-Curing Butyl Sealant: Solvent-based, single component, non-sag, non-skinning, non-hardening, non-bleeding; non-vapor-permeable; intended for fully concealed applications.

### 2.05 SELF-LEVELING SEALANTS

- A. Self-Leveling Silicone Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
  - 1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
- B. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multi-component; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
  - 1. Movement Capability: Plus and minus 25 percent, minimum.

### 2.06 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

#### **3.02 PREPARATION**

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

#### **3.03 INSTALLATION**

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Install bond breaker backing tape where backer rod cannot be used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

**END OF SECTION**

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**SECTION 07 9513  
EXPANSION JOINT COVER ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Expansion joint cover assemblies for wall and soffit surfaces.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Roof expansion and control joint covers.

**1.03 REFERENCE STANDARDS**

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- C. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles 2020.
- D. UL (DIR) - Online Certifications Directory Current Edition.
- E. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Installation Templates: For frames and anchors to be embedded in concrete or masonry, furnish templates to relevant installers; include installation instructions and tolerances.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish.
- C. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction and anchorage locations.
- D. Samples: Submit two samples 6 inch long, illustrating profile, dimension, color, and finish selected.
- E. Manufacturer's Installation Instructions: Indicate rough-in sizes and required tolerances for item placement.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 for additional provisions.

**PART 2 PRODUCTS**

**2.01 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS**

- A. Exterior Wall Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. Balco, Inc; Exterior Wall, Elastomeric Face Seal System (FCWW): [www.balcousa.com/#sle](http://www.balcousa.com/#sle).
    - b. Construction Specialties, Inc; Exterior Wall Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
    - c. EMSEAL Joint Systems, Ltd; BG System: [www.emseal.com/#sle](http://www.emseal.com/#sle).
    - d. Or Approved Equal..
    - e. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 EXPANSION JOINT COVER ASSEMBLIES**

- A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.
  - 1. Joint Dimensions and Configurations: As indicated on drawings, nominal 2-inch width.
  - 2. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
  - 3. Joint Cover Styles: As indicated on drawings.
  - 4. Joint Movement Capability: If not indicated, provide minimum plus/minus 50 percent joint movement capability.
  - 5. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
  - 6. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.

## **2.03 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper; or ASTM B308/B308M, 6061 alloy, T6 temper.
  - 1. Exposed Finish Outdoors: Natural anodized, color to be selected from manufacturer's available full color range.
  - 2. Exposed Finish at Walls and Ceilings: Natural anodized, color to be selected from manufacturer's available full color range.
- B. Resilient Seals:
  - 1. For Ceilings: Any resilient material, flush, pleated, or hollow gasket.
  - 2. Color: Dark Gray for Ceilings. Vertical wall joint seal color to be selected from manufacturer's full available color range.
- C. Anchors and Fasteners: As recommended by cover manufacturer.
- D. Ferrous Metal Anchors: Galvanized where embedded in concrete or in contact with cementitious materials.
- E. Threaded Fasteners: Aluminum.
- F. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.
- B. Verify that frames and anchors installed by others are in correct locations and suitable for installation of remainder of assembly.

### **3.02 INSTALLATION**

- A. Install components and accessories in accordance with manufacturer's instructions.
- B. Align work plumb and level, flush with adjacent surfaces.
- C. Rigidly anchor to substrate to prevent misalignment.

### **3.03 PROTECTION**

- A. Do not permit traffic over unprotected floor joint surfaces.
- B. Provide strippable coating to protect finish surface exposed to view.

**END OF SECTION**



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**SECTION 08 5113  
WINDOW SCREENS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Window Screens

**1.02 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. AAMA 612 - Voluntary Specification, Performance Requirements, and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum 2020, with Errata (2022).
- C. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- E. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- F. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Include information on the aluminum frame and finish. Also include information on the screen fabric.
- C. Shop Drawings. Include screen dimensions based on field measurements. Show method of attachment to existing windows.

**1.04 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Material Completion.

**PART 2 PRODUCTS**

**2.01 WINDOW SCREENS**

- A. Custom fabricated aluminum framed window screens.
  - 1. Screen material:
    - a. Charcoal gray fiberglass screen fabric.
  - 2. Frame material.
    - a. Aluminum.
      - 1) Finish: Match finish on existing windows.
      - 2) Color: Match existing window.
- B. Measurements
  - 1. Field verify measurements to determine screen size(s) prior to preparing shop drawings.

**PART 3 EXECUTION**

**3.01 WINDOW SCREEN INSTALLATION**

- A. Replace existing window screens at locations indicated.

**END OF SECTION**

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**SECTION 09 2116  
GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal stud wall framing.
- B. Acoustic insulation.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.
- C. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- D. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- E. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.
- F. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

**1.03 REFERENCE STANDARDS**

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing 2020.
- B. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).
- D. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- E. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- F. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.
- G. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- I. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
- J. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- K. GA-216 - Application and Finishing of Gypsum Panel Products 2021.
- L. GA-600 - Fire Resistance and Sound Control Design Manual 2021.
- M. UL (FRD) - Fire Resistance Directory Current Edition.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:

1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on non-wicking supports, in accordance with manufacturer's recommendations.

## **PART 2 PRODUCTS**

### **2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
  1. See PART 3 for finishing requirements.

### **2.02 BOARD MATERIALS**

- A. Manufacturers - Gypsum-Based Board:
  1. American Gypsum Company; \_\_\_\_: [www.americangypsum.com/#sle](http://www.americangypsum.com/#sle).
  2. CertainTeed Corporation; \_\_\_\_: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
  3. Georgia-Pacific Gypsum; \_\_\_\_: [www.gpgypsum.com/#sle](http://www.gpgypsum.com/#sle).
  4. Gold Bond Building Products, LLC provided by National Gypsum Company; \_\_\_\_: [www.goldbondbuilding.com/#sle](http://www.goldbondbuilding.com/#sle).
  5. USG Corporation; \_\_\_\_: [www.usg.com/#sle](http://www.usg.com/#sle).
  6. Substitutions: See Section 01 6000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
  2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  3. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Long Edges: Tapered.

### **2.03 GYPSUM BOARD ACCESSORIES**

- A. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
- B. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
  1. Fiberglass Tape: 2-inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
  2. Joint Compound: Setting type, field mixed.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.

### **3.02 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.
- B. Studs: Space studs at 16 inches on center.

1. Extend partition framing to structure where indicated and to ceiling in other locations unless otherwise noted.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

### **3.03 BOARD INSTALLATION**

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
  1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- C. Install gypsum board over supplemental metal stud framing used to infill existing wall opening resulting from the removal of mechanical exhaust fan units at multiple locations.
  1. Install new gypsum board to match the orientation of adjacent existing gypsum board finish. Coordinate installation of supplemental metal stud infill framing to adequately support new gypsum board material.
  2. Prep, tape and finish joints between new gypsum board panels and adjacent existing gypsum wall finish feathering joints into adjacent finish to eliminate edges, ridges, and noticeable transitions.
  3. Prime and paint infill gypsum board surfaces to match existing adjacent wall finish.

### **3.04 INSTALLATION OF TRIM AND ACCESSORIES**

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.

### **3.05 JOINT TREATMENT**

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
  2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

### **3.06 TOLERANCES**

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

### **3.07 CLEANING**

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Clean \_\_\_\_\_.

**3.08 PROTECTION**

- A. Protect installed gypsum board assemblies from subsequent construction operations.

**END OF SECTION**

**SECTION 09 9113  
EXTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Field application of paints.

**1.02 RELATED REQUIREMENTS**

- A. Section 02 5000 - Building Remediation: Existing concrete block pointing and cleaning and existing concrete cleaning.

**1.03 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2019.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.
- D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- E. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- F. SSPC-SP 2 - Hand Tool Cleaning 2018.
- G. SSPC-SP 3 - Power Tool Cleaning 2018.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
  - 3. Manufacturer's installation instructions.
- C. Samples: Submit two paper chip samples illustrating range of colors available for each surface finishing product scheduled.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
  - 3. Label each container with color and location in addition to the manufacturer's label.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

### **1.06 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
  - 1. Basis-of-Design Product: Sherwin-Williams Company
  - 2. Benjamin Moore & Co.
  - 3. PPG Paints
- C. Primer Sealers: Same manufacturer as top coats.

### **2.02 PAINTS AND FINISHES - GENERAL**

- A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
  - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
  - 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
  - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
    - b. Architectural coatings VOC limits of the State in which the Project is located.
  - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Flammability: Comply with applicable code for surface burning characteristics.
- D. Colors: As selected by Architect from manufacturer's full range.
- E. Sheens: As selected by Architect from manufacturer's full range.

### **2.03 PAINT SYSTEMS - EXTERIOR**

- A. Existing Exterior split-faced and smooth faced concrete block and existing exterior concrete including but not limited to the existing columns, concrete building walls and exposed concrete between existing finish grade and metal panels.
  - 1. Comply with manufacturer's written instructions.
  - 2. Products
    - a. Prime Coat: LX02W0050 - LXN C & M PRIMER WH



- b. Tops Coats: Two Coats: A80W01151 - SuperPaint Exterior Latex Flat Extra White

#### **2.04 ACCESSORY MATERIALS**

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. The existing exterior concrete and concrete block are to be soft washed prior to painting. Refer to Section 02 5000. Do not begin application of paints until this work is completed and has dried.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. Beginning to paint indicates acceptance of the substrates.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

#### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.

#### **3.03 APPLICATION**

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Remove before painting and reinstall electrical cover plates, hardware, light fixture trim, escutcheons, louvers, and fittings that removed.

#### **3.04 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Material Completion.

**END OF SECTION**

**SECTION 10 1419  
DIMENSIONAL LETTER SIGNAGE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Cast Aluminum Letters

**1.02 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.
- C. Shop Drawings:
  - 1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.
- D. Samples: Submit one sample of each type of dimensional letter sign of size similar to that required for project, indicating sign style, font, and method of attachment.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Package dimensional letter signs as required to prevent damage before installation.
- B. Store under cover and elevated above grade.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide cast letters as manufactured by A.R.K. Ramos or a comparable product by one of the following:
  - 1. Henry Graphics, Inc.
  - 2. Kroy Signs Systems.
  - 3. Metal Arts.
  - 4. Ancient Mariner

**2.02 LETTERS**

- A. Applications: Building identification.
  - 1. Mounting Location: Exterior as indicated on drawings.
- B. Cast Aluminum Characters: Produce characters with smooth flat faces, sharp corners, and precisely formed lines and profiles, free of pits, scale, sand holes, and other defects. Cast lugs into bottom of characters and tap to receive threaded mounting studs. Alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated. Comply with the following requirements:
  - 1. Copy: As indicated.
  - 2. Material: Aluminum.
  - 3. Letter Size: As indicated H x 4 1/2" D
  - 4. Font: Obtain from Owner to match campus branding.
  - 5. Exposed Stud: 2"
  - 6. Finish (letters, studs, bolts and channel): Clear Anodized.
  - 7. Attachment:
    - a. Canopy Roof Mounted.

- 1) Bottom mounted aluminum studs, two per letter, and continuous ½" aluminum U channel.
8. Make field measurements prior to preparing shop drawings and fabrication.
- C. Aluminum Finish:
  1. Clear Anodic Finish: Manufacturer's standard Class 1 clear anodic coating, 0.018 mm or thicker, over a satin (directionally textured) mechanical finish, complying with AAMA 611.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

#### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**END OF SECTION**

**SECTION 10 7316.13  
METAL CANOPIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Freestanding metal canopies.
- B. Attached metal canopies.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete footings.

**1.03 REFERENCE STANDARDS**

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2021.
- C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- F. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles 2020.
- G. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube 2020.
- H. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs 2022.
- I. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2021.
- J. AWS D1.2/D1.2M - Structural Welding Code - Aluminum 2014, with Errata (2020).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit product data sheets, including material descriptions and finishes, and preparation instructions and recommendations.
- C. Shop Drawings: Prior to commencement of fabrication, submit detailed shop drawings, showing profiles, sections of components, finishes, and fastening details. Shop drawings shall also show structural columns and footings. Stamp and sign by professional engineer. SUBMITTAL WILL NOT BE REVIEWED WITH OUT SIGNED SEAL.
- D. Design Data: Submit comprehensive structural analysis of design for the specified loads. Stamp and sign calculations by professional engineer. SUBMITTAL WILL NOT BE REVIEWED WITH OUT SIGNED SEAL.
- E. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.
- F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

### **1.05 QUALITY ASSURANCE**

- A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and currently licensed in Georgia.
  - 1. Comply with applicable code for submission of design calculations as required for acquiring permits.
  - 2. Cooperate with regulatory agency or authorities having jurisdiction (AHJ), and provide data as requested.
- B. Erector Qualifications: Company specializing in performing the work of this section.
  - 1. Not less than three years of documented experience and approved by canopy manufacturer.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to project site ready for erection.
- B. Package using methods that prevent damage during shipping and storage on site.
- C. Store materials under cover and elevated above grade.

### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Metal Canopies: Correct defective work within a two year period after Date of Material Completion.
- C. Finish Warranty: Provide manufacturer's 20 warranty on factory finish against cracking, peeling, and blistering.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Metal Canopies:
  - 1. Basis of Design: Peachtree Protective Covers, Inc.
  - 2. Mapes Architectural Canopies
  - 3. Mitchell Metals, LLC
  - 4. Tennessee Valley Metals, Inc.
  - 5. Dittmar Architectural Aluminum.
  - 6. Perfection Architectural Systems, Inc.

### **2.02 ALUMINUM CANOPIES**

- A. Configuration: Layout and dimensions, column layout, canopy clearance, fascia profile, and roof covering design as indicated on drawings.
- B. Performance Requirements:
  - 1. Design and fabricate metal canopy system to resist wind, snow, live, and seismic loads without failure, damage, or permanent deflection in accordance with ASCE 7:
  - 2. Thermal Movement: Design canopy system to accommodate thermal movement caused by ambient temperature range of 120 degrees F and surface temperature range of 180 degrees F without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects on assembly components.

### **2.03 COMPONENTS**

- A. Structural Aluminum Framing: Alloy and temper 6063-T5, 6063-T6, or 6061-T6.
  - 1. Extruded Shapes and Tubes: ASTM B221 (ASTM B221M).
  - 2. Rolled or Extruded Structural Shapes: ASTM B308/B308M.
  - 3. Extruded Structural Pipe and Tube: ASTM B429/B429M.
  - 4. Sheet and Plate: Alloy 5052, 5005, or 6061-T651, ASTM B209/B209M.

- B. General:
1. Protective cover shall be all welded extruded aluminum system complete with internal drainage. Non-welded systems are not acceptable.
    - a. Roll formed deck is not acceptable.
  2. Material thicknesses specified are minimum requirements. Heavier component required by code or design to meet Contract Design Requirements shall be furnished at no additional costs.
  3. Expansion joints shall be included to accommodate temperature changes of 120°F. Expansion joints shall have no metal to metal contact.
  4. Deck:
    - a. Deck shall be Super Lumideck extruded self-flashing sections interlocking into a composite unit. Closures at deck ends shall be welded plates.
  5. Fascia:
    - a. Manufacturer's standard shape.
  6. Flashing: Flashing shall be minimum 0.040 inch thick aluminum.
    - a. All thru-wall counter-flashing shall be furnished by Construction Manager.
  7. Hanger Rods:
    - a. 3/4- inch minimum diameter galvanized steel pipe with powder-coated finish to match aluminum finish.
  8. Gaskets:
    - a. Gaskets shall be dry seal santoprene pressure type.
- C. Anchor Bolts: ASTM A307 or ASTM A572/A572M, formed with bent shank, assembled with template for casting into concrete.
  1. Minimum exposed thread of 7 inches above footing and 23 inch minimum embedment.
  2. Provide nuts and washers as required to level and plumb column.
- D. Concrete Footings: Refer to Section 03 3000 for additional requirements.

#### **2.04 SHOP FABRICATION**

- A. Provide a complete system ready for erection at project site.
- B. Shop fabricate to the greatest extent possible; disassemble if necessary for shipping.
- C. Weld steel members in accordance with AWS D1.1/D1.1M.
- D. Weld aluminum members in accordance with AWS D1.2/D1.2M.
- E. Fabricate connections for bolt, nut, and washer connectors.
- F. Deck Construction:
  1. Deck Construction: Deck shall be manufactured of extruded modules that interlock in a self-flashing manner. Interlocking joints shall be positively fastened at 8" O.C. creating a monolithic structural unit capable of developing the full strength of the sections. The fastenings must have minimum shear strength of 350 pounds each. Deck shall be assembled with sufficient camber to offset dead load deflection.
- G. Size: As indicated.

#### **2.05 FINISHES**

- A. Finish: High performance Organic Coating Finish: AA-C12C42R1x. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
- B. Fluoropolymer Three-Coat Coating System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.

- C. Exposed fasteners shall match canopy finish. Field painted fasteners or other items are not acceptable.

## **2.06 ACCESSORIES**

- A. Trim, Closure Pieces, and Flashings: Same material, thickness and finish as sheet metal decking; factory-fabricated to required profiles.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates and site area for conditions that might prevent satisfactory installation.
- B. Verify that foundation, electrical utilities, and placed anchors are in correct position.
- C. Do not proceed with installation until all conditions are satisfactory.

### **3.02 INSTALLATION - FRAMING**

- A. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation.
- B. Set column base plates with non-shrink grout to achieve full plate bearing.
- C. Fasten columns to anchor bolts.
- D. Do not field cut or alter structural members without approval.
- E. After erection, prime welds, abrasions, and surfaces not shop primed.

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Fasten metal decking to metal support members, aligned level and plumb.
- C. Install fascia panels, trim, and flashing.
- D. Separate dissimilar metals using concealed bituminous paint.
- E. Touch-up damaged finish coating using material provided by manufacturer to match original coating.

### **3.04 TOLERANCES**

- A. Maximum Variation from Level: Plus/Minus 1/8 inch.

### **3.05 CLEANING**

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Clean surfaces of dust and debris; follow manufacturer's cleaning instructions for the finish used.

**END OF SECTION**

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**SECTION 23 0913  
INSTRUMENTATION AND CONTROL DEVICES FOR HVAC**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Control Valves:
  - 1. Ball Valves and Actuators
  - 2. Globe Pattern
  - 3. Electronic Operators
- B. Pressure Independent Valves and Actuators
- C. Dampers
- D. Damper Actuators
- E. HVAC&R Sensors:
  - 1. Temperature Sensors
  - 2. Humidity Sensors
  - 3. Static Pressure Sensors
  - 4. Current Sensors
  - 5. Damper Position Indicators
  - 6. Carbon Dioxide Sensors
- F. Sensors with Transmitters:
  - 1. Building Static Pressure Transmitters
  - 2. Temperature Transmitters
  - 3. Humidity Transmitters
- G. Flow Sensors and Transmitters:
  - 1. Airflow Meter, Thermal Dispersion Type
- H. Flow Sensors:
  - 1. Annular Pitot Tubes

**1.02 RELATED REQUIREMENTS**

- A. Section 23 0923-Direct Digital Controls for HVAC.

**1.03 REFERENCE STANDARDS**

- A. AMCA 500-D – Laboratory Methods of Testing Dampers for Rating; 2018.

**1.04 SUBMITTALS**

- A. Shop Drawings: Indicate complete operating data, system drawings, wiring diagrams, and written detailed operational description of sequences. Submit schedule of valves indicating size, flow, and pressure drop for each valve. For automatic dampers indicate arrangement, velocities, and static pressure drops for each system.
- B. Designer's qualification statement.
- C. Manufacturer's qualification statement.
- D. Installer's qualification statement.
- E. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- F. Product Data: Provide description of and engineering data for each control system component. Include sizing as requested. Provide data for each system component and software module.



### **1.05 QUALITY ASSURANCE**

- A. Designer Qualifications: Design system under direct supervision of a Professional Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience approved by manufacturer.

### **1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five year period after Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 EQUIPMENT – GENERAL**

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

### **2.02 ELECTRONIC DAMPER ACTUATORS**

- A. Spring Return Actuators:
  - 1. Spring Return Actuators shall be manufactured, brand labelled and distributed by Johnson Controls or an approved equivalent.
  - 2. Spring Return Actuators shall comply with the following regulatory agency listings: cULus, CSA C22.2 No24-93, and CE marked. Asia Pacific (APAC) actuators shall be excluded from this regulatory information.
  - 3. Spring Return Actuators shall be of direct-coupled design and require no crank arm or linkage for mounting to a shaft.
  - 4. Spring Return Actuators shall be configured for reversible mounting which provides either clockwise or counter clockwise operation.
  - 5. Spring Return Actuators power failure operation shall configure upon a loss of electric power to the actuator, a mechanical spring return system shall drive the actuator to the failsafe home position. Other forms of internal energy storage for power failure operation shall not be acceptable.
  - 6. Spring Return Actuators shall utilize the following motor technology:
    - a. Modulating types: Microprocessor-controlled brushless DC motors
    - b. On/Off types: DC brush motor
  - 7. Spring Return Actuators shall be furnished with Electronic Stall Detection which protects the actuator from overload at all angles of rotation without the need for end switches.
  - 8. Spring Return Actuators shall comply with enclosure ratings of NEMA type 2 or IP54 mounted in any orientation.
  - 9. Spring Return Actuators shall eliminate the need for electrical ground wires for double-insulated construction.
  - 10. Spring Return Actuators shall be furnished with integral cables with colored and numbered conductors for simplified wiring.
  - 11. Spring Return Actuators shall be sized for the torque required to seal the damper at load conditions.
  - 12. Spring Return Actuators shall be available in parallel operation that are capable of being mechanically or electrically paralleled.
  - 13. Proportional actuators shall be user configurable without the use of external computer software or programming tools. Calibration, input signal range selection, and control logic reversal shall be selectable with an external mode selection switch.

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14. Spring Return Actuators shall operate in the following temperature ranges:
    - a. For a 70 lb·in. torque actuator range must be -40°F to 140°F (-40°C to 60°C)
    - b. For a 177 lb·in. torque actuator range must be -40°F to 131°F (-40°C to 55°C)
  15. Spring Return Actuators shall be provided with the following power requirements:
    - a. Modulating types:
      - 1) A torque of 27 lb·in. has a 6VA maximum
      - 2) A torque of 70 lb·in. has an 8VA maximum
      - 3) A torque of 177 lb·in. has a 16VA maximum
    - b. Two-position types:
      - 1) A torque of 27 lb·in. has a 6VA maximum
      - 2) A torque of 70 lb·in. has an 8VA maximum
      - 3) A torque of 177 lb·in. has a 25VA maximum
  - B. Non-Spring Return Actuators
    1. Non-Spring Return (NSR) actuators shall be manufactured, brand labelled or distributed by Johnson Controls or an approved equivalent. The NSR actuators are manufactured under International Standards Organization (ISO) 9001 Quality Control Standards to ensure quality.
    2. NSR actuators shall comply with the following regulatory agency listings: cULus, CSA C22.2 No 24-93, and CE marked. APAC actuators are excluded from this regulatory information.
    3. NSR actuators shall be provided with a 5 year warranty from the date of sale. Actuators sold in the APAC region shall comply with an 18 month warranty policy.
    4. NSR actuators shall be of direct-coupled design and require no crank arm or linkage for mounting to a shaft.
    5. NSR actuators shall be configured for direct mounting and will not require any damper linkage.
  - C. Actuators can be mounted directly with a universal clamp to the following:
    1. Round damper shaft from 3/8 in. (10mm) up to 1 in. to 1/16 in. (27mm)
    2. Square damper shaft from 3/8 in. (10mm) up to 3/4 in. (19mm)
    3. NSR actuators shall feature an optional NEMA 4X/IP66 weather shield for applications in harsh environments.
    4. NSR actuators shall be furnished such that the actuator complies with the following control signals:
  - D. The NSR actuators shall be available in models that accept input signal controls for on/off, floating, and proportional control.
  - E. The NSR actuators shall operate with an automatic signal input detection which allows automatic recognition of input signals for on/off, floating and proportional control. They shall be equipped with adjustable span automatic controls that require no special tools.
  - F. In proportional mode, the actuator shall respond to control signals DC 0 V to 10 V or DC 2 to 10 V.
  - G. When a 500 ohm resistor is added in proportional mode, the actuator shall respond to a 0 mA to 20 mA or 4 to 20mA signal. A feedback signal of DC 0 V to 10 V or DC to 10 V indicates position.
  - H. NSR actuators shall be available in line voltage On/Off and floating models to offer reduced total installation cost by avoiding installation of external power supply adapters.
  - I. NSR actuators shall be available in high speed On/Off and floating models for applications in loop that require a quick response time.
  - J. NSR actuators shall offer optional auxiliary switches to provide the following:

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1. Two line-voltage-capable single-pole, double-throw (SPDT) switches with continuously adjustable switch points
  2. An auxiliary potentiometer kit provides and potentiometer feedback options for improving the safety, interface and signal
- K. NSR actuators shall be furnished with the option of backward compatible to produce a seamless retrofit without the need to replace the controller.
- L. NSR actuators shall have the option to be furnished with a plenum-rated cable which are specially configured for installation in spaces used for environmental air-handling purposes, other than ducts and plenums, as specified in National Fire Protection Association (NFPA) 70: National Electrical Code section 300.22(C), Other Space Used for Environmental Air.
- M. NSR actuators shall have a constant runtime which is independent of supply voltage frequency and load.
- N. NSR actuators for Floating and On/Off models for line voltage (AC 85 to 264 V) for standard speed applications shall operate with AC 85 to 264 V and provide the rated torque. The actuators shall be designed to provide constant runtime, independent of supply voltage frequency and load.
- O. NSR actuators for Floating and On/Off models for AC/DC 24 V for high speed applications shall have an 8-second constant runtime, independent of supply voltage frequency and load.
- P. NSR actuators shall be furnished with electronic stall detection which protects the actuator from overload at all angles of rotation. The actuator may be stalled anywhere in its rotation range without the need for mechanical end switches.
- Q. NSR actuators shall be equipped with microprocessor-controlled brushless DC motors which provides constant runtime independent of torque and increases the actuators lifecycle by reducing wear.
- R. NSR Actuators shall have the option of a bottom-mounted coupler which simplifies short shaft damper applications.
- S. NSR actuators shall offer multiple shaft coupling methods:
1. For units above 80 lb·in a toothed V-bolt clamp and nuts with a toothed cradled shall be used
  2. For units 80 lb·in. and below use a single-cup-point set screw and toothed cradle shall be used
- T. NSR actuators shall be furnished with a Minimum IP (ingress protection) enclosure ratings as follows:
1. Actuator for types with covered wiring terminals shall be furnished as NEMA type 2/IP42 mounted in any orientation.
  2. Actuators for types without a covered wiring terminal shall be furnished with a NEMA type 1/IP30 or IP40.
  3. Actuators for types with integrated cables shall be furnished as NEMA type 2/IP42 mounted in any orientation.
  4. NSR actuators shall be furnished with a minimum IP (ingress protection) rating of no lower than IP42, but also be available in NEMA5/IP54.
- U. NSR actuators shall be able to operable in a temperature range of -4°F to 122°F (-20°C to 50°C) except for VAV and similar indoor applications in which 32°F to 122°F (0°C to 50°C) is acceptable.
- V. NSR actuators shall be provided with the following power requirements:
1. 24 V with models available for both 24 VAC and 24 VDC operation (maximum)
  2. For NSR actuators above 80 lb·in. a maximum of 7.5 VA at 24 VAC

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3. For NSR actuators 80 lb·in. or below a maximum of 3.5 VA at 24 VAC
  - W. NSR actuators shall be sized for the torque required to seal the damper at load conditions. For NSR actuators in parallel operation, actuators shall be available that are capable of being mechanically or electrically paralleled automatically.
  - X. NSR proportional actuators shall be user configurable without requiring the use of external computer software or programming tools.
  - Y. NSR actuators shall also be furnished with the option of backward compatible auxiliary switch kits and auxiliary potentiometers which allow for a seamless retrofit without the needs to replace the controller.

### **2.03 SENSORS AND TRANSMITTERS**

#### **A. General Requirements**

1. Installation, testing, and calibration of all sensors, transmitters, and other input devices shall be provided to meet the system requirements. Exact OEM equivalents of specified sensors and transmitters shall be acceptable if clearly identified in submittals.

#### **B. Temperature Sensors**

1. General Requirements
  - a. Sensors and transmitters shall be provided, as outlined in the input/output summary and sequence of operations.
  - b. The temperature sensor shall be of the resistance type, and shall be either two-wire 1000 ohm nickel RTD, or two-wire 1000 ohm platinum RTD. Thermistor sensors of 10,000 or 2,250 ohms resistance may be substituted based on the application.
2. Room Temperature Sensors
  - a. Room sensors shall be constructed for either surface or wall box mounting.
  - b. Room sensors shall have the following options when specified:
    - 1) Setpoint warmer/cooler
    - 2) Individual heating/cooling setpoint
    - 3) Momentary override request for activation of after-hours operation
    - 4) Analog thermometer
3. Room Temperature Sensors with Integral Display
  - a. Room sensors shall be constructed for either surface or wall box mounting.
  - b. Room sensors shall have an integral LCD display and the following capabilities when specified:
    - 1) Display room air temperatures
    - 2) Display and adjust room comfort setpoint
    - 3) Display and adjust fan operation status
    - 4) Setpoint override request via setpoint adjust dial or buttons
    - 5) Timed override request via occupancy override with status indication for activation of after-hours setpoint operation
    - 6) Occupancy sensor status
    - 7) Toggle between Degrees F and Degrees C
    - 8) Toggle between temperature and humidity where specified
4. Thermowells
  - a. Thermowell manufacturer shall have models available in stainless steel, brass body, and copper bulb.
  - b. Thermowells shall be pressure rated and constructed in accordance with the system working pressure.
  - c. Thermowells and sensors shall be mounted in a direct mount (no adapter) offering faster installation or 1/2" NPT saddle and allow easy access to the sensor for repair

- or replacement.
- 5. Outside Air Sensors
  - a. Outside air sensors shall be designed to withstand the environmental conditions to which they will be exposed. They shall be provided with a solar shield.
  - b. Sensors exposed to wind velocity pressures shall be shielded by a perforated plate that surrounds the sensor element.
  - c. Temperature transmitters shall be of NEMA 3R (IP54) or NEMA 4 (IP65) construction and rated for ambient temperatures.
  - d. The outdoor sensor shall be capable of being mounted on a roof, pole or side of a building utilizing its preassembled mounting bracket.
  - e. Outside air relative humidity sensors 0-100% full range of accurate measurement. Operating temperature -4 to 140°F (-20 to 60°C).
  - f. Outside air temperature sensors operating temperature range -40 to 140°F, +/- 0.55°F (+/-0.3°
- 6. Duct Mount Sensors
  - a. Duct mount sensors shall mount in an electrical box through a hole in the duct, positioned to provide ease of accessibility for repair or replacement.
  - b. Duct sensors shall be insertion type and constructed as a complete assembly, including lock nut and mounting plate.
  - c. For outdoor air duct applications, a weatherproof mounting box with weatherproof cover and gasket shall be provided.
- 7. Averaging Sensors
  - a. For ductwork greater in any dimension than 48 inches and/or where air temperature stratification exists, an averaging sensor with multiple sensing points shall be used.
  - b. For plenum applications, such as mixed air temperature measurements, a continuous averaging sensor or a string of sensors mounted across the plenum shall be used to account for stratification and/or air turbulence. The averaging string shall have a minimum of 4 sensing points per 12-foot long segment.
  - c. Capillary supports at the sides of the duct shall be provided to support the sensing string.
- 8. Acceptable Manufacturers: Johnson Controls, Minco.
- C. Differential Pressure Transmitters
  - 1. General Air and Water Pressure Transmitter Requirements:
    - a. Pressure transmitters shall be constructed to withstand 100% pressure over-range without damage, and to hold calibrated accuracy when subject to a momentary 40% over-range input.
    - b. Pressure transmitters shall transmit a 0 to 5 VDC, 0 to 10 VDC, or 4 to 20 mA output signal.
    - c. Differential pressure transmitters used for flow measurement shall be sized to the flow sensing device, and shall be supplied with Tee fittings and shut-off valves in the high and low sensing pick-up lines to allow the balancing Contractor and Owner permanent, easy-to-use connection.
    - d. A minimum of a NEMA 1 housing shall be provided for the transmitter. Transmitters shall be located in accessible local control panels wherever possible.
  - 2. Low Differential Water Pressure Applications (0" - 20" WC):
    - a. The differential pressure transmitter shall be of industrial quality and transmit a linear, 4 to 20 mA output in response to variation of flow meter differential pressure or water pressure sensing points.
    - b. The differential pressure transmitter shall have non-interactive zero and span adjustments that are adjustable from the outside cover and meet the following performance specifications:

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- 1) .01-20" WC input differential pressure range
  - 2) 4-20 mA output
  - 3) Maintain accuracy up to 20 to 1 ratio turndown
  - 4) Reference Accuracy: +0.2% of full span
  - c. Acceptable Manufacturers: Setra and Mamac.
3. Medium to High Differential Water Pressure Applications (Over 21" WC):
    - a. The differential pressure transmitter shall meet the low-pressure transmitter specifications with the following exceptions:
      - 1) Differential pressure range 10" WC to 300 PSI
      - 2) Reference Accuracy: +1% of full span (includes non-linearity, hysteresis, and repeatability)
    - b. Standalone pressure transmitters shall be mounted in a bypass valve assembly panel. The panel shall be constructed to NEMA 1 standards. The transmitter shall be installed in the panel with high and low connections piped and valved. Air bleed units, bypass valves, and compression fittings shall be provided.
    - c. Acceptable Manufacturers: Setra and Mamac.
  4. Building Differential Air Pressure Applications (-1" to +1" WC):
    - a. The differential pressure transmitter shall be of industrial quality and transmit a linear, 4 to 20 mA output in response to variation of differential pressure or air pressure sensing points.
    - b. The differential pressure transmitter shall have non-interactive zero and span adjustments that are adjustable from the outside cover and meet the following performance specifications:
      - 1) -1.00 to +1.00 WC input differential pressure ranges. (Select range appropriate for system application)
      - 2) 4-20 mA output
      - 3) Maintain accuracy up to 20 to 1 ratio turndown
      - 4) Reference Accuracy: +0.2% of full span
    - c. Acceptable Manufacturers: Johnson Controls or approved equal
  5. Low Differential Air Pressure Applications (0" to 2.5" WC):
    - a. The differential pressure transmitter shall be of industrial quality and transmit a linear, 4 to 20 mA output in response to variation of differential pressure or air pressure sensing points.
    - b. The differential pressure transmitter shall have non-interactive zero and span adjustments that are adjustable from the outside cover and meet the following performance specifications.
      - 1) (0.00 - 1.00" to 5.00") WC input differential pressure ranges (select range appropriate for system application)
      - 2) 4-20 mA, 0-5 VDC, 0-10 VDC output
      - 3) Maintain accuracy up to 20/1 ratio turndown
      - 4) Reference Accuracy: +0.25%, or 0.5% of full span
    - c. Acceptable Manufacturers: Johnson Controls and Ruskin
  6. Medium Differential Air Pressure Applications (5" to 21" WC):
    - a. The pressure transmitter shall be similar to the Low Air Pressure Transmitter, except that the performance specifications are not as severe. Differential pressure transmitters shall be provided that meet the following performance requirements.
      - 1) Zero & span: (c/o F.S./Deg. F): .04% including linearity, hysteresis and repeatability
      - 2) Accuracy: 1% F.S. (best straight line) Static Pressure Effect: 0.5% F.S. (to 100 psig.)

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- 3) Thermal Effects:  $<+.033$  F.S./Deg. F. over 40°F to 100°F (calibrated at 70°F.)
  - b. Standalone pressure transmitters shall be mounted in a bypass valve assembly panel. The panel shall be constructed to NEMA 1 standards. The transmitter shall be installed in the panel with high and low connections piped and valved. Air bleed units, bypass valves, and compression fittings shall be provided.
  - c. Acceptable manufacturers: Johnson Controls and Ruskin
- D. Flow Monitoring
1. Air Flow Monitoring
    - a. Single Probe Air Flow Measuring Sensor
      - 1) The single probe airflow-measuring sensor shall be duct mounted with an adjustable sensor insertion length of up to eight inches. The transmitter shall produce a 4-20 mA or 0- 10 VDC signal linear to air velocity. The sensor shall be a thermal dispersion and utilize one temperature sensor and a heated thermistor. The sensor pair shall measure the air temperature and airflow velocity.
    - b. Duct Air Flow Measuring Stations
      - 1) Furnish and install, at locations shown on plans or as in accordance with schedules, an equalized air measuring probe system piped to a high performance pressure transducer or an electronic type airflow temperature measuring station.
      - 2) Each device shall be designed and built in order to comply with, and provide results in accordance with, accepted practice as defined for system testing in the ASHRAE Handbook of fundamentals, as well as in the Industrial Ventilation Handbook.
      - 3) Assembly shall be AMCA tested and capable of measuring a range from 70 to 5,000 FPM (22 to 1524 MPM).
      - 4) Equalized air measuring assembly shall measure to  $\pm 3\%$  average and consist of 6063T5 extruded aluminum step sensing blade(s) with anodized finish, plenum-rated polyethylene pressure tubing, brass barbed fittings, mounting hardware and a glass-on-silicone capacitance sensor pressure transducer capable of measuring up to five field-selectable pressure ranges up to 2.5 in. WC.
      - 5) The transducer shall be accurate to  $\pm 0.5\%$ , or 0.25% of full scale and be contained in a National Electrical Manufacturer's Association (NEMA) 4 (IP-65) enclosure. Transducer shall be factory mounted and piped to high and low pressure ports through fittings made of brass.
      - 6) All sensor tubing shall terminate in solid brass barbed fittings.
      - 7) Total and static pressure manifolds shall terminate with external ports for connection to control tubing. An identification label shall be present on each unit casing, listing model number, size, area, and airflow capacity.
      - 8) Air straightener shall be provided for sizes over 17 square feet (1.6 sq meter).
      - 9) Airflow measuring station assemblies shall be fabricated of galvanized steel or aluminum casing of appropriate thickness for slip fits or with 90 Deg. connecting flanges in configuration and size equal to that of the duct into which it is mounted. Each station shall be complete with an air directionalizer and parallel cell profile suppressor (3/4" maximum cell) across the entering air stream and mechanically fastened to the casing in such a way to withstand velocities up to 5000 feet per minute.
      - 10) Electronic air measuring station shall be capable of monitoring and reporting the airflow and temperature at each measuring location through one or more measuring probes containing multiple sensor points and a control transmitter that outputs a 4-20 mA linear signal.

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- 11) Probe(s) shall be constructed of an airfoil shaped aluminum extrusion containing the sensor circuit(s).
  - 12) Each sensor circuit shall consist of coated thermistors, for temperature and velocity, mounted to a Printed Circuit Board (PCB). Multiplexer board shall be encased to prevent moisture damage.
  - 13) Control transmitter shall be capable of processing independent sensing points and shall operate on a fused 24 VAC supply.
  - 14) Control transmitter shall feature a 16 x 2 character alphanumeric LCD screen, digital offset/gain adjustment, continuous performing sensor/transmitter diagnostics, and a visual alarm to detect malfunctions.
  - 15) Installation Considerations
    - (a) The maximum allowable pressure loss through the Flow and Static Pressure elements shall not exceed .04" WC at 1000 feet per minute, or .11" WC at 2000 feet per minute. Each unit shall measure the airflow rate within an accuracy of plus 3-5% as determined by AMCA.
    - (b) Where the stations are installed in insulated ducts, the airflow passage of the station shall be the same size as the inside airflow dimension of the duct. Station flanges shall be 1.5 inches to facilitate matching connecting ductwork.
    - (c) Where control dampers are provided as part of the airflow measuring station, parallel blade precision controlled volume dampers integral to the station and complete with actuator, and linkage shall be provided.
    - (d) Stations shall be installed in strict accordance with the manufacturer's published requirements, and in accordance with ASME Guidelines affecting non-standard approach conditions.
  - 16) All air measuring devices shall be tested according to AMCA Standard 610.
  - 17) Acceptable manufacturers: Ebtron, Air Monitor Corp., Kurz Instruments, and Sierra Instruments.
- c. Static Pressure Traverse Probe
    - 1) Duct static traverse probes shall be provided where required to monitor duct static pressure. The probe shall contain multiple static pressure sensors located along exterior surface of the cylindrical probe.
    - 2) Acceptable manufacturers: Cleveland Controls
  - d. Shielded Static Air Probe
    - 1) Where indicated on plans or in schedules a shielded static pressure probe shall be provided at each end of the building. The probe shall have multiple sensing ports, an impulse suppression chamber, and airflow shielding.
- E. Power Monitoring Devices
1. Current Measurement (amps)
    - a. Current measurement shall be by a combination current transformer and a current transducer. The current transformer shall be sized to reduce the full amperage of the monitored circuit to a maximum 5 Amp signal, which will be converted to a 4-20 mA DDC compatible signal for use by the Facility Management System.
    - b. Current Transformer – A split core current transformer shall be provided to monitor motor amps.
      - 1) Operating frequency – 50 - 400 Hz
      - 2) Insulation – 0.6 Kv class 10Kv BIL
      - 3) UL recognized
      - 4) Five amp secondary
      - 5) Select current range as appropriate for application



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- c. Current Transducer – A current to voltage or current to mA transducer shall be provided. The current transducer shall include:
    - 1) 6X input over amp rating for AC inrushes of up to 120 amps
    - 2) Manufactured to UL 1244
    - 3) Accuracy: +.5%, Ripple +1%
    - 4) Minimum load resistance 30kOhm
    - 5) Output 4-20 mA
    - 6) Transducer shall be powered by a 24 VDC regulated power supply (24 VDC +5%)
    - 7) Acceptable manufacturers: Setra
  - F. Status and Safety Switches
    - 1. General Requirements
      - a. Switches shall be provided to monitor equipment status, safety conditions, and generate alarms at the Building Management System (BMS) when a failure or abnormal condition occurs. Safety switches shall be provided with two sets of contacts and shall be interlock wired to shut down respective equipment.
    - 2. Current Sensing Switches
      - a. The current sensing switch shall be self-powered with solid-state circuitry and a dry contact output. It shall consist of a current transformer, a solid state current sensing circuit, adjustable trip point, solid state switch, SPDT relay, and an LED indicating the on or off status. A conductor of the load shall be passed through the window of the device. It shall accept over-current up to twice its trip point range.
      - b. Current sensing switches shall be used for run status for fans, pumps, and other miscellaneous motor loads.
      - c. Current sensing switches shall be calibrated to show a positive run status only when the motor is operating under load. A motor running with a broken belt or coupling shall indicate a negative run status.
      - d. Acceptable manufacturers: Johnson Controls or approved equal
    - 3. Air Filter Status Switches
      - a. Differential pressure switches used to monitor air filter status shall be of the automatic reset type with SPDT contacts rated for 2 amps at 120VAC.
      - b. A complete installation kit shall be provided, including: static pressure tops, tubing, fittings, and air filters.
      - c. Provide appropriate scale range and differential adjustment for intended service.
      - d. Acceptable manufacturers: Johnson Controls, Cleveland Controls
    - 4. Air Flow Switches
      - a. Differential pressure flow switches shall be bellows actuated mercury switches or snap acting micro- switches with appropriate scale range and differential adjustment for intended service.
      - b. Acceptable manufacturers: Johnson Controls, Cleveland Controls
    - 5. Air Pressure Safety Switches
      - a. Air pressure safety switches shall be of the manual reset type with SPDT contacts rated for 2 amps at 120VAC.
      - b. Pressure range shall be adjustable with appropriate scale range and differential adjustment for intended service.
      - c. Acceptable manufacturers: Johnson Controls, Cleveland Controls
    - 6. Low Temperature Limit Switches
      - a. The low temperature limit switch shall be of the manual reset type with Double Pole/Single Throw snap acting contacts rated for 16 amps at 120VAC.

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- b. The sensing element shall be a minimum of 15 feet in length and shall react to the coldest 18-inch section. Element shall be mounted horizontally across duct in accordance with manufacturers recommended installation procedures.
  - c. For large duct areas where the sensing element does not provide full coverage of the air stream, additional switches shall be provided as required to provide full protection of the air stream.
  - d. The low temperature limit switch shall be equal to Johnson Controls A70.

#### **2.04 CONTROL VALVES**

- A. Ball Valves, 1/2 in. through 2 in.
  1. Ball Valves shall have forged brass bodies.
  2. Valves shall have available either Chrome Plated Brass Balls or 300 Series Stainless Steel Balls in all sizes.
  3. Valves shall have available either Nickel Plated Brass Stems or 300 Series Stainless Steel Stems with a blow-out proof stem design in all sizes.
  4. Valves shall have Graphite reinforced Polytetrafluoroethylene (PTFE) seats with Ethylene Propylene Diene Monomer (EPDM) O-ring backing.
  5. Stem seals shall be double EPDM O-rings.
  6. Flow Characterization Disk shall be manufactured from Amodel AS-1145HS Polyphthalamide Resin and rated for 50 psi maximum differential pressure and shall be inserted against the casting of the valve.
  7. All ball valves with internal pipe thread end connections shall be rated to 580 psi maximum static pressure at 203°F (95°C) fluid temperature.
  8. All ball valves with sweat end connections or press end connection shall be rated to 300 psig maximum static pressure at 203°F (95°C) fluid temperature.
  9. All valves shall be rated for service with hot water, chilled water and 50% glycol solutions.
  10. Flow Characteristics shall be equal percentage on the control port. Bypass port on three-way valves shall have linear flow characteristics.
  11. Valves shall have a maximum leakage specification of 0.01% of maximum flow for the control port, ANSI/FCI 70-2, Class 4 and 1% of maximum flow, bypass port.
  12. Valves shall be maintenance free.
  13. Valves shall be provided with a 5 year equipment warranty.
  14. Valves shall be rated for 200 psi differential closeoff pressure.
  15. Valve actuators shall be UL-recognized or CSA-certified.
  16. Valves shall be Johnson Controls VG1000 Series ball valves or approved equal.
- B. Ball Valves, 2½ in. through 4 in. Flanged
  1. Ball valves shall have forged brass bodies with ASME Class 150 ductile iron flanges.
  2. Valves shall be manufactured from 300 series stainless steel balls and the flanges shall rotate independently until tightened down which is an advantage during installation.
  3. Valves shall have 300 series steel stems with a blow-out proof stem design.
  4. Stem seals shall have double EPDM O-rings.
  5. Valves have graphite reinforced PTFE seats with EPDM O-ring backing.
  6. Flow characterization disk shall be manufactured from Amodel AS-1145HS Polyphthalamide Resin and rated for 50 psid maximum differential pressure.
  7. Flow characteristics shall be of equal percentage on the control port. Bypass port on three-way valves shall have linear flow characteristics.
  8. Valves shall be rated for service with hot water, chilled water and 50% glycol solutions and are rated for use with 25 psig (kPa) saturated steam.
  9. Two-way valves shall be rated for 100 psid close off pressure and three-way valves shall be rated for maximum of 50 psid close off pressure.

10. Valves shall have a maximum leakage specification of 0.01% of maximum flow for the control port, ANSI/FCI 70-2, Class 4 and 1% of maximum flow, bypass port.
  11. Valves shall be maintenance free.
  12. Valves shall be provided with a 5 year warranty. Valves sold in the APAC region shall comply with an 18 month warranty policy.
  13. Valves shall be CE marked as Johnson Controls declares these valves are in compliance with essential requirements and other relevant provisions of the Pressure Equipment Directive (PED). APAC actuators shall be excluded from this regulatory information.
  14. Valves shall be Johnson Controls VG1000 Series ball valves or approved equal.
- C. Globe Valves, Brass, 1/2 in. through 2 in.
1. Globe valve stems shall be manufactured from 300 series stainless steel.
  2. Valves with brass plugs and seats shall have stem seals with self-adjusting Ethylene Propylene Rubber (EPR) Ring Pack U-Cups.
  3. Valves with stainless steel plugs and seats shall have valve stem seals with spring loaded PTFE and Elastomer V-Rings.
  4. Flow characteristics shall be of equal percentage for two-way valves and linear for three-way valves.
  5. Valves shall meet the pressure and temperature requirements of ANSI B16.15, Class 250.
  6. Valves with brass trim shall have a maximum leakage specification of 0.01% of maximum flow per ANSI/FCI 70-2, Class 4.
  7. Valves with stainless steel trims shall have a maximum leakage of 0.05% of maximum flow.
  8. Valves shall be serviceable without being removed from the pipe.
  9. Valves shall be provided with a 3 year warranty. Valves sold in the APAC region shall comply with an 18 month warranty policy.
  10. Valve bodies shall be manufactured from a RoHS compliant brass.
  11. Valves electric actuators shall be UL-recognized or CSA-certified. APAC valves shall be excluded from this regulatory information.
  12. Globe valves shall be Johnson Controls VG7000 Series Globe Valves or an approved equal.
- D. Globe Valves, Cast Iron, 2-1/2 through 6 in.
1. Globe valve bodies shall be manufactured from cast iron.
  2. Valve stems shall be manufactured from 316 series stainless steel.
  3. Valves shall have stem seals with Ethylene Propylene Terpolymer (EPT) Ring Pack U-Cups.
  4. Flow characteristics shall be equal modified linear.
  5. Valves shall meet the pressure and temperature requirements of ANSI B16.15, Class 125.
  6. Valves shall have a maximum leakage specification of 0.01% of maximum flow per ANSI/FCI 70-2, Class 3.
  7. Valves shall be serviceable without being removed from the pipe.
  8. Valves shall be provided with a 3 year warranty. Valves sold in the APAC region shall comply with an 18 month warranty policy.
  9. Valve electric actuators shall be UL-recognized or CSA-certified. APAC valves shall be excluded from this regulatory information.

**END OF SECTION**

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**SECTION 23 0923  
DIRECT DIGITAL CONTROL SYSTEM FOR HVAC**

**PART 1 – GENERAL**

**1.01 RELATED DOCUMENTS**

- A. All work of this Division shall be coordinated and provided by the single BMS Contractor.
- B. The work of this Division shall be scheduled, coordinated, and interfaced with the associated work of other trades. Reference the applicable sections for details.
- C. The work of this Division shall be as required by the Specifications, Point Schedules and Drawings.
- D. If the BMS Contractor believes there are conflicts or missing information in the project documents, the Contractor shall promptly request clarification and instruction from the design team.

**1.02 DEFINITIONS**

- A. Analog: A continuously variable system or value not having discrete levels. Typically exists within a defined range of limiting values.
- B. Binary: A two-state system where an “on” condition is represented by one discrete signal level and an “Off” condition is represented by a second discrete signal level.
- C. BMS: The total integrated system of fully operational and functional elements, including equipment, software, programming, and associated materials, to be provided by this Division BMS Contractor and to be interfaced to the associated work of other related trades.
- D. BMS Contractor: The single Contractor to provide the work of this Division. This Contractor shall be the primary manufacturer, installer, commissioner and ongoing service provider for the BMS work.
- E. Control Sequence: A BMS pre-programmed arrangement of software algorithms, logical computation, target values and limits as required to attain the defined operational control objectives.
- F. Direct Digital Control: The digital algorithms and pre-defined arrangements included in the BMS software to provide direct closed-loop control for the designated equipment and controlled variables. Inclusive of Proportional, Derivative and Integral control algorithms together with target values, limits, logical functions, arithmetic functions, constant values, timing considerations and the like.
- G. BMS Network: The total digital on-line real-time interconnected configuration of BMS digital processing units, workstations, panels, sub-panels, controllers, devices and associated elements individually known as network nodes. May exist as one or more fully interfaced and integrated sub-networks, LAN, WAN or the like.
- H. Node: A digitally programmable entity existing on the BMS network.
- I. BMS Integration: The complete functional and operational interconnection and interfacing of all BMS work elements and nodes in compliance with all applicable codes, standards and ordinances to provide a single coherent BMS as required by this Division.
- J. Provide: The term “Provide” and its derivatives when used in this Division shall mean to furnish, install in place, connect, calibrate, test, commission, warrant, document and supply the associated required services ready for operation.
- K. PC: Personal Computer from a recognized major manufacturer or a virtual equivalent provided by, or with the consent of the owner.
- L. Furnish: The term “Furnish” and its derivatives when used in this Division shall mean supply at the BMS Contractor’s expense to the designated third party trade contractor for installation.

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BMS Contractor shall connect furnished items to the BMS, calibrate, test, commission, warrant and document.

- M. Wiring: The term "Wiring" and its derivatives when used in this Division shall mean provide the BMS wiring and terminations.
- N. Install: The term "Install" and its derivatives when used in this Division shall mean receive at the jobsite and mount.
- O. Protocol: The term "protocol" and its derivatives when used in this Division shall mean a defined set of rules and standards governing the on-line exchange of data between BMS network nodes.
- P. Software: The term "software" and its derivatives when used in this Division shall mean all of programmed digital processor software, preprogrammed firmware and project specific digital process programming and database entries and definitions as generally understood in the BMS industry for real-time, on-line, integrated BMS configurations.
- Q. The use of words in the singular in these Division documents shall not be considered as limiting when other indications in these documents denote that more than one such item is being referenced.
- R. Headings, paragraph numbers, titles, shading, bolding, underscores, clouds and other symbolic interpretation aids included in the Division documents are for general information only and are to assist in the reading and interpretation of these Documents.

### **1.03 BMS SYSTEM DESCRIPTION**

- A. The BMS shall be a complete system designed for use with the enterprise IT systems. This functionality shall extend into the equipment rooms. Devices residing on the automation network located in equipment rooms and similar shall be fully IT compatible devices that mount and communicate directly on the IT infrastructure in the facility. Contractor shall be responsible for coordination with the owner's IT staff to ensure that the BMS will perform in the owner's environment without disruption to any of the other activities taking place on that LAN.
- B. Any and all components of the BMS that are connected via field bus or IP network, including the network controllers, field controllers, application specific controllers, server and user interface software, system and controller programming tools and software applications shall be designed, engineered, and tested to work together as a complete building management system, and shall be manufactured by the same BMS manufacturer.
  - 1. Systems that use or require network controllers, field controllers, application specific controllers, server and user interface software, programming tools and software from more than one BMS manufacturer shall not be accepted.
- C. All points of user interface shall be on standard computing devices that do not require the purchase of any special software from the BMS manufacturer for use as a building operations terminal. The primary point of interface on these devices will be a standard Web Browser.
- D. Where necessary and as dictated elsewhere in these Specifications, Servers shall be used for the purpose of providing a location for extensive archiving of system configuration data, and historical data such as trend data and operator transactions. All data stored will be through the use of a standard data base platform: Microsoft SQL Server Express or Microsoft SQL Server as dictated elsewhere in this specification.
- E. The work of the single BMS Contractor shall be as defined individually and collectively in all Sections of this Division specification together with the associated Point Sheets and Drawings and the associated interfacing work as referenced in the related documents.
- F. The BMS work shall consist of the provision of all labor, materials, tools, equipment, software, software licenses, software configurations and database entries, interfaces, wiring, tubing, installation, labeling, engineering, calibration, documentation, samples, submittals, testing, commissioning, training services, permits and licenses, transportation, shipping, handling,

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administration, supervision, management, insurance, temporary protection, cleaning, cutting and patching, warranties, services, and items, even though these may not be specifically mentioned in these Division documents which are required for the complete, fully functional and commissioned BMS.

- G. Provide a complete, neat and workmanlike installation. Use only manufacturer employees or subcontractors who are skilled, experienced, trained, and familiar with the specific equipment, software, standards and configurations to be provided for this Project.
- H. Manage and coordinate the BMS work in a timely manner in consideration of the Project schedules. Coordinate with the associated work of other trades so as not to impede or delay the work of associated trades.
- I. The BMS as provided shall incorporate, at minimum, the following integrated features, functions and services:
  - 1. Operator information, alarm management and control functions
  - 2. Information management including monitoring, transmission, archiving, retrieval, and reporting functions
  - 3. Diagnostic monitoring and reporting of BMS functions
  - 4. Energy management
  - 5. Standard applications for terminal HVAC systems
  - 6. Enterprise-wide information and control access
  - 7. Offsite monitoring and management access including read only access by the engineer of record
  - 8. Fault Detection and Fault Triage

#### 1.04 QUALITY ASSURANCE

- A. General
  - 1. The BMS Contractor shall be the primary manufacturer-owned branch office or manufacturer's representative that is regularly engaged in the engineering, programming, installation and service of total integrated BMS.
  - 2. The BMS Contractor shall be a recognized national manufacturer or manufacturer's representative, installer and service provider of BMS. The BMS installer shall be a BMS manufacturer-owned or manufacture's representative branch office.
  - 3. Johnson Controls is the current BMS provider for this facility and the basis of design for this project:
    - a. Johnson Controls, Inc – Columbia, SC Branch
    - b. Representative Contact Info: Daniel Hoppe - 864-516-5331 - [daniel.lee.hoppe@jci.com](mailto:daniel.lee.hoppe@jci.com)
  - 4. The BMS Contractor shall have a branch facility within a 100-mile radius of the job site supplying complete maintenance and support services on a 24 hour, 7-day-a-week basis. The BMS Contractor shall have, at this facility, a trained, directly employed and full time technical staff, spare parts inventory, and all necessary test and diagnostic equipment.
  - 5. As evidence and assurance of the contractor's ability to support the Owner's system with service and parts, the contractor must have been in the BMS business for at least the last ten (10) years and have successfully completed total projects of at least 10 times the value of this contract in each of the preceding five years.
  - 6. The BMS architecture shall consist of the products of a manufacturer regularly engaged in the production of BMS, and shall be the manufacturer's latest standard of design at the time of bid.
- B. Workplace Safety and Hazardous Materials
  - 1. Provide a safety program in compliance with the Contract Documents.
  - 2. The BMS Contractor shall have a corporately certified comprehensive Safety Certification Manual and a designated Safety Supervisor for the Project.

3. The Contractor and its employees and subtrades shall comply with federal, state and local safety regulations.
  4. The Contractor shall ensure that all subcontractors and employees have written safety programs in place that covers their scope of work, and that their employees receive the training required by the OSHA rules that have jurisdiction for at least each topic listed in the Safety Certification Manual.
  5. Hazards created by the Contractor or its subcontractors shall be eliminated before any further work proceeds.
  6. Hazards observed but not created by the Contractor or its subcontractors shall be reported to either the General Contractor or the Owner within the same day. The Contractor shall be required to avoid the hazard area until the hazard has been eliminated.
  7. The Contractor shall sign and date a safety certification form prior to any work being performed, stating that the Contractor's company is in full compliance with the Project safety requirements.
  8. The Contractor's safety program shall include written policy and arrangements for the handling, storage and management of all hazardous materials to be used in the work in compliance with the requirements of the AHJ at the Project site.
    - a. The Contractor's employees and subcontractor's staff shall have received training as applicable in the use of hazardous materials and shall govern their actions accordingly.
- C. Quality Management Program
1. Designate a competent and experienced employee to provide BMS Project Management. The designated Project Manager shall be empowered to make technical, scheduling and related decisions on behalf of the BMS Contractor. At minimum, the Project Manager shall:
    - a. Manage the scheduling of the work to ensure that adequate materials, labor and other resources are available as needed.
    - b. Manage the financial aspects of the BMS Contract.
    - c. Coordinate as necessary with other trades.
    - d. Be responsible for the work and actions of the BMS workforce on site.

#### 1.05 REFERENCES

- A. All work shall conform to the following Codes and Standards, as applicable:
1. National Fire Protection Association (NFPA) Standards
  2. National Electric Code (NEC) and applicable local Electric Code
  3. UL listing and labels
  4. UL 864 10th Edition UUKL Smoke Control (for USA and Canada)
  5. UL 268 Smoke Detectors
  6. UL 916 Energy Management
  7. NFPA 70 – National Electrical Code
  8. NFPA 90A – Standard For The Installation Of Air Conditioning And Ventilating Systems
  9. American National Standards Institute (ANSI)
  10. National Electric Manufacturer's Association (NEMA)
  11. American Society of Mechanical Engineers (ASME)
  12. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
  13. Air Movement and Control Association (AMCA)
  14. Institute of Electrical and Electronic Engineers (IEEE)
  15. American Standard Code for Information Interchange (ASCII)
  16. Electronics Industries Association (EIA)
  17. Occupational Safety and Health Administration (OSHA)
  18. American Society for Testing and Materials (ASTM)

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19. Federal Communications Commission (FCC) including Part 15, RF Devices
  20. Americans Disability Act (ADA)
  21. ANSI/EIA 909.1-A-1999 (LonWorks®)
  22. ANSI/ASHRAE Standard 195 (BACnet)
- B. In the case of conflicts or discrepancies, the more stringent regulation shall apply.
- C. All work shall meet the approval of the Authorities Having Jurisdiction at the project site.

#### **1.06 SUBMITTALS**

- A. Shop Drawings, Product Data, and Samples
1. The BMS contractor shall submit a list of all shop drawings with submittal dates within 30 days of contract award.
  2. Submittals shall be in defined packages. Each package shall be complete, shall only reference itself, and previously submitted packages. The packages shall be as approved by the Architect and Engineer for Contract compliance.
  3. Allow 15 working days for the review of each package by the Architect and Engineer in the scheduling of the total BMS work.
  4. Equipment and systems requiring approval of local authorities must comply with such regulations and be approved. Filing shall be at the expense of the BMS Contractor where filing is necessary. Provide a copy of all related correspondence and permits to the Owner.
  5. Prepare an index of all submittals and shop drawings for the installation. Index shall include a shop drawing identification number, Contract Documents reference and item description.
  6. The BMS Contractor shall correct any errors or omissions noted in the first review.
  7. At a minimum, submit the following:
    - a. BMS network architecture diagrams including all nodes and interconnections
    - b. Systems schematics, sequences, and flow diagrams
    - c. Points schedule for each point in the BMS, including: Point Type, Object Name, Expanded ID, Display Units, Controller type, and Address
    - d. Samples of Graphic Display screen types and associated menus
    - e. Detailed Bill of Material list for each system or application, identifying quantities, part numbers, descriptions, and optional features
    - f. Control Damper Schedule including a separate line for each damper provided under this section and a column for each of the damper attributes, including Code
      - 1) Number, Fail Position, Damper Type, Damper Operator, Duct Size, Damper Size, Mounting, and Actuator Type
    - g. Room Schedule including a separate line for each VAV box and/or terminal unit indicating location and address
    - h. Control Valve Schedules including a separate line for each valve provided under this section and a column for each of the valve attributes: Code Number, Configuration, Fail Position, Pipe Size, Valve Size, Body Configuration, Close off Pressure, Capacity, Valve CV, Design Pressure, and Actuator Type
    - i. Details of all BMS interfaces and connections to the work of other trades
    - j. Product data sheets or marked catalog pages including part number, photo and description for all products including software
- B. Existing Systems Inventory
1. Where applicable, provide a complete and current BMS site inventory for all existing field and supervisory controllers to be integrated into the new BMS including manufacturer, model number, firmware version, available updates, battery condition, integrations, controlled equipment, and point counts.



## 1.07 RECORD DOCUMENTATION

- A. Operation and Maintenance Manuals.
  - 1. Three (3) copies of the Operation and Maintenance Manuals shall be provided to the Owner's Representative upon completion of the project. The entire Operation and Maintenance Manual shall be furnished on Compact Disc media or USB Flash Drive, and include the following for the BMS provided:
    - a. Table of contents
    - b. As-built system record drawings. Computer Aided Drawings (CAD) record drawings shall represent the as-built condition of the system and incorporate all information supplied with the approved submittal.
    - c. Manufacturer's product data sheets or catalog pages for all products including software
    - d. System Operator's manuals
    - e. Archive copy of all site-specific databases and sequences
    - f. BMS network diagrams
    - g. Interfaces to all third party products and work by other trades
  - 2. The Operation and Maintenance Manual shall be self-contained, and include all necessary software required to access the product data sheets. Include a logically organized table of contents. Viewer software shall provide the ability to display, zoom, print, and search all documents.
- B. On-Line documentation: After completion of all tests and adjustments the contractor shall provide a copy of all as-built information and product data to be installed on a customer designated computer workstation or server.

## 1.08 WARRANTY

- A. Standard Material and Labor Warranty:
  - 1. Provide a one-year labor and material warranty on the BMS.
  - 2. If within twelve (12) months from the date of acceptance of product, upon written notice from the owner, it is found to be defective in operation, workmanship or materials, it shall be replaced, repaired or adjusted at the option of the BMS Contractor at the cost of the BMS Contractor.

## PART 2 – PRODUCTS

### 2.01 GENERAL DESCRIPTION

- A. The BMS shall use an open architecture and fully support a multi-vendor environment. To accomplish this effectively, the BMS shall support open communication protocol standards and integrate a wide variety of third party devices and applications. The system shall be designed for use on the Internet, or intranets using off the shelf, industry standard technology compatible with other owner provided networks.
- B. The BMS shall consist of the following:
  - 1. Network Engine(s)
  - 2. Equipment Controller(s)
  - 3. Input/Output Module(s)
  - 4. Local Display Device(s)
  - 5. Portable Operator's Terminal(s)
  - 6. Distributed User Interface(s)
  - 7. Network processing, data storage and communications equipment
  - 8. Other components required for a complete and working BMS
- C. The system shall be modular in nature, and shall permit expansion of both capacity and functionality through the addition of sensors, actuators, controllers and operator devices, while re-using existing controls equipment.

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- D. System architectural design shall eliminate dependence upon any single device for alarm reporting and control execution.
    - 1. The failure of any single component or network connection shall not interrupt the execution of control strategies at other operational devices.
    - 2. The System shall maintain all settings and overrides through a system reboot.
  - E. System architectural design shall eliminate dependence upon any single device for alarm reporting and control execution.
  - F. The System shall comply with (UL) 864 (UUKL) Tenth Edition Smoke Control Listing including the UL 864 Tenth Edition Standard for Control Units and Accessories for Fire Alarm Systems for USA and Canada.
  - G. The System shall comply with the following NFPA Codes and Standards as applicable:
    - 1. NFPA 70 National Electrical Code
    - 2. NFPA 72 National Fire Alarm Code
    - 3. NFPA 101 Life Safety Code
    - 4. NFPA 90A Standard for the Installation of Air-Conditioning and Ventilation Systems
    - 5. NFPA 92B Guide for Smoke Management Systems in Malls, Atria, and Large Areas
  - H. The System shall comply with the following International Code Council (ICC) Codes:
    - 1. 2018 International Building Code with Georgia Amendments
    - 2. 2018 International Mechanical Code with Georgia Amendments
    - 3. 2015 International Energy Conservation Code with Georgia Amendments
    - 4. 2018 International Fuel Gas Code with Georgia Amendments
    - 5. 2018 International Fire Code with Georgia Amendments
  - I. Acceptable Manufacturers:
    - 1. Johnson Controls, Metasys

## **2.02 BMS SYSTEM ARCHITECTURE**

- A. Automation Network
  - 1. The automation network shall be based on a PC industry standard of Ethernet TCP/IP. Where used, LAN controller cards shall be standard “off the shelf” products available through normal PC vendor channels.
  - 2. The BMS shall network multiple user interface clients, application and data servers, network engines, system controllers and application-specific controllers including but not limited to:
    - a. Network Engines
    - b. Network Control Engines
    - c. Equipment Controllers
    - d. VAV Box Controllers
    - e. Third Party BACnet controllers and peripheral devices with compatibility listed by BACnet International
    - f. Application and Data Server
  - 3. All BMS devices on the automation network shall be capable of operating at a minimum communication speed of 100 Mbps, with full peer-to-peer network communication.
  - 4. Network Security – To protect the BMS from unauthorized users and computer hackers the Automation Network shall support HTTPS with TLS 1.2 between components, including the Application and Data Server(s), Network Engines, Mobile User Interface and Site Management Portal. Self-signed certificates are installed on supported products, with the option of configuring trusted certificates. Computing devices supplied by the BMS vendor will automatically shut down unused ports to deter unauthorized access.
  - 5. The automation network will be compatible with other enterprise-wide networks. Where indicated, the automation network shall be connected to the enterprise network and share

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resources with it by way of standard networking devices and practices.

**B. Control Network**

1. Network Engines shall provide supervisory control over the control network and shall selectively support the following communication protocols:
  - a. BACnet Standard Master-Slave/Token-Passing (MS/TP) Bus Protocol ASHRAE SSPC- 135:
    - 1) The Network Engines shall be BTL listed/certified.
    - 2) The Network Engines shall be tested and certified as a BACnet Building Controller (B- BC) profile.
  - b. LonWorks enabled devices using the Free Topology Transceiver (FTT-10a)
  - c. The Johnson Controls N2 Field Bus
  - d. Modbus® TCP and RTU
2. Control networks shall provide either “Peer-to-Peer”, Master-Slave, or Supervised Token Passing communications, and shall operate at a minimum communication speed of 9600 baud.
3. Control network shall support digital controllers as indicated in plans and specifications.
4. Default control network communication protocol for this project shall be BACnet Standard MS/TP Bus Protocol ASHRAE SSPC-135.
5. A BACnet Protocol Implementation Conformance Statement (PICS) shall be provided for each controller device (master or slave) that will communicate on the BACnet MS/TP Bus.
6. The PICS shall be submitted 10 days prior to bidding.

**2.03 USER INTERFACE**

**A. Mobile, Web Based, User Interface (MUI)**

1. General
  - a. The mobile, web-based, user interface shall be HTML5-compliant and provide access to the system from smartphones, tablets, portable and desktop computers. User Interfaces that require software installation on the client device (e.g. Java, MicrosoftSilverlight®, Adobe® Flash®), or software downloads from an online app store shall not be acceptable for these purposes.
  - b. The mobile user interface shall provide system operators with a simple location-based navigation approach to finding information, including the ability to search for any location by name and to bookmark a location in a standard browser.
  - c. The mobile user interface shall organize and display information using customer specific locations and spaces. At a minimum, the user interface shall provide:
    - 1) Organization of all space, equipment and point information in a familiar way (using standard equipment names and location descriptions), reducing the need for extensive training prior to use.
    - 2) A navigation mechanism or tree for users to select the specific location or space for accessing information – only spaces and locations in the navigation tree or equipment serving that space, nothing more.
    - 3) The ability to search for and/or bookmark any location, space, or equipment by name for quick access to critical or troublesome areas.
    - 4) Application of the same navigation mechanisms across any client device (e.g. Smart phone, tablet, personal computer) for consistency and ease of use.
  - d. The same user interface elements shall be accessible from any type of personal computer or mobile device running any type of operating system supported (e.g. iOS, Android, Windows®). It shall automatically adapt and optimize the display for the screen size and touch screen navigation.
  - e. The user interface shall provide support for up to 50 concurrent users from individuals with defined access to the system.
2. Navigation Trees

- a. A dedicated location based navigation tree shall be provided as part of the user interface in order to navigate to specific places within the facility on a hierarchical basis (typ. Facility, Building, Wing, Floor, Room.)
  - b. The location-based tree shall use place names familiar to the operator without training or familiarization regarding special codes and conventions utilized in the generation of the BMS.
  - c. Clicking or tapping on a location name in the tree shall display the home page associated with the space and simultaneously expand the tree to display the next level of spaces below the one selected.
  - d. It shall be possible for qualified users to view a navigation tree of devices connected to the BMS network in order to enable troubleshooting of equipment and communications. Clicking or tapping on the Network Icon at the top of the Navigation Tree will access this alternate view. Users without the necessary access rights shall not see the Network Icon.
  - e. A click or tap on a device in the network tree shall display a dashboard for that device including information regarding related equipment and access to a separate focus view of commandable points associated with the piece of hardware. A click or tap on such a point shall display a control dialogue box allowing the user to modify or command that point as indicated. The dialog box shall contain an annotation box for describing why the action was taken or special circumstances that apply.
  - f. Specific hardware and software types in the Network tree shall also include access to one or more the following views in their dashboard depending on hardware type or network element (e.g. MS/TP trunk):
    - 1) Summary View
    - 2) Diagnostic View
    - 3) Network View
    - 4) Trend View
  - g. It shall be possible to hide the Network Tree and return to the Spaces Tree at any time by clicking on the Spaces Icon above the tree.
  - h. It shall be possible to restrict user access to any space in the Spaces Tree and thereby prevent manipulation of equipment associated with the space.
3. Dashboard Displays
- a. The user interface shall provide the ability to view equipment visualizations, floor plans, and/or other graphics on mobile or desktop client devices in a browser environment, without the need for additional plugins or software. Graphics shall be accessible via a space (for floorplans, campus maps, etc.) or equipment dashboard.
  - b. Standard dashboards shall be configured for each defined space including one of the following predefined or custom elements:
    - 1) Equipment Serving Space
    - 2) Potential Problem Areas
    - 3) Equipment Summary
    - 4) Graphic Display (if specified)
    - 5) Schedule
  - c. Standard dashboards shall be configured for each system or device (typ. mechanical or electrical equipment) including the following predefined or custom elements:
    - 1) Trend
    - 2) Equipment Activity Summary
    - 3) Equipment Relationships Summary
    - 4) Equipment Data
    - 5) Graphic Display (if specified)
    - 6) Schedule

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- d. Users with appropriate permissions shall have access to a Dashboards Manager that can change the display order of Summaries and Data elements, add or remove elements and apply custom dashboards layouts to equipment and space by type.
  - e. Dashboard Manager shall apply dashboards to spaces or equipment based on the viewing platform (Desktop/Tablet or Phone) in order to tailor the user experience to the needs of the specific user base.
  - f. Default dashboard displays by space and equipment type shall be created per the guidelines in this specification or by mutual agreement with the owner's representative.
4. Alarm Management
    - a. The user interface shall provide a single display of all potential issues in a facility including items currently in alarm, warning, override, out-of-service and offline.
    - b. The user interface shall provide notification of new alarms, visually and audibly.
    - c. The user interface shall provide the ability to view a summary of alarms, including a chart of the number of alarms in each of the defined alarm priority ranges. The priority ranges should be filterable.
    - d. The user interface shall provide the capability to view multiple occurrences of the same alarm, ultimately providing the ability to acknowledge or discard all occurrences of the alarm in a single action.
    - e. The user interface shall provide the capability to view, and filter on, all alarms present in a well-defined mechanical system using the equipment serving equipment relationships.
    - f. The user interface shall provide the capability to acknowledge and discard all occurrences of at least 1000 alarms in one operation.
    - g. The user interface shall provide the user with the understanding of what physical space is being affected when an alarm occurs. The user interface shall provide the ability to filter alarms by physical space affected when the alarm occurred.
    - h. The user interface shall provide the capability to monitor alarms 24/7 without requiring an active login to the system, accessible via segregated web page. The user interface shall provide the capability to enable or disable the 24/7 alarm monitor mode if desired.
    - i. The user interface shall provide the capability to annotate alarms using a pre-defined selection list or by providing custom text.
    - j. The user interface shall provide the capability to filter down alarm list and bookmark the filtered list, allowing automatic filtering to be applied when the bookmark is accessed.
    - k. It shall be possible to export a .csv or .pdf copy of the currently displayed alarm list.
    - l. If an alarm is not acknowledged or discarded by recipients within a user-selected time, the alarm shall be sent to an additional set of recipients.
  5. Send Announcement
    - a. Administrative users should have the ability to alert staff of planned outages in advance. The communication avenues should include:
      - 1) Email
      - 2) A message shown on the login screen
      - 3) A banner shown to logged in users
  6. Equipment Activity Summary
    - a. The user interface shall provide a filterable, single display, of all activity related to a specific piece of equipment including user changes, discarded user changes, pending alarms, discarded alarms, and acknowledged alarms for at least one year of historical data.
    - b. Items shall be listed in timed order with the latest activity at the top of the list.

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- c. Filters shall allow only specific activities for specific data points occurring within a specific time and date window to be displayed.
  - d. It shall be possible to export a .csv copy of the currently displayed summary by clicking or tapping on the export icon.
  - e. It shall be possible to create a custom trend graph containing the data shown in the currently displayed summary by tapping or clicking on the trend icon in the header bar and selecting the specific points to trend in the resulting selection panel.
  - f. Clicking on the information icon in front of any displayed activity listed in the summary shall expand the display to include the name of the user, server time, value prior to the activity, the ability to annotate the activity and a user selectable icon for displaying a trend graph of the point.
7. Equipment Relationships Summary
    - a. The user interface shall provide a summary of all equipment and spaces related to the operation of the system or device currently selected for viewing.
    - b. The user interface shall include the capability to navigate to the home page of any related piece of equipment or space with a single click or tap on the desired element.
  8. Equipment Data Summary
    - a. The user interface shall provide a summary of all data pertaining to a particular piece of mechanical or electrical equipment in a tabular format. Clicking or tapping on any value in the summary shall display a related command panel allowing the user to command, override, or change service condition of the point selected and to annotate such actions for future reference.
    - b. It shall be possible to export a .pdf copy of the report with a single click on the associated export icon.
  9. Equipment Serving Space Summary
    - a. The user interface shall provide a summary of all mechanical and electrical equipment as defined in the points list that serves a selected space from the navigation tree.
    - b. The summary shall be capable of including a subset of the viewable points for each system representing the key elements of interest to operators without subjecting them to long lists of points irrelevant to basic operation.
    - c. Clicking or tapping on any item in the summary shall navigate to the item's assigned home page in the user interface.
    - d. It shall be possible to view a custom trend of information contained in the summary with a single click of the trend icon residing in the title header.
    - e. It shall be possible to display specific systems and points by filtering equipment types desired.
    - f. Because the data is intended to be a snapshot of the current conditions in the space it shall not dynamically update but a click or tap on the update icon at any time performs that function.
  10. Potential Problem Areas
    - a. The user interface shall provide a summary of all points in the system related to the space that are not operating correctly (e.g. alarm, off normal or not communicating correctly) in order to provide the operator with a quick update on current conditions.
    - b. The information shall include:
      - 1) Point status (via color)
      - 2) Point name
      - 3) Value of the point when the summary was taken
      - 4) Equipment that contains the offending point
      - 5) Space that is served by that equipment
    - c. Data points in the summary may be filtered by one or more types of off-normal condition (e.g. above setpoint, offline and overridden).

- d. The summary may be exported in .csv format for inclusion in spreadsheets or other documents.
- 11. Equipment Summary
  - a. The user interface shall provide a summary that allows the user to compare all similar equipment that serves the space as well as downstream (child) spaces in order to evaluate conditions quickly and determine patterns for troubleshooting purposes.
  - b. Each unique equipment type shall be selectable and display a representative set of values along with the space(s) being served by the device. Equipment types can be selected from a dropdown menu in the summary.
  - c. Clicking or tapping on a selected device in the summary shall navigate to the home page for that piece of equipment while clicking or tapping a data point shall display the command panel for that point.
    - 1) It shall be possible to export a .pdf copy of the currently displayed summary by clicking or tapping on the export icon.
  - d. It shall be possible to create a custom trend graph containing the data shown in the currently displayed summary by clicking on the trend icon in the header bar and selecting the specific points to trend in the resulting selection panel.
- 12. User Defined Summaries
  - a. Provide the capability to view, command, and modify large quantities of similar data in summaries without the use of a secondary application (e.g. a spreadsheet). These summaries shall be generated automatically or user defined. User defined summaries shall allow up to seven user defined columns describing attributes to be displayed including custom column labels with up to 100 rows per summary.
- 13. Trend
  - a. The user interface shall provide the capability to view historical trend data from up to five years for multiple pieces of equipment in both bar and line formats.
  - b. The user shall have the ability to navigate to a selection list of frequently viewed trends.
  - c. Trend graphs shall have to ability to be smartly auto-generated based on equipment and space relationships.
  - d. The user shall have the ability to view up to 3 graphs in a single screen and select which data points to plot on each to help with readability.
  - e. Each graph shall include a dedicated selection icon to export a copy of the graphic and data in .pdf format or the data only as a .csv file.
  - f. Trend graphs shall allow the plotting of non-trended point's default values.
  - g. The user shall have the ability to add any trended to point a custom trend graph.
  - h. The user shall have the ability to save trend graphs for reference later.
  - i. The user shall be able to specify the duration of time and aggregation period for each trend line.
  - j. The user shall have the ability to decide whether to show raw or aggregate trend data.
- 14. Operator Access
  - a. The user interface shall provide the ability to segment access to building data based on the space(s) or location(s) the user is physically located in and/or manages. The user interface shall provide the capability to assign "inherited" space permissions and the ability to assign user's space based access in bulk.
  - b. The user interface shall provide the ability to segment access to building data based on the space(s) or location(s) the user is physically located in and/or manages. The user interface shall provide the capability to assign "inherited" space permissions and the ability to assign user's space based access in bulk.
- 15. Graphics

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- a. The user interface shall display an equipment visualization or graphic within the context of its associated space (building, floor, room, etc.) or equipment dashboard.
  - b. Graphics shall include the ability to define individual information layers for operator selection in order to clarify systems status and simplify operation on mobile devices. Where desired a master layer may be defined to include important information about the facility on all graphic screens.
  - c. Graphics shall support the use of photo-realistic symbols as well as color change and animation to match the status of the related system control point.
  - d. It shall be possible to export a time stamped .pdf file of the graphic being viewed in order to communicate the current conditions in the space or the equipment being viewed and to provide a historic record.
  - e. An integral graphic manager shall be provided including the following features and capabilities:
    - 1) Creation and modification of graphics from any HTML5 capable browser without the need for additional plug-ins or software packages.
    - 2) Access to a full suite of pre-defined templates for air and water sourced HVAC applications as well as the ability to add custom templates as created for other use. Pre-aliased graphic templates may be defined and saved for repetitive representations of common mechanical and electrical equipment.
    - 3) A full suite of pre-defined three dimensional symbols for mechanical and electrical systems as well as all line, text and shape tools required for integration into a graphic with zoom and pan capabilities on multiple platforms and in multiple browsers.
    - 4) The ability to search and replace items in multiple graphics with a single command.
    - 5) The ability to import and insert photos and images into the graphic.
    - 6) The ability of the graphics manager to create and edit graphics including the ability to bind graphic elements to the values and conditions of system points in both an on-line and off-line mode.
    - 7) The ability to create and import custom SVG symbols that can be selectable from the graphical palette and rendered at runtime.
  - f. As required, the BMS Contractor shall provide software licenses in the name of the owner for programming, configuration and graphics building tools to allow designated representatives to make changes, modifications or additions to the system. While future updates or revisions may require an update fee, the owner shall incur no additional cost if they choose not to update. Systems that require any annual or time-limited licensing fees shall not be permitted.
16. Scheduling
- a. The user interface shall provide the capability to display, in a singular view, all of the effective schedules in the context of the space (building/floor/room, etc.) or equipment that the schedule effects. The software should have the ability to display an effective schedule, for the present, or a future date.
  - b. The user interface shall provide a report of all schedules affecting a space or equipment. The report shall provide the user details of events that comprise the weekly schedule and exception schedule(s). The report shall provide a means of viewing individual breakout scheduling elements for Weekly Schedule, Exceptions and Default Commands.
  - c. The user interface shall provide the capability to efficiently change or modify schedules in mass quantities. This includes the capability to add, in bulk, exceptions to schedules, in addition to assigning, in bulk, weekly schedules.
17. Command and Control



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- a. It shall be possible to command system analog and binary points via a dropdown menu accessed by clicking or tapping on the value shown in any equipment summary or graphic display and completing the task in the resultant menu including an optional annotation.
  - b. Commanding multiple points shall be possible on displays where multiple like system elements can be chosen.
  - c. The user interface shall support users adding notes on their commands.
  - d. The user interface shall support a choice of either permanent or temporary commands.
18. Involvement
- a. The user interface shall provide in a single screen, a way to visualize all interactions (i.e. - commands, writes, references) with a single object.
  - b. The interface shall provide the ability to filter out any interactions (i.e. commands, writes, references) that are not pertinent.
  - c. The user interface shall allow seamless navigation between one object's Involvement view to another object's.
19. System-level Activity
- a. The user interface shall provide a timeline view of all audits that occur in the system, including:
    - 1) Logins attempts with user specified
    - 2) Add, delete, modification of objects
    - 3) Commands
20. Search
- a. Typing a text string in the Search box shall display a list of all occurrences of that string in the mobile user interface. When a string is represented in the description of a space or network element, selecting it shall display its default dashboard.
  - b. Clicking or tapping on the Advanced Search Icon shall display the Advanced Search dialog box permitting the following:
    - 1) Search by Space and Equipment, Equipment Definition or Network Reference
    - 2) Filter the search by wildcard name or object type
    - 3) Multi-selection of objects for commanding or the creation of reports including Trend, Alarm, Audit and Activity for a specific period of time
21. Software Updates
- a. Users shall be notified when new software becomes available for download.
  - b. Users shall be given brief information on what's to be expected in the update.
22. Offline Operation
- a. The mobile user interface shall have the ability to operate in an offline mode in order to create or edit graphics and dashboard elements.
  - b. Content created offline shall be available to all authorized users for inclusion of an operating user interface later.

## **2.04 NETWORK ENGINES**

### **A. General**

1. The Network Engine shall be a fully user-programmable, supervisory controller. The Network Engine(s) shall monitor the network of distributed equipment controllers, provide global strategy and direction, and communicate on a peer-to-peer basis with other Network Engine(s).
2. Automation network – The Network Engine(s) shall reside on the automation network and shall support a subnet of system controllers.
3. User Interface – Each Network Engine shall have the ability to deliver a web-based User Interface using the Site Management Portal functionality previously described. All computers connected physically or virtually to the automation network shall have access

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- to the web-based user interface.
- a. The web-based user interface software shall be embedded in the Network Engine(s). Systems that require a local copy of the system database on the user's device are not acceptable.
  - b. The Network Engine(s) shall support a minimum of two (2) concurrent users.
  - c. The web-based user interface shall have the capability to access all system data through a single Network Engine.
  - d. Remote users connected to the network using a Virtual Private Network (VPN) shall also have total system access through one Network Engine.
  - e. Systems that require the user to address more than one Network Engine to access all system information are not acceptable.
  - f. The Network Engine shall have the capability of serving web-based user interface graphics. The graphics capability shall be embedded in the Network Engine.
  - g. Systems that only support user interface graphics from a central database or require the graphics to reside on the user's device are not acceptable.
  - h. The web-based user interface shall support the following functions using a supported web browser:
    - 1) Configuration
    - 2) Commissioning
    - 3) Data Archiving
    - 4) Monitoring
    - 5) Commanding
    - 6) System Diagnostics
  - i. Systems that require workstation software or modified web browsers for system queries are not acceptable.
4. Processor – The Network Engine(s) shall be microprocessor-based with a minimum word size of 32 bits. The Network Engine(s) shall be a multi-tasking, multi-user, and real-time digital control processor. Standard operating systems shall be employed. Network Engine(s) size and capability shall be sufficient to fully meet the requirements of this Specification.
  5. Memory – Each Network Engine shall have sufficient memory to support its own operating system, databases, and control programs, and to provide supervisory control for all control level devices.
  6. Secure Boot – The Network Engine(s) shall prevent malicious or unauthorized software applications from loading during the system startup process.
  7. User Authentication – The Network Engine(s) shall support local user authentication.
  8. Password Security – Access to the Network Engines' embedded user interface shall require a password of 8 to 50 characters including a minimum of one lower case letter, one upper case letter, one number, and one special character. An alarm shall be generated after three unsuccessful attempts within 15 minutes, and the user shall be denied access until permission is renewed by a system administrator.
  9. Network Security – Communication between the Network Engine and other system networked devices including additional Network Engines, Application and Data Servers, Open Data Servers (BACnet listed OWS), and user interface clients shall be encrypted and support HTTPS with Transport Level Security (TLS) Version 1.2. Self-signed certificates are to be provided with the option of configuring trusted certificates.
  10. Hardware Real Time Clock – The Network Engine(s) shall include an integrated, hardware-based, real-time clock, with a supercapacitor to maintain time for a minimum of 72 hours during a power loss. Controllers using a battery to maintain time during a power loss shall not be acceptable.
  11. Diagnostics – The Network Engine(s) shall continuously perform self-diagnostics, communication diagnosis, and diagnosis of all panel components. The Network Engine(s)

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- shall provide both local and remote annunciation of any detected component failures or repeated failures to establish communication.
12. Power Failure – In the event of the loss of normal power, the Network Engine(s) shall continue to operate for a user adjustable period of up to 10 minutes after which there shall be an orderly shutdown of all programs to prevent the loss of database or operating system software.
    - a. During a loss of normal power, the control sequences shall go to the normal system shutdown conditions. All critical configuration data shall be saved in Flash memory.
    - b. Upon restoration of normal power and after a minimum off -time delay, the controller shall automatically resume full operation without manual intervention through a normal soft-start sequence.
  13. Certification – The Network Engine(s) shall meet and be listed to the UL 916 Standard for Energy Management Equipment and be FCC Compliant to CFR47, Part 15, Subpart B, Class A.
  14. Device Integration – The Network Engine(s) shall support integrating networked devices using the following communication protocols on the device/controller network:
    - a. The Network Engine(s) shall support Remote Field Bus integration via a BACnet IP to MS/TP router.
    - b. The Network Engine(s) shall be tested and BTL listed/certified as a BACnet Building Controller (B-BC).
    - c. A BACnet Protocol Implementation Conformance Statement shall be provided for the Network Engine(s).
    - d. The Protocol Implementation Conformance Statement shall be submitted 10 days prior to bidding.
  15. The Network Engine shall support LonWorks enabled devices using a whitelisted USB-to-LonWorks FTT10 Free Topology Transceiver adapter.
    - a. All LonWorks controls devices shall be LonMark® certified.
    - b. The Network Engine(s) shall support Johnson Controls N2 or third party N2 Open devices.
  16. The Network Engine(s) shall include the following multi-color, flashing LEDs to indicate important operating conditions and status:
    - a. Heartbeat – to indicate each of the following states: operational (normal), powered but not operational, starting up, shutting down, or no power applied
    - b. Fault – to indicate if fault conditions have been detected
    - c. Ethernet Activity – to indicate if Ethernet Traffic is occurring or not occurring.
    - d. Ethernet Link Speed – to indicate the speed of Ethernet Link (10, 100, or 1000 Mbps)
      - 1) Site Director – to indicate if the Network Engine has been designated as the Site Director
    - e. BACnet/IP – to indicate if the Network Engine is transmitting BACnet messages over BACnet/IP to other devices, including other Network Engines
      - 1) USB -1 – to indicate if a supported device is connected, no device is connected, or an unsupported device is connected on USB port 1
    - f. USB-1 – to indicate if a supported device is connected, no device is connected, or an unsupported device is connected on USB port 2
    - g. FC BUS-# – to indicate if communication is occurring on FC Bus port # (1 or 2)
    - h. FC EOL-# – to indicate if the end-of-line termination switch # (1 or 2) is on or off
- B. Network Engine – Large
1. The Network Engine shall support up to 100 supervised devices across all supported integrations.
  2. Communication Ports – The Network Engine(s) shall provide the following ports for connecting networkable devices:
    - a. Two (2) USB ports

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- b. One (1) RS-485 port
      - c. One (1) Ethernet port
    3. Provide Johnson Controls SNE1100 or approved equal as indicated on plans.
  - C. Extended Application and Data Server
    1. The Extended Application and Data Server shall manage the collection and presentation of large amounts of trend data, event messages, operator transactions, and system configuration data.
    2. The Extended Application and Data Server shall act as site director for consolidating BMS information from large number of Network Engines for integrated storage and presentation of data. The Extended Application and Data Server shall not restrict access to the individual Network Engines ensuring optimal BMS accessibility in the event of individual component failure or communications loss.
    3. The Extended Application and Data Server shall act as a server for the following functionality as described in these specifications:
      - a. Mobile user interface providing user friendly access to system information via site navigation by place or device
      - b. Site Management Portal functions and applications
      - c. System Configuration Tool controller configuration and programming
    4. Network Security – Communication between the Network Engines, Extended Application and Data Server, and user interface clients shall be encrypted and support HTTPS with Transport Level Security (TLS) Version 1.2. Self-signed certificates are to be provided with the option of configuring trusted certificates.
    5. The Extended Application and Data Server shall support the addition of optional software packages for advanced reporting and essential energy information. Where provided:
      - a. An Advanced Reporting package shall provide historical and configuration data reporting capabilities in a user interface that is separate from the site management user interface, allowing authorized users to run reports for immediate review in a web browser including:
        - 1) Configuration Setup Report
        - 2) System Behavior Report
        - 3) Trend Report – including statistical calculations and Mean Kinetic Temperature (MKT)
        - 4) Trend Detail Report – including summary data
      - b. The Energy Essentials package shall extend reporting capabilities to include prepackaged reports providing a high-level view of normalized energy use across the site:
        - 1) Big Picture Energy
        - 2) Consumption
        - 3) Electrical Energy
        - 4) Production
        - 5) Simple Energy Cost
        - 6) Load Profile
        - 7) Equipment Runtime
    6. Supported Web Client operating systems:
      - a. Microsoft Windows 7, 8.1, 10 (Professional, Enterprise, Ultimate, Anniversary.) ii. Apple OS X 10.8, 10.9, 10.10, 10.11.
    7. Supported Web Browsers:
      - a. Google Chrome
      - b. Microsoft Edge
    8. User Authentication – The Extended Application and Data Server shall support local, Active Directory, and Microsoft 365 authentication.

9. Computer shall be configured as specified in the Computing Hardware and Software section of this specification.
10. Provide Johnson Controls MS-ADX or approved equal.

## **2.05 DDC EQUIPMENT CONTROLLERS**

### **A. General Purpose Equipment Controller**

1. The General Purpose Equipment Controller (CGM) shall be a fully programmable, digital controller that communicates via the BACnet MS/TP protocol.
  - a. The CGM shall support BACnet Standard ANSI/ASHRAE 135.
  - b. The CGM shall be BTL listed/certified.
  - c. The CGM shall be tested and certified as a BACnet Advanced Application Controller (B-AAC).
  - d. A BACnet Protocol Implementation Conformance Statement shall be provided for the CGM.
    - 1) The Conformance Statement shall be submitted 10 days prior to bidding.
2. The CGM shall employ finite state programming to eliminate unnecessary conflicts between control functions at crossover points in their operational sequences. Suppliers using non-state based DDC shall provide separate control strategy diagrams for all controlled functions in their submittals.
3. CGM controllers shall be factory programmed with a continuous adaptive tuning algorithm that senses changes in the physical environment and continually adjusts loop tuning parameters appropriately. Controllers that require manual tuning of loops or perform automatic tuning on command only shall not be acceptable.
4. The CGM shall be assembled in a plastic housing with protection class IP20 (IEC529) and flammability rated to UL94-5VB.
5. The CGM shall include an integral real-time clock and support time-based tasks which enables these field controllers to monitor and control:
  - a. Schedules
  - b. Calendars
  - c. Alarms
  - d. Trends
6. The CGM can continue time-based monitoring when offline for extended periods of time from a network.
7. The CGM can operate as a stand-alone controller in applications that do not require a networked supervisory device or for network applications where it is preferred to have the scheduling, alarming, and/or trending performed locally in the equipment controllers.
8. The CGM shall include troubleshooting LEDs to indicate the following conditions:
  - a. Power—to indicate if the controller is powered or not powered
  - b. Fault – to indicate if the controller is in its default state, has no faults, has a device fault, is in startup or download mode, or has an SA Bus communication issue
  - c. SA Bus – to indicate if SA Bus communication is occurring and normal, is not occurring, or was occurring but has been lost and is waiting to rejoin
  - d. FC Bus – to indicate if FC Bus communication is occurring and normal, is not occurring, or was occurring but has been lost and is waiting to rejoin
  - e. EOL – to indicate if the end-of-line termination switch is on or off
9. The CGM shall have the ability to transfer and apply firmware files to all SA Bus devices (XPM, IOM, and NS8000) connected to it.
10. The CGM shall include pluggable and labeled screw terminal blocks for all I/O, FC and SA Bus communication, and power wiring connections.
11. The CGM shall accommodate the direct wiring of analog and binary I/O field points with the following resolution.
  - a. Inputs – 24-bit analog-to-digital converter

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- b. Outputs – +/- 200 mV accuracy in 0-10 VDC applications
  12. The CGM shall support the following types of inputs and outputs supplied in the amounts required for the specified applications:
    - a. Universal Inputs – shall be configurable to monitor any of the following:
      - 1) 0-10 VDC analog input
      - 2) 4-20 mA analog input
      - 3) 0-600k ohms analog input
      - 4) Dry contact binary input
    - b. Binary Inputs – shall be configurable to monitor either of the following:
      - 1) Dry Contact Maintained Mode
      - 2) Pulse Counter Mode
    - c. Analog Outputs – shall be configurable to output either of the following:
      - 1) 0-10 VDC analog output
      - 2) 4-20 mA analog output
    - d. Binary Outputs – shall output the following:
      - 1) 24 VAC Triac
    - e. Configurable Outputs – shall be capable of the following:
      - 1) 0-10 VDC analog output
      - 2) 24 VAC Triac binary output
  13. The CGM shall have the ability to reside on a Field Controller Bus (FC Bus).
    - a. The FC Bus shall be a MS/TP Bus supporting BACnet Standard protocol SSPC-135.
    - b. The FC Bus shall support communications between the CGMs and the Network Engine.
    - c. The FC Bus shall also support peer-to-peer communications between non-supervisory devices, allowing these devices to communicate system data with each other directly, bypassing the supervisory network engine on the bus.
    - d. The FC Bus shall support a minimum of 100 equipment controllers and/or expansion modules in any combination.
    - e. The FC Bus shall operate at a maximum distance of 15,000 Ft. between the CGM and the furthest connected device.
  14. The CGM shall include three (3) decimal rotary dial switches for setting the BACnet MS/TP device address.
  15. The CGM shall have the ability to monitor and control a network of sensors and actuators over a SA Bus.
    - a. The SA Bus shall be a MS/TP Bus supporting BACnet Standard Protocol SSPC-135.
    - b. The SA Bus shall support a minimum of 10 devices per trunk.
    - c. The SA Bus shall operate at a maximum distance of 1,200 Ft. between the CGM and the furthest connected device.
  16. The CGM shall have the capability to execute complex control sequences involving direct wired I/O points as well as input and output devices communicating over a MS/TP Bus.
  17. Provide Johnson Controls CGM or approved equal as shown on plans.
- B. VAV Box Controller
1. The VAV Box Controller (hereafter referred to as CVM) shall provide both standalone and networked DDC of pressure-independent, VAV terminal units.
  2. The CVM controller shall be a fully programmable, digital controller that communicates via BACnet MS/TP protocol.
  3. The CVM shall support BACnet Standard ANSI/ASHRAE 135.
    - a. The CVM shall be BTL listed/certified.
    - b. The CVM shall be tested and certified as a BACnet Advanced Application Controller (B-AAC).

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- c. A BACnet Protocol Implementation Conformance Statement shall be provided for the CVM.
    - 1) The Conformance Statement shall be submitted 10 days prior to bidding.
  4. The CVM shall include 14 preloaded single duct VAV box control applications to allow the CVM to be made fully operational without the need to create a custom program.
  5. The CVM shall employ finite state programming to eliminate unnecessary conflicts between control functions at crossover points in their operational sequences. Suppliers using non-state based DDC shall provide separate control strategy diagrams for all controlled functions in their submittals.
  6. CVM controllers shall be factory programmed with a continuous adaptive tuning algorithm that senses changes in the physical environment and continually adjusts loop tuning parameters appropriately. Controllers that require manual tuning of loops or perform automatic tuning on command only shall not be acceptable.
  7. The CVM shall be assembled in a plenum-rated plastic housing with protection class IP20 (IEC529) and flammability rated to UL94-5VB.
  8. The CVM shall include an integral real-time clock and support time-based tasks which enables these equipment controllers to monitor and control:
    - a. Schedules
    - b. Calendars
    - c. Alarms
    - d. Trends
  9. The CVM can continue time-based monitoring when offline for extended periods of time from a network.
  10. The CVM shall include an integral differential pressure transducer and damper actuator. An additional configuration option shall be available that also includes an integral potentiometer for actual damper position feedback. All components shall be connected and mounted as a single assembly, removable as one piece.
  11. The integral damper actuator shall be a fast response stepper motor capable of stroking 90 degrees in 60 seconds for quick damper positioning to speed commissioning and troubleshooting tasks.
  12. The CVM shall determine airflow by a state-of-the-art, digital, non-flow pressure sensor that supports automatic correction for polarity on high- and low-pressure DP tube connections to eliminate high- and low-pressure connection mistakes.
  13. The CVM shall have the ability to automatically calibrate the flow sensor to eliminate pressure transducer offset error due to ambient temperature / humidity effects.
  14. The CVM can operate as a stand-alone controller in applications that do not require a networked supervisory device or for network applications where it is preferred to have the scheduling, alarming, and/or trending performed locally in the equipment controllers.
  15. The CVM shall include troubleshooting LEDs to indicate the following conditions:
    - a. Power - to indicate if the controller is powered or not powered.
    - b. Fault - to indicate if the controller is in its default state, has not faults, has a device fault, is in startup or download mode, or has an SA Bus communication issue.
    - c. SA Bus - to indicate if SA Bus communication is occurring and normal, is not occurring, or was occurring but has been lost and is waiting to rejoin.
    - d. FC Bus - to indicate if FC bus communication is occurring and normal, is not occurring, or was occurring but has been lost and is waiting to rejoin.
    - e. EOL - to indicate if the end-of-line termination switch is on or off.
  16. The CVM shall have the ability to transfer and apply firmware files to all SA Bus devices (XPM, IOM, and NS8000) connected to it.
  17. The CVM shall include pluggable screw terminal blocks for all I/O, FC and SA Bus communication, and power wiring connections.

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18. The CVM shall accommodate the direct wiring of analog and binary I/O field points with the following resolution:
    - a. Inputs - 24-bit analog-to-digital converter.
    - b. Outputs - +/- 200mV accuracy in 0-10 VDC application.
  19. The CVM shall support the following types of inputs and outputs supplied in the amounts required for the specified applications:
    - a. Universal Inputs - shall be configurable to monitor any of the following:
      - 1) 0-10 VDC analog input
      - 2) 4-20 mA analog input
      - 3) 0-600k ohms analog input
      - 4) Dry contact binary input
    - b. Binary Outputs – shall output the following:
      - 1) 24 VAC Triac binary outputs
    - c. Configurable Outputs – shall be configurable of outputting the following:
      - 1) 0-10 VDC analog output
      - 2) 24 VAC Triac binary output
  20. The CVM shall have the ability to reside on a Field Controller Bus (FC Bus).
    - a. The FC Bus shall be a MS/TP Bus supporting BACnet Standard protocol SSPC-135.
    - b. The FC Bus shall support communications between the CVMs and the Network Engine.
      - 1) The FC Bus shall also support peer-to-peer communications between non-supervisory devices, allowing these devices to communicate system data with each other directly, bypassing the supervisory network engine on the bus.
    - c. The FC Bus shall support a minimum of 100 equipment controllers and/or expansion modules in any combination.
    - d. The FC Bus shall operate at a maximum distance of 15,000 Ft. between the CVM and the furthest connected device.
  21. The CVM shall include three (3) decimal rotary dial switches for setting the BACnet MS/TP device address.
  22. The CVM shall have the ability to monitor and control a network of sensors and actuators over a SA Bus.
    - a. The SA Bus shall be a MS/TP Bus supporting BACnet Standard Protocol SSPC-135.
    - b. The SA Bus shall support a minimum of 10 devices per trunk.
    - c. The SA Bus shall operate at a maximum distance of 1,200 Ft. between the CVM and the furthest connected device.
  23. The CVM shall have the capability to execute VAV box control sequences involving direct wired I/O points as well as input and output devices communicating over a MS/TP Bus.
  24. The controller shall utilize a proportional plus integration (PI) algorithm for the space temperature control loops.
  25. Each controller shall continuously, adaptively tune the control algorithms to improve control and controller reliability through reduced actuator duty cycle. In addition, this tuning reduces commissioning costs, and eliminates the maintenance costs of manually re-tuning loops to compensate for seasonal or other load changes.
  26. The controller shall provide the ability to download and upload VAV box control application configuration files, both locally and via the communications network. Controllers shall be able to be loaded individually or as a group.
  27. Control setpoint changes initiated over the network shall be written to CVM non-volatile memory to prevent loss of setpoint changes and to provide consistent operation in the event of communication failure.
  28. The CVM controller firmware shall be flash-upgradeable remotely via the communications bus to minimize costs of feature enhancements.



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29. The CVM controller shall provide fail-soft operation if the airflow signal becomes unreliable, by automatically reverting to a pressure-dependent control mode.
  30. The CVM controller shall interface with balancer tools that allow automatic recalculation of box flow pickup gain ("K" factor), and the ability to directly command the airflow control loop to the box minimum and maximum airflow setpoints.
  31. The CVM controller shall have on-board diagnostics. These diagnostics shall consist of control loop performance measurements executing at each control loop's sample interval, which may be used to continuously monitor and document system performance. The CVM shall calculate Exponentially Weighted Moving Averages (EWMA) for each of the following metrics, which shall be available to the end user for efficient management of the VAV terminals.
    - a. Absolute temperature loop error
    - b. Signed temperature loop error
    - c. Absolute airflow loop error
    - d. Signed airflow loop error
    - e. Average damper actuator duty cycle
  32. The controller shall detect system error conditions to assist in managing the VAV zones. The error conditions shall consist of:
    - a. Unreliable space temperature sensor
    - b. Unreliable differential pressure sensor
    - c. Starved box
    - d. Actuator stall
    - e. Insufficient cooling
    - f. Insufficient heating
  33. The controller shall provide a flow test function to view damper position vs. flow in a graphical format. The information would alert the user to check damper position. The CVM would also provide a method to calculate actuator duty cycle as an indicator of damper actuator runtime.
  34. The CVM controller shall provide a compliant interface for ASHRAE Standard 62-1989 (indoor air quality), and shall be capable of resetting the box minimum airflow based on the percent of outdoor air in the primary air stream.
  35. The CVM controller shall comply with ASHRAE Standard 90.1 (energy efficiency) by preventing simultaneous heating and cooling, and where the control strategy requires reset of airflow while in reheat, by modulating the box reheat device fully open prior to increasing the airflow in the heating sequence.
  36. Provide Johnson Controls CVM or approved equal as shown on plans.
- C. XPM expansion I/O module (XPM)
1. The XPM provides additional input and output interfaces for use in digital controllers.
  2. The XPM shall communicate with controllers over the FC Bus or the SA Bus.
  3. The XPM shall support BACnet Standard ANSI/ASHRAE 135.
    - a. The XPM shall be BTL listed/certified and carry the BTL Label.
    - b. The XPM shall be tested and certified as a BACnet Smart Actuator (B-SA).
    - c. A BACnet Protocol Implementation Conformance Statement shall be provided for the XPM.
      - 1) The Conformance Statement shall be submitted 10 days prior to bidding.
  4. The XPM shall include pluggable screw terminal blocks for all I/O, SA/FC bus communication, and power wiring connections.
  5. The XPM shall include three (3) decimal rotary dial switches for setting the BACnet MS/TP device address.
  6. The XPM shall accommodate the direct wiring of analog and binary I/O field points with the following resolution:

- 
- a. Inputs – 24-bit analog-to-digital converter
  - b. Outputs – +/- 200 mV accuracy in 0-10 VDC applications
  7. The XPM shall support the following types of inputs and outputs:
    - a. Universal Inputs – shall be configured to monitor any of the following:
      - 1) 0-10 VDC analog input
      - 2) 4-20 mA analog input
      - 3) 0-600k ohms analog input
      - 4) Dry contact binary input
    - b. Binary Inputs – shall be configured to monitor either of the following:
      - 1) Dry Contact Maintained Mode
      - 2) Pulse Counter Mode
    - c. Analog Outputs – shall be configured to output either of the following:
      - 1) 0-10 VDC analog output
      - 2) 4-20 mA analog output
    - d. Binary Outputs – shall output the following:
      - 1) 24 VAC Triac
      - 2) Configurable Outputs – shall be capable of the following:
        - 3) 0-10 VDC analog output
        - 4) 24 VAC Triac binary output
  8. The XPM shall include troubleshooting LEDs to indicate the following conditions:
    - a. Power – to indicate if the device is powered or not powered
    - b. Fault – to indicate if the device is in its default state, has no faults, has a device fault, is in startup or download mode, or has an SA Bus communication issue
    - c. SA/FC Bus – to indicate if bus communication is occurring and normal, is not occurring, or was occurring but has been lost and is waiting to rejoin
    - d. EOL – to indicate if the end of line termination is on or off.
  9. Provide Johnson Controls XPM or approved equal as shown on plans.

## 2.06 COMPUTING HARDWARE AND SOFTWARE

- A. General
  1. Computing hardware, software and operating systems shall be provided at the revision level or model number as specified or at the latest release of the vendor if not specified.
  2. In order to provide a consistent level of performance, all PCs shall be provided with Operating Systems and Processors by the manufacturer specified.
- B. Dedicated Web Based User Interface
  1. PC Hardware – The personal computer(s) shall be configured as follows:
    - a. Memory – 16 GB (8 GB Minimum)
    - b. CPU– Intel Quad Core processor. 3.2 GHz Clock Speed (minimum)
    - c. Hard Drive – 500 GB hard drive capacity
    - d. Hard drive backup system – CD/RW, DVD/RW or network backup software provided by owners IT department.
    - e. Ports – (2) USB 3.0, Ethernet, VGA, microphone/headset
    - f. Keyboard – 101 Keyboard and 2 Button Mouse
    - g. Display configuration – 1-2 displays as follows:
      - 1) Each Display – 24” LED Flat Panel Monitor 1920 x 1080 resolution minimum
      - 2) 16 bit or higher color resolution
      - 3) Display card with multiple monitor support
  2. Operating System Software
    - a. Windows 10 Professional or Enterprise Edition with Anniversary Update (64 bit)
    - b. Provide complete operator workstation software package, including any hardware or software keys. Include the original installation disks and licenses for all included

- software, device drivers, and peripherals.
- c. Provide software registration cards to the Owner for all included software.

## 2.07 MISCELLANEOUS DEVICES

### A. Local Control Panels

1. All control panels shall be factory constructed, incorporating the BMS manufacturer's standard designs and layouts. All control panels shall be UL inspected and listed as an assembly and carry a UL 508A label listing compliance. Control panels shall be fully enclosed, with sub-panel, hinged door, and flush latch.
2. In general, the control panels shall consist of the DDC controller(s), display module as specified and indicated on the plans, and I/O devices—such as relays, transducers, and so forth—that are not required to be located external to the control panel due to function. Where specified the display module shall be flush mounted in the panel face unless otherwise noted.
3. All I/O connections on the DDC controller shall be provide via removable or fixed screw terminals.
4. Low and line voltage wiring shall be segregated. All provided terminal strips and wiring shall be UL listed, 300-volt service and provide adequate clearance for field wiring.
5. All wiring shall be neatly installed in plastic trays or tie-wrapped.
6. Control panels for use in seismic areas shall be built in an approved facility and carry the appropriate label.
7. Except where otherwise noted, all standard and custom control panels shall be built in an ISO9002 certified facility.

### B. Power Supplies

1. DC power supplies shall be sized for the connected device load. Total rated load shall not exceed 75% of the rated capacity of the power supply.
2. Input: 120 VAC +10%, 60Hz
3. Output: 24 VDC
4. Line Regulation: +0.05% for 10% line change
5. Load Regulation: +0.05% for 50% load change
6. Ripple and Noise: 1 mV rms, 5 mV peak to peak
7. An appropriately sized fuse and fuse block shall be provided and located next to the power supply.
8. A power disconnect switch shall be provided next to the power supply.

## PART 3 – PERFORMANCE/EXECUTION

### 3.01 BMS SPECIFIC REQUIREMENTS

#### A. Graphic Displays

1. Provide a color graphic system flow diagram display for each system with all points as indicated on the point list. All terminal unit graphic displays shall be from a standard design library.
2. User shall access the various system schematics via a graphical penetration scheme and/or menu selection.

#### B. Custom Reports:

1. Provide custom reports as required for this project.

#### C. Actuation / Control Type

1. Primary Equipment
  - a. Controls shall be provided by equipment manufacturer as specified herein.
  - b. All damper and valve actuation shall be electric.
  - c. Air Handling Equipment
  - d. All air handlers shall be controlled with a HVAC-DDC Controller.

- e. All damper and valve actuation shall be electric.
2. Terminal Equipment:
  - a. Terminal Units (VAV, UV, etc.) shall have electric damper and valve actuation.
  - b. All Terminal Units shall be controlled with HVAC-DDC Controller.

### 3.02 INSTALLATION PRACTICES

#### A. BMS Wiring

1. All conduit, wiring, accessories and wiring connections required for the installation of the BMS, as herein specified, shall be provided by the BMS Contractor unless specifically shown on the Electrical Drawings under Division 24 Electrical. All wiring shall comply with the requirements of applicable portions of Division 24 and all local and national electric codes, unless specified otherwise in this section.
2. All BMS wiring materials and installation methods shall comply with BMS manufacturer recommendations.
3. The sizing, type and provision of cable, conduit, cable trays, and raceways shall be the design responsibility of the BMS Contractor. If complications arise, however, due to the incorrect selection of cable, cable trays, raceways and/or conduit by the BMS Contractor, the Contractor shall be responsible for all costs incurred in replacing the selected components.
4. Class 2 Wiring
  - a. All Class 2 (24 VAC or less) wiring shall be installed in conduit unless otherwise specified.
5. Class 2 signal wiring and 24 VAC power can be run in the same conduit. Power wiring 120VAC and greater cannot share the same conduit with Class 2 signal wiring.
6. Provide for complete grounding of all applicable signal and communications cables, panels and equipment so as to ensure system integrity of operation. Ground cabling and conduit at the panel terminations. Avoid grounding loops.

#### B. BMS Line Voltage Power Source

1. 120-volt AC circuits used for the BMS shall be taken from panel boards and circuit breakers provided by Division 26.
2. Circuits used for the BMS shall be dedicated to the BMS and shall not be used for any other purposes.
3. DDC terminal unit controllers may use AC power from motor power circuits.

#### C. BMS Raceway

1. All wiring shall be installed in conduit or raceway except as noted elsewhere in this specification. Minimum control wiring conduit size 1/2".
2. Where it is not possible to conceal raceways in finished locations, surface raceway (Wiremold) may be used as approved by the Architect.
3. All conduits and raceways shall be installed level, plumb, at right angles to the building lines and shall follow the contours of the surface to which they are attached.
4. Flexible Metal Conduit shall be used for vibration isolation and shall be limited to 3 feet in length when terminating to vibrating equipment. Flexible Metal Conduit may be used within partition walls. Flexible Metal Conduit shall be UL listed.

#### D. Penetrations

1. Provide fire stopping for all penetrations used by dedicated BMS conduits and raceways.
2. All openings in fire proofed or fire stopped components shall be closed by using approved fire resistive sealant.
3. All wiring passing through penetrations, including walls shall be in conduit or enclosed raceway.
4. Penetrations of floor slabs shall be by core drilling. All penetrations shall be plumb, true, and square.

- E. BMS Identification Standards
  - 1. Node Identification. All nodes shall be identified by a permanent label fastened to the enclosure. Labels shall be suitable for the node location.
  - 2. Cable types specified in Item A shall be color coded for easy identification and troubleshooting.
- F. BMS Panel Installation
  - 1. The BMS panels and cabinets shall be located as indicated at an elevation of not less than 2 feet from the bottom edge of the panel to the finished floor. Each cabinet shall be anchored per the manufacturer's recommendations.
  - 2. The BMS contractor shall be responsible for coordinating panel locations with other trades and electrical and mechanical contractors.
- G. Input Devices
  - 1. All Input devices shall be installed per the manufacturer recommendation.
  - 2. Locate components of the BMS in accessible local control panels wherever possible.
- H. HVAC Input Devices – General
  - 1. All Input devices shall be installed per the manufacturer's recommendation.
  - 2. Locate components of the BMS in accessible local control panels wherever possible.
  - 3. The mechanical contractor shall install all in-line devices such as temperature wells, pressure taps, airflow stations, etc.
  - 4. Input Flow Measuring Devices shall be installed in strict compliance with ASME guidelines affecting non-standard approach conditions.
  - 5. Outside Air Sensors
    - a. Sensors shall be mounted on the North wall to minimize solar radiant heat impact or located in a continuous intake flow adequate to monitor outdoor air conditions accurately.
    - b. Sensors shall be installed with a rain proof, perforated cover.
  - 6. Water Differential Pressure Sensors
    - a. Differential pressure transmitters used for flow measurement shall be sized to the flow- sensing device.
    - b. Differential pressure transmitters shall be supplied with tee fittings and shut-off valves in the high and low sensing pick-up lines.
    - c. The transmitters shall be installed in an accessible location wherever possible.
  - 7. Medium to High Differential Water Pressure Applications (Over 21" WC)
    - a. Air bleed units, bypass valves and compression fittings shall be provided.
  - 8. Building Differential Air Pressure Applications (-0.5" to +0.5" WC)
    - a. Transmitter's exterior sensing tip shall be installed with a shielded static air probe to reduce pressure fluctuations caused by wind.
    - b. The interior tip shall be inconspicuous and located as shown on the drawings.
  - 9. Air Flow Measuring Stations
    - a. Where the stations are installed in insulated ducts, the airflow passage of the station shall be the same size as the inside airflow dimension of the duct.
    - b. Station flanges shall be two to three inches to facilitate matching connecting ductwork.
  - 10. Duct Temperature Sensors
    - a. Duct mount sensors shall mount in an electrical box through a hole in the duct and be positioned so as to be easily accessible for repair or replacement.
    - b. The sensors shall be insertion type and constructed as a complete assembly including lock nut and mounting plate.
    - c. For ductwork greater in any dimension than 48 inches or where air temperature stratification exists such as a mixed air plenum, utilize an averaging sensor.

- d. The sensor shall be mounted to suitable supports using factory approved element holders.
- 11. Space Sensors
  - a. Shall be mounted per ADA requirements.
  - b. Provide lockable tamper-proof covers in public areas and/or where indicated on the plans.
- 12. Low Temperature Limit Switches
  - a. Install on the discharge side of the first water or steam coil in the air stream.
  - b. Mount element horizontally across duct in a serpentine pattern ensuring each square foot of coil is protected by 1 foot of sensor.
  - c. For large duct areas where the sensing element does not provide full coverage of the air stream, provide additional switches as required to provide full protection of the air stream.
- 13. Air Differential Pressure Status Switches
  - a. Install with static pressure tips, tubing, fittings, and air filter.
- 14. Water Differential Pressure Status Switches
  - a. Install with shut off valves for isolation.
- 15. HVAC Output Devices
  - a. All output devices shall be installed per the manufacturer's recommendation. The mechanical contractor shall install all in-line devices such as control valves, dampers, airflow stations, pressure wells, etc.
  - b. Actuators: All control actuators shall be sized capable of closing against the maximum system shut-off pressure. The actuator shall modulate in a smooth fashion through the entire stroke. When any pneumatic actuator is sequenced with another device, pilot positioners shall be installed to allow for proper sequencing.
  - c. Control Dampers: Shall be opposed blade for modulating control of airflow. Parallel blade dampers shall be installed for two position applications.
  - d. Control Valves: Shall be sized for proper flow control with equal percentage valve plugs. The maximum pressure drop for water applications shall be 5 PSI. The maximum pressure drop for steam applications shall be 7 PSI.
  - e. Electronic Signal Isolation Transducers: Whenever an analog output signal from the BMS is to be connected to an external control system as an input (such as a chiller control panel), or is to receive as an input a signal from a remote system, provide a signal isolation transducer. Signal isolation transducer shall provide ground plane isolation between systems. Signals shall provide optical isolation between systems.

### 3.03 TRAINING

- A. The BMS contractor shall provide the following training services:
  - 1. One day of on-site orientation by a system technician who is fully knowledgeable of the specific installation details of the project. This orientation shall, at a minimum, consist of a review of the project as-built drawings, the BMS software layout and naming conventions, and a walk through of the facility to identify panel and device locations.

**END OF SECTION**

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**SECTION 26 0010  
GENERAL PROVISIONS FOR ELECTRICAL WORK**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. The work included in this Contract is shown on the drawings and described in these specifications. It consists of furnishing all labor, material, services, supervision and connection of all systems shown and/or specified including the requirements of:
  - 1. DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS
  - 2. DIVISION 1 - GENERAL REQUIREMENT
  - 3. DIVISION 26,27,28 - GENERAL REQUIREMENT
- B. Contractor is responsible to review and understand all drawings and all work of all trades to ensure a complete and thorough project.
- C. Provide all labor, tools, materials, equipment, coordination, and plans necessary for installation and proper operation of the electrical systems.
- D. Contract drawings and specifications are complementary and must be so used to ascertain all requirements of the work.

**1.02 DEFINITIONS**

- A. Provide, furnish, install, and furnish and install shall have the same meaning. That is, the Contractor shall purchase, transport to the site and install all required components of the work unless specifically stated otherwise in the contract documents.
- B. Wiring pertains to raceway, fittings, conductors, terminations, hangers, supports, etc. as required to form a complete system.

**1.03 DRAWINGS AND SPECIFICATIONS**

- A. The plans are diagrammatic and indicate only the sizes and general arrangement of conduit, devices, and equipment; exact locations of all elements shall be determined as work progresses, in cooperation with the work of other trades. It is not intended to show every item of work or minor piece of equipment, but every item shall be furnished and installed without additional remuneration as necessary to complete the system in accordance with the best practice of the trade.
- B. As previously stated, the exact locations of electrical devices and equipment are diagrammatic. The owner may request for any devices or equipment to be installed at different locations than what is indicated on the drawings in a specific area or room. It is the responsibility of the Electrical Contractor to coordinate the locations of devices in all areas prior to installation.

**1.04 SUBMITTALS**

- A. See Section 01 30 00-Administrative Requirements for submittal procedures.

**1.05 PRODUCT EQUIVALENTS**

- A. Refer to Section "Substitution Procedures".

**1.06 APPLICABLE STANDARDS**

- A. All equipment shall bear the UL label.
- B. The latest edition of the following minimum standards shall apply wherever applicable:
  - 1. American Standards Association
  - 2. American Society for Testing Materials
  - 3. Electrical Testing Laboratories, Inc.
  - 4. Institute of Electrical and Electronic Engineers



5. Insulated Power Cable for Engineers Association
  6. Occupational Safety and Health Act
  7. National Electrical Code
  8. National Electrical Manufacturers Association
  9. National Electrical Safety Code
  10. National Fire Protection Association
  11. Underwriters Laboratories, Inc.
  12. Local and state codes.
- C. In the event there are conflicts between specifications and standards, standards shall govern unless specifications are in excess of standards.

#### **1.07 PERMITS AND INSPECTIONS**

- A. Permits: The Contractor shall apply for and pay the cost for any local permits necessary for the work of this contract.
- B. Inspections: The Contractor shall be responsible for obtaining a 3rd party electrical inspection of and the certificate by the approved inspection agency for the entire electrical system.
- C. The undertaking of periodic inspections by the Owner or Engineer shall not be construed as supervision of actual construction. The Owner or Engineer is not responsible for providing a safe place of work for the Contractor, Contractor's employees, suppliers or subcontractors for access, visits, use, work, travel or occupancy by any person.

#### **1.08 CODES AND REGULATIONS**

- A. Comply with all applicable rules and regulations of the municipal laws and ordinances and latest revisions thereof. All work shall be done in full conformity with the requirements of all authorities having jurisdiction. Modifications required by the above authorities will be made without additional charges to the Owner. Where alterations to and/or deviations from the Contract Documents are required by the authorities, report the requirements to the Engineer and secure approval before work is started.
- B. Furnish and file with the proper authorities, all drawings required by them in connection with the work. Obtain all permits, licenses, and inspections and pay all legal and proper fees and charges in this connection.
- C. Should any work shown or specified be of lighter or smaller material than Code requires, same shall be executed in strict accordance with the regulations.
- D. This Contractor shall have the electrical work inspected from time to time by authorized inspectors and shall pay all expense incurred by same. At the completion of the work, the Contractor shall furnish a Certificate of Approval, in triplicate, indicating full approval of the work furnished and installed in this Contract from the local authority having jurisdiction.
- E. Equipment and components parts thereof shall bear manufacturer's name-plate, giving manufacturer's name, size, type and model number or serial number, electrical characteristic to facilitate maintenance and replacements. Name plates of distributors or contractors are not acceptable.
- F. Engineer will have privilege of stopping any work or use of any material that in his opinion is not being properly installed and each Contractor shall remove all materials delivered, or work erected, which does not comply with Contract Drawings and Specifications, and replace with proper materials, or correct such work as directed by the Engineer, at no additional cost to Owner.
- G. If equipment or materials are installed before proper approvals have been obtained, each Contractor shall be liable for their removal and replacement including work of other trades affected by such work, at no additional cost to Owner, if such items do not meet intent of the Drawings and Specifications.

### **1.09 RECORD DRAWINGS**

- A. The Electrical Contractor shall keep an accurate location record of all underground and concealed piping, and of all changes from the original design. He is required to furnish this information to the Engineer prior to his application for final payment.
  - 1. Submit prior to final acceptance inspection, one complete marked-up set of reproducible engineering design drawings.
    - a. Fully illustrate all revisions made by all crafts in course of work.
    - b. Include all field changes, adjustments, variances, substitutions and deletions, including all Change Orders.
    - c. Exact location of raceways, equipment and devices.
    - d. Exact size and location of underground and under floor raceways, grounding conductors and duct banks.
    - e. These drawings shall be for record purposes for Owner's use and are not considered shop drawings.
- B. At completion of the project, all changes and deviations from the Contract Documents shall be recorded by the Contractor.
- C. Four (4) corrected sets of all operating and maintenance instructions and complete parts lists bound in hard covers shall be furnished to the Owner.

### **1.10 CLEANING CONDUIT, EQUIPMENT**

- A. Conduit, equipment: thoroughly cleaned of dirt, cuttings, other foreign substances. Should any conduit, other part of systems be stopped by any foreign matter, disconnect, clean wherever necessary for purpose of locating, removing obstructions. Repair work damaged in course of removing obstructions.

### **1.11 BALANCED LOAD**

- A. It is intended that design and features of the work as indicated will provide balanced load on the feeders and main service. Contractor shall provide material and installation to provide this balance load insofar as possible.

### **1.12 JOB CONDITIONS**

- A. Examine site related work and surfaces before starting work of any Section. Failure to do so shall in no way relieve the Contractor of the responsibility to properly install the new work.
  - 1. Report to the Engineer, in writing, conditions, which will prevent proper provision of this work ten (10) days prior to bid date, in time for an addendum to be issued .
  - 2. Beginning work of any Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor.
  - 3. Perform any required removal, repair or replacement of this work caused by unsuitable conditions at no additional cost to Owner.
  - 4. The Contractor is responsible for performing routine maintenance and cleaning of any existing equipment where he is making connections to new work and to the building where his work adds debris.

### **1.13 REVIEW OF CONSTRUCTION**

- A. Work may be reviewed at any time by representative of the Engineer.
  - 1. Contractor is to uncover all concealed areas during inspections if requested.
- B. Advise Architect and Engineer that work is ready for review at following times:
  - 1. Prior to backfilling buried work.
  - 2. Prior to concealment of work in walls and above ceilings.
  - 3. When all requirements of contract have been completed.

#### **1.14 SHOP DRAWING SUBMITTALS**

- A. Submit required shop drawings, samples and product information in accordance with Division 1, requirements and as required in the various sections of these specifications.
- B. Submittals shall show evidence of checking by the Contractor for accuracy. Product information (catalog sheets) shall indicate complete catalog number, color, accessories, etc., as well as, name of manufacturer and local distributor or manufacturer's representative.
- C. Submit for review detailed coordination drawings 3/8" or larger scale plans for all major electrical equipment and any areas of conflicts by drafting location of equipment, lighting fixtures, cable trays and conduits larger than 1-1/2" trade size. Contractor shall refer to Division 1 for preparing coordination drawings.
- D. Incomplete submittals will be rejected.
- E. It is the Contractor's responsibility to provide submittals in an organized and timely manner so as not to delay the project schedule and hamper the work of other trades.

#### **1.15 OPERATING INSTRUCTIONS**

- A. It shall be the Contractor's responsibility to insure that the Owner's representative is given adequate instruction on the operation of all equipment prior to final payment.
- B. Test and demonstrate all systems described in this Division in the presence of the Owner or a designated representative upon completion of the work. Demonstrate that the installation is in accordance with Contract Documents.
- C. Provide to the Owner all instructions on maintenance and operation of all systems and equipment provided. Provide all necessary tools and personnel to thoroughly demonstrate and present those instructions.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. All materials and equipment shall be new and as specified or of equal or better quality.
- B. Basic hardware and miscellaneous items shall meet existing trade standards of quality and shall carry UL or FM listings where applicable.
- C. All equipment supplied shall be the standard equipment of the manufacturer.
- D. Drawings and specifications are based on specific manufacturer's equipment. Therefore, the Contractor shall assume all responsibility, cost and coordination involved in making any necessary revisions to apply another manufacturer's equipment, even though it may be approved as an "equal" item by the Engineer.

### **PART 3 EXECUTION**

#### **3.01 COORDINATION OF WORK**

- A. All work shall be executed in accordance with recognized standards of workmanship. All work shall be installed in a neat and orderly manner.
- B. The Contractor shall exchange information with other Contractors and the Owner in order to insure orderly progress of the work.
- C. The Contractor shall check for possible interference before installing any items. If any work is installed, and later develops interference with other features of the design, the Contractor will be responsible to make such changes to eliminate the interference.

**END OF SECTION**

**SECTION 26 0505  
SELECTIVE DEMOLITION FOR ELECTRICAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical demolition.

**PART 2 PRODUCTS**

**2.01 MATERIALS AND EQUIPMENT**

- A. Materials and equipment for patching and extending work: As specified in individual sections.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Owner before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

**3.02 PREPARATION**

- A. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- B. Existing Lighting System: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

**3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK**

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- D. Disconnect and remove obsolete luminaires. Remove brackets, stems, hangers, and other accessories.
- E. Repair adjacent construction and finishes damaged during demolition and extension work.
- F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

**END OF SECTION**

**SECTION 26 0519**  
**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Single conductor building wire.
- B. Wiring connectors.
- C. Electrical tape.
- D. Wire pulling lubricant.
- E. Cable ties.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

**1.03 REFERENCE STANDARDS**

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy 2021.
- D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.
- F. UL 486C - Splicing Wire Connectors Current Edition, Including All Revisions.
- G. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
  - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Georgia Peach Green Building Rating System Submittals:
  - 1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this this information.
  - 2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project. Refer to Section 01 8113.

- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

### **PART 2 PRODUCTS**

#### **2.01 CONDUCTOR AND CABLE APPLICATIONS**

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Armored cable is not permitted.
- E. Metal-clad cable is not permitted.

#### **2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
- H. Conductor Material:
  - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
  - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
- I. Minimum Conductor Size: 12 AWG.
  - 1. Branch Circuits: 12 AWG.
    - a. Exceptions:

- 
- 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
  - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
- J. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- K. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
  2. Color Coding Method: Integrally colored insulation.
    - a. Conductors size 6 AWG and larger may have black insulation color coded using vinyl color coding electrical tape within 2 inches of each end of the conductor.
  3. Color Code:
    - a. 480Y/277 V, 3 Phase, 4 Wire System:
      - 1) Phase A: Brown.
      - 2) Phase B: Orange.
      - 3) Phase C: Yellow.
      - 4) Neutral/Grounded: Gray.
    - b. 208Y/120 V, 3 Phase, 4 Wire System:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
      - 4) Neutral/Grounded: White.
    - c. Equipment Ground, All Systems: Green.

### 2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
1. Copper Building Wire:
    - a. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
    - b. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
    - c. General Cable Technologies Corporation: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
    - d. Service Wire Co: [www.servicewire.com/#sle](http://www.servicewire.com/#sle).
    - e. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
    - f. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
      - 1) All wiring within flexible conduit shall be flexible stranded.
    - b. Size 8 AWG and Larger: Stranded.
  2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
    - a. Installed Underground: Type XHHW-2.

### 2.04 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

- B. Connectors for Grounding and Bonding: Comply with Section 26 0526.
- C. Joints in solid conductors shall be spliced using Ideal "wire nuts", 3M Company "Scotchlock" or T&B connectors in junction boxes, outlet boxes and lighting fixtures.
- D. Sta-Kon", "Piggy", or other permanent type crimp connectors shall not be used for #10 AWG and smaller conductors.
- E. Joints in stranded conductors shall be spliced by approved mechanical connectors that are insulated with gum rubber tape and insulating tape. Permanent compression connectors for splices and taps, provided with UL-approved insulating covers, may be used instead of mechanical connectors plus tape. Power Distribution Blocks may be used where listed for the enclosure size and available fault current.
- F. Conductors, in all cases, shall be continuous from outlet to outlet and no splicing shall be made except within outlet or junction boxes, troughs and gutters.
  - 1. No splices are allowed in panels.

## 2.05 ACCESSORIES

- A. Electrical Tape:
  - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
- B. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. American Polywater Corporation: [www.polywater.com/#sle](http://www.polywater.com/#sle).
    - c. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
- C. Cable Ties: Material and tensile strength rating suitable for application.
  - 1. Manufacturers:
    - a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that work likely to damage wire and cable has been completed.
- B. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- C. Verify that field measurements are as indicated.
- D. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

### 3.03 INSTALLATION

- A. Circuiting Requirements:
  - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
  - 2. When circuit destination is indicated without specific routing, determine exact routing required.
  - 3. Arrange circuiting to minimize splices.



4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
  5. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
  6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is permitted, under the following conditions:
    - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
    - b. Increase size of conductors as required to account for ampacity derating.
    - c. Size raceways, boxes, etc. to accommodate conductors.
  7. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Installation in Raceway:
1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  2. Pull all conductors and cables together into raceway at same time.
  3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- F. Install conductors with a minimum of 12 inches of slack at each outlet and junction box.
1. All junction boxes are to have slack for future use as opposed to having wires pulled right through boxes.
- G. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
- H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- I. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- J. Make wiring connections using specified wiring connectors.
1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
  2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
  3. Do not remove conductor strands to facilitate insertion into connector.
  4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
  5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
- K. Identify conductors and cables in accordance with Section 26 0553.

- L. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

**3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

**END OF SECTION**

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**SECTION 26 0526  
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.

**1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

**PART 2 PRODUCTS**

**2.01 GROUNDING AND BONDING REQUIREMENTS**

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Bonding and Equipment Grounding:
  - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
    - a. Bond the following conduits to each other, the housing can, and ground bus with a #3/0 insulated copper ground wire and grounding bushings.
      - 1) All conduits entering any freestanding enclosure, transformers, or other equipment.
  - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  - 3. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with 8-inch long bonding jumper.
  - 4. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.

## 2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
  - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
  - 1. Use insulated copper conductors unless otherwise indicated.
- C. Connectors for Grounding and Bonding:
  - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  - 2. Manufacturers - Mechanical and Compression Connectors:
    - a. Advanced Lightning Technology (ALT): [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - c. Harger Lightning & Grounding: [www.harger.com/#sle](http://www.harger.com/#sle).
    - d. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
  - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.



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**SECTION 26 0529  
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 26 0533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- C. Section 26 0533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

**1.03 REFERENCE STANDARDS**

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2023.
- C. MFMA-4 - Metal Framing Standards Publication 2004.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
  - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
  - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
  - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Georgia Peach Green Building Rating System Submittals:
  - 1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this information.
  - 2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project. Refer to Section 01 8113.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.

## **PART 2 PRODUCTS**

### **2.01 SUPPORT AND ATTACHMENT COMPONENTS**

- A. General Requirements:
  - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
  - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
  - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported at 5 times the applied force. Include consideration for vibration, equipment operation, and shock loads where applicable.
  - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - 5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
  - 6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
    - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
    - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Components for Vibration Isolation and/or Seismic Controls: Comply with Section 26 0548.
- C. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
  - 1. Conduit Straps: One-hole or two-hole type; steel.
  - 2. Conduit Clamps: Bolted type unless otherwise indicated.
  - 3. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- D. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
  - 1. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- E. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
  - 1. Comply with MFMA-4.
  - 2. Manufacturers:
    - a. Cooper B-Line, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - c. Unistrut, a brand of Atkore International Inc: [www.unistrut.com/#sle](http://www.unistrut.com/#sle).

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- d. Substitutions: See Section 01 6000 - Product Requirements.
  - e. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
  - F. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
    - 1. Minimum Size, Unless Otherwise Indicated or Required:
      - a. Equipment Supports: 1/2 inch diameter.
      - b. Single Conduit up to 1 inch (27 mm) trade size: 1/4 inch diameter.
      - c. Single Conduit larger than 1 inch (27 mm) trade size: 3/8 inch diameter.
      - d. Outlet Boxes: 1/4 inch diameter.
  - G. Anchors and Fasteners:
    - 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
    - 2. Solid or Grout-Filled Masonry: Use expansion anchors.
    - 3. Hollow Masonry: Use toggle bolts.
    - 4. Hollow Stud Walls: Use toggle bolts.
    - 5. Steel: Use beam clamps, machine bolts, or welded threaded studs.
    - 6. Sheet Metal: Use sheet metal screws.
    - 7. Plastic and lead anchors are not permitted.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Provide required vibration isolation and/or seismic controls in accordance with Section 26 0548.
- H. Equipment Support and Attachment:
  - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
  - 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
  - 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  - 4. Unless otherwise indicated, mount floor-mounted equipment on properly sized 4 inch high concrete pad constructed in accordance with Section 03 3000.
  - 5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.



- I. Conduit Support and Attachment: Also comply with Section 26 0533.13.
- J. Box Support and Attachment: Also comply with Section 26 0533.16.
- K. Exterior Luminaire Support and Attachment: Also comply with Section 26 5600.
- L. Secure fasteners according to manufacturer's recommended torque settings.

**3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

**END OF SECTION**

**SECTION 26 0533.13  
CONDUIT FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Galvanized steel rigid metal conduit (RMC).
- B. Intermediate metal conduit (IMC).
- C. Liquidtight flexible metal conduit (LFMC).
- D. Electrical metallic tubing (EMT).
- E. Rigid polyvinyl chloride (PVC) conduit.
- F. Conduit fittings.
- G. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0548 - Vibration and Seismic Controls for Electrical Systems.
- D. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- E. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

**1.03 REFERENCE STANDARDS**

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2020.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S) 2020.
- C. ANSI C80.5 - American National Standard for Electrical Rigid Metal Conduit -- Aluminum (ERMC-A) 2020.
- D. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit 2018.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.
- H. UL 360 - Liquid-Tight Flexible Metal Conduit Current Edition, Including All Revisions.
- I. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.
- J. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings Current Edition, Including All Revisions.
- K. UL 797 - Electrical Metallic Tubing-Steel Current Edition, Including All Revisions.
- L. UL 1242 - Electrical Intermediate Metal Conduit-Steel Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.

3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
  4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
  5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

### 1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. Georgia Peach Green Building Rating System Submittals:
1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this this information.
  2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project. Refer to Section 01 8113.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

### 1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

## PART 2 PRODUCTS

### 2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
1. Exterior, Direct-Buried: Use rigid PVC conduit.
  2. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit at elbow before emerging from underground.
  3. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows for bends.
  4. Metallic conduits installed underground outside the building or below the floor slab and vapor barrier shall be coated with two coats of coal tar bitumastic equal to Koppers Bitumastic 505.
- D. Embedded Within Concrete:
1. Within Slab on Grade: Not permitted.
  2. Within Slab Above Ground: Not permitted.
- E. Concealed Above Accessible Ceilings: Use electrical metallic tubing (EMT).

- F. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit or intermediate metal conduit (IMC).
- G. Exposed, Interior, Not Subject to Physical Damage: Use electrical metallic tubing (EMT).
- H. Exposed, Interior, Subject to Physical Damage: Use intermediate metal conduit (IMC).
  - 1. Locations subject to physical damage include, but are not limited to:
    - a. Where exposed below 6 feet, except within electrical and communication rooms or closets.
- I. Exposed, Exterior: Use galvanized steel rigid metal conduit.
- J. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit.
- K. Fittings: In outdoor locations or interior damp or wet locations, gasketed fittings inclusive of couplings shall be used in all metallic raceways.

## 2.02 CONDUIT REQUIREMENTS

- A. Fittings for Grounding and Bonding: Also comply with Section 26 0526.
- B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. Branch Circuits: 3/4 inch (21 mm) trade size.
  - 2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
  - 3. Underground, Exterior: 1 inch (27 mm) trade size.
- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## 2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
  - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  - 2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
  - 3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  - 4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
  - 2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Material: Use steel.
  - 4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

## 2.04 INTERMEDIATE METAL CONDUIT (IMC)

- A. Manufacturers:
  - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).

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2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
  3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
  2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  3. Material: Use steel or malleable iron.
  4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

## 2.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Manufacturers:
1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.
- C. Fittings:
1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
  2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  3. Material: Use steel or malleable iron.

## 2.06 ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
  3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.

2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel.
4. Connectors and Couplings: Use compression (gland) type.
  - a. Do not use indenter type connectors and couplings.
  - b. Do not use set-screw type connectors and couplings.

## **2.07 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT**

- A. Manufacturers:
  1. Cantex Inc: [www.cantexinc.com/#sle](http://www.cantexinc.com/#sle).
  2. Carlon, a brand of Thomas & Betts Corporation: [www.carlon.com/#sle](http://www.carlon.com/#sle).
  3. JM Eagle: [www.jmeagle.com/#sle](http://www.jmeagle.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- C. Fittings:
  1. Manufacturer: Same as manufacturer of conduit to be connected.
  2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

## **2.08 ACCESSORIES**

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil.
- B. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.
- C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.
- E. Sealing Compound for Sealing Fittings: Listed for use with the particular fittings to be installed.
- F. Modular Seals for Conduit Penetrations: Rated for minimum of 40 psig; Suitable for the conduits to be installed.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install intermediate metal conduit (IMC) in accordance with NECA 101.
- E. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- F. Conduit Routing:
  1. Unless dimensioned, conduit routing indicated is diagrammatic.

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2. When conduit destination is indicated without specific routing, determine exact routing required.
  3. Conceal all conduits unless specifically indicated to be exposed.
  4. Conduits in the following areas may be exposed, unless otherwise indicated:
    - a. Electrical rooms.
    - b. Mechanical equipment rooms.
    - c. Within joists in areas with no ceiling.
  5. Unless otherwise approved or indicated on associated documents, do not route conduits exposed:
    - a. Across floors.
    - b. Across roofs.
    - c. Across top of parapet walls.
    - d. Across building exterior surfaces.
  6. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
  7. Conduits containing conductors at voltages of 120 volts or higher (phase to ground) shall be installed a minimum of 48" below grade. All underground wires or conduits shall be buried with a warning tape installed 24" above the conduit or cable.
  8. Conduits run within slab on deck applications are NOT acceptable.
  9. Arrange conduit to maintain adequate headroom, clearances, and access.
  10. Arrange conduit to provide no more than the equivalent of three 90 degree bends between pull points.
  11. Arrange conduit to provide no more than 150 feet between pull points.
  12. Route conduits above water and drain piping where possible.
  13. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
  14. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
    - a. Heaters.
    - b. Hot water piping.
    - c. Flues.
- G. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
    - a. Conduits shall be supported on not more than 8'-0" centers when concealed and 5'-0" centers when exposed.
    - b. All vertical conduit runs not supported by walls are to be secured at floor and ceiling. Conduits are to be secured at the floor by means of a flange secured to the floor by expansion bolts. Connections to the equipment are to be by means of a "tee" conduit fitting and flexible conduit.
  2. Provide required vibration isolation and/or seismic controls in accordance with Section 26 0548.
  3. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
  4. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
  5. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
  6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
  7. Use of wire for support of conduits is not permitted.

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8. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with the most stringent requirements.
  - H. Connections and Terminations:
    1. Use approved conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
    2. Use suitable adapters where required to transition from one type of conduit to another.
    3. Terminate threaded conduits in boxes and enclosures using threaded hubs for dry locations and raintight hubs for wet locations.
    4. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
    5. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
  - I. Penetrations:
    1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
    2. Make penetrations perpendicular to surfaces unless otherwise indicated.
    3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
    4. Conceal bends for conduit risers emerging above ground.
    5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
    6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
  - J. Underground Installation:
    1. Provide trenching and backfilling in accordance with Section 31 2316.13.
    2. Minimum Cover, Unless Otherwise Indicated or Required:
      - a. Underground, Exterior: 48 inches.
      - b. Under Slab on Grade: 12 inches to bottom of slab.
    3. Provide underground warning tape in accordance with Section 26 0553 along entire conduit length.
  - K. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide concrete in accordance with Section 03 3000 with minimum concrete cover of 3 inches on all sides unless otherwise indicated.
  - L. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
    1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
    2. Where conduits are subject to earth movement by settlement or frost.
  - M. Provide pull string (70# test nylon cord) in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end. Empty conduit ends shall be corked or capped. Both ends of conduit shall be clearly identified as to where the other end is terminated.
  - N. Provide grounding and bonding in accordance with Section 26 0526.
    1. Where concentric, eccentric, or over-sized knockouts are encountered, a grounding-type insulated bushing shall be provided.
  - O. Identify conduits in accordance with Section 26 0553.



**3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

**3.04 CLEANING**

- A. Clean interior of conduits to remove moisture and foreign matter.

**3.05 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

**END OF SECTION**

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**SECTION 26 0533.16  
BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

**1.02 RELATED REQUIREMENTS**

- A. Section 08 3100 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0533.13 - Conduit for Electrical Systems:
  - 1. Conduit bodies and other fittings.
- D. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- E. Section 26 2726 - Wiring Devices:
  - 1. Wall plates.
  - 2. Additional requirements for locating boxes for wiring devices.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 514A - Metallic Outlet Boxes Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
  - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
  - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
  - 5. Coordinate the work with other trades to preserve insulation integrity.
  - 6. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Georgia Peach Green Building Rating System Submittals:
  - 1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this this information.
  - 2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project.

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Refer to Section 01 8113.

- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.

## 1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

## PART 2 PRODUCTS

### 2.01 BOXES

- A. General Requirements:
1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  3. Provide products listed, classified, and labeled as suitable for the purpose intended.
  4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
  2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  3. Use cast iron boxes or cast aluminum boxes where exposed galvanized steel rigid metal conduit is used.
  4. Use suitable concrete type boxes where flush-mounted in concrete.
  5. Use suitable masonry type boxes where flush-mounted in masonry walls.
  6. Use raised covers suitable for the type of wall construction and device configuration where required.
  7. Use shallow boxes where required by the type of wall construction.
  8. Do not use "through-wall" boxes designed for access from both sides of wall.
  9. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
  10. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  11. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  12. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
  13. Minimum Box Size, Unless Otherwise Indicated:
    - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch by 2-1/8 inches by 2-1/8 inches deep unless otherwise noted.
    - b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
  14. Wall Plates: Comply with Section 26 2726.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- F. Box Locations:
  - 1. Locate boxes and conduit bodies so that covers are accessible and removable. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
  - 2. Locate boxes as required for devices installed under other sections or by others.
    - a. Switches, Receptacles, and Other Wiring Devices: Comply with Section 26 2726.
    - b. Communications Systems Outlets: See drawings.
  - 3. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 0533.13.
  - 4. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
    - a. Electrical rooms.
- G. Box Supports:
  - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
  - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- H. Install boxes plumb and level.
- I. Install boxes as required to preserve insulation integrity.
- J. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- K. Close unused box openings.
- L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- M. Provide grounding and bonding in accordance with Section 26 0526.
- N. Identify boxes in accordance with Section 26 0553.

**3.03 CLEANING**

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

**3.04 PROTECTION**

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

**END OF SECTION**

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**SECTION 26 0553  
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Underground warning tape.
- E. Warning signs and labels.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 9113 - Exterior Painting.
- B. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

**1.03 REFERENCE STANDARDS**

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs 2011 (Reaffirmed 2017).
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels 2011 (Reaffirmed 2017).
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 969 - Marking and Labeling Systems Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
  - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
  - 2. Do not install identification products until final surface finishes and painting are complete.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. Georgia Peach Green Building Rating System Submittals:
  - 1. Submit with the product submittals required by this Section the percentage of Georgia-based materials. Architect will not review the submittal(s) without this this information.
  - 2. Keep and submit records to document the percentage of Georgia-based material and products to track the materials and costs of Georgia-based product used on this project. Refer to Section 01 8113.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

**1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Adhesive-attached labeling materials, including label stocks, laminating adhesive, and inks used by label printers, shall comply with UL 969.

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## PART 2 PRODUCTS

### 2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
    - a. Time Switches:
      - 1) Identify load(s) served and associated circuits controlled. Include location.
  - 2. Use identification nameplate to identify disconnect location for equipment with remote disconnecting means.
  - 3. Use identification label to identify overcurrent protective devices for branch circuits serving fire alarm circuits. Identify with text "FIRE ALARM CIRCUIT".
  - 4. Use warning labels, identification nameplates, or identification labels to identify electrical hazards for equipment where multiple power sources are present with the word message "DANGER; Hazardous voltage; Multiple power sources may be present; Disconnect all electric power including remote disconnects before servicing" or approved equivalent.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
  - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- C. Identification for Boxes:
  - 1. All outlet boxes, junction boxes and pull boxes shall have their covers and exterior visible surfaces painted with colors to match the surface color scheme outlined above. This includes covers on boxes above lift-out and other type accessible ceilings, where identification shall also include branch circuit designation.
  - 2. Use identification labels to identify circuits enclosed.
    - a. For exposed boxes in public areas, use only identification labels.
  - 3. Use warning labels to identify electrical hazards for boxes containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEP OUT".
- D. Identification for Devices:
  - 1. Wiring Device and Wallplate Finishes: Comply with Section 26 2726.
  - 2. Use identification label to identify fire alarm system devices.
    - a. For devices concealed above suspended ceilings, provide additional identification on ceiling tile below device location.
  - 3. Use identification label to identify serving branch circuit for all receptacles.

### 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
  - 1. Materials:
    - a. Indoor Clean, Dry Locations: Use plastic nameplates.
    - b. Outdoor Locations: Use plastic nameplates suitable for exterior use.
  - 2. Plastic Nameplates: Two-layer or three-layer laminated electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
    - a. Exception: Provide minimum thickness of 1/8 inch when any dimension is greater than 4 inches.
  - 3. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:

1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
  2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for General Information and Operating Instructions:
1. Minimum Size: 1 inch by 2.5 inches.
  2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 1/4 inch.
  5. Color: Black text on white background unless otherwise indicated.
- D. Format for Caution and Warning Messages:
1. Minimum Size: 2 inches by 4 inches.
  2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 1/2 inch.
  5. Color: Black text on yellow background unless otherwise indicated.
- E. Format for Receptacle Identification:
1. Minimum Size: 3/8 inch by 1.5 inches.
  2. Legend: Power source and circuit number or other designation indicated.
    - a. Include voltage and phase for other than 120 V, single phase circuits.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 3/16 inch.
  5. Color: Black text on white background.
- F. Format for Control Device Identification:
1. Minimum Size: 3/8 inch by 1.5 inches.
  2. Legend: Load controlled or other designation indicated.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 3/16 inch.
  5. Color: Black text on white background.

### **2.03 UNDERGROUND WARNING TAPE**

- A. Manufacturers:
1. Brady Corporation
  2. Brimar Industries, Inc
  3. Seton Identification Products
- B. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
1. Exception: Use foil-backed detectable type tape where required by serving utility or where directed by Owner.
- C. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil.
- D. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- E. Legend: Type of service, continuously repeated over full length of tape.
- F. Color:
1. Tape for Buried Power Lines: Black text on yellow background.
  2. Tape for Buried Telephone or Cable TV lines: Black text on green background.



## **2.04 WARNING SIGNS AND LABELS**

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
  - 1. Materials:
    - a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
    - b. Outdoor Locations: Use factory pre-printed rigid aluminum or rigid plastic signs.
  - 2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
  - 3. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
    - a. Do not use labels designed to be completed using handwritten text.
  - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Enclosure front.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Branch Devices: Adjacent to device.
  - 6. Interior Components: Legible from the point of access.
  - 7. Boxes: Outside face of cover.
  - 8. Conductors and Cables: Legible from the point of access.
  - 9. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates with two-part epoxy, self-tapping stainless-steel screws with the screw sharp end protected, non-corrosive machine screws, or rivets.
  - 1. In outdoor locations, labels shall be applied using two-part epoxy that is weatherproof and sunlight resistant.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade, minimum 24" above the buried conduit or cable.
- G. Secure rigid signs using stainless steel screws.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

**END OF SECTION**

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**SECTION 26 0923  
LIGHTING CONTROL DEVICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Occupancy/vacancy sensors.
  - 1. This section includes devices in spaces other than where Digital Lighting Management (DLM) is specified.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0529 - Hangers and Supports for Electrical Systems
- B. Section 26 0533.16 - Boxes for Electrical Systems.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- C. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts 2020.
- D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 1472 - Solid-State Dimming Controls Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
  - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
  - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
  - 1. Occupancy Sensors: Include detailed motion detection coverage range diagrams.
- C. Field Quality Control Reports.
- D. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Operation and Maintenance Data: Include detailed information on device programming and setup.

**1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND PROTECTION**

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

#### **1.08 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### **1.09 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for all occupancy sensors.

### **PART 2 PRODUCTS**

#### **2.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS**

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.
- C. Products for Switching of Electronic Ballasts/Drivers: Tested and rated to be suitable for peak inrush currents specified in NEMA 410.

#### **2.02 OCCUPANCY SENSORS**

- A. Manufacturers:
  - 1. Hubbell Incorporated: [www.hubbell.com/#sle](http://www.hubbell.com/#sle).
  - 2. Lutron Electronics Company, Inc: [www.lutron.com/#sle](http://www.lutron.com/#sle).
  - 3. Sensor Switch Inc: [www.sensorswitch.com/#sle](http://www.sensorswitch.com/#sle).
  - 4. WattStopper: [www.wattstopper.com/#sle](http://www.wattstopper.com/#sle).
  - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. All Occupancy Sensors:
  - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
  - 2. Sensor Technology:
    - a. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
  - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
  - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
  - 5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
  - 6. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
  - 7. Sensitivity: Field adjustable.

8. Compatibility (Non-Dimming Sensors): Suitable for controlling LED lighting and fractional motor loads, with no minimum load requirements.
  9. Load Rating for Line Voltage Occupancy Sensors: As required to control the load indicated on drawings.
- C. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
    - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
    - b. Unless otherwise indicated or required to control the load indicated on drawings, provide line voltage units with self-contained relay.
    - c. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
    - d. Finish: Match finishes specified for wiring devices in Section 26 2726, unless otherwise indicated.
  2. Passive Infrared/Ultrasonic Dual Technology Wall Switch Occupancy Sensors: Capable of detecting motion within an area of 900 square feet.
- D. Wall Dimmer Occupancy Sensors:
1. General Requirements:
    - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated dimming control capability, and no leakage current to load in off mode.
    - b. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472; type and rating suitable for load controlled.
    - c. Finish: Match finishes specified for wiring devices in Section 26 2726, unless otherwise indicated.
- E. Ceiling Mounted Occupancy Sensors:
1. All Ceiling Mounted Occupancy Sensors:
    - a. Description: Low profile occupancy sensors designed for ceiling installation.
    - b. Unless otherwise indicated or required to control the load indicated on drawings, provide low voltage units, for use with separate compatible accessory power packs.
    - c. Finish: White unless otherwise indicated.
  2. Passive Infrared/Ultrasonic Dual Technology Ceiling Mounted Occupancy Sensors:
    - a. Standard Range Sensors: Capable of detecting motion within an area of 450 square feet at a mounting height of 9 feet, with a field of view of 360 degrees.
- F. Power Packs for Low Voltage Occupancy Sensors:
1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
  2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
  3. Input Supply Voltage: Dual rated for 120/277 V ac.
  4. Load Rating: As required to control the load indicated on drawings.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.

- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.
  - 1. Locate wall switch occupancy sensors on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 2726.
- G. Provide required supports in accordance with Section 26 0529.
- H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- I. Occupancy Sensor Locations:
  - 1. Location Adjustments: Within the design intent, reasonably minor adjustments to locations may be made in order to optimize coverage and avoid conflicts or problems affecting coverage.
  - 2. Locate ultrasonic and dual technology passive infrared/ultrasonic occupancy sensors a minimum of 4 feet from air supply ducts or other sources of heavy air flow and as per manufacturer's recommendations, in order to minimize false triggers.
- J. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.
- K. Energy Management System

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.
- C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test

results in written report to be included with submittals.

- D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

### **3.04 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.
- C. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.

### **3.05 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### **3.06 CLOSEOUT ACTIVITIES**

- A. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.
- B. Training: Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.
  - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  - 2. Instructor: Qualified contractor familiar with the project and with sufficient knowledge of the installed lighting control devices.
  - 3. Location: At project site.

**END OF SECTION**

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**SECTION 26 0943  
DIGITAL LIGHTING MANAGEMENT (DLM) CONTROL SYSTEM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Distributed Digital Lighting Control System: System includes
  - 1. Digital Lighting Controls

**1.02 RELATED SECTIONS**

- A. Section 26 51 00 - Lighting.

**1.03 REFERENCES**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association.
- B. NEMA - National Electrical Manufacturers Association
- C. UL - Underwriters Laboratories, Inc. Listings
- D. UL 924 - Standard for Emergency Lighting and Power Equipment

**1.04 DESIGN / PERFORMANCE REQUIREMENTS**

- A. Digital Lighting Management System shall accommodate the square-footage coverage requirements for each area controlled, utilizing room controllers, digital occupancy sensors, switches, daylighting sensors and accessories that suit the required lighting and electrical system parameters.
- B. System shall conform to requirements of NFPA 70.

**1.05 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Catalog sheets and specifications.
  - 2. Ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation instructions.
- B. Shop Drawings: Wiring diagrams a for the various components of the System specified including:
  - 1. Composite wiring and/or schematic diagram of each control circuit as proposed to be installed.
  - 2. Show location of all devices, including at minimum sensors, load controllers, and switches/dimmers for each area on reflected ceiling plans.
  - 3. Provide room/area details including products and sequence of operation for each room or area. Illustrate typical acceptable room/area connection topologies.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- D. Closeout Submittals:
  - 1. Project Record Documents: Record actual installed locations and settings for lighting control devices.
  - 2. Operation and Maintenance Manual:
    - a. Include approved Shop Drawings and Product Data.
    - b. Include Sequence of Operation, identifying operation for each room or space.
    - c. Include manufacturer's maintenance information.
    - d. Operation and Maintenance Data: Include detailed information on device programming and setup.



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- e. Include startup and test reports.

#### **1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing of centralized and distributed lighting control systems with a minimum of 10 years documented experience.
- B. Installer Qualifications: Company certified by the manufacturer and specializing in installation of networked lighting control products with minimum three years documented experience.
- C. System Components: Demonstrate that individual components have undergone quality control and testing prior to shipping.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation

#### **1.08 PROJECT CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not install equipment until following conditions can be maintained in spaces to receive equipment:
  - 1. Ambient temperature: 32 to 104 degrees F (0 to 40 degrees C).
  - 2. Relative humidity: Maximum 90 percent, non-condensing.

#### **1.09 WARRANTY**

- A. Products Warranty: Manufacturer shall provide a 5 year limited warranty on products within this installation, except where otherwise noted, and consisting of a one for one device replacement.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Acceptable Manufacturers:
  - 1. WattStopper (Basis of Design)
  - 2. Acuity n-Light
  - 3. Lutron Electronics
  - 4. Design Professional approved equal.

#### **2.02 DIGITAL LIGHTING CONTROL SYSTEM**

- A. Equipment Required: Lighting Control and Automation system as defined under this section covers the following equipment.
  - 1. Digital Lighting Management (DLM) local network: Free topology, plug-in wiring system (Cat 5e) for power and data to room devices.
  - 2. Digital Room Controllers: Self-configuring, digitally addressable one, two or three relay plenum-rated controllers for on/off control and 0-10 volt dimming control.
  - 3. Digital Occupancy Sensors: Self-configuring, digitally addressable, calibrated occupancy sensors with LCD display and two-way active infrared (IR) communications.
  - 4. Digital Switches: Self-configuring, digitally addressable pushbutton on/off, dimming, and scene switches with two-way active infrared (IR) communications.

#### **2.03 DIGITAL WALL OR CEILING MOUNTED OCCUPANCY SENSOR**

- A. Digital Occupancy Sensors shall provide graphic LCD display for digital calibration and electronic documentation. Features include the following:
  - 1. Digital calibration and pushbutton configuration for the following variables:
    - a. Sensitivity, 0-100 percent in 10 percent increments

- 
- b. Time delay, 1-30 minutes in 1 minute increments
  - c. Test mode, Five second time delay
  - d. Detection technology, PIR, Ultrasonic or Dual Technology activation and/or re-activation.
  - e. Walk-through mode
  2. Load parameters including Auto/Manual-ON, blink warning, and daylight enable/disable when photosensors are included in the DLM local network.
  3. Programmable control functionality including:
    - a. Each sensor may be programmed to control specific loads within a local network.
    - b. Sensor shall be capable of activating one of 16 user-definable lighting scenes.
    - c. Adjustable retrigger time period for manual-on loads. Load will retrigger (turn on) automatically within a configurable period of time (default 10 seconds) after turning off.
    - d. On dual technology sensors, independently configurable trigger modes are available for both Normal (NH) and After Hours (AH) time periods. The retrigger mode can be programmed to use the following technologies:
      - e. Ultrasonic and Passive Infrared
      - f. Ultrasonic or Passive Infrared
      - g. Ultrasonic only
      - h. Passive Infrared only
      - i. Independently configurable sensitivity settings for passive infrared and ultrasonic technologies (on dual technology sensors) for both Normal (NH) and After Hour (AH) time periods.
  4. One or two RJ-45 port(s) for connection to DLM local network.
  5. Two-way infrared (IR) transceiver to allow remote programming through handheld commissioning tool and control by remote personal controls.
  6. Device Status LEDs, which may be disabled for selected applications, including:
    - a. PIR detection
    - b. Ultrasonic detection
    - c. Configuration mode
    - d. Load binding
  7. Assignment of occupancy sensor to a specific load within the room without wiring or special tools.
  8. Manual override of controlled loads.
  9. All digital parameter data programmed into an individual occupancy sensor shall be retained in non-volatile FLASH memory within the sensor itself. Memory shall have an expected life of no less than 10 years.

B. Units shall not have any dip switches or potentiometers for field settings

C. Multiple occupancy sensors may be installed in a room by simply connecting them to the free topology DLM local network. No additional configuration will be required.

#### **2.04 DIGITAL WALL SWITCH OCCUPANCY SENSORS**

- A. Digital Occupancy Sensors shall provide scrolling LCD display for digital calibration and electronic documentation. Features include the following:
  1. Digital calibration and pushbutton configuration for the following variables:
    - a. Sensitivity: 0-100 percent in 10 percent increments
    - b. Time delay: 1-30 minutes in 1 minute increments
    - c. Test mode: Five second time delay
    - d. Detection technology: PIR, Dual Technology activation and/or re-activation.
    - e. Walk-through mode

- 
- f. Load parameters including Auto/Manual-ON, blink warning, and daylight enable/disable when photosensors are included in the DLM local network.
  2. Programmable control functionality including:
    - a. Each sensor may be programmed to control specific loads within a local network.
    - b. Sensor shall be capable of activating one of 16 user-definable lighting scenes.
    - c. Adjustable retrigger time period for manual-on loads. Load will retrigger (turn on) automatically during the configurable period of time (default 10 seconds) after turning off.
    - d. On dual technology sensors, independently configurable trigger modes are available for both Normal (NH) and After Hours (AH) time periods. The retrigger mode can be programmed to use the following technologies:
      - 1) Ultrasonic and Passive Infrared
      - 2) Ultrasonic or Passive Infrared
      - 3) Ultrasonic only
      - 4) Passive Infrared only
  3. Independently configurable sensitivity settings for passive infrared and ultrasonic technologies (on dual technology sensors) for both Normal (NH) and After Hour (AH) time periods.
  4. Two RJ-45 ports for connection to DLM local network.
  5. Two-way infrared (IR) transceiver to allow remote programming through handheld configuration tool and control by remote personal controls.
  6. Device Status LEDs including
    - a. PIR detection
    - b. Ultrasonic detection
    - c. Configuration mode
    - d. Load binding
  7. Assignment of any occupancy sensor to a specific load within the room without wiring or special tools.
  8. Assignment of local buttons to specific loads within the room without wiring or special tools
  9. Manual override of controlled loads
  10. All digital parameter data programmed into an individual wall switch sensor shall be retained in non-volatile FLASH memory within the wall switch sensor itself. Memory shall have an expected life of no less than 10 years.
- B. Units shall not have any dip switches or potentiometers for field settings.
- C. Multiple occupancy sensors may be installed in a room by simply connecting them to the free topology DLM local network. No additional configuration will be required.
- D. Two-button wall switch occupancy sensors, when connected to a single relay dimming room or fixture controller, shall operate in the following sequence as a factory default:
1. Left button
    - a. Press and release - Turn load on
    - b. Press and hold - Raise dimming load
  2. Right button
    - a. Press and release - Turn load off
    - b. Press and hold - Lower dimming load
- E. Low voltage momentary pushbuttons shall include the following features:
1. Load/Scene Status LED on each switch button with the following characteristics:
    - a. Bi-level LED
    - b. Dim locator level indicates power to switch
    - c. Bright status level indicates that load or scene is active

- 
2. The following button attributes may be changed or selected using a wireless configuration tool:
    - a. Load and Scene button function may be reconfigured for individual buttons (from Load to Scene, and vice versa).
    - b. Individual button function may be configured to Toggle, On only or Off only.
    - c. Individual scenes may be locked to prevent unauthorized change.
    - d. Fade Up and Fade Down times for individual scenes may be adjusted from 0 seconds to 18 hours.
    - e. Ramp rate may be adjusted for each dimmer switch.
    - f. Switch buttons may be bound to any load on any load controller or relay panel and are not load type dependent; each button may be bound to multiple loads.

## 2.05 DIGITAL WALL SWITCHES

- A. Low voltage momentary pushbutton switches in 1, 2, 3, 4, 5 and 8 button configuration. Wall switches shall include the following features:
  1. Two-way infrared (IR) transceiver for use with personal and configuration remote controls.
  2. Removable buttons for field replacement with engraved buttons and/or alternate color buttons. Button replacement may be completed without removing the switch from the wall.
  3. Configuration LED on each switch that blinks to indicate data transmission.
  4. Load/Scene Status LED on each switch button with the following characteristics:
    - a. Bi-level LED
    - b. Dim locator level indicates power to switch
    - c. Bright status level indicates that load or scene is active
    - d. Dimming switches shall include seven bi-level LEDs to indicate load levels using 14 steps.
  5. Programmable control functionality including:
    - a. Button priority may be configured to any BACnet priority level, from 1-16, corresponding to networked operation allowing local actions to utilize life safety priority
    - b. Scene patterns may be saved to any button other than dimming rockers. Once set, buttons may be digitally locked to prevent overwriting of the preset levels.
  6. All digital parameter data programmed into an individual wall switch shall be retained in non-volatile FLASH memory within the wall switch itself. Memory shall have an expected life of no less than 10 years.
- B. Two RJ-45 ports for connection to DLM local network.
- C. Multiple digital wall switches may be installed in a room by simply connecting them to the free topology DLM local network. No additional configuration shall be required to achieve multi-way switching.
- D. Load and Scene button function may be reconfigured for individual buttons from Load to Scene, and vice versa.
  1. Individual button function may be configured to Toggle, On only or Off only.
  2. Individual scenes may be locked to prevent unauthorized change.
  3. Fade Up and Fade Down times for individual scenes may be adjusted from 0 seconds to 18 hours.
  4. Ramp rate may be adjusted for each dimmer switch.
  5. Switch buttons may be bound to any load on any load controller or relay panel and are not load type dependent; each button may be bound to multiple loads.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Do not begin installation until measurements have been verified and work areas have been properly prepared.
- B. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that required pre-installation meeting specified in Part 1 of this specification has been completed, recorded meeting minutes have been distributed and all outstanding issues noted have been resolved prior to the start of installation.

### **3.02 INSTALLATION**

- A. Install system in accordance with the approved system shop drawings and manufacturer's instructions.
- B. Install all room/area devices using manufacturer's factory-tested Cat 5e cable with pre-terminated RJ-45 connectors.
  - 1. If pre-terminated cable is not used for room/area wiring, each field-terminated cable shall be tested following installation and testing results submitted to the Manufacturer's Representative for approval prior to proceeding with the Work.
  - 2. Low voltage wiring topology must comply with manufacturer's specifications.
  - 3. Route network wiring as indicated on the Drawings as closely as possible. Document final wiring location, routing and topology on as built drawings.
- C. All line voltage connections shall be tagged to indicate circuit and switched legs.
- D. Test all devices to ensure proper communication.
- E. Calibrate all sensor time delays and sensitivity to guarantee proper detection of occupants and energy savings. Adjust time delay so that controlled area remains lighted while occupied.
- F. Provide written or computer-generated documentation on the configuration of the system including room by room description including:
  - 1. Sensor parameters, time delays, sensitivities, and daylighting setpoints.
  - 2. Sequence of operation, (e.g. manual ON, Auto OFF. etc.)
  - 3. Load Parameters (e.g. blink warning, etc.)
- G. Post start-up tuning - Adjust sensor time delays and sensitivities to meet the Owner's requirements 30 days from beneficial occupancy. Provide a detailed report to the Architect / Owner of post start-up activity.
- H. Tighten all panel Class I conductors from both circuit breaker and to loads to torque ratings as marked on enclosure UL label.
- I. All Class II cabling shall enter enclosures from within low-voltage wiring areas and shall remain within those areas. No Class I conductors shall enter a low-voltage area.
- J. Run separate neutrals for any phase dimmed branch load circuit. Different types of dimming loads shall have separate neutral.
- K. Verify all non-panel-based lighting loads to be free from short circuits prior to connection to room controllers.

### **3.03 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing. Notify Architect and Manufacturer in writing a minimum of 3 weeks prior to system start-up and testing.

- B. Tests and Inspections: Manufacturer's service representative shall perform the following inspections and prepare reports.
1. Verify Class I and II wiring connections are terminated properly by validating system performance.
  2. Set IP addresses and other network settings of system front end hardware per facilities IT instructions.
  3. Verify / complete task programming for all switches, dimmers, time clocks, and sensors.
  4. Verify that the control of each space complies with the Sequence of Operation.
  5. Correct any system issues and retest.

#### **3.04 DEMONSTRATION AND TRAINING**

- A. Before Material Completion, arrange and provide a one-day Owner instruction period to designated Owner personnel. Set-up, starting of the lighting control system and Owner instruction includes:
1. Confirmation of entire system operation and communication to each device.
  2. Confirmation of operation of individual relays, switches, and sensors.
  3. Confirmation of system Programming, photocell settings, override settings, etc.
  4. Provide training to cover installation, programming, operation, and troubleshooting of the lighting control system.

#### **3.05 PRODUCT SUPPORT AND SERVICE**

- A. Factory telephone support shall be available at no cost to the Owner following acceptance. Factory assistance shall consist of assistance in solving application issues pertaining to the control equipment.

**END OF SECTION**

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**SECTION 26 5100  
INTERIOR LIGHTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Interior luminaires.
- B. Emergency lighting units.
- C. Exit signs.
- D. LED drivers.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0529 - Hangers and Supports for Electrical Systems.
- B. Section 26 0533.16 - Boxes for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 0923 - Lighting Control Devices.
- E. Section 26 2726 - Wiring Devices: Manual wall switches and wall dimmers.
- F. Section 26 5600 - Exterior Lighting.

**1.03 REFERENCE STANDARDS**

- A. IEC 60529 - Degrees of Protection Provided by Enclosures (IP Code) 1989 (Corrigendum 2019).
- B. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products 2019.
- C. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources 2021.
- D. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems 2006.
- E. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems 2006.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 844 - Luminaires for Use in Hazardous (Classified) Locations Current Edition, Including All Revisions.
- I. UL 924 - Emergency Lighting and Power Equipment Current Edition, Including All Revisions.
- J. UL 1598 - Luminaires Current Edition, Including All Revisions.
- K. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
  - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts

- installed under other sections or by others.
- 3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
- 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
  - 1. LED Luminaires:
    - a. Include estimated useful life, calculated based on IES LM-80 test data.
- D. Field quality control reports.
- E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. Operation and Maintenance Data: Instructions for each product including information on replacement parts.
- G. Project Record Documents: Record actual connections and locations of luminaires and any associated remote components.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND PROTECTION**

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting) and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

#### **1.08 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### **1.09 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for LED luminaires, including drivers.



- C. Provide five year full warranty for batteries for emergency lighting units. Life time warranty for LEDs.

## **PART 2 PRODUCTS**

### **2.01 LUMINAIRE TYPES**

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01 6000 - Product Requirements except where individual luminaire types are designated with substitutions not permitted.

### **2.02 LUMINAIRES**

- A. Manufacturers:
  - 1. Acuity Brands, Inc: [www.acuitybrands.com/#sle](http://www.acuitybrands.com/#sle).
  - 2. Cooper Lighting, a division of Cooper Industries: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
  - 3. Hubbell Lighting, Inc: [www.hubbellighting.com/#sle](http://www.hubbellighting.com/#sle).
  - 4. Philips Lighting North America Corporation; [www.lightingproducts.philips.com/#sle](http://www.lightingproducts.philips.com/#sle).
  - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Provide products that comply with requirements of NFPA 70.
- C. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- D. Provide products listed, classified, and labeled as suitable for the purpose intended.
- E. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- F. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- G. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- H. Recessed Luminaires:
  - 1. Ceiling Compatibility: Comply with NEMA LE 4.
- I. LED Luminaires:
  - 1. Components: UL 8750 recognized or listed as applicable.
  - 2. Tested in accordance with IES LM-79 and IES LM-80.
  - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

### **2.03 EMERGENCY LIGHTING UNITS**

- A. Manufacturers:
  - 1. Acuity Brands, Inc: [www.acuitybrands.com/#sle](http://www.acuitybrands.com/#sle).
  - 2. Cooper Lighting, a division of Cooper Industries: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
  - 3. Hubbell Lighting, Inc: [www.hubbellighting.com/#sle](http://www.hubbellighting.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
- C. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
- D. Battery:

1. Sealed maintenance-free lead calcium unless otherwise indicated.
  2. Size battery to supply all connected lamps, including emergency remote heads where indicated.
- E. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
- F. Provide low-voltage disconnect to prevent battery damage from deep discharge.
- G. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.
- H. Accessories:
1. Provide compatible accessory mounting brackets where indicated or required to complete installation.
  2. Provide compatible accessory high impact polycarbonate vandal shields where indicated.

#### **2.04 EXIT SIGNS**

- A. Description: Exit signs complying with NFPA 101 and applicable state and local codes, and listed and labeled as complying with UL 924.
1. Number of Faces: Single- or double-face as indicated or as required for installed location.
  2. Directional Arrows: As indicated or as required for installed location.
- B. Powered Exit Signs: Internally illuminated with LEDs unless otherwise indicated.
1. Manufacturers:
    - a. Acuity Brands, Inc: [www.acuitybrands.com/#sle](http://www.acuitybrands.com/#sle).
    - b. Cooper Lighting, a division of Cooper Industries: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - c. Hubbell Lighting, Inc: [www.hubbellighting.com/#sle](http://www.hubbellighting.com/#sle).
    - d. Philips Lighting North America Corporation; [www.lightingproducts.philips.com/#sle](http://www.lightingproducts.philips.com/#sle).
    - e. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.05 DRIVERS**

- A. Ballasts/Drivers - General Requirements:
1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
  2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

#### **3.03 INSTALLATION**

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.

- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Recessed Luminaires:
  - 1. Install trims tight to mounting surface with no visible light leakage.
  - 2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
- G. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.
- H. Install accessories furnished with each luminaire.
- I. Bond products and metal accessories to branch circuit equipment grounding conductor.
- J. Emergency Lighting Units:
  - 1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
  - 2. Install lock-on device on branch circuit breaker serving units.
- K. Exit Signs:
  - 1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
  - 2. Install lock-on device on branch circuit breaker serving units.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Test emergency lighting units to verify proper operation upon loss of normal power supply.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

#### **3.05 ADJUSTING**

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.
- C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

#### **3.06 CLEANING**

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

#### **3.07 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

- B. See Section 01 7900 - Demonstration and Training, for additional requirements.
- C. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.
- D. Just prior to Substantial Completion, LED's or drivers that have failed.

**3.08 PROTECTION**

- A. Protect installed luminaires from subsequent construction operations.

**END OF SECTION**

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**SECTION 32 1413  
PRECAST CONCRETE UNIT PAVING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Non-interlocking concrete paver units.
- B. Sand setting bed.
- C. Polymeric sand joint filler.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 Cast-in-Place Concrete

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide characteristics of paver unit, detectable warning pavers, dimensions, and special shapes.
- C. Samples: Submit two samples of each paver type, illustrating style, size, color range and surface texture of units being provided.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Non-interlocking Permeable Concrete Pavers:
  - 1. Oldcastle: [www.oldcastle.com/#sle](http://www.oldcastle.com/#sle).
  - 2. The Concrete Products Group: [www.concreteproductsgroup.com/#sle](http://www.concreteproductsgroup.com/#sle).
  - 3. Approved equal.

**2.02 MATERIALS**

- A. Non-interlocking Pavers: Precast concrete.
  - 1. Compressive Strength: Minimum of 7200 pounds per square inch.
  - 2. Absorption: 5 percent average, with maximum of 7 percent.
  - 3. Air Entrainment: 5 to 7 percent.
  - 4. Size: 12 by 12 inches.
  - 5. Thickness: 3-1/8 inches.
  - 6. Color: Selected from manufacturer's full range.
- B. Sand for Setting Bed: Clean washed natural sand or crushed stone complying with gradation requirements of ASTM C33/C33M for fine aggregates.
- C. Polymeric Sand: Fine sand complying with ASTM C144 combined with polymer binders for creating semi-solid joints between pavers.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that substrate is level or to correct gradient, smooth, capable of supporting pavers and imposed loads, and ready to receive work of this Section.
- B. Verify gradients and elevations of substrate are correct.

**3.02 INSTALLATION OF SOLID PAVER UNITS**

- A. Poured-in-place concrete underlayment: 4" slab with steel reinforcement (6 x6 welded wire fabric). Minimum of 3,000 psi concrete.
- B. Spread sand bedding evenly over prepared substrate surface to a maximum thickness of 1-1/2 inch.

- C. Dampen and roller compact sand to level and even surface.
- D. Screed and scarify top 1 inch to 1 1/2 inch of sand.
- E. Cut paver units at edges with masonry saw.
- F. Place half units at edge and interruptions. Maintain tight joints.
- G. Tamp and level paver units with mechanical vibrator until units are firmly bedded, level, and to correct elevation and gradients. Do not tamp unrestrained edges.

**END OF SECTION**

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