

PROJECT MANUAL

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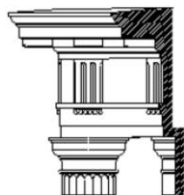
SPECIFICATIONS

THE HISTORIC 1937 ROYAL THEATER REHABILITATION



June 03, 2019

Prepared by



**CARTER WATKINS
ASSOCIATES**

A R C H I T E C T S ,
I N C .

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BID FORM

The Historic 1937 Royal Theater Rehabilitation

BID SUBMITTAL FORM

Project Location: Hogansville, GA

The undersigned CONTRACTOR, having examined these documents, and having full knowledge of the condition under which the work described herein must be performed, hereby proposes that she/he will fulfill the obligations contain herein in accordance with all instructions, terms, conditions, and specifications set forth; and that she/he will furnish all required products/services and pay all incidental costs in strict conformity with these documents for the stated prices as payment in full.

Base Bid \$ _____

Included and attached is a Bid Bond in the amount of not less than 5% of the base bid. Also included in the amount above is the sum of \$ _____ for providing a Performance and Payment Bond for 100% of the total base bid. Same shall be provided by a surety corporation licensed in the State of Georgia and a certified Power of attorney shall be attached.

Alternates (if any). Amounts are to be indicated as an increase (+) or decrease (-) in the cost column.

Alternate 1: 10% Construction Contingency \$ _____

Alternate 2: \$ _____

Alternate 3: \$ _____

Alternate 4: \$ _____

Alternate 5: \$ _____

Submitting Firm: _____

Address: _____

Name and Title of Authorized Representative (print/type): _____

Authorized Signature: _____

(Signature-When signed, this bid is legal and binding to the Gordon County and acknowledges that ALL Specifications, Terms and Conditions and/or instructions to Bidders have been read and understood).

Date: _____

Email: _____

FIRM PRICING - Prices submitted on this bid form are firm through (minimum 60 days).

Initial below for Acknowledgement of Addenda (if any)

_____Addendum #1 _____Addendum #2 _____Addendum #3 _____Addendum #4

_____Addendum #5 _____Addendum #6 _____Addendum #7 _____Addendum #8



AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230
Telephone Number: 7066378629

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

Hogansville Royal Theater Rehabilitation
400 East Main Street
Rehabilitation of the 1937 Hogansville Royal Theater.

The Architect:
(Name, legal status, address and other information)

Carter Watkins Architects Associates Inc., Subchapter S Corporation
P.O. Box 1004
137 East Washington Street
Monroe, Georgia
Telephone Number: 770-267-7799
Fax Number: 77-267-1064

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

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

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
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6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
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9	ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- ☐ The date of this Agreement.
- ☒ A date set forth in a notice to proceed issued by the Owner.
- ☐ Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

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

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

§ 3.3 Substantial Completion

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

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

[X] Not later than three hundred (300) calendar days from the date of commencement of the Work.

[] By the following date:

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

Portion of Work

Substantial Completion Date

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

ARTICLE 4 CONTRACT SUM

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

§ 4.2 Alternates

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

Item

Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item

Price

Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item

Price

See Project Manual

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

Item

Units and Limitations

Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

\$750.00 per calendar day, excluding Federal Holidays only.

(Paragraphs deleted)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

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

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

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the First day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the Thirtieth day of the same month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than Forty Five (45) days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

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

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

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

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

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

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

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

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

10% Retaining

§ 5.1.7.1.1 The following items are not subject to retainage:

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

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

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

Per O.C.G.A.

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

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

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

§ 5.2 Final Payment

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

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

§ 5.3 Interest

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

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

6 % six percent per annum

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017

Init.

☒ [X] Litigation in a court of competent jurisdiction

☐ [] Other (*Specify*)

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

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

Mr. Ben Carter, Architect

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

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

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth below:

Builders Risk in the amount of \$4 million

General Liability in the amount of \$ 4 million

Workman’s Compensation per Surety standards

Init.

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User Notes:

(1230455399)

Automobile Liability in the amount of \$1 million
100% Performance and Payment Bonds

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

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

OWNER *(Signature)*

The Honorable William Stankiewicz, Mayor
CITY OF HOGANSVILLE

(Printed name and title)
(Paragraphs deleted)

CONTRACTOR *(Signature)*

(Printed name and title)

Init.

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AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Hogansville Royal Theater
400 East Main Street

THE OWNER:

(Name, legal status and address)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230

THE ARCHITECT:

(Name, legal status and address)

Carter Watkins Architects Associates Inc., Subchapter S Corporation
P.O. Box 1004
137 East Washington Street
Monroe, Georgia

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503[™], Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

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

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

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

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

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

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

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

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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

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

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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

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

§ 3.5 Warranty

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

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

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

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

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely

upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

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

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

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

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

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

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

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

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

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

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.
- .4 **The total allowable contractor markup on Change Orders will be 10% of the aggregate total of all elements/items/labor/materials/shipping, etc.**

§ 7.3 Construction Change Directives

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may

prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

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

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

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

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

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

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

§ 9.5 Decisions to Withhold Certification

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

.1 defective Work not remedied;

- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

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

§ 9.6 Progress Payments

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

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

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

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

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

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

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

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and

litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

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

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

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

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

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

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

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

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

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract

Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Builders Risk

§ 11.2.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

(Paragraphs deleted)

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that

purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be

sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

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

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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

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

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

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

§ 14.3 Suspension by the Owner for Convenience

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

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

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

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

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law,

but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision

shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

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

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

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

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

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

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

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending

mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

§ 15.4 Arbitration

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

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

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

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

§ 15.4.4 Consolidation or Joinder

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

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

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



AIA[®] Document A305[™] – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- ☐ Corporation
- ☐ Partnership
- ☐ Individual
- ☐ Joint Venture
- ☐ Other

NAME OF PROJECT: *(if applicable)* Hogansville Royal Theater

TYPE OF WORK: *(file separate form for each Classification of Work)*

- ☐ General Construction
- ☐ HVAC
- ☐ Electrical
- ☐ Plumbing
- ☐ Other: *(Specify)*

§ 1 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

§ 1.3.3 President's name:

§ 1.3.4 Vice-president's name(s)

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2 LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3 EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4 REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5 FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6 SIGNATURE

§ 6.1 Dated at this day of

Name of Organization:

By:

Title:

§ 6.2

M being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this day of

Notary Public:

My Commission Expires:



AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230

BOND AMOUNT: \$**PROJECT:**

(Name, location or address, and Project number, if any)

Hogansville Royal Theater
400 East Main Street

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner 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. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Signed and sealed this day of ,

(Witness)

(Witness)

(Contractor as Principal)

(Seal)

(Title)

(Surety)

(Seal)

(Title)

Init.

/



AIA[®] Document A312[™] – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230

CONSTRUCTION CONTRACT

Date:

Amount: \$ 0.00

Description:

(Name and location)

Hogansville Royal Theater
400 East Main Street

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Payment Bond.)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

(Architect, Engineer or other party:)

Lynne Miller

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Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____ (Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____ (Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____



AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230

CONSTRUCTION CONTRACT

Date:

Amount: \$ 0.00

Description:

(Name and location)

Hogansville Royal Theater
400 East Main Street

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☐ See Section 16

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Performance Bond.)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

(Architect, Engineer or other party:)

Lynne Miller

ADDITIONS AND DELETIONS:

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the

Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

Init.

/



AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Hogansville Royal Theater
400 East Main Street
Rehabilitation of the 1937 Hogansville Royal Theater.

THE OWNER:

(Name, legal status, address, and other information)

City of Hogansville, Other
400 East Main Street
Hogansville, GA 30230
Telephone Number: 7066378629

THE ARCHITECT:

(Name, legal status, address, and other information)

Carter Watkins Architects Associates Inc., Subchapter S Corporation
P.O. Box 1004
137 East Washington Street
Monroe, Georgia
Telephone Number: 770-267-7799
Fax Number: 77-267-1064

TABLE OF ARTICLES

1	DEFINITIONS
2	BIDDER'S REPRESENTATIONS
3	BIDDING DOCUMENTS
4	BIDDING PROCEDURES
5	CONSIDERATION OF BIDS
6	POST-BID INFORMATION
7	PERFORMANCE BOND AND PAYMENT BOND
8	ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

Send an email requesting the instruction sheet to access the FTP site.

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

Questions may only be sent by email to info@carterwatkins.com

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

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

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

Addenda will be posted periodically on the FTP site. It is the bidder's responsibility to check the site prior to bidding.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

5% Bid Bond

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

By sealed envelope with the Bidder's name, address, and phone numbers and with the project name and bid date and time.

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

(Table deleted)(Paragraphs deleted)(Paragraphs deleted)

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-1

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work included in this section includes furnishing all labor, equipment and materials required to furnish and install a complete wet-pipe sprinkler system in all heated spaces or required for the proper completion of the sprinkler systems in conformance with the applicable codes and regulations. Work shall include all equipment, labor, taps, etc. for complete installation from street. Include fire vault, back-flow preventer, electronic monitoring, fire tap, fire line, and all other equipment required by NFPA and Fire Marshal and for complete installation.
- B. Provide wet-pipe sprinkler system in all occupied spaces, chases, shafts, plenum spaces, concealed areas. Heads in all inmate-occupied spaces to be detention heads (Raven Pendant head TFP651 or equal). Heads in all other areas to be concealed with white escutcheon plates.

1.02 FLOW TEST

- A. The Contractor shall be responsible for the complete design of the systems and obtaining flow and pressure test results from the governing authority.
- B. The Contractor shall base calculations on an approved and certified flow test from the governing authority indicating flow, residual and static pressures, exact location of source with elevations shown in contract documents.

1.03 REQUIREMENTS

- A. The fire protection system includes the designing, furnishing of material and installation of the approved systems as herein described. If the Owner's insurance underwriter's requirements are higher, they shall be used. The design, hydraulic calculation, equipment, materials, installation, and workmanship shall be in strict accordance with NFPA Codes and Standards and the Owner's insurance underwriter. The systems design and installation shall be coordinated with all piping, electrical equipment, duct-work and all other trades. The system shall be free of operating and maintenance difficulties. Devices and equipment shall be new and shall be make and type listed by Underwriter's Laboratories, INC. or approved by Factory Mutual.

1.04 CONTRACTOR QUALIFICATIONS

- A. The Fire Protection Contractor shall be state certified and have a minimum of four years experience in the field of fire protection system and design and installation.

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-2

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

1.05 QUALITY ASSURANCE

- A. The work shall be in accordance and conform to the requirements of the National Fire Protection Association, local Fire Marshal, local water authority and Owner's Insurance Underwriter.

1.06 SUBMITTALS

- A. Submit equipment cuts and shop drawings for all equipment and specialties supplied. See section 15 010, paragraph 2.03.
- B. Submit for review a complete set of shop drawings bearing evidence of contractor's registration and certification, Underwriter's approval and/or comments and Fire Marshal's approval,
- C. The shop drawings shall be in accordance with the requirements for "Working Plans" as specified in NFPA 13. No work shall begin until design of the system and various components are approved.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

- A. Aboveground
 - 1. Pipe: Schedule 40 black steel conforming to ANSI / ASTM A120 and ASTM A795. Schedule 10 black steel conforming to ASTM A-135 may be used for pipe sizes greater than 2 inches.
 - 2. Fittings: Screwed fittings shall be 175 lb. black cast iron conforming to ANSI B16.4 and cast iron flanges and fittings conforming to ANSI B16.3, grooved fittings U.L. listed in accordance with NFPA 13.
 - 3. Hangers: Suitable U.L. listed hangers shall be provided in accordance with NFPA 13.
- B. Underground
 - 1. Pipe: Ductile iron, plastic or cement lines, conforming to AWWA Standards and NFPA 24.
 - 2. Fittings: Ductile iron mechanical joints conforming to ANSI / AWWA C110 / A21.10.

2.02 VALVES

- A. All valves shall be positioned for maximum accessibility and operation. Valves shall be U.L. listed and F.M. approved.
- B. Gate Valves: 2-1/2" and larger, OS&Y type, cast iron body, solid wedge, flanged ends, 175 pound W.W.P. Valves shall be Stockham B-634 or approved substitute.
- C. Gate Valves: For mechanical joint pipe, OS&Y type, cast iron body, ASTM A-120 Class B, 175 pound W.W.P. Valves shall be Stockham G-635-0 or approved substitute.
- D. Check Valves: 2-1/2" and larger, horizontal swing type, cast iron body, rubber disc, flanged ends, 175

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-3

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

pound W.W.P. Valves shall be Stockham B-305-B or approved substitute.

- E. Wafer Check Valves: Cast iron body, ASTM A-126, cast bronze seating ring, stainless steel hinge. Valves shall be Mueller A-2102 or approved substitute.
- F. Globe Valves: Cast iron body, rising stem, composition disc, threaded ends, 175 pound W.W.P. Valves shall be Stockham B-13-T or approved substitute.
- G. Angle Valves: Bronze body, rising stem, composition disc, threaded ends, 175 pound W.W.P. Valves shall be Stockham B-222 or approved substitute.
- H. Butterfly Valves: 1" to 2-1/2", bronze body, stainless steel disc, 175 pound W.W.P., supervisory stainless steel disc, 175 pound W.W.P., supervisory switch built-in. Valves shall be Milwaukee BB-CSO1 or approved substitute.
- I. Wet Pipe Alarm Valve: Vertical installation, retard chamber, alarm switch, testing by-pass, system drain and necessary pipe, fittings, gauges and accessories required for a complete installation. Valve shall be Viking Model G-1 or approved substitute.
- J. Dry-Pipe Alarm Valve: Vertical installation, with alarm switch, drip check valve, drain cup, reset bar, and alarm test shut-off valve, drain check valve and all other accessories, gauges, pipe and fittings for a complete installation. Valve shall be Viking Model E or other approved substitute.
- K. Pre-action Alarm Valve: Vertical installation, single interlock, test drain valve, auxiliary drain valve, drain cup, drip check, alarm test shut off valve, strainer orifice check valve, pressure operated relief valve, priming valve, emergency release, priming pressure gauge and valve and all other gauges, piping and fittings for a complete installation. Valve shall be Viking Model E or approved substitute.

2.03 SIAMESE CONNECTION

- A. Wall Type: Three way, 2-1/2" x 2-12" x 4" connections, integral clappers, caps and chains, polished chrome plated finish. Hose threads to meet local fire department requirements. Nameplate to read "AUTOMATIC SPRINKLER". Siamese shall be Potter-Roemer 5021 or approved substitute.

2.04 SWITCHES

- A. Flow Switch: Vane-type, tamper-proof, pneumatic retard device, adjustable time delay, U.L. listed, F.M. approved. Switch shall be Potter-Roemer 6200 or approved substitute.
- B. Supervisory Switch: Monitor the open position of valve and have two sets of single pole, double throw suitable for 120 volt operation. Switch shall be Potter-Roemer 6220 or approved substitute.

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-4

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

2.05 ALARMS

- A. Water Motor Alarm: Aluminum, steel or stainless steel gong, water operated, mechanical striking device, red enamel finish, U.L. listed, F.M. approved. Alarm shall be Automatic Sprinkler Corp. Model "F" or approved substitute.
- B. Electric Bell Alarm: 6" diameter, aluminum, steel or stainless steel, electric motor, 120V, red enamel finish, U.L. listed, F.M. approved. Alarm shall be Potter-Roemer 6230 or approved substitute.

2.06 PRESSURE GAUGES

- A. Pressure Gauges: Polished brass case, 3-1/2" dial, glass enclosure plate, phosphor bronze bourdon tube, 0- to 300 psi, brass 1/4" male N.P.T. connection, lever handle union cock, suitable for air and water. Gauges shall be Potter-Roemer 6240 or approved substitute.

2.07 AIR COMPRESSORS

- A. Electric, motor-driven, air-cooled, single stage, oil-less, check valve, pressure and moisture under-loader and pressure switch, 1/4 horsepower. Compressor shall be Viking Model D-1 or approved substitute.

2.08 PRE-ACTION CONTROL PANEL

- A. Control panel shall be fully automatic with relays, timer, key type switches, alarm and trouble lights, assembled, wired and tested at the factory. Assembly shall be F.M. and U.L. approved. Panel shall have a printed circuit board and completely factory wired ready to make connections

2.09 BATTERY CHARGER/POWER SUPPLY:

- A. Shall be an automatic switching float equalize battery charger with a capacity to supply continuous loads of 50% of the charger capacity, charger to include volt meter, ammeter, AC and DC fuses, modular construction, remote sensing terminals, preset float and equalize level for specific battery types, isolated output, hermetically sealed integrated circuits and semi-conductors, and malfunction alarm.

2.10 STANDBY BATTERY:

- A. Shall be sealed construction, high gloss red interior and exterior, 14 gallon steel enclosure, 12 volt, gelled electrolyte type designed for float / standby service. Shall be capable of providing 24 hour backup to system components.

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-5

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

2.11 DETECTORS

- A. Shall be ionization (or rate of rise heat) detectors, cross zoned such that control panel is activated by two adjacent detectors within a zone. Detectors shall be wired normally open with a supervised circuit. Detectors shall be spaced per the manufacturer's listing. Detectors shall be the same as fire alarm system. See Division 16.

2.12 SPRINKLERS

- A. Upright (No Ceiling) : Bronze construction, ½" orifice, polished chrome finish. Sprinklers shall be Viking Model M or approved substitute.
- B. Pendent, Recessed Ceiling Plate (non-public areas): Bronze construction, ½" orifice, polished chrome finish. Sprinklers shall be Viking Model M or approved substitute.
- C. Pendent, Concealed (All Public Areas and all gypsum board ceiling areas) : Bronze construction, ½" orifice, round (white) (brass) (polished chrome plated) cover with spring. Sprinklers shall be Viking Horizon Mirage or approved substitute.
- D. Spare Sprinkler Cabinet: Steel construction, red enamel finish, hinged door and catch. Cabinet shall be stocked with spare sprinklers and respective wrenches per NFPA 13. Cabinet shall be Potter-Roemer 6162 or approved substitute.
- E. Sprinkler Head Guard: Welded wire cage, red enamel finish. Guard shall be Potter-Roemer 6160 or approved substitute.
- F. Sprinkler heads shall be U.L. listed and F.M. approved for fire protection service.
- G. Temperature ratings of sprinklers shall comply with NFPA 13.

PART 3 - EXECUTION

3.01 GENERAL

- A. All areas shall be sprinkled as required by NFPA 13, Fire Marshal and Owner's Insurance Underwriter including above and below large ductwork, attic spaces, etc.
- B. Sprinkler head shall be symmetrically located as required to provide proper coverage and to avoid interference with lights, diffusers, grilles, or other ceiling mounted equipment. Where sprinkler heads are located in a ceiling tile, the head pattern shall be symmetrical and the head pattern shall bear the same relationship to the general ceiling pattern, and lights throughout. Heads located in ceiling tile shall be centered in the tile.
- C. Inspector test connection and flushing connections shall be provided per NFPA 13.

SECTION 21 13 00
FIRE PROTECTION SPRINKLER SYSTEM

21 13 00-6

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

3.02 PROCEDURE FOR PIPE JOINTS

- A. Welding: All welding of pipe shall conform to American Standard Code for Pressure Piping ANSI B31.1, Section 6 Fabrication Details, Chapter 4 Welding of Pipe Joints. Refer to NFPA 13 for welders qualifications and welding procedures.
- B. Threaded Pipe Connections: Ends of pipe shall be cleaned and reamed; joints shall be made with an oil base non-solvent pipe compound applied to male threads only.
- C. Grooved Coupling Connections: Joined in strict accordance with manufacturer's instructions.

3.03 TESTS

- A. All piping shall be hydrostatically test at 200 PSI for two hours before concealing or placed in service.

3.04 INSTALLATION

- A. Inside piping shall be installed in accordance with NFPA 13. Revision of piping locations because of conflict requiring field changes shall be coordinated with the Architect.
- B. Sleeves at concrete slabs, walls, partitions and other appurtenances shall be provided as specified under Section 15 050.
- C. All piping shall be arranged to drain the main riser or suitable auxiliary drains or plugged outlets in accordance with NFPA 13.
- D. Escutcheon plates having a finish painted to match the ceiling shall be provided for all exposed wall and ceiling penetrations. Submit samples for approval.
- E. Underground piping shall be installed in accordance with NFPA 24. All tees, plugs, caps and bends shall be anchored with clamps and tie rods or other approved means to prevent movement.
- F. The Contractor's Material and Test Certificates for Aboveground Piping and Underground Piping shall be satisfactorily executed and submitted in accordance with NFPA 13 : 1-10.
- G. A placard shall be permanently affixed at each main riser in accordance with NFPA 13 : 7-1.2 indicating the location and the design density, including the flow rate and residual pressure demand at the base of riser.

END OF SECTION

REQUEST FOR BIDS

Due: _____

Notice is hereby given that the City of Hogansville will accept sealed bids for the Rehabilitation of the Historic 1937 Royal Theater located at 400 Main Street Hogansville, Georgia. Bids should be submitted to the City Hall, Attn: Mr. David Milliron, City Administrator. The City Hall is also located at 400 Main Street Hogansville, Georgia. Bids shall be due **no later than 2:00 p.m., Eastern Standard Time,** _____. Bids shall be evaluated based on the price, qualifications and the requirements and criteria set forth herein. The contract shall be awarded to the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in this invitation for bids.

A Pre-bid Conference will be held at the site on _____, 2019 at 2:00 p.m.. Attendance is encouraged but is not mandatory. Questions can be submitted up until Noon on _____ 19th and answers/Addendum will be issued within three business days.

Documents are available for download on the Architect's FTP site. To obtain a Username and password, send an inquiry to info@carterwatkins.com. Documents will also be posted in the County Administration Office for review only. No documents will be mailed. Any questions regarding the bid documents should be emailed to info@carterwatkins.com. Addendum may be issued during the bidding period. All bidders are responsible to check the Architect's FTP site for addenda.

Both a Performance and a Payment Bond will be required in an amount equal to 100% of the Contract Price in a form to be provided by the County. Proof of General Liability Insurance and Workman's Compensation Insurance will be required with the Gordon County Commission listed as an additional insured. All bids must be accompanied by a Bid Bond or Certified Funds in the amount of 5% of the Bid Amount.

The City of Hogansville, in accordance with Title VI of the Civil Rights Act of 1964 and related statutes and regulations, hereby notifies all bidders that it will affirmatively ensure that in regards to any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award. The General Contractor and all Sub-contractors shall insure that employees and employment applicants are not discriminated against because of race, color, creed, sex, or national origin.

Bidders shall submit a price AND shall have to submit the following information along with the bid:

1. Bid Form.
2. Bid Bond.
3. Qualifications (see Specification Section 001153)
4. Proposed Project Schedule (See Specification Section 003113)
5. Schedule of Values (See Specification Section 004373)

In addition, all Addenda must be acknowledged by the Bidder on the Bid Form.

Bids may not be withdrawn for a period of 90 days after time has been called on the date of bid opening. The Commission reserves the right to reject any and all bids and to waive any technicalities or irregularities and to award the bid based on the highest and best interests of the County. This project will exceed \$100,000 and therefore this project will be subject to the Public Works Construction Law, OCGA Sec. 36-91-1 et seq.

Note: No Bidders are to contact anyone with the City of Hogansville at any time during the Bidding Process. All questions are to be directed to the Architect, via email, at the address provided above. Any breach of this requirement will result in Bidder's disqualification.

SECTION 001153
REQUEST FOR QUALIFICATIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

001153-1

DOCUMENT 001153 - REQUEST FOR QUALIFICATIONS

1.1 PURPOSE, LAWS, AND REGULATIONS

- A. The purpose of the Prequalification Procedure described in this Document is to provide Owner with a mechanism to evaluate and determine whether Prospective Bidders are qualified to participate in the construction of Project. Evaluation will be limited to that office of the Prospective Bidder that is proposed to perform the Work.
- B. Applicable provisions of The City of Hogansville shall be observed in the soliciting, receiving, and evaluating of Prospective Bidders' qualifications.
- C. Applicable provisions of The City of Hogansville, Troup County, and The Secretary of Interior's Standards for Rehabilitation shall be observed in bidding, letting, and execution of the Work.
- D. Prospective Bidders are required to comply with these Requirements for Prequalification. Only those Prospective Bidders who have complied with the Requirements for Prequalification and have been determined to be qualified will be eligible to submit construction bids on Project.

1.2 DEFINITIONS

- A. Financial Statement: The requirement for submitting a financial statement as an attachment to AIA Document A305, "Contractor's Qualification Statement" shall be understood to mean a certified annual audit, prepared according to generally acceptable accounting practices and signed by an independent certified public accountant. **A Reviewed Statement of Assets and Liabilities, prepared and signed by an independent certified public accountant, is also acceptable.** A self-prepared annual compiled financial statement or balance sheet is unacceptable.
- B. Prospective Bidder: A Prospective Bidder is a person or entity who submits a Submittal of Qualifications to Owner.
- C. Project: Generally described in the **Advertisement for Bids**.

1.3 PREQUALIFICATION DOCUMENTS

- A. Prequalification Documents: Consist of the Advertisement for Prequalification of Bidders; this Request for Qualifications document; AIA Document A305, "Contractor's Qualification Statement"; and additional documents issued by Owner.

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REQUEST FOR QUALIFICATIONS

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- B. Obtaining Prequalification Documents: Prospective Bidders may obtain complete sets of the Prequalification Documents from the issuing office designated in the Advertisement for Prequalification of Bidders. Prospective Bidders shall use complete sets of Prequalification Documents in preparing their submittal. Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Prequalification Documents.
- C. Interpretation or Correction of Prequalification Documents: If the Prospective Bidder is in doubt as to the interpretation of any part of the Prequalification Documents, or finds discrepancies in or omissions from any part of the Prequalification Documents, it must submit a written Request for Interpretation thereof no later than [seven] <Insert number> days prior to acceptance of Submittals of Qualifications. Address all communications to Owner.

1.4 PREQUALIFICATION PROCEDURES

- A. Form of Prequalification Submittal:
 - 1. Submittals of Prequalification must be submitted in duplicate on AIA Document A305, "Contractor's Qualification Statement," properly executed and with all items filled out in ink or typed, and all additional data, attachments, and forms provided. Do not change or add words to the Qualification Statement or forms. All signatures must be original (and sealed if a corporation) and must be notarized and sealed by a Notary Public.
- B. Modification to Requirements for Prequalification:
 - 1. Clarifications, alterations, or changes made by Owner to the Requirements for Prequalification shall be in writing only. Verbal information is not valid or binding.
 - 2. Modifications will be mailed or delivered to those Prospective Bidders having obtained Prequalification Documents from the issuing office.
- C. Submission of Prequalification Documents:
 - 1. Each Submittal of Prequalification shall be delivered to the location indicated in the Advertisement for Prequalification on or before the day and hour set for receipt of Submittals. Each Submittal of Prequalification shall be submitted in an opaque, sealed envelope marked in the lower left-hand corner as follows:
 - a. Bidder's Prequalification Statement for The Historic 1937 Royal Theater Rehabilitation.
 - b. **Prospective Bidder's Name.**
 - c. **Prospective Bidder's Address.**
 - d. Contractor's License No.
 - e. Date and Time for Submittal.

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2. If not delivered in person, this envelope shall be enclosed in a second envelope for posting to the location indicated for receipt of bids. This envelope shall be addressed as follows:
 - a. Bidder's Prequalification Statement for The Historic 1937 Royal Theater Rehabilitation.
 - b. Date and Time for Submittal.
 - c. The City of Hogansville>.
 - d. 400 Main Street
 - e. Hogansville, GA 30230
 - f. Contractor's License No. (In return address).
3. Include a completed copy of the Prequalification Checklist attached to the cover of the Submittal.
4. It is the sole responsibility of the Prospective Bidder to ensure that its submittal is received by the submittal date and time. No faxed or e-mail submittal or modification of a submittal will be considered. No submittal submitted after the time fixed for receiving submittals will be considered; late submittals will be returned to the Prospective Bidder unopened.
5. Owner reserves the right to waive any informality and to request additional information from Prospective Bidders, at Owner's discretion.

D. Attachments:

1. Prospective Bidders shall complete all required forms and attachments described in the Prequalification Documents, entering "Not Applicable" where information does not apply. Absence of any of the forms included in the Prequalification Documents will be reason for possible disqualification.

E. Status of Prospective Bidders:

1. Proprietors submitting bids shall indicate their status as proprietors.
2. Prospective Bidders submitting qualifications for partnerships shall indicate their status as partners and shall submit a certified copy of the power of attorney authorizing the executor of the submittal to bind the partnership.
3. Prospective Bidders submitting qualifications for corporations shall indicate their status as corporations and shall submit a certified copy of the board of directors' authorization for the Prospective Bidder to bind the corporation and shall affix the corporate seal on the submittal.
4. Prospective Bidders shall provide the following:
 - a. Names and addresses of proprietors, of all members of a partnership, or of the corporation's officers.

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- b. Name of jurisdiction where the partnership is registered or where the corporation is incorporated. Corporations must be licensed to do business in Project state at the time of executing the Contract.

1.5 WITHDRAWAL

- A. A Qualification Statement may be withdrawn on personal request received from the Prospective Bidder.

1.6 PREQUALIFICATION CRITERIA

- A. Prospective Bidders must demonstrate the following to the satisfaction of Owner:
 - 1. Proper license under the laws and regulations governing their respective trade(s).
 - 2. Capacity to provide Performance Bond, Labor and Material Payment Bond, and Insurance in a form acceptable to Owner in amounts adequate to bond the Work based on the scope indicated.
 - 3. Applicable experience of firm as described in the Contractor's Qualification Statement, including the following:
 - a. Experience of Firm: The firm in its current organization shall have successfully completed minimum of **five** projects of similar type, quality, and scope, including a minimum of **two** within the last **three** years. The firm shall have a record of project completion, credit record, record of judgment claims, arbitration proceedings, and suits pending or outstanding acceptable to Owner.
 - b. Experience of Firm Officers: The firm officers shall have personal record of project completion acceptable to Owner.
 - c. Experience of Project and Field Management Staff to Be Committed by the Prospective Bidder to Carry Out the Work: The assigned project manager and field superintendent must have successfully completed minimum of **three** projects of similar type, quality, and scope.
 - d. For purposes of this submittal, reference to "key individuals" as described in the Contractor's Qualification Statement shall be understood to mean the principal in charge, the project manager(s), and the project field superintendent(s) committed by the Prospective Bidder to carry out the Work of this Project. Prospective Bidder by submitting qualifications of key individuals agrees that Owner reserves the right to approve or reject subsequent reassignment of key individuals.
 - e. For purposes of this submittal, "successful completion" shall be understood to mean completion of project within project schedule and budget. Provide additional information indicating reasons why any referenced project did not meet project schedule or project budget.

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- f. For purposes of this Qualification, "similar project" shall be understood to include the following project elements:
 - 1) Reinforced masonry load-bearing construction.
 - 2) Long-span, steel-framed roof structure.
 - 3) Automated building systems (controls, fire detection and alarm, technology wiring infrastructure, intercommunications).
 - 4) Renovation/addition work on occupied sites.
 - 4. Adequate financial resources, including ability to secure materials and labor necessary for completion of the Work and other work in hand, within the anticipated contract times, and reflecting the anticipated retainage from progress payments.
 - 5. Work-in-hand capacity, such that the Prospective Bidder demonstrates adequate work under contract to continue its business operations at least at their current level, at the same time indicating the capability to carry out Owner's proposed work.
 - 6. Adequate organization to complete work of the scope anticipated, including firm management, project management, field superintendence, and field engineering and quality control.
 - 7. Acceptable past performance as indicated by firm's references, including ability to meet contract time and to monitor, manage, and communicate interim scheduling requirements, to carry out required quality-control activities, to properly prepare interim and final payment requests, and to successfully complete project closeout requirements.
 - 8. Acceptable documentation of firm's ability to comply with Owner's Minority-owned business enterprise/woman-owned business enterprise (MBE/WBE) requirements. Prospective Bidders shall contact Owner to obtain copies of requirements.
 - 9. Acceptable documentation of firm's employee screening practices as indicating by affidavit describing background check procedures for firm's employees and requirements for same incorporated in firm's subcontracts.
 - 10. **<Insert additional qualifications>.**
- B. Consideration of qualifications may be withheld if the Qualification Statement shows any unexplained erasures, omissions, alterations of form, additions not called for, added restrictions or qualifying conditions, or other irregularities of any kind.
- C. Owner may make such investigations as it deems necessary to determine the ability of the Prospective Bidder to perform the Work, and the Prospective Bidder shall furnish to Owner all such information for this purpose as Owner may request. Owner reserves the right to withhold qualification if the evidence submitted by or investigation of such Prospective Bidder fails to satisfy Owner that such Prospective Bidder is properly qualified to carry out the obligations of the proposed Project. The determination of which bidders are prequalified is not protestable, except as allowed by law.
- D. Prequalification Submittal and data contained therein is considered privileged and confidential and will not be disclosed to any outside party except as required by law.

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1.7 BONDS AND INSURANCE

- A. The Prospective Bidder shall provide as part of the Submittal of Qualifications evidence of its ability to furnish below:
 - 1. Performance Bond, a Payment Bond, and a Labor and Material Bond, each in the amount of 100 percent of the Contract Sum, with a corporate surety authorized to transact business in Project's jurisdiction.
 - 2. Satisfactory certificates of insurance in the amount and types required by statute, but not less than the following:
 - a. Professional design errors and omissions insurance endorsement for delegated design by Contractor's professional engineer.
 - b. Workers' Compensation insurance provisions: statutory limits.
 - c. Commercial General Liability insurance provisions: at limits established by Owner in Project Contract Documents and including below:

1.8 ACCEPTANCE OF QUALIFICATIONS

- A. Prospective bidders will be notified of Owner's determination, within **45** days from the date of submission.
- B. Evaluations will be confidential. Notifications will be publicly available information.
- C. Owner may deny prequalification if it finds one or more of the following:
 - 1. The Prospective Bidder does not have sufficient financial capacity to perform the Work.
 - 2. The Prospective Bidder does not have the appropriate experience to perform the Work, including, but not limited to, having met the experience criteria set forth herein.
 - 3. The Prospective Bidder or any officer, director, or owner thereof has had judgments entered against him within the past five years for the breach of contracts for governmental or nongovernmental construction work including, but not limited to, design-build or construction management contracts.
 - 4. The Prospective Bidder has been in substantial noncompliance with the terms and conditions of prior construction with Owner, or in documented substantial noncompliance with the terms and conditions of prior construction with another public body without good cause.
 - 5. The Prospective Bidder or any officer, director, owner, or chief financial official thereof has been convicted within the past 10 years of a crime related to governmental or nongovernmental construction or contracting.
 - 6. The Prospective Bidder or any officer, director, or owner thereof is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state, or agency of the Federal Government.

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7. The Prospective Bidder failed to provide to the public body in a timely manner any information required by the public body relevant to the six preceding subparagraphs.
 8. The Prospective Bidder provides false, nonresponsive, misleading, or incomplete information for items required herein.
- D. The acceptance of a Prospective Bidder's qualifications will be a Notice of Prequalification, signed by a duly authorized representative of Owner; no other act by Owner or its agents shall constitute the acceptance of qualifications. The acceptance of a Prospective Bidder's qualifications by Owner does not constitute a contract or promise to award a contract to the Prospective Bidder.

1.9 PROSPECTIVE BIDDER'S CHECKLIST

- A. In an effort to assist the Prospective Bidder in properly completing all documentation required, the following checklist is provided for the Prospective Bidder's convenience. The Prospective Bidder is solely responsible for verifying compliance with prequalification requirements.
- B. Attach this completed checklist to the outside of the Submittal envelope.
 1. Reviewed the Prequalification Documents, including the Advertisement for Prequalification and Requirements for Prequalification, prior to preparing this submittal.
 2. Prepared AIA Document A305, "Contractor's Qualification Statement," as required by the document instructions and by the Requirements for Prequalification, including all attachments and data required as part of the Qualification Statement, properly notarized.
 3. Attached: Copy of applicable Contractor's license(s).
 4. Attached: Affidavit of Employee Screening.
 5. Attached: Resumes of key individuals.
 6. Attached: Other attachments as necessary to provide information required.
 7. Envelope shows name and address of the Prospective Bidder.
 8. Envelope shows the Prospective Bidder's Contractor's License No.
 9. By submitting notarized statement, the Prospective Bidder certifies that the Bidder can provide executed Performance Bond and Labor and Material Bond meeting requirements given in the Requirements for Prequalification.
 10. By submitting notarized statement, the Prospective Bidder certifies that the Bidder can provide Certificates of Insurance in the amounts indicated in the Requirements for Prequalification.

END OF DOCUMENT 001153

SECTION 002113
INSTRUCTIONS TO BIDDERS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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DOCUMENT 002113 - INSTRUCTIONS TO BIDDERSINSTRUCTIONS TO BIDDERS

- A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.
 - 1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

END OF DOCUMENT 002113

SECTION 002513
PREBID MEETINGS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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DOCUMENT 002513 - PREBID MEETINGS

1.1 PREBID MEETING

- A. **Architect** will conduct a Prebid meeting as indicated below:
1. Meeting Date: <**TBD**>.
 2. Meeting Time: [**2:00 p.m.**] , local time.
 3. Location: 400 Main Street Hogansville, GA 30230
- B. Attendance:
1. Prime Bidders: Attendance at Prebid meeting is **recommended**.
 2. Subcontractors: Attendance at Prebid meeting is recommended.
 3. Notice: Bids will only be accepted from prime bidders represented on Prebid Meeting sign-in sheet.
- C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of **two** business days prior to meeting.
- D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:
1. Procurement and Contracting Requirements:
 - a. Advertisement for Bids.
 - b. Instructions to Bidders.
 - c. Bidder Qualifications.
 - d. Bonding.
 - e. Insurance.
 - f. Bid Security.
 - g. Bid Form and Attachments.
 - h. Bid Submittal Requirements.
 - i. Bid Submittal Checklist.
 - j. Notice of Award.
 2. Communication during Bidding Period:
 - a. Obtaining documents.
 - b. Access to Project Web site.
 - c. Bidder's Requests for Information.
 - d. Bidder's Substitution Request/Prior Approval Request.
 - e. Addenda.

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3. Contracting Requirements:
 - a. Agreement.
 - b. The General Conditions.
 - c. The Supplementary Conditions.
 - d. Other Owner requirements.
 4. Construction Documents:
 - a. Scopes of Work.
 - b. Temporary Facilities.
 - c. Use of Site.
 - d. Work Restrictions.
 - e. Alternates, Allowances, and Unit Prices.
 - f. Substitutions following award.
 5. Separate Contracts:
 - a. Work by Owner.
 - b. Work of Other Contracts.
 6. Schedule:
 - a. Project Schedule.
 - b. Contract Time.
 - c. Liquidated Damages.
 - d. Other Bidder Questions.
 7. Site/facility visit or walkthrough.
 8. Post-Meeting Addendum.
- E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees, plan rooms, and others known by the issuing office to have received a complete set of Procurement and Contracting Documents. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
1. Sign-in Sheet: Minutes will include list of meeting attendees.
 2. List of Attendees: Minutes will include list of Attendees.

END OF DOCUMENT 002513

SECTION 002600
PROCUREMENT SUBSTITUTION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
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002600-1

DOCUMENT 002600 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

- A. Procurement Substitution Request: Submit to **Architect**. Procurement Substitution Request must be made in writing in compliance with the following requirements:

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PROCUREMENT SUBSTITUTION PROCEDURES

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1. Requests for substitution of materials and equipment will be considered if received no later than **10** days prior to date of bid opening.
 2. Submittal Format: Submit an electronic copy, via email, of each written Procurement Substitution Request, using **form bound in Project Manual or CSI Substitution Request Form 1.5C**.
 3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
 - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.
 - 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. 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.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project.
 - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
 - c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
 - d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance

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PROCUREMENT SUBSTITUTION PROCEDURES

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of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 002600

SECTION 003113
PRELIMINARY SCHEDULES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
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003113-1

DOCUMENT 003113 - PRELIMINARY SCHEDULES

1.1 PROJECT SCHEDULE

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but do not affect Contract Time requirements. This Document and its attachments are not part of the Contract Documents.
- B. Available Project information includes the following:
 - 1. Project Schedule.
- C. Provide a Preliminary Project Schedule with durations, milestones, completion dates, etc. along with the Bid Documents.

END OF DOCUMENT 003113

SECTION 003119
EXISTING CONDITIONS INFORMATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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003119-1

DOCUMENT 003119 - EXISTING CONDITION INFORMATION

1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. Existing drawings that include information on existing conditions including previous construction at Project site are available for viewing **on Project Web site at the office of Architect and at the office of Owner.**
- C. Existing **specifications and submittals**, if any, that include information on existing conditions including previous construction at Project site are available for viewing **on Project Web site, at the office of Architect, and at the office of Owner.**
- D. Survey information, if any, that includes information on existing conditions, is available for viewing **on Project Web site, at the office of Architect, and at the office of Owner.**
- E. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Document 003126 "Existing Hazardous Material Information" for hazardous materials reports that are made available to bidders.
 - 3. Document 003132 "Geotechnical Data" for reports and soil-boring data from geotechnical investigations that are made available to bidders.

END OF DOCUMENT 003119

SECTION 003126

EXISTING HAZARDOUS MATERIALS INFORMATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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DOCUMENT 003126 - EXISTING HAZARDOUS MATERIAL INFORMATION

1.1 EXISTING HAZARDOUS MATERIAL INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. An existing asbestos report for Project, if any, is available for viewing **on Project Web site, at the office of Architect, and at the office of Owner or is appended to this document.**
- C. An existing lead report for Project, if any, is available for viewing **on Project Web site, at the office of Architect, and at the office of Owner or is appended to this Document.**
- D. An existing PCB (Polychlorinated Biphenyl) information report for Project, if any, is available for viewing **on Project Web site, at the office of Architect, and at the office of Owner or is appended to this Document.**
- E. An existing mold report for Project, if any, is available for viewing on Project Web site, at the office of Architect, and at the office of Owner or is appended to this Document.
- F. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Document 003119 "Existing Condition Information" for information about existing conditions that is made available to bidders.
 - 3. Document 003132 "Geotechnical Data" for reports and soil-boring data from geotechnical investigations that are made available to bidders.
 - 4. Section 024116 "Structure Demolition" for notification requirements if materials suspected of containing hazardous materials are encountered.
 - 5. Section 024119 "Selective Structure Demolition" for notification requirements if materials suspected of containing hazardous materials are encountered.

END OF DOCUMENT 003126

SECTION 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

- A. Bidder: _____.
- B. Project Name: Historic 1937 Hogansville Royal Theater Rehabilitation.
- C. Project Location: 400 Main Street Hogansville, GA 30230.
- D. Owner: The City of Hogansville.
- E. Architect: Carter Watkins Associates Architects, Inc..

1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Carter Watkins Associates Architects, Inc. and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
 - 1. _____ Dollars (\$_____).
 - 2. The above amount may be modified by amounts indicated by the Bidder on the attached Document 004322 "Unit Prices Form" and Document 004323 "Alternates Form."

1.3 ALTERNATES

- A. The following Bid Alternates, if any, are to be either added or subtracted from the Bid Amount (addition or subtraction from bid amount to be indicated by a plus or minus in front of each amount) Bidders are to include any alternates, if any, issued in subsequent Addendums:
 - 1. 10% Contingency amount (bid amount multiplied by .10): \$_____
 - 2.

1.4 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. _____ Dollars (\$_____).

- B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.5 SUBCONTRACTORS AND SUPPLIERS

- A. The following companies shall execute subcontracts for the portions of the Work indicated:

1. Concrete Work: _____.
2. Masonry Work: _____.
3. Roofing Work: _____.
4. Plumbing Work: _____.
5. HVAC Work: _____.
6. Electrical Work: _____.

1.6 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within the number of calendar days outlined in the Project Manual.

1.7 ACKNOWLEDGMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.
4. Addendum No. 4, dated _____.
5. Addendum No. 5, dated _____.
6. Addendum No. 6, dated _____.
7. Addendum No. 7, dated _____.
8. Addendum No. 8, dated _____.

1.8 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto.

1. 001153 Request for Qualifications
2. 003113 Preliminary Schedule.
3. 004373 Proposed Schedule of Values.
4. Bid Form Supplement - Bid Bond Form (AIA Document A310-2010).

1.9 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.10 SUBMISSION OF BID

- A. Respectfully submitted this ____ day of _____, <Insert year>.
- B. Submitted By: _____ (Name of bidding firm or corporation).
- C. Authorized Signature: _____ (Handwritten signature).
- D. Signed By: _____ (Type or print name).
- E. Title: _____ (Owner/Partner/President/Vice President).
- F. Witnessed By: _____ (Handwritten signature).
- G. Attest: _____ (Handwritten signature).
- H. By: _____ (Type or print name).
- I. Title: _____ (Corporate Secretary or Assistant Secretary).
- J. Street Address: _____.
- K. City, State, Zip: _____.
- L. Phone: _____.
- M. License No.: _____.
- N. Federal ID No.: _____ (Affix Corporate Seal Here).

END OF DOCUMENT 004113

SECTION 004373
PROPOSED SCHEDULE OF VALUES FORM

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

004373-1

SECTION 004373 - PROPOSED SCHEDULE OF VALUES FORM

1.1 BID FORM SUPPLEMENT

- A. A completed Proposed Schedule of Values form is required to be attached to the Bid Form.

1.2 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of **five** percent of the Contract Sum.
- B. Arrange schedule of values using **AIA Document G703 or similarly formatted form.**
 - 1. Copies of AIA standard forms may be obtained from the American Institute of Architects; <https://www.aiacontracts.org/library>; (800) 942-7732.

END OF DOCUMENT 004373

SECTION 004393
BID SUBMITTAL CHECKLIST

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

004393-1

DOCUMENT 004393 - BID SUBMITTAL CHECKLIST

1.1 BID INFORMATION

- A. Bidder: _____.
- B. Prime Contract: _____.
- C. Project Name: HISTORIC 1937 ROYAL THEATER REHABILITATION
- D. Project Location: 400 Main Street Hogansville, GA 30230
- E. Owner: The City of Hogansville.
- F. Architect: Carter Watkins Associates Architects, Inc.

1.2 BIDDER'S CHECKLIST

- A. In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.
- B. Attach this completed checklist to the outside of the Submittal envelope.
 - 1. Used the Bid Form provided in the Project Manual.
 - 2. Prepared the Bid Form as required by the Instructions to Bidders.
 - 3. Indicated on the Bid Form the Addenda received.
 - 4. Attached to the Bid Form: Bid Bond OR a certified check for the amount required.
 - 5. Bid envelope shows name and address of the Bidder.
 - 6. Bid envelope shows the Bidder's Contractor's License Number.
 - 7. Bid envelope shows name of Project being bid.
 - 8. Bid envelope shows name of Prime Contract being bid, if applicable.
 - 9. Bid envelope shows time and day of Bid Opening.

END OF DOCUMENT 004393

SECTION 01 11 13
SUMMARY OF THE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 11 13-1

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

- A. The Project consists of the Rehabilitation of the Historic 1937 Royal Theater. The project intends to replicate the historic interior while providing modern technology for use with stage, movie, and other media. Refer to the drawings and project manual as prepared by CARTER WATKINS ASSOCIATES ARCHITECTS, INC. Contracting shall be by means of a General Contractor for Construction between one General Contractor and The City of Hogansville.

1.3 CONTRACTORS USE OF PREMISES

- A. General: Limit use of the premises only to construction activities in areas indicated.
 - 1. Confine operations to areas within Construction limits to areas mutually agreed upon with the Owner. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 - 2. Keep driveways and entrances serving the premises and the park grounds clean and available to the Owner. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

END OF SECTION

SECTION 01 21 13

ALLOWANCES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 21 13-1

HISTORIC 1937 ROYAL THEATER REHABILITATION

JUNE 03, 2019

PART 1 - GENERAL

ALLOWANCES ARE AS FOLLOWS (IF ANY):

1. Hardware Allowance: (allowance to provide for the purchase of hardware materials only. Labor, preparation, etc. to be included in base bid amount). Figures below are not inclusive of Access Control.

\$ 800.00 per interior door leaf (all interior doors to receive new lever handle locksets). Coordinate with City's hardware standards and manufacturer.

\$1,500.00 per exterior leaf.

END OF SECTION

SECTION 01 23 00

ALTERNATES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 23 00-1

HISTORIC 1937 ROYAL THEATER REHABILITATION

JUNE 03, 2019

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for Alternates.
- B. Definition: an Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in Contract Documents.
- C. Coordination: Coordinate related Work and modify or adjust adjacent work as necessary to ensure that work affected by each accepted Alternate is complete and fully integrated into the project.
- D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.
- E. Schedule: Specification Sections contain requirements for materials and methods necessary to achieve the work described under each Alternate.

Alternate Additions/Deductions to the Base Bid (IF ANY) Refer to Addendums for future alternates.

- 1. Alternate 1 is to be a 10% Contingency for the entire project. Bidders shall take their Base bid number and provide 10% of that number as the figure for Alternate #1.
- 2.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 25 13

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to produce specified.
- D. Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment."

1.3 DEFINITIONS

- A. Definitions used in the Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by the Owner or Architect.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within 15 days after commencement of the work. Requests received more than 15 days after commencement Of the Work may be considered or rejected at the discretion of the Architect.

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

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1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.
2. The Architect will consider only those requests accompanied by a copy of the Request for Substitution form bound herein, filled out completely, signed, and including the required attachments.
3. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of Contract Documents.
 3. The request is timely, fully documented and properly submitted.
 4. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.
 5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 6. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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considerations.

7. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
8. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
9. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.

- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 25 13

PROPOSED REQUEST FOR SUBSTITUTION

TO: _____

FROM: _____
Name of Manufacturer

Street Address

City and State

Phone number and name of person to contact

PROJECT: _____

1. Specification Section and Paragraph numbers of product specified

_____.

2. Proposed Substitute

A. Name and Model No:

B. Description:

C. Attach applicable Submittals as required by the referenced
Specification Section, i.e. Product Data, Materials List, Shop
Drawings, Samples, Design Data, Test Reports, and Certificates.

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

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Attach Shop Drawings to the effect of the proposed substitution
on adjacent components of the work.

- D. Insert Numbers of applicable reference standards:
 - E. Attach a color chart; if applicable.
 - F. Attach installation instructions.
3. Manufacturer's Reputation: Attach the following:
- A. Evidence of reputation for prompt delivery.
 - B. Evidence of reputation for efficiency in servicing products.
4. Comparison: Attach an itemized comparison of the proposed substitution with product specified. Significant qualities may include elements such as size, weight, durability, performance, and visual effects.
5. Changes in Work: Attach data relating to changes required in other work to permit use of proposed substitution and changes required in construction schedule and overall contract time. Coordinate changes or modifications needed to other parts of the work and to construction performed by the Owner and separate Contractors that will be necessary to accommodate the proposed substitution.
6. Cost Data: Attach accurate cost data on proposed substitution in comparison with product specified.
7. Previous Installation: Provide the following information on similar projects on which proposed substitution was used, list projects in the locale of the project primarily and then in other areas that best represent its application on this project:

Name and Address of Project	Date of Installation	Name, Address and Phone Number of Architect
--------------------------------	-------------------------	--

A.

SECTION 01 25 13
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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B.

C.

D.

8. In making a request for substitution, the Manufacturer, Installer, and Contractor each represents that:

- A. He has examined the Drawings and Specifications and has determined that, to the best of his knowledge, the proposed substitution is appropriate for the use intended in the Drawings and Specifications.
- B. He will provide the same or better warranty for substitution as for product or method specified.
- C. The product is equal or better in quality and serviceability to the specified item.

9. In making a request for substitution, the Installer and Contractor each represents that:

- A. He will coordinate the installation of accepted substitution into the work, making such changes as may be required for the work to be complete in all respects.
- B. He waives all claims for additional costs related to substitution which consequently become apparent.
- C. Cost data is complete and includes all related costs under his Contract, but excludes costs under separate contracts and the Architect's redesign costs.
- D. The substitution meets the requirements of the Contract Documents, regardless of the evidence submitted or any review or independent investigation by the Owner or the Architect.

Name of Manufacturer and signature of Manufacturer's Rep Date

Name of Installer and signature of Installer's Rep Date

Name of Contractor and signature of Contractor's Rep Date

SECTION 01 26 00
MODIFICATION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 26 00-1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on AIA form G710, Architect's Supplemental Instructions.

1.4 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
 - 1. Proposal requests issued by the Architect are for information only. Do not consider them instruction either to stop work in progress, or to execute the proposed change.
 - 2. Unless otherwise indicated in the proposal request, within 20 days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.
 - a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

SECTION 01 26 00
MODIFICATION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 26 00-2

- b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
 - B. Contractor-Initiated Change Order Proposals: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a change proposal to the Architect.
 - 1. Include a statement outlining the 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 proposed change on the Contract Sum and Contract Time.
 - 2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Comply with requirements in Section "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.
- 1.5 ALLOWANCES
- A. Allowance Adjustment: Base each Change Order Proposal for an allowance cost adjustment solely on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
- 1.6 CONSTRUCTION CHANGE DIRECTIVE
- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA for G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

SECTION 01 26 00
MODIFICATION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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01 26 00-3

-
1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.7 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Change Order Proposal, the Architect will issue a Change Order for signatures of the Owner and Contractor on AIA Form G701, as provided in the Conditions of the Contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 29 00
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 29 00-1

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.

- B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.

1. Identification: Include the following Project Identification on the Schedule of Values:

- a. Project name
- b. Name of the Architect
- c. Project number
- d. Contractor's name and address
- e. Date of submittal

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

- a. Generic name

SECTION 01 29 00
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
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01 29 00-2

- b. Related Specification Section
 - c. Name of subcontractor
 - d. Name of Manufacturer or fabricator
 - e. Name of supplier
 - f. Change Orders (numbers) that have affected value
 - g. Dollar value
 - h. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent
3. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

1.4 APPLICATIONS FOR PAYMENT:

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
- B. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for payment.
- D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
- E. Transmittal: Submit 3 executed copies of each Application for Payment to the Architect by means ensuring receipt within 24 hours.
- F. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
- G. Administrative actions and submittals that shall proceed or coincide with this application include:
 - 1. Occupancy permits and similar approvals
 - 2. Warranties (guarantees) and maintenance agreements

SECTION 01 29 00
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 29 00-3

-
3. Test/adjust/balance records
 4. Maintenance instructions
 5. Meter readings
 6. Start-up performance reports
 7. Change-over information related to Owner's occupancy, use, operation, and maintenance.
 8. Final cleaning
 9. Application for reduction of retainage, and consent of surety
 10. Advice on shifting insurance coverages
 11. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial completion.

H. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements
2. Completion of items specified for completion after Substantial Completion
3. Assurance that unsettled claims will be settled
4. Assurance that Work not complete and accepted will be completed without undue delay
5. Transmittal of required Project construction records to Owner
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations have been paid
8. Release of liens
9. Removal of temporary facilities and services
10. Removal of surplus materials, rubbish, and similar elements
11. Change of door locks to Owner's access

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 31 13
PROJECT COORDINATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 31 13-1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
1. Coordination
 2. General installation provisions
 3. Cleaning and protection

1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the

SECTION 01 31 13
PROJECT COORDINATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

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substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.2 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

01 31 19-1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
 - 1. Pre-Construction Conference
 - 2. Progress Meetings – to be held every other week at an agreed-upon time/date.
- B. Construction schedules are specified in another Division-1 Section.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
 - 1. Tentative construction schedule
 - 2. Critical Work sequencing
 - 3. Designation of responsible personnel
 - 4. Procedures for processing field decisions and Change Orders
 - 5. Procedures for processing Applications for Payment
 - 6. Distribution of Contract Documents
 - 7. Submittal of Shop Drawings, Product Data and Samples
 - 8. Preparation of record documents
 - 9. Use of the premises
 - 10. Office, Work, and storage areas
 - 11. Equipment deliveries and priorities
 - 12. Safety procedures

SECTION 01 31 19
PROJECT MEETINGS

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- 13. First aid
- 14. Security
- 15. Housekeeping
- 16. Working hours

1.4 PROGRESS MEETINGS

- A. Conduct weekly progress meetings with sub-contractors at the Project site and provide written minutes to the Architect for review.
- B. Attendees: In addition to representatives of the Owner and Architect, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
 - 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind 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.
 - 2. Review the present and future needs of each entity present, including such items as:
 - a. Interface requirements
 - b. Time
 - c. Sequences
 - d. Deliveries
 - e. Off-site fabrication problems
 - f. Access
 - g. Site utilization
 - h. Temporary facilities and services
 - i. Hours of Work
 - j. Hazards and risks

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PROJECT MEETINGS

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- k. Housekeeping
 - l. Quality and Work standards
 - m. Change Orders
 - n. Documentation of information for payment requests
 - o. Pre-installation discussions
- D. Reporting: No later than 3 days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
- 1. Schedule Updating: Revise the construction schedule after each progress meeting where revision to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
3. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within [three] days of taking photographs.

1. Submit photos [on CD-ROM or thumb-drive]. Include copy of key plan indicating each photograph's location and direction.

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2. Identification: Provide the following information with each image description [in file metadata tag]:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect[and Construction Manager].
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of location, vantage point, and direction.
 - g. Unique sequential identifier keyed to accompanying key plan.

1.3 QUALITY ASSURANCE

1.4 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of [12] megapixels, and at an image resolution of not less than [3200 by 2400] pixels[, and with vibration-reduction technology]. Use flash in low light levels or backlit conditions.
- B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1.5 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs with maximum depth of field and in focus.
 1. Maintain key plan with each set of construction photographs that identifies each photographic location.

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- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by [Architect].
 - 1. Flag [construction limits] before taking construction photographs.
 - 2. Take [20] photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take [20] photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take [10] photographs [weekly] . Select vantage points to show status of construction and progress since last photographs were taken.
- E. Final Completion Construction Photographs: Take [100] photographs after date of Substantial Completion for submission as Project Record Documents. [Architect] will inform photographer of desired vantage points.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

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SUBMITTALS

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the work, including:
 - 1. Contractor's construction schedule
 - 2. Daily construction reports
 - 3. Shop Drawings
 - 4. Product Data
 - 5. Samples
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits
 - 2. Applications for payment
 - 3. Performance and payment bonds
 - 4. Insurance certificates
 - 5. List of Subcontractors
- C. The Schedule of Values submittal is included in Section "Applications for Payment."

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

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- a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
 - a. Allow three weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name
 - b. Date
 - c. Name and address of Architect
 - d. Name and address of Contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Number and title of appropriate Specification Section
 - i. Drawing number and detail references, as appropriate
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
 1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

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1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".
- B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute 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 construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
1. Dimensions
 2. Identification of products and materials included
 3. Compliance with specified standards
 4. Notation of coordination requirements
 5. Notation of dimensions established by field measurement.
 6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings of sheets at least 8 1/2" x 11" but no larger than 30" x 42".
 7. Initial Submittal: Submit one correctable translucent reproducible print and two blue or black-line print for the Architect's review; the reproducible print will be returned.
 8. Final Submittal: Submit three blue or black-line prints; submit 5 prints where required for

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maintenance manuals. 2 prints will be retained; the remainder will be returned.

9. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

C. SPECIFIC SHOP DRAWINGS TO BE SUBMITTED, IN ADDITION TO CUSTOMARY ITEMS, ARE AS FOLLOWS:

1. Marquee.
2. Exterior LED lighting simulating original neon lighting.
3. Light fixtures.
4. All interior finishes
5. Mechanical, Electrical, Plumbing, Fire Alarm, Sprinkler.
6. Stage Curtains and operation.
7. Hardware with complete hardware schedule prepared by hardware consultant in conformance with current code requirements..

1.6 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations
 - b. Compliance with recognized trade association standards
 - c. Compliance with recognized testing agency standards
 - d. Application of testing agency labels and seals
 - e. Notation of dimensions verified by field measurement
 - f. Notation of coordination requirements
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.

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4. Submittals: Submit 3 copies of each required submittal; submit 5 copies where required for maintenance manuals. The Architect will retain one, and will return the other marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.7 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
 1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's Sample. Include the following:
 - a. Generic description of the Sample
 - b. Sample source
 - c. Product name or name of manufacturer
 - d. Compliance with recognized standards
 - e. Availability and delivery time
 2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3) that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation

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and similar construction characteristics.

- c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
- 3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
 - a. Preliminary submittals will be reviewed and returned with the Architect's mark indicating selection and other action.
- 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
- 5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.8 ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. Final Unrestricted Release: Where submittals are marked "Approved " or No Exceptions Taken" that 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.

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This does NOT preclude the Contractor from following the Construction Documents in any way.

This does not comprise the Architect's "approval" of the submittal, other than for a cursory review, and does not allow the contractor to deviate from the documents in any fashion. It is simply a courtesy review of the submittal. The Architect has outlined the project in the Construction Document and any variation is taken at the Contractor's risk.

2. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted" that 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. Returned for Resubmittal: When submittal is marked "Rejected, Resubmit," 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 "Rejected, Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 42 19
REFERENCE STANDARDS AND DEFINITIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the General Conditions.
- B. Indicated: The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help the reader locate the reference; no limitation on location is intended.
- C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the Architect," "requested by the Architect," and similar phrases.
- D. Approve: The term "approved," where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in General and Supplementary Conditions.
- E. Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."
- G. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."
- H. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
- I. Installer: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor, for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
1. The term "experienced" when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this Project, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.

REFERENCE STANDARDS AND DEFINITIONS

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2. Trades: Use of titles such as "carpentry" is not intended to 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.
3. Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or opinion. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
 - a. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
- J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.
- K. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where 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. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with The standard in effect as of date of Contract Documents.
- C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.

SECTION 01 095
REFERENCE STANDARDS AND DEFINITIONS

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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. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
 - D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
 1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
 2. Although copies of standards needed for enforcement of requirements may be included as part of required submittals, the Architect reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.
 - E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.
- 1.4 GOVERNING REGULATIONS/AUTHORITIES
- A. The Architect has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.
- 1.5 SUBMITTALS
- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 43 13
MATERIALS AND EQUIPMENT

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
- D. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

1.3 DEFINITIONS

- A. Definitions used in the Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.
1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

SECTION 01 43 13
MATERIALS AND EQUIPMENT

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1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to View in occupied spaces or on the exterior.
 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - a. Name of product and manufacturer
 - b. Model and serial number
 - c. Capacity
 - d. Speed
 - e. Ratings

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 1. Schedule delivery to minimize long-term storage at the 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 the site in the manufacturer's original sealed container or other packaging

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- system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
 1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
 1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. Substitutions will be permitted, if approved equal.
 2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. Substitutions will be permitted, if approved equal.
 3. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

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4. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
5. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
7. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.
8. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division-1 for allowances that control product selection, and for procedures required for processing such selections.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. Temporary utilities required include but are not limited to:
 - 1. Water service and distribution
 - 2. Temporary electric power and light
 - 3. Telephone service.
 - 4. Internet Service with email, Computer, and Printer.
- C. Temporary construction and support facilities required include but are not limited to:
 - 1. Temporary heat
 - 2. Field offices and storage sheds
 - 3. Sanitary facilities, including drinking water
 - 4. Temporary enclosures
 - 5. Temporary Project identification signs and bulletin boards
 - 6. Waste disposal services
 - 7. Rodent and pest control
 - 8. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities required include but are not limited to:
 - 1. Temporary fire protection
 - 2. Barricades, warning signs, lights
 - 3. Environmental protection

1.3 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.4 QUALITY ASSURANCE

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- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
 - 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
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Division-6 Section "Rough Carpentry."

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1. For job-built temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
 2. For signs and directory boards, provide exterior type, Grade B-B high Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.
 3. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.
- C. Gypsum Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary offices.
- D. Paint: Comply with requirements of Division-9 Section "Finish Painting."
1. For job-built temporary offices, shops, sheds, fences and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
 2. For sign panels and applying graphics, provide exterior grade alkyd gloss enamel over exterior primer.
 3. For interior walls of temporary offices, provide two coats interior latex flat wall paint.
- E. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- F. Water: Provide potable water approved by local health authorities.

2.2 EQUIPMENT

- A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- E. Lamps and Light Fixtures: Provide general service incandescent 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.

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- F. 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.
 - G. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
 - H. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
 - I. First Aid Supplies: Comply with governing regulations.
 - J. 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 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. 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.
- B. 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.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Connect to existing service.
- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
 - 1. Sterilization: Sterilize temporary water piping prior to use.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters

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and main distribution switch gear.

1. Except where overhead service must be used, install electric power service underground.
 2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
- D. Temporary Lighting: Whenever 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, and will provide adequate illumination for construction operations and traffic conditions.
- E. Temporary Telephones: Provide temporary telephone service for all personnel engaged in construction activities, throughout the construction period. Install telephone on a separate line for each temporary office and first aid station. Where an office has more than two occupants, install a telephone for each additional occupant or pair of occupants.
1. At each telephone, post a list of important telephone numbers.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
1. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Temporary Heat: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
- D. Heating Facilities: Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.

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1. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.
- E. Field offices: Provide insulated, weather-tight temporary offices of sufficient size to accommodate required office personnel at the Project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:
- F. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
 1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- G. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
- H. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
 1. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.
- I. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.
 1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).
- J. 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 feet 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.
- K. Temporary Elevator Use: Use of Service Elevator for movement of materials and personnel is permitted.

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- L. Project Identification and Temporary Signs: Prepare project identification and other signs of the size indicated; install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
 - 1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
 - 2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- M. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
- N. Rodent and Pest Control: Retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be relatively free of pests and their residues at Substantial Completion. Perform control operations in a lawful manner using environmentally safe materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Architect.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit

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smoking in hazardous fire exposure areas.

4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
- E. 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.
- F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 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. Protect from damage by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

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- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.
 2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION

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PROJECT CLOSEOUT

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
1. Inspection procedures
 2. Project record document submittal
 3. Operating and maintenance manual submittal
 4. Submittal of warranties
 5. Final clearing
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Division-2 through -16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
 2. Advise Owner of pending insurance change-over requirements.
 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 5. Submit record drawings, maintenance manuals, and similar final record information.
 6. Deliver tools, spare parts, extra stock, and similar items.
 7. Make final change-over of permanent locks and transmit keys to the Owner. Advise the

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- Owner's personnel of change-over in security provisions.
- 8. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
- 9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspect Procedures: On receipt of a request for inspection the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. The Architect will repeat inspection when requested and assured that the work has been substantially completed.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.
 - 3. The initial inspection shall be scheduled at least 20 days prior to date of substantial completion.
 - 4. If necessary, the initial inspection will be repeated. Architects and Engineers cost for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
 - 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the work.
 - 5. Submit consent of surety to final payment.
 - 6. Submit a final liquidated damages settlement statement.

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7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Re-inspection Procedure: The Architect will re-inspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.
 1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, re-inspection will be repeated, and the Architect's and Engineer's costs for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and

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Product Data.

1. Upon completion of the work, submit record Specifications to the Architect for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Data to the Architect for the Owner's records.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect for the Owner's records.
- G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information.
1. Emergency instructions
 2. Spare parts lists
 3. Copies of warranties
 4. Wiring diagrams
 5. Recommended "turn around" cycles
 6. Inspection procedures
 7. Shop Drawings and Product Data
 8. Fixture lamping schedule

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PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
1. Maintenance manuals
 2. Record documents
 3. Spare parts and materials
 4. Tools
 5. Lubricants
 6. Fuels
 7. Identification systems
 8. Control sequences
 9. Hazards
 10. Cleaning
 11. Warranties and bonds
 12. Maintenance agreements and similar continuing commitments
- B. As part of instruction for operating equipment, demonstrate the following procedures:
1. Start-up
 2. Shutdown
 3. Emergency operations
 4. Noise and vibration adjustments
 5. Safety procedures
 6. Economy and efficiency adjustments
 7. Effective energy utilization

3.2 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance

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- program. Comply with manufacturer's instructions.
- a. Remove labels that are not permanent labels
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects and other pests.
- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.
- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- 1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01 78 33
WARRANTIES AND BONDS

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
 2. General closeout requirements are included in Section "Project Closeout."
 3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall

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be equal to the original warranty with an equitable adjustment for depreciation.

- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept work for the Project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the work.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.
 - 1. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.
- C. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.

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Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

- D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the 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 the installer.
 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.
 3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Sections include the following:
 - 1. Division 1 Section "Summary of Multiple Contracts" for coordinating Project Record Documents covering the Work of multiple contracts.
 - 2. Division 1 Section "Closeout Procedures" for general closeout procedures].
 - 3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit **one** set of marked-up Record Prints and one electronic copy.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit **one** set of **corrected Record electronic files** and **one** set of marked-up Record Prints. Architect will initial and date each **marked-up set** and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return **transparencies** and prints for organizing into sets, printing, binding, and final submittal.
 - b. Final Submittal: Submit **one** set of marked-up Record Prints, **one** set of record transparencies, and **three** copies printed from Record Transparencies. Print

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each Drawing, whether or not changes and additional information were recorded.

- c. Final Submittal: Submit **one** set of marked-up Record Prints, **one** set of Record CAD Drawing files, **one** set of Record CAD Drawing plots, and **three** copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.

1) Electronic Media: **CD-ROM**.

- B. Record Specifications: Submit **one copy** of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit **one copy** of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark 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 prepare the 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 understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 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.

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- e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - 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, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
- 1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 - 2. Refer instances of uncertainty to Architect for resolution.
 - 3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
 - 4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
- C. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:
- 1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
 - 2. Format: **DWG**], operating in **Windows NT** operating system.
 - 3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
 - 4. Refer instances of uncertainty to Architect for resolution.

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5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
 - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
 - b. CAD Software Program: The Contract Drawings are available in AUTOCAD 2000.
- D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
 1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult with Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 3. Record CAD Drawings: Organize CAD 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 CAD file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect .
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

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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 the 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 Drawings, **[and] [Product Data]** where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, **and Product Data** where applicable.

2.4 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.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- 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 Architect's reference during normal working hours.

END OF SECTION 01781

SECTION 01 79 00
DEMONSTRATION AND TRAINING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
HISTORIC 1937 ROYAL THEATER REHABILITATION
JUNE 03, 2019

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
- B. Related Sections include the following:
 - 1. Division 1 Section "Allowances" for administrative and procedural requirements for demonstration and training allowances.
 - 2. Division 1 Section "Project Management and Coordination" for requirements for pre-instruction conferences.
 - 3. Division 1 Section "Photographic Documentation" for preparing and submitting demonstration and training videotapes.
- C. Allowances: Furnish demonstration and training instruction time under the Demonstration and Training Allowance as specified in Division 1 Section "Allowances."
- D. Unit Price for Instruction Time: Length of instruction time will be measured by actual time spent performing demonstration and training in required location. No payment will be made for time spent assembling educational materials, setting up, or cleaning up.

1.3 SUBMITTALS

- A. Instruction Program: Submit **[four]** copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. At completion of training, submit **[four]** complete training manual**[s]** for Owner's use.
- B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

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- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
 - D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
 - E. Demonstration and Training Videotape: Submit **[four]** copies at end of each training module.

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
 - 1. Inspect and discuss locations and other facilities required for instruction.
 - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 - 3. Review required content of instruction.
 - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- 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 Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM (as applicable)

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- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
1. Motorized doors, including **[overhead coiling doors]** .
 2. Equipment, including **[residential appliances]**.
 3. Fire-protection systems, including **[fire alarm]** **[fire pumps]** **[and]** **[fire-extinguishing systems]**.
 4. Intrusion detection systems.
 5. Conveying systems, including **[elevators]**.
 6. Medical equipment, including medical gas equipment and piping.
 7. Heat generation, including **[boilers]** **[feedwater equipment]** **[pumps]** **[steam distribution piping]** **[and]** **[water distribution piping]**.
 8. Refrigeration systems, including **[chillers]** **[cooling towers]** **[condensers]** **[pumps]** **[and]** **[distribution piping]**.
 9. HVAC systems, including **[air-handling equipment]** **[air distribution systems]** **[and]** **[terminal equipment and devices]**.
 10. HVAC instrumentation and controls.
 11. Electrical service and distribution, including **[transformers]** **[switchboards]** **[panelboards]** **[uninterruptible power supplies]** **[and]** **[motor controls]**.
 12. Packaged engine generators, including transfer switches.
 13. Lighting equipment and controls.
 14. Communication systems, including **[intercommunication]** **[surveillance]** **[clocks and programming]** **[voice and data]** **[and]** **[television]** equipment.
- 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:
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.

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- 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.

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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

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 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. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
 - 2. Owner will furnish an instructor to describe Owner's operational philosophy.
 - 3. Owner will furnish 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 [, **through Architect,**] with at least [**seven**] days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of [**a written**] performance-based test.
- E. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. Comply with requirements in Division 1 Section "Photographic Documentation."
 - 2. At beginning of each training module, record each chart containing learning objective and lesson outline.

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- 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

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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PART 1 - GENERAL

1.01 SCOPE

- A. This section shall include all labor, materials, accessories, equipment, and related services for the construction of concrete forms; detailing, fabrication, transportation, storage, handling, and placement of reinforcing; and mix design, testing, and placement of concrete as shown on the drawings and/or specified herein.

1.02 REFERENCE STANDARDS

- A. The following publications, but referred to in this section by their basic designation, form a part of this section to the extent specified herein or called for on the drawings:
1. American Concrete Institute (ACI), publications:
 - a. Standard Tolerances for Concrete Construction and Materials.
 - b. Specification for Structural Concrete for Buildings.
 - c. Recommended Practice for Measuring, Mixing, and Placing Concrete.
 - d. Hot weather Concreting.
 - e. Cold Weather Concreting.
 - f. Standard Practice for Consolidation of Concrete.
 - g. Building Code Requirements for Reinforced Concrete.
 - h. Recommended Practice for Concrete Formwork.
 - i. Recommended Practice for Shotcreting.
 - j. Detailing Manual
 2. Concrete Reinforcing Steel Institute (CRSI), publications:
 - a. CRSI-Manual of Standard Practice
 - b. CRSI-Placing Reinforcing Bars
 3. American Society for Testing and Materials (ASTM) publications:
 - a. Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement.
 - b. Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement with Supplementary Requirements S1.
 - c. Standard Specification for Rail Steel Deformed and Plain Bars

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- for Concrete Reinforcement.
- d. Standard Specification for Axle Steel Deformed and Plain Bars
for Concrete Reinforcement.
- e. Standard Method of Making and Curing Concrete Test Specimens
in the Field.
- f. Standard Specification for Concrete Aggregates.
- g. Standard Method of Test for Compressive Strength of Cylindrical
Concrete Specimens.
- h. Standard Method of Obtaining and Testing Drilled Cores and Sawed
Beams of Concrete.
- i. Standard Specification for Ready-Mixed Concrete.
- j. Standard Specification for Aggregate for Masonry Mortar.
- k. Standard Specification for Portland Cement.
- l. Standard Method of Sampling Fresh Concrete.
- m. Standard Method of Making and Curing Concrete Test Specimens
in the Laboratory.
- n. Standard Specification for Air-Entraining Admixtures for Concrete.
- o. Standard Specification for Liquid Membrane-Forming Compounds
for Curing Concrete.
- p. Standard Specification for Chemical Admixtures for Concrete.
- q. Standard Specifications for Performed Expansion Joint Fillers for
Concrete Paving and Structural Construction (Nonextruding and Resistant
Bituminous Types)
- 3. American Welding Society (AWS) publication
 - a. AWS D1.4-79 Structural Welding Code-Reinforcing Steel.
- 4. Standard Building Code
- 5. American Institute of Steel Construction (AISC) publications:
 - a. Manual of Steel Construction
- 6. American Institute of Timber Construction (AITC) publications:
 - a. Timber Construction Manual

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- A. The Contractor shall submit to the Architect five (5) copies of the following information for review:
1. Curing compound manufacturer's data sheets.
- B. Two copies will be returned to the Contractor marked as follows:
1. "No Exceptions Taken" - Indicates the information has been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.
 2. "Exceptions Noted" - Indicates that the drawings have been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects work as noted. Resubmittal will not be required.
 3. "Exceptions Noted - Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.
 4. "Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and are too incomplete or in an unacceptable condition for review. A notation will be made on the shop drawings as to the exceptions taken. Drawings shall be revised and resubmitted for review before proceeding with the work.

1.04 DESIGN OF FORMWORK

- A. Responsibility
1. The design and engineering of the formwork as well as its construction shall be the responsibility of the Contractor.
 2. Where concrete is cast against earth cut or an existing structure, such cut or structure shall be considered a form for which the Contractor shall be responsible.
- B. Criteria
1. Except as specifically called for otherwise herein, all formwork shall meet the requirements of ACI 347, Chapter 4 and 6 of ACI 301 and Chapter 6 of ACI 318.
 2. Specifically the formwork shall be designed as a minimum for the loads and lateral pressure outlined in paragraph 1.2 of ACI 347 and wind loads specified by the Standard Building Code. Design considerations and allowable stresses shall meet the above references and the applicable requirements of the AISC Manual of Steel Construction and the AITC Timber Construction Manual.

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1.05 MIX DESIGN

- A. Prior to concrete placement of any concrete, the concrete mix design the Contractor proposes to use for each type of concrete shall be submitted to the Architect for review.
- B. The Concrete mix shall be proportioned to give a 28-day strength of the properties outlined in the drawings (e.g. 3,000/5000 psi) and other properties as specified herein as determined by laboratory tests in accordance with requirements specified herein.
- C. The laboratory or laboratories which design and test the concrete mix shall be obtained by the Contractor, approved by the Architect and paid for by the Contractor.

1.06 TESTING OF CONCRETE

- A. A laboratory shall be obtained by the Contractor approved by the Architect and paid for by the Contractor for the purpose of sampling and testing of concrete.
- B. The following samples shall be taken at the job site. If any material has been added to the concrete, tests shall be made after material has been added to the concrete.
 - 1. For each 100 cubic yards, or fraction thereof, of concrete three test specimens shall be made and cured in accordance with ASTM C172 and C31. Each set of three cylinders shall have a numerical designation and each cylinder an alphabetical subdesignation. Thus, the first set of three cylinders shall be numbered 1A, 1B, and 1C. One cylinder shall be broken at 7 days and two at 28 days. The average of the two 28-day cylinder breaks shall be considered one test. Cylinders shall be broken in accordance with ASTM C39.
 - 2. For each 100 cubic yards, or fraction thereof, of concrete a slump test shall be made in accordance with ASTM C143 and the density and air content shall be determined in accordance with ASTM C172 and C31.

1.07 SHOP DRAWINGS

- A. The Contractor shall furnish drawings, schedules, and details for the fabrication of the reinforcing steel AND the phasing of excavation and new concrete placement. The drawings and details shall be so complete that when used with the contract drawings the reinforcing steel can be properly placed. In addition, shop drawings showing all footing details, CMU details and slab details. All shop related shop drawings to be submitted with a professional engineer's stamp in this discipline.

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- B. In case the Contractor is in doubt regarding certain dimensions shown on the contract drawings, or if there is a discrepancy on the contract plans, the Contractor or his agent shall circle and question such dimensions on his shop drawings. In such cases the dimensions shall be especially checked or supplied by the Architect.
- C. All drawings for review must be submitted in five copies. Two sets shall be returned to the Contractor marked as follows:
1. "No Exceptions Taken" - Indicates the material has been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.
 2. "Exceptions Noted" - Indicates that the material has been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects the work as noted. Resubmittal will not be required.
 3. "Exceptions Noted - Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.
 4. "Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and is too incomplete or in an unacceptable condition for review. A notation will be made as to the exceptions taken. Material shall be revised and resubmitted for review before proceeding with the work.
- E. In case exceptions are noted on one sheet which affect details on other sheets, the exception is to be taken as applying to such other details.
- F. Review of shop drawings by the Architect or Engineer shall not constitute an authorization or approval of a change to the contract. Changes from the contract documents must be made by written change order and issued by the Architect.
- G. Work must not proceed on items to which exceptions have been taken.
- H. The Contractor must check and be responsible for the conforming of all steel reinforcing details shown on shop drawings to those shown on the Contract drawings.
- I. All bars shall be shown on shop drawings as to number, size, length, and spacing in a manner similar or complementary to the way they are shown on contract drawings.

1.08 QUALITY CONTROL

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- A. Should misalignment of forms or screeds or deflection of forms or displacement of reinforcement occur during concrete placing, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within forms. The corrective measures shall be such as to ensure acceptable lines and surfaces to the prescribed dimensions and cross sections.
- B. Any work not meeting the requirements of this section shall be deemed in non-compliance and shall be removed or corrected at no additional expense to the Owner.
- C. The Contractor shall prepare for the Architect's review his proposed method of removal or correcting any work which is in non-compliance prior to commencing with the work.
- D. Any work which is in non-compliance and is allowed to remain in place by the Architect shall be made a part of this contract by issuing a change order as set forth in the General Conditions of this specification.
- E. Should displacement of reinforcing steel occur during concrete placement, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within the forms.
- F. To comply with this specification, concrete shall obtain its design strength at the 28-day break. Any concrete not obtaining its design strength as determined by the 28-day break shall be considered as not complying to this specification.
- G. The results of the concrete tests shall be evaluated in accordance with paragraphs 17.2 of ACI Standard 301.
- H. If compressive tests fail to meet the specified strength, the following procedures shall be followed: The Architect shall determine if the concrete has been placed in a position of critical structural importance. If the concrete has been placed in a position of critical structural importance, the Contractor shall have core tests made by a testing laboratory approved by the Architect. Core tests shall be done in accordance with ASTM C42 and paragraph 17.3.2 of ACI Standard 301. These core tests shall be taken in each area in question. Such tests shall be paid for by the Contractor. If core tests fail to verify the design strength requirements, the Contractor will have two options:
 - 1. Remove and reconstruct that portion of the structure found to be defective. Removal and replacement will not be undertaken until a plan and procedure has been proposed by the Contractor and approved by the Architect. All such work shall be done at the Contractor's expense.
 - 2. Have a testing laboratory approved by the Architect conduct a load test on the questionable portion of the structure in accordance with Chapter 20 of ACI Building Code 318. If the test demonstrates that the member or members are not acceptable under the provisions of

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Chapter 20, Option One becomes mandatory. All costs of the load test shall be paid for by the Contractor.

- I. If tests, either by the 28-day break or core tests, have demonstrated that concrete supplied has not met the strength requirements of the specifications, but the concrete has been permitted to remain in place in the structure by the Architect, a change order shall be issued as set forth in the General Conditions Section of these specifications.

PART 2 - PRODUCT

2.01 FORMS

- A. Forms for unexposed work or surfaces covered by a non-contact finish.
 1. Where work is to be covered by a non-contact finish or not exposed to view, forms of metal, metal and wood, wood, or a pre-engineer forming system will be accepted.
- B. Forms for exposed work or surfaces covered by a contact finish.
 1. Where work is to be left exposed, or concrete surface is covered by a contact finish, forms shall either be plywood, lined plank, or patented type panels. All plywood shall receive non-staining protective coating that affords positive release.
 2. Forms shall not be reused when the surface material delaminates, splits, or becomes marred.

2.02 APPURTENANCES

- A. Form Ties
 1. Except for exposed work or Architecturally exposed concrete, snap ties may be used for wall forms. Pull ties, which are to be completely removed, or cone type break back ties that will leave clean cut holes without fractures, spalls, shallows, depressions, or other disfigurements shall be used for all exposed work, and Architecturally exposed concrete.
- B. Expansion Joint Material
 1. Expansion joint material shall meet ASTM C1751.

2.03 REINFORCING

- A. Reinforcing steel shall meet ASTM A-615, ASTM 616, or ASTM 617, and develop 60,000 psi at yield.
- B. Wire mesh shall meet ASTM A-185.

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2.04 ACCESSORIES

- A. Bar supports shall meet the requirements of CRSI, Manual of Standard Practice, unless specified otherwise herein.
- B. Legs of all accessories used over exposed concrete surfaces shall have that portion of the accessories in contact with the form coated with plastic, or the accessory shall be of stainless steel.

2.05 CEMENT

- A. All cement used on this construction for exposed concrete shall be one brand of Portland cement. All cement shall be Type 1 and meet the requirements of ASTM 150.

2.06 AGGREGATES

- A. Samples of both coarse and fine aggregates shall be selected by the Contractor at the beginning of the work, and following approval of laboratory tests, shall be used throughout the work as standards to which the aggregate must conform.
 - 1. Fine aggregates shall conform to ASTM C33.
 - 2. Coarse aggregates for regular weight concrete shall conform to ASTM C33 and shall be sized within the limits as established by Table 2, 1" to #4.

2.07 WATER

- A. Water shall be clean, free from oil, acid, vegetable matter, alkalies or salts.

2.08 ADMIXES

- A. Admixes shall conform to ASTM C-494 and not contain any chloride ions.

2.09 AIR ENTRAINMENT

- A. Air entraining agent shall conform to ASTM C260.

2.10 ABRASIVE AGGREGATES

- A. Abrasive aggregates shall be aluminum oxide or carborundum and have a hardness factor of 9 mohs.

2.11 CURING COMPOUND

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A. Curing compound for unformed surfaces without a surface applied cementitious bonding agent or fill.

1. Curing compound shall be formulated by the manufacturer not to interfere with the bond of or adhesion of resilient floor coverings, paints, sprayed on or applied finishes, water-proofing materials, other types of finish, or curing compounds.
2. Curing compound shall be a combination sealer-hardener and dust-proofer.
3. Curing compound shall be a membrane forming resin containing 18% minimum solids with a fugitive dye meeting the requirements of ASTM C309, Type 1-D, Class A.
4. The following products are approved:

Spartan Cote	-	The Burke Company
Rez. Seal	-	Euclid
SealCo	-	Gifford Hill
Clearbond	-	Guardian
Dress & Seal #18	-	L&M Construction Chemicals
Clear Seal 150	-	AC Horne
MB429	-	Master Builders
Kure-N-Seal, 0800	-	Sonneborn
C5309	-	WR Meadows

B. Curing compounds for formed concrete surfaces exposed to view.

1. Curing compound shall be formulated not to interfere with the bond or adhesion of any applied coating or covering.
2. Curing compound shall be a penetrating compound with a fugitive dye meeting the requirements of ASTM C309, Type 1D.
3. The following products are approved.

Cure Concentrate	-	The Burke Co
Eucosil	-	Euclid
L&M Cure	-	L&M Construction Chemicals
Horne One Kote	-	AC Horne
Master Seal	-	Master Builders

2.12 PROPORTIONS

A. All concrete shall provide the ultimate compressive strength at 28 days, as determined by laboratory

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cured cylinders, as shown on the drawings. All mix designs shall be proportioned in accordance with one of the following methods.

1. ACI 318, Section 4.3, Proportioning on the basis of field experience and/or trial mixtures.
 2. ACI 318, Section 4.4, Proportioning by water cement ratio.
- B. The mix shall be so proportioned so that the average of any three consecutive strength tests shall be equal to or greater than the strength specified on plans, and no test shall have a value less than the specified strength less 3000 psi.
- C. Minimum cement content for regular concrete shall be as follows:

1. REGULAR WEIGHT CONCRETE:

3,000 psi concrete 498# (5.3 bags)

5,000 psi concrete 705# (7.5 bags)

For pump mixes add 47# (0.5 bags) to the above quantities.

- D. The water-cement ration of the mix shall be established in the design and shall be based on the established relationship between the water-cement ration and the strength of concrete shall be such as to produce the specified strength of the concrete with the least amount of water consistent with the workability of the mix. Surface water contained in the aggregate shall be included as part of the mixing water in computing the water content. The design shall provide for a slump range of 3" minimum, 5" maximum.
- E. To each sack of cement the following amount of admix shall be provided:

1. Air temperature above 80 degrees F

3 oz.	-	Master Builders - Pozzoloth 300R
3 oz.	-	Protex PDA 25XL
2 oz.	-	Sika Chemical Co. - Plastement
2 oz.	-	Gifford Hill PSI - Normal
2 oz.	-	Castle Chemical Corp. - Chemstrong R
2 oz.	-	Construction Chemical Co - Trisene N
5 oz.	-	Grace - WRDA-79

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2. Air Temperature between 50 and 80 degrees F.

- 3 oz. - Master Builders Pozzoloth 300N
- 3 oz. - Protex PBA 25R
- 3 oz. - Sika Chemical Co. - Plastement NS
- 3 oz. - Gifford Hill PSI - Retarder
- 3 oz. - Castle Chemical Corporation - Chemstrong A
- 3 oz. - Construction Chemical Co - Trisene R
- 7.5 oz. - Grace - WRDA

3. Air temperature below 50 degrees F.

- 8 oz. - Master Builders - Pozzutec 20
- 8 oz. - Sika Chemical Co. - Plastrocrete 161 PC
- 12 oz. - Grace - Darex

2.13 FABRICATION

- A. All reinforcing shall be fabricated. Fabrication shall be in accordance with applicable sections, ACI 301, ACI 318, ACI-SP66, and CRSI Manual of Standard Practice. All bends shall be made cold around pins having a diameter of not less than that specified in the bend test of the applicable ASTM specifications. Heating bars for bending is prohibited without the written approval of the Architect.
- B. Reinforcement shall be correct in length and size and bent as prescribed by contract drawings or specifications.

PART 3 - EXECUTION

3.01 PREPARATION

A. Excavations

- 1. Where excavations exceeding a depth of five feet are to be made to install the foundations or any part of the structure of this building or any retaining walls on the site, the back slope of

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such excavation shall be at an incline not exceeding one vertical to two horizontal unless such backslope is sheeted and braced. If sheeting and bracing are to be provided, such sheeting and bracing shall be designed by an Engineer registered in the state where the project is located. Such sheeting and bracing shall be designed to resist the pressures given on pages 14-32 of the CRSI Design Handbook unless more specific pressures are determined by a Registered Soils Engineer. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.

2. No excavation shall be made below a line extending downward and away from any foundation grade slab or other building element on a slope one vertical or two horizontal, unless such foundation, grade slab, or other building element is under pinned. The underpinning shall be designed by an Engineer registered in the state where the project is located. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.

B. Treat excavated soil for termites as required by industry standards.

C. Care of Materials

1. Shipping, storage and handling of reinforcing steel shall be in such a manner as to prevent damage.
2. Straightening of bars bent in shipping or handling will not be undertaken except when so directed by change order.

D. Cleaning

1. Reinforcing shall be cleaned of grease, dirt, concrete, or other foreign substances.

3.02 INSTALLATION

A. Construction of Forms

1. All forms shall be built and secured in place to carry the dead weight of the concrete as a liquid without deflection or distortion exceeding the requirements of ACI 347. Formwork shall be built watertight, true to position and direction. Formwork shall be constructed so as to ensure the concrete surfaces will conform to the tolerances given in ACI 347.
2. All concrete surfaces that are to be left exposed on interior and exterior of the building shall have the forms so constructed that when removed they will produce a uniform smooth surface free from misalignment and imperfections.
3. Where new concrete is placed above a previous placement, the joint between new and old

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work, as well as the face of the concrete surface, must be aligned.

4. All wood forms shall be built of sound lumber. Clean and remove nails from form material before reusing or when using second-hand lumber.
5. Unless indicated otherwise on the drawings, all columns shall be centered on the foundations supporting them within a tolerance of 2".
6. Where earth is too unstable to serve as a form for foundations or walls, wood forms shall be provided.
7. Box out all slots, recesses, or openings for work of all trades.
8. Build bulkheads with keys in walls and footings at construction joints in concrete.
9. Bevel strips shall be placed at all outside corners of exposed work unless shown otherwise on architectural details.
10. All overhanging edges shall be provided with a 1/2" quarter round drip 2" from the edge.

B. Installing other material in forms

1. Expansion joint fillers shall be installed in the forms, where called for on plans, in advance of the pour. 8d nails of 2'-0" o.c. shall be placed through the filler so that when concrete is placed, the nails will be embedded so as to lock the filler in place.
2. Compact earth fill under slabs on grade in eight inch layers with mechanical equipment to obtain a compaction of 95% standard proctor, unless specified otherwise.
3. Provide 6 mil polyethylene film vapor barrier under all slabs on grade.
4. Fill for slabs on grade shall be #57 stone, 4" thick, where shown on drawings.

C. Placement of Reinforcement

1. Reinforcement shall be placed to conform with the recommendations of ACI 301, ACI 318, and CRSI Manual of Standard Practice.
2. Bars shall not be cut or bent in the field unless specifically called for on detail drawings.
3. Bars with kinks or bends not shown on detail drawings shall not be used.
4. Contract drawings shall take precedence over Contractor's working drawings unless otherwise authorized by written change order.
5. Contract drawings shall be referred to by the steel setter for details governing placing.
6. Vertical steel shall be lapped 30 diameters at splices unless specifically called for otherwise on plans.

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7. Steel dowels for successive work shall be wired in the prescribed position before placing concrete. The "sticking" of dowels after placing concrete will not be permitted.
 8. Hooks may be turned flat to facilitate placement.
 9. Concrete covering for reinforcing steel shall be as follows unless shown otherwise on drawings:
 - a. Concrete cast against and permanently exposed to earth: 3"
 - b. Concrete exposed to earth or weather:
#6 through #18 bars: 2"
#5 bar, W31 or D31 wire, and smaller: 1-1/2"
 - c. Concrete not exposed to weather or in contact with ground:
Slabs, walls
#14 and #18 bar: 1-1/2"
#11 bar and smaller: 3/4"
 10. No splicing of main reinforcing steel will be permitted unless shown otherwise on plans. Bars marked continuous shall be lapped 30 diameters at splices, and at corner conditions corner bars shall be provided.
 11. No reinforcing shall be cut in the field unless it is called for to be cut on the reviewed shop drawings.
 12. No reinforcing shall be bent in the field unless it is called for to be bent on the reviewed shop drawings.
- D. Placement of Wire Mesh
1. Welded wire fabric shall be lapped 6" at both side and end laps unless shown otherwise on drawings and wire together at 18"o.c. Mesh shall extend to within 2" of sides and end of slabs.

3.03 WELDING OF REINFORCEMENT

- A. All reinforcing bars which are to be welded shall be welded in accordance with AWS D1.4.

3.04 MIXING

- A. All materials shall be measured and mixed in a machine. Mixing and transporting shall meet ASTM C94. The materials shall first be mixed dry and the water then added by measurement.
- B. Mixing time shall begin when the water is added to the mix.
- C. Water shall not be added to the mix at the job site except under the direction of the laboratory

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responsible for testing (paragraph 1.06). The laboratory shall instruct that a fixed amount of cement shall be added to maintain the water-cement ratio. The mixer shall be turned 50 revolutions after the addition of water.

- D. A slump test shall be made of any concrete to which water has been added to ascertain that the slump does not exceed 5" for regular mixes and 6" for pump mixes.
- E. A record shall be kept of any concrete to which water has been added, and the record shall show the results of the slump test.

3.05 PREPARATION

- A. Before the placing of any concrete the footing trenches shall be drained of water, any mud film removed and any loose dirt lifted out.
- B. Before placing concrete in forms the forms shall be cleaned and all debris removed. All reinforcing shall be checked to be sure that no reinforcing is touching the form or pan sides. A man shall be designated during the pour to keep the steel in the prescribed position.
- C. Before placing any concrete it shall be determined that all conduits, pipes, sleeves, inserts, hangers, steel equipment, grounds, anchors, and other work that is to be built into the concrete is located and installed. All such items shall be so placed as not to interfere with the reinforcing steel.
- D. No concrete shall be placed until the Architect has observed the reinforcement.
- E. Wood board forms shall be soaked with water first before the concrete is placed.
- F. Metal forms shall be oiled before reinforcement is placed.
- G. All reinforcement shall be supported and fastened in prescribed position and protected against displacement during pouring operations.
- H. A workman shall be designated to lift mesh reinforcing off the ground or the bottom of forms as concrete is placed.
- I. Concrete temperature at time of placement shall be as follows:

Temperature	Concrete Temperature	F Degrees
F Degrees	Maximum	Minimum
Above 75	90	75
50 - 75	90	75

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40 - 50	90	65
30 - 40	90	55
0 - 30	90	65
Below 0	90	70

J. Cold Weather Concreting

1. Cold weather concreting procedures shall be used when temperature at job site is 40 degrees or below at time of concrete placement as follows:
 - a. Heat ingredients as necessary to produce a mix temperature at time of placement as specified herein.
 - b. Concrete shall be heated, insulated, and protected as necessary to maintain a concrete temperature of 40 degrees F minimum for 72 hours after placement.
 - c. Accelerating agents shall not be used unless approval from the Architect has been obtained.
2. ACI 306R should be used as a guide in determining proper procedures for cold weather concreting.

K. Hot Weather Concreting

1. Hot weather concreting procedures shall be used when temperature a job site is 75 degrees F or above at time of concrete placement or wind or humidity is such to result in shrinkage cracking as follows:
 - a. Cool materials necessary to produce a mix temperature at time of placement as specified herein.
 - b. Mix time shall not exceed one hour from time of initial mix.
 - c. Concrete once discharged from truck shall be placed in its final position within 30 minutes from time of discharge.
 - d. Placed concrete shall be cooled or protected as necessary to maintain a concrete temperature of 120 degrees maximum for 48 hours after placement.
 - e. Retarding agents shall not be used unless approval from the Architect has been obtained.

2.ACI 305R should be used as a guide in determining proper procedures for cold weather

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concreting.

3.06 TRANSPORTING CONCRETE

- A. Concrete shall be handled from the mixer to the place of final deposit by means of carts, buggies, conveyor, or pump in accordance with ACI 304. If the concrete is to be transported more than fifty feet in carts or buggies they shall be equipped with pneumatic tires. Concrete delivered to the carts, buggies, or conveyors from spouts, troughs or mixer trucks shall not have a free fall of more than three (3) feet. Prevent separation or loss of ingredients while transporting the concrete.

3.07 CASTING

- A. It shall be the responsibility of the Contractor to consider the temperature and humidity in scheduling the time interval between mixing and placing. No partially hardened concrete shall be placed. Placement shall meet the requirements of ACI 304.
- B. Special care shall be observed to avoid concrete spilling over forms when placing.
- C. Placing of concrete shall be rapid and continuous between construction joints. Concrete shall not be placed when the sun, wind, heat, or humidity prevent placement and consolidation.
- D. Special care shall be taken in spading concrete around gangs of parallel conduit.
- E. Concrete shall not be placed within twenty-five feet of workmen placing or securing reinforcement.
- F. Internal type mechanical vibrators and hand spading shall be used to consolidate the concrete and produce a dense concrete free from voids and honeycombs. Care shall be taken that vibration is not applied long enough to separate the ingredients. Use and type of vibrators shall conform to ACI 309.
- G. Hand spreading shall be done with shovels not rakes.
- H. Before depositing the new concrete on or against concrete that has hardened, the forms shall be retightened, the surface of the hardened concrete roughened, cleaned of foreign matter than laitance and moistened with water. To ensure mortar at the juncture of the hardened and newly deposited concrete, the cleaned and moistened surface of the hardened concrete, including vertical and inclined surfaces, shall first be slushed with a coating of neat cement grout against which the new concrete shall be placed before the grout has attained its initial set. Before starting to place concrete in walls and columns a uniform layer of grout two inches thick shall be placed at the bottom of the forms or on top of the hardened concrete. The grout shall consist of one part cement and two parts sand with enough water to make a thick consistency.

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- I. All horizontal surfaces shall be screeded to an even surface by the use of a straight edge and screeding strips set at the level called for on plans. Screeds shall be of such type and so arranged as not to interfere with the top slab steel. Finish is specified in a following section.

3.08 PROTECTION

- A. Workmen shall not walk on concrete during placing or finishing with any earth or foreign matter on footgear.
- B. All freshly placed concrete shall be protected from damage or injury due to water, falling objects, persons or anything that might mar, discolor, or injure the finish surface of the concrete. Any surfaces that are damaged due to lack of protective measures shall be removed and replaced with fresh concrete at the expense of the Contractor.

3.09 FLOOR FINISHING

- A. Floors, except those requiring a special finish, shall be finished as follows:
 1. The surface of all concrete slabs, after screeding, shall be worked with a float in a manner which will compact the concrete and produce a surface free of depressions or inequalities of any kind. Test for grade (or level) and correct by removing excess or adding and compacting additional concrete.
 2. All floor slabs, except in areas dropped to receive finish, shall receive a steel trowel finish as follows:
 - a. After screeding and floating slab surface and when concrete has hardened to prevent excess fines from working to the surface and surface water has disappeared, steel trowel slab to a smooth surface free from defects.
 - b. After initial troweling and when surface produces a ringing sound as trowel is moved across surface, steel trowel the slab a second time. The drying of the surface moisture must proceed naturally and must not be hastened by sacking or dusting on of sand or cement.
 3. Areas which are dropped to receive a finish, after floating, shall be roughened with a very coarse broom.
 4. All concrete ramps, docks, and stair treads shall be dusted with abrasive aggregates at the rate of 25 pounds per 100 square feet. Abrasive aggregates shall be worked into concrete surface by trowelling.

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3.10 CURING OF CONCRETE

A. Unformed Horizontal Surfaces

1. As soon as sheen of surface water has disappeared and the surface can be walked upon without damage (one or two hours) concrete surfaces shall be cured as follows:
 - a. All interior slabs with resilient tile, carpet or left exposed shall be cured with the specified curing and sealing compound.
 - b. All other interior slabs shall be cured with the specified dissipating resin type curing compound.
 - c. All vertical surfaces shall be cured with the specified curing and hardening compound when forms are removed prior to completion of the curing period.
 - d. The curing compounds must be applied immediately after final finishing.
 - e. Where required, the curing and hardening compounds shall be applied to vertical surfaces immediately after forms have been removed.
 - f. Sisalkraft paper, placed in a manner approved by the Engineer, may be used for any surface indicated above to be cured with the dissipating resin compound or the curing and hardening compound.
2. Surface traffic shall not be permitted on curing compound until curing compound is completely dry.

B. Formed Surfaces

1. Formed surfaces which are rubbed after forms are removed shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after rubbing is completed.
2. Formed surfaces which are repaired or patched shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after repairing and/or patching is complete.
3. No coating, sealer or other applied material shall be placed on concrete which received a curing compound until forty-five (45) days after curing compound has been in place.

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3.11 TOLERANCES

- A. Tolerances for concrete floor slabs shall meet the requirements of ACI 117, Class BX Slabs.
- B. Where slabs abut at joints the differential elevation between abutting slabs shall be less than 1/16 inch.

3.12 EXPOSED CONCRETE SURFACES

- A. Exposed concrete surfaces shall be finished as follows:
 - 1. Surfaces shall be rubbed smooth with carborundum brick or other abrasive within 36 hours after forms are removed. Surfaces shall be wetted and rubbed until a uniform color and texture is produced. No cement grout or slush shall be used other than the cement paste drawn from the green concrete itself by the rubbing process.
 - 2. The first panel that is to be finished shall be done in the presence of the Architect. When it is approved by the Architect, it shall serve as a standard to which all additional architecturally finished concrete shall conform.
 - 3. Edges of exposed beams and columns shall be pointed up to present a straight, square appearance.

3.13 REMOVAL OF FORMS

- A. Removal
 - 1. Care shall be taken in the removal of the forms not to damage the surface of the concrete. Immediately after the forms are removed, the Architect shall examine the concrete and determine the extent and magnitude of any damaged or imperfect work. The Architect shall determine what work shall be patched and what work shall be removed and rebuilt. Patching, where allowed, shall be done immediately. Patching shall be done as specified in these specifications.
 - 2. The removal of shoring and stripping of forms shall be the responsibility of the Contractor. In no case shall forms for columns or walls be removed in less than two days.
 - 3. All form ties shall be broken back at least 1/2" from the surface of concrete, and pull ties shall be removed.

3.14 PATCHING AND CORRECTION OF DEFECTIVE WORK

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- A. Any concrete which is not within the allowable tolerances as set forth in ACI 347, Section 203.1 shall be considered as not conforming to these specifications. Any concrete which is not formed as shown on the plans or is out of alignment or level or shows a defective surface shall be considered as not conforming to these specifications.
- B. Any concrete as described above shall be removed from the job by the Contractor at his expense unless the Architect grants permission to patch or repair the defective area. Permission to patch or repair any such area shall not be considered a waiver of the Architect's right to require complete removal of the defective work if the patching does not, in his opinion, obtain the quality and appearance of the work as specified.
- C. Within 24 hours after removing form, all concrete surfaces shall be inspected by the Architect. With the Architect's approval any honeycombs, voids, stone pockets and tie holes shall at once be patched before the concrete is dry. Defective areas shall be chipped away to a depth of not less than one inch (1") with the edges perpendicular to the surface. The area to be patched and a space at least six inches (6") wide entirely surrounding it shall be dampened with water to prevent absorption of water from the patching mortar. The specified bonding compound shall be applied to the damp concrete.
- D. The patching shall be made of the same material and of the same proportions as used for the concrete except that the coarse aggregate shall be omitted. The amount of water used in mixing the mortar shall be consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing to stand for a period of one hour during which hour it shall be mixed with a trowel to prevent setting.
- E. After the bonding compound has dried, the mortar shall be compacted into place. Every hole and void shall be filled solid and the mortar screeded off to leave the patch slightly higher than the surrounding surface. It shall then be left undisturbed for a period of one to two hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner to match the adjoining surface.
- F. Where patching is not accomplished within 24 hours after removal of forms, the shotcrete method of applying concrete under pressure shall be used. Application of shotcrete shall meet ACI 506.
- G. Where concrete or concrete work does not conform to the plans or to the specifications and is condemned by the Architect, procedures and plans covering removal and rebuilding or other corrective measures shall be submitted by the Contractor to the Architect before removal and rebuilding is begun. The cost of such plans, as well as the cost of corrective work or removal and rebuilding shall be at the Contractor's expense.

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END OF SECTION

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SECTION 040110 - MASONRY CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cleaning the following:

1. Unit masonry surfaces.
2. Stone surfaces.

1.2 DEFINITIONS

- A. Low-Pressure Spray: [**100 to 400 psi** (**690 to 2750 kPa**); **4 to 6 gpm** (**0.25 to 0.4 L/s**)]
- B. Medium-Pressure Spray: [**400 to 800 psi** (**2750 to 5510 kPa**); **4 to 6 gpm** (**0.25 to 0.4 L/s**)]
- C. High-Pressure Spray: [**800 to 1200 psi** (**5510 to 8250 kPa**); **4 to 6 gpm** (**0.25 to 0.4 L/s**)]

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 QUALITY ASSURANCE

A. Mockups: Prepare mockups of cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Cleaning: Clean an area [**approximately 25 sq. ft. (2.3 sq. m)**] for each type of masonry and surface condition.
 - a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.

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- b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.

PART 2 - PRODUCTS

2.1 PAINT REMOVERS

- A. Covered or Skin-Forming Alkaline Paint Remover: Manufacturer's standard covered or skin-forming, alkaline paste or gel formulation, for removing paint from masonry; containing no methylene chloride. Products in "Solvent-Type Paste Paint Remover" Paragraph below contain methylene chloride.
- B. Solvent-Type Paste Paint Remover: Manufacturer's standard water-rinsable, solvent-type paste or gel formulation, for removing paint from masonry.
- C. Low-Odor, Solvent-Type Paste Paint Remover: Manufacturer's standard low-odor, water-rinsable, solvent-type paste, gel, or foamed emulsion formulation, for removing paint coatings from masonry; containing no methanol or methylene chloride.

2.2 CLEANING MATERIALS

- A. Water: Potable.
- B. Hot Water: Water heated to a temperature of 140 to 160 deg F (60 to 71 deg C).
- C. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 1/2 cup (125 mL) of laundry detergent, and 20 quarts (20 L) of hot water for every 5 gal. (20 L) of solution required.
- D. Mold, Mildew, and Algae Remover, Job Mixed: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 5 quarts (5 L) of 5 percent sodium hypochlorite (bleach), and 15 quarts (15 L) of hot water for every 5 gal. (20 L) of solution required.
- E. Nonacidic Gel Cleaner: Manufacturer's standard gel formulation, with pH between 6 and 9, that contains detergents with chelating agents and is specifically formulated for cleaning masonry surfaces.
- F. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.

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- G. Mild-Acid Cleaner: Manufacturer's standard mild-acid cleaner containing no muriatic (hydrochloric), hydrofluoric, or sulfuric acid; or ammonium bifluoride or chlorine bleaches.
- H. Acidic Cleaner: Manufacturer's standard acidic masonry cleaner composed of hydrofluoric acid or ammonium bifluoride blended with other acids, detergents, wetting agents, and inhibitors.
- I. One-Part Limestone Acidic Cleaner: Manufacturer's standard one-part acidic formulation for cleaning limestone.

2.3 CHEMICAL CLEANING SOLUTIONS

- A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.
- B. Acidic Cleaner Solution for [**Nonglazed Masonry**]: Dilute acidic cleaner with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended in writing by chemical-cleaner manufacturer.
 - 1. Stones: Use only on unpolished granite, unpolished dolomite marble, and siliceous sandstone.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
 - 1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

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3.2 CLEANING MASONRY, GENERAL

- A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from [**20 feet (6 m)**] away by Architect.
- B. Proceed with cleaning in an orderly manner; work from [**bottom to top**] [**top to bottom**] of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- C. Use only those cleaning methods indicated for each masonry material and location.
 - 1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
 - 2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
 - a. Equip units with pressure gages.
 - b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
 - c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
 - d. For heated water-spray application, use equipment capable of maintaining temperature between **140 and 160 deg F (60 and 71 deg C)** at flow rates indicated.
- D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.
- E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.
- F. Water-Spray Application Method: Unless otherwise indicated, hold spray nozzle at least **6 inches (150 mm)** from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- G. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush[**or spray**] application.[**Do not spray apply at pressures exceeding 50 psi (345 kPa).**] Do not allow

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chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.

- H. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
 - 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

3.3 PRELIMINARY CLEANING

- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.
- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.
 - 1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
 - 2. Remove paint and calking with [**alkaline paint remover**] .
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Repeat application up to two times if needed.
 - 3. Remove asphalt and tar with [**solvent-type paste paint remover**].
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Apply paint remover only to asphalt and tar by brush without prewetting.
 - c. Allow paint remover to remain on surface for 10 to 30 minutes.
 - d. Repeat application if needed.

3.4 PAINT REMOVAL

- A. Paint-Remover Application, General: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
- B. Paint Removal with Covered or Skin-Forming Alkaline Paint Remover:

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1. Remove loose and peeling paint using [medium]-pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with trowel, spatula, or as recommended in writing by manufacturer.
3. Apply cover according to manufacturer's written instructions.
4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
5. Scrape off paint and remover.
6. Rinse with [hot] water applied by [medium]-pressure spray to remove chemicals and paint residue.
7. Apply acidic cleaner or manufacturer's recommended afterwash to surface, while surface is still wet, using low-pressure spray equipment or soft-fiber brush. Let cleaner or afterwash remain on surface as a neutralizing agent for period recommended by chemical-cleaner or afterwash manufacturer.
8. Rinse with cold water applied by [medium] -pressure spray to remove chemicals and soil.
9. Retreat spots of remaining paint.

C. Paint Removal with Solvent-Type Paste Paint Remover:

1. Remove loose and peeling paint using [medium] -pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to painted surface with natural-fiber cleaning brush, deep-nap roller, or large paint brush. Apply in one or two coats according to manufacturer's written instructions.
3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
4. Rinse with [hot] water applied by [medium]-pressure spray to remove chemicals and paint residue.

3.5 CLEANING MASONRY

A. Detergent Cleaning:

1. Wet surface with [hot] water applied by low-pressure spray.
2. Scrub surface with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
3. Rinse with [hot] water applied by [medium]-pressure spray to remove detergent solution and soil.

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4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

B. Mold, Mildew, and Algae Removal:

1. Wet surface with **[hot]** water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush **[or low-pressure spray]**.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with **[hot]** water applied by **[medium]**-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

C. Nonacidic Gel Chemical Cleaning:

1. Wet surface with **[cold]** **[hot]** water applied by low-pressure spray.
2. Apply gel cleaner in **1/8-inch (3-mm)** thickness by brush, working into joints and crevices. Apply quickly and do not brush out excessively, so area is uniformly covered with fresh cleaner and dwell time is uniform throughout area being cleaned.
3. Let cleaner remain on surface for period **recommended in writing by chemical-cleaner manufacturer**.
4. Remove bulk of gel cleaner.
5. Rinse with **[hot]** water applied by **[medium]** -pressure spray to remove chemicals and soil.
6. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

D. Nonacidic Liquid Chemical Cleaning:

1. Wet surface with **[hot]** water applied by low-pressure spray.
2. Apply cleaner to surface **[in two applications]** by brush **[or low-pressure spray]**.
3. Let cleaner remain on surface for period **[recommended in writing by chemical-cleaner manufacturer]** .
4. Rinse with **[hot]** water applied by **[medium]**-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

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E. Mild-Acid Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface [**in two applications**] by brush [**or low-pressure spray**].
3. Let cleaner remain on surface for period [**recommended in writing by chemical-cleaner manufacturer**] .
4. Rinse with cold water applied by [**medium**]-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

F. Acidic Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface [**in two applications**] by brush [**or low-pressure spray**].
3. Let cleaner remain on surface for period [**recommended in writing by chemical-cleaner manufacturer**] .
4. Rinse with cold water applied by [**medium**]-pressure spray to remove chemicals and soil. Rinse until all foaming, if any, stops and suds disappear.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

G. One-Part Limestone Chemical Cleaning:

1. Wet surface with [**hot**] water applied by low-pressure spray.
2. Apply cleaner to surface by brush [**or low-pressure spray**].
3. Let cleaner remain on surface for period **recommended in writing by chemical-cleaner manufacturer**.
4. Immediately repeat application of one-part limestone cleaner as indicated above over the same area.
5. Rinse with [**hot**] water applied by medium-pressure spray to remove chemicals and soil.

END OF SECTION 040110

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SECTION 040120.63 - BRICK MASONRY REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes repairing brick masonry.

1.2 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.3 DEFINITIONS

- A. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]** .

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and locations of replacement bricks on the structure.
 - 2. Show provisions for expansion joints or other sealant joints.
- C. Samples: For each exposed product and for each color and texture specified.

1.6 INFORMATIONAL SUBMITTALS

- A. Quality-control program.

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1.7 QUALITY ASSURANCE

- A. Brick Masonry Repair Specialist Qualifications: Engage an experienced brick masonry repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.
- C. Mockups: Prepare mockups of brick masonry repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
 - 1. Masonry Repair: Prepare sample areas for each type of masonry repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches (1200 mm) in least dimension. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work.

PART 2 - PRODUCTS

2.1 MASONRY MATERIALS

- A. Face Brick: As required to complete brick masonry repair work.
 - 1. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork.
 - a. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
 - 2. Special Shapes:
 - a. Provide molded, 100 percent solid shapes for applications where core holes or "frogs" could be exposed to view or weather when in final position and where shapes produced by sawing would result in sawed surfaces being exposed to view.

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- b. Provide specially ground units, shaped to match patterns, for arches and where indicated.
 - c. Mechanical chopping or breaking brick, or bonding pieces of brick together by adhesive, are unacceptable procedures for fabricating special shapes.
- B. Building Brick: ASTM C62, Grade SW where in contact with earth or Grade SW, MW, or NW for concealed backup; and of same vertical dimension as face brick, for masonry work concealed from view.

2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white, beige, **or gray, or all** where required for color matching of mortar.
 - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Masonry Cement: ASTM C91/C91M.
- D. Mortar Cement: ASTM C1329/C1329M.
- E. Mortar Sand: ASTM C144.
 - 1. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
- F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
- G. Water: Potable.

2.3 MANUFACTURED REPAIR MATERIALS

- A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.

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1. Use formulation that is vapor and water permeable (equal to or more than the brick), exhibits low shrinkage, has lower modulus of elasticity than bricks being repaired, and develops high bond strength to all types of masonry.
2. Formulate patching compound in colors and textures to match each brick being patched.

2.4 ACCESSORY MATERIALS

- A. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.
- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 1. Previous effectiveness in performing the work involved.
 2. Minimal possibility of damaging exposed surfaces.
 3. Consistency of each application.
 4. Uniformity of the resulting overall appearance.
 5. Do not use products or tools that could leave residue on surfaces.

2.5 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 1. Rebuilding (Setting) Mortar by Volume: ASTM C270, Proportion Specification, [**1 part portland cement, 1 part lime, and 6 parts sand**] .

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2. Rebuilding (Setting) Mortar by Type: ASTM C270, Proportion Specification, [**Type N**] unless otherwise indicated; with cementitious material limited to [**portland cement and lime**].
3. Rebuilding (Setting) Mortar by Property: ASTM C270, Property Specification, [**Type N**] unless otherwise indicated; with cementitious material limited to [**portland cement and lime**].
4. Pigmented, Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Remove[**gutters and** downspouts adjacent to masonry and store during masonry repair. Reinstall when repairs are complete.
 1. Provide temporary rain drainage during work to direct water away from building.

3.2 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated[**or are to be reused**]. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- D. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

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- G. Replace removed damaged brick with other removed brick in good condition, where possible, matching existing brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
 - 1. Maintain joint width for replacement units to match existing joints.
 - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.) Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
 - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 - 2. Rake out mortar used for laying brick before mortar sets according to Section 040120.64 "Brick Masonry Repointing." Point at same time as repointing of surrounding area.
 - 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.3 BRICK MASONRY PATCHING

- A. Patching Bricks:
 - 1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 inch (6 mm) thick, but not less than recommended in writing by patching compound manufacturer.
 - 2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of brick.
 - 3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
 - 4. Rinse surface to be patched and leave damp, but without standing water.
 - 5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.

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6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than **1/4 inch (6 mm)** or more than **2 inches (50 mm)** thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
8. Keep each layer damp for 72 hours or until patching compound has set.

3.4 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low pressure spray.
 1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120.63

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SECTION 040120.64 - BRICK MASONRY REPOINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes repointing joints with mortar.

1.2 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]** .

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.5 INFORMATIONAL SUBMITTALS

- A. Quality-control program.

1.6 QUALITY ASSURANCE

- A. Brick Masonry Repointing Specialist Qualifications: Engage an experienced brick masonry repointing firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repointing work.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use

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materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

- C. Mockups: Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Repointing: Rake out joints in two separate areas, each approximately **36 inches (900 mm)** high by **48 inches (1200 mm)** wide, unless otherwise indicated, for each type of repointing required, and repoint one of the areas.

PART 2 - PRODUCTS

2.1 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white, beige, **or gray, or all** where required for color matching of mortar.
 - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Masonry Cement: ASTM C91/C91M.
- D. Mortar Cement: ASTM C1329/C1329M.
- E. Mortar Sand: ASTM C144.
 - 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
- F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
- G. Water: Potable.

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2.2 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
 - 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
 - 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 - 1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, [**1 part portland cement, 1 part lime, and 6 parts sand**]
 - 2. Pointing Mortar by Type: ASTM C270, Proportion Specification, [**Type N**] unless otherwise indicated; with cementitious material limited to [**portland cement and lime**].[**Add mortar pigments to produce mortar colors required.**]
 - 3. Pointing Mortar by Property: ASTM C270, Property Specification, [**Type N**] unless otherwise indicated; with cementitious material limited to [**portland cement and lime**].[**Add mortar pigments to produce mortar colors required.**]

PART 3 - EXECUTION

3.1 PROTECTION

- A. Remove **gutters and** downspouts and associated hardware adjacent to masonry and store during masonry repointing. Reinstall when repointing is complete.
 - 1. Provide temporary rain drainage during work to direct water away from building.

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3.2 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
2. Joints indicated as sealant-filled joints. Seal joints according to Section 079200 "Joint Sealants."
3. Joints at locations of the following defects:
 - a. Holes and missing mortar.
 - b. Cracks that can be penetrated **1/4 inch (6 mm)** or more by a knife blade **0.027 inch (0.7 mm)** thick.
 - c. Cracks [**1/16 inch (1.6 mm)**] [**1/8 inch (3 mm)**] or more in width and of any depth.
 - d. Hollow-sounding joints when tapped by metal object.
 - e. Eroded surfaces **1/4 inch (6 mm)** or more deep.
 - f. Deterioration to point that mortar can be easily removed by hand, without tools.
 - g. Joints filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of [**joint width plus 1/8 inch (3 mm)** [and] [**not less than that required to expose sound, unweathered mortar**] . Do not remove unsound mortar more than [**2 inches (50 mm)**] deep; consult Architect for direction.
2. Remove mortar from brick and other masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of brick or other masonry units or widen joints. Replace or patch damaged brick or other masonry units as directed by Architect.

D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than [**3/8 inch (9 mm)**] until a

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uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.

3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than [**3/8 inch (9 mm)**]. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
 4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
 5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.
- F. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.3 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low pressure spray.
1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120.64

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products.
3. Shear wall panels.
4. Rooftop equipment bases and support curbs.
5. Wood blocking[, **cants**,] and nailers.
6. Wood furring[**and grounds**].
7. Wood sleepers.
8. Plywood backing panels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
1. Wood-preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Engineered wood products.
 4. Shear panels.
 5. Power-driven fasteners.
 6. Post-installed anchors.
 7. Metal framing anchors

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PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, **[mark grade stamp on end or back of each piece]**.
 - 3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: **[15 percent for 2-inch nominal (38-mm actual) thickness or less; 19 percent for more than 2-inch nominal (38-mm actual) thickness]** unless otherwise indicated.
- C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
 - 1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC2[**for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**].
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.[**Do not use inorganic boron (SBX) for sill plates.**]
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

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D. Application: Treat [**all rough carpentry unless otherwise indicated.**]

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, [**furring,**] [**stripping,**] and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than **18 inches (460 mm)** above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than **10.5 feet (3.2 m)** beyond the centerline of the burners at any time during the test.
1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.[**Kiln-dry plywood after treatment to maximum moisture content of 15 percent.**]
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. Application: Treat [**all rough carpentry unless otherwise indicated.**]
1. Framing for raised platforms.

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2. Framing for stages.
3. Concealed blocking.
4. Framing for non-load-bearing partitions.
5. Framing for non-load-bearing exterior walls.
6. Roof construction.
7. Plywood backing panels.

2.4 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: [**Construction or No. 2**] grade.

1. Application: [**Interior partitions not indicated as load bearing**].
2. Species:
 - a. Southern pine or mixed southern pine; SPIB.
 - b. Northern species; NLGA.
 - c. Eastern softwoods; NeLMA.
 - d. Western woods; WCLIB or WWPA.

B. Framing Other Than Non-Load-Bearing Partitions: [**Construction or No. 2**] grade.

1. Application: Framing other than [**interior partitions not indicated as load bearing**].
2. Species:
 - a. Hem-fir (north); NLGA.
 - b. Southern pine; SPIB.
 - c. Douglas fir-larch; WCLIB or WWPA.
 - d. Southern pine or mixed southern pine; SPIB.
 - e. Spruce-pine-fir; NLGA.
 - f. Douglas fir-south; WWPA.
 - g. Hem-fir; WCLIB or WWPA.
 - h. Douglas fir-larch (north); NLGA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

C. Framing Other Than Non-Load-Bearing Partitions: Any species and grade with a modulus of elasticity of at least [**1,500,000 psi (10 350 MPa)**] OR [**1,300,000 psi (8970 MPa)**] OR [**1,100,000 psi (7590 MPa)**] thickness and **12-inch nominal (286-mm actual)** width for single-member use.

1. Application: Framing other than [**interior partitions not indicated as load-bearing**].

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- D. Exposed Framing: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1. Species and Grade: As indicated above for load-bearing construction of same type.

2.5 ENGINEERED WOOD PRODUCTS

- A. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.

1. Extreme Fiber Stress in Bending, Edgewise: [**3100 psi (21.3 MPa)**]**OR** [**2900 psi (20.0 MPa)**] depth members.
2. Modulus of Elasticity, Edgewise: [**2,000,000 psi (13 700 MPa)**] **OR** [**1,800,000 psi (12 400 MPa)**]

- B. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Comply with material requirements of and with structural capacities established and monitored according to ASTM D 5055.

1. Web Material: [**Either OSB or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1**]
2. Structural Properties: Depths and design values not less than those indicated.
3. Comply with APA PRI-400. Factory mark I-joists with APA-EWS trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA-EWS standard.

- C. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research or evaluation report for I-joists.

1. Manufacturer: Provide products by same manufacturer as I-joists.
2. Material: [**product made from any combination solid lumber, wood strands, and veneers**].
3. Thickness: [**1 inch (25 mm)**].
4. Comply with APA PRR-401, [**rim board**] grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.

2.6 SHEAR WALL PANELS

- A. Wood-Framed Shear Wall Panels: Prefabricated assembly consisting of wood perimeter framing, tie downs, and Exposure I, Structural I plywood or OSB sheathing.

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- B. Steel-Framed Shear Wall Panels: Prefabricated assembly consisting of cold-formed galvanized-steel panel, steel top and bottom plates, and wood studs.
- C. Allowable design loads, as published by manufacturer, shall meet or exceed those of building codes and [**of products of manufacturers listed**]. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.7 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
 - 6. Grounds.
- B. Dimension Lumber Items: [**Construction or No. 2**] grade lumber of any species.
- C. Concealed Boards: [**15**] percent maximum moisture content and [**any of**] the following species and grades:
 - 1. Mixed southern pine or southern pine; No. [**2**] grade; SPIB.
 - 2. Eastern softwoods; No. [**2**] Common grade; NeLMA.
 - 3. Northern species; No. [**2**] Common grade; NLGA.
 - 4. Western woods; [**Construction or No. 2 Common**] grade; WCLIB or WWPA.

2.8 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, [**Exterior, A-C**] in thickness indicated or, if not indicated, not less than [**3/4-inch (19-mm)**] nominal thickness.

2.9 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

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1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners **of Type 304 stainless steel**].
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on **ICC-ES AC01** as appropriate for the substrate.

2.10 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those **[of products of manufacturers listed]**. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, **G60 (Z180)** coating designation.
 1. Use for interior locations unless otherwise indicated.
- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); **G185 (Z550)** coating designation; and not less than **0.036 inch (0.9 mm)** thick.
 1. Use for wood-preservative-treated lumber and where indicated.

2.11 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; **1-inch (25-mm)** nominal thickness, compressible to **1/32 inch (0.8 mm)**; selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Sill-Sealer Gaskets: Closed-cell neoprene foam, **1/4 inch (6.4 mm)** thick, selected from manufacturer's standard widths to suit width of sill members indicated.

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- C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, [**butyl rubber**] compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than **0.025 inch (0.6 mm)**.
- D. Adhesives for Gluing [**Furring**] to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate [**furring**], nailers, blocking, [**grounds**], and similar supports to comply with requirements for attaching other construction.
- D. Install shear wall panels to comply with manufacturer's written instructions.
- E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Comply with AWPAC M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
 - 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

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3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes [**wet enough that moisture content exceeds that specified**], apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 06 40 23
Interior Architectural Woodwork

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior standing and running trim.
2. Interior frames and jambs.
3. Interior stairs and railings.
4. Wood furring, blocking, shims, and hanging strips for installing interior architectural woodwork items that are not concealed within other construction.
5. Shop priming of interior architectural woodwork.
6. Shop finishing of interior architectural woodwork.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]** .

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Anchors.
2. Adhesives.
3. Shop finishing materials.
4. Fire-Retardant Treatment: Include data and warranty information from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings:

1. Include the following:
 - a. Dimensioned plans, elevations, and sections.
 - b. Attachment details.
2. Show **[large-scale]** details.
3. Show locations and sizes of furring, blocking, and hanging strips, including blocking and reinforcement concealed by construction and specified in other Sections.

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4. Apply [**AWI Quality Certification**] Program label to Shop Drawings.

- C. Samples: For each exposed product and for each shop-applied color and finish specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For [**architectural woodwork manufacturer**] [**and**] [**Installer**].

- B. Product Certificates: For the following:

1. Composite wood and agrifiber products.
2. Adhesives.

- C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Quality Standard Compliance Certificates: [**AWI Quality Certification Program**] certificates.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Certification: Licensed participant in [**AWI's Quality Certification Program**].

1. Installer Qualifications: [**Manufacturer of products**] [**and**] [**Licensed participant in AWI's Quality Certification Program**] or [**Licensed participant in WI's Certified Compliance Program**].

- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockups of **typical interior architectural woodwork as shown on Drawings** including paneling, wainscot, crown assembly and bases..
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations by Change Order.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install interior architectural woodwork until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining

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temperature and relative humidity at levels designed for building occupants for the remainder of the construction period.

- B. Environmental Limitations: Do not deliver or install interior architectural woodwork until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between **60 and 90 deg F** (**16 and 32 deg C**) and relative humidity between **[25 and 55]** percent during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL WOODWORK, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
 - 1. Provide **[labels]** **[and]** **[certificates]** from **[AWI]** certification program indicating that woodwork **[and installation]** complies with requirements of grades specified.

2.2 INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH

- A. Architectural Woodwork Standards Grade: **[Premium]**.
- B. Hardwood Lumber:
 - 1. Species: **[Red oak]** .
 - 2. Cut **[Quarter cut/quarter sawn]**.
 - 3. Wood Moisture Content: **[5 to 10]** percent.
 - 4. Provide split species on trim that faces areas with different wood species, matching each face of woodwork to species and cut of finish wood surfaces in areas finished.
 - 5. For trim items **[other than base]** wider than available lumber, use veneered construction. Do not glue for width.
 - a. For veneered base, use hardwood lumber core, glued for width.
 - 6. For base wider than available lumber, glue for width. Do not use veneered construction.
 - 7. For rails thicker than available lumber, use veneered construction. Do not glue for thickness.

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2.3 INTERIOR FRAMES AND JAMBS FOR TRANSPARENT FINISH

- A. Architectural Woodwork Standards Grade: [**Premium**] .
- B. Wood Species and Cut:
 - 1. Species: [**Red oak**] .
 - 2. Cut:[**Quarter cut/quarter sawn**].
 - 3. Wood Moisture Content: [**5 to 10**] percent.
 - 4. Provide split species on frames and jambs that face areas with different wood species, matching each face of woodwork to species and cut of finish wood surfaces in areas finished.
- C. For frames or jambs wider than available lumber, use veneered construction. Do not glue for width.
 - 1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than **3 inches (76 mm)** wide.

2.4 HARDWOOD SHEET MATERIALS

- A. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of the Architectural Woodwork Standards for each type of interior architectural woodwork and quality grade specified unless otherwise indicated.
 - 1. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.

2.5 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Nailers: [**hardwood lumber**], kiln-dried to less than 15 percent moisture content.
 - 1. Preservative Treatment: Provide softwood lumber treated by pressure process, AWWA U1; Use Category UC3b.
 - a. Provide [**where indicated**] and/or [**where in contact with concrete or masonry**] .
 - b. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
 - c. Preservative Chemicals: Acceptable to authorities having jurisdiction[**and containing no arsenic or chromium**].
 - d. Mark lumber with treatment quality mark of an inspection agency approved by the American Lumber Standards Committee's (ALSC) Board of Review.

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- B. Provide self-drilling screws for metal-framing supports, as recommended by metal-framing manufacturer.
- C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.
 - 1. Provide metal expansion sleeves or expansion bolts for post-installed anchors.
 - 2. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

2.6 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate interior architectural woodwork to dimensions, profiles, and details indicated.
 - 1. Ease edges to radius indicated for the following:
 - a. Edges of Solid-Wood (Lumber) Members: **1/16 inch (1.5 mm)** unless otherwise indicated.
 - b. Edges of Rails and Similar Members More Than **3/4 Inch (19 mm)** Thick: **1/8 inch (3 mm)**.
- C. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site.
 - 1. Disassemble components only as necessary for shipment and installation.
 - 2. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.
 - 3. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled.
 - a. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting.
 - b. Verify that parts fit as intended, and check measurements of assemblies against field measurements indicated on approved Shop Drawings before disassembling for shipment.

2.7 SHOP PRIMING

- A. Preparations for Finishing: Comply with the Architectural Woodwork Standards for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.

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- B. Interior Architectural Woodwork for Opaque Finish: Shop prime with one coat of wood primer as specified in Section 099123 "Interior Painting."
 - 1. Backpriming: Apply one coat of primer, compatible with finish coats, to concealed surfaces of woodwork. [**Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.**]
- C. Interior Architectural Woodwork for Transparent Finish: Shop-seal concealed surfaces with required pretreatments and first coat of finish as specified in Section 099300 "Staining and Transparent Finishing."
 - 1. Backpriming: Apply one coat of sealer, compatible with finish coats, to concealed surfaces of woodwork. [**Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.**]

2.8 SHOP FINISHING

- A. Finish interior architectural woodwork [**with transparent finish**] at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with Architectural Woodwork Standards, Section 5 for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.
 - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of interior architectural woodwork. Apply two coats to end-grain surfaces.
- C. Transparent Finish:
 - 1. Architectural Woodwork Standards Grade: [**Premium**]
 - 2. Retain one or more of 13 "Finish" subparagraphs below. Review the Architectural Woodwork Standards for general performance characteristics of finishing systems.
 - 3. Finish: System - 1, Lacquer, Nitrocellulose.
 - 4. Finish: System - 2, Lacquer, Pre Catalyzed.
 - 5. Finish: System - 3, Lacquer, Post Catalyzed.
 - 6. Finish: System - 4, Latex Acrylic, Water Based.
 - 7. Finish: System - 5, Varnish, Conversion.
 - 8. Finish: System - 6, Oil, Synthetic Penetrating.
 - 9. Finish: System - 7, Vinyl, Catalyzed.
 - 10. Finish: System - 8, Acrylic Cross Linking, Water Based.

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11. Finish: System - 9, UV Curable, Acrylated Epoxy, Polyester, or Urethane.
12. Finish: System - 10, UV Curable, Water Based.
13. Finish: System - 11, Polyurethane, Catalyzed.
14. Finish: System - 12, Polyurethane, Water Based.
15. Finish: System - 13, Polyester, Catalyzed.
16. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
17. Staining: [**Match Architect's sample**].
18. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
19. Filled Finish for Open-Grain Woods: [**After staining, apply wash-coat sealer and allow to dry.**] Apply paste wood filler and wipe off excess. Tint filler to match stained wood.
20. Sheen: [**Satin, 31-45**] gloss units measured on 60-degree gloss meter according to ASTM D 523.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition interior architectural woodwork to humidity conditions in installation areas for not less than 72 hours prior to beginning of installation.
- B. Before installing interior architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming of concealed surfaces.

3.2 INSTALLATION

- A. Grade: Install interior architectural woodwork to comply with same grade as item to be installed.
- B. Assemble interior architectural woodwork and complete fabrication at Project site to the extent that it was not completed during shop fabrication.
- C. Install interior architectural woodwork level, plumb, true in line, and without distortion.
 1. Shim as required with concealed shims.
 2. Install level and plumb to a tolerance of **1/8 inch in 96 inches (3 mm in 2400 mm)**.
- D. Scribe and cut interior architectural woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

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- E. Preservative-Treated Wood: Where cut or drilled in field, treat cut ends and drilled holes according to AWWPA M4.
- F. Fire-Retardant-Treated Wood: Install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
- G. Anchor interior architectural woodwork to anchors or blocking built in or directly attached to substrates.
 - 1. Secure with countersunk, concealed fasteners and blind nailing.
 - 2. Use fine finishing nails[**or finishing screws**] for exposed fastening, countersunk and filled flush with interior architectural woodwork.
 - 3. For shop-finished items, use filler matching finish of items being installed.
- H. Standing and Running Trim:
 - 1. Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible.
 - 2. Do not use pieces less than [**60 inches (1500 mm)**] long, except where shorter single-length pieces are necessary.
 - 3. Scarf running joints and stagger in adjacent and related members.
 - 4. Fill gaps, if any, between top of base and wall with [**plastic wood filler; sand smooth; and finish same as wood base if finished**].
 - 5. Install standing and running trim with no more variation from a straight line than **1/8 inch in 96 inches (3 mm in 2400 mm)**.
- I. Stairs: Securely anchor carriages to supporting substrates.
 - 1. Install stairs with treads and risers no more than **1/8 inch (3 mm)** from indicated position.
 - 2. Secure with countersunk, concealed fasteners and blind nailing.
 - 3. Use fine finishing nails[**or finishing screws**] for exposed fastening, countersunk and filled flush with wood surface.
- J. Railings:
 - 1. Install rails with no more than **1/8 inch in 96-inch (3 mm in 2400-mm)** variation from a straight line.
 - 2. Stair Rails: Glue and dowel or pin balusters to treads and railings, and railings to newel posts.
 - a. Secure with countersunk, concealed fasteners and blind nailing.

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Interior Architectural Woodwork

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- b. Use fine finishing nails[**or finishing screws**] for exposed fastening, countersunk and filled flush with wood surface.
- 3. Wall Rails: Support rails on wall brackets securely fastened to wall framing.
 - a. Space rail brackets not more than 36" o.c.

END OF SECTION 064023

SECTION 07 21 00
BUILDING INSULATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
1. Blown or Batt (R-40) if applicable.
 2. Polyisoanurate 2" Insulation Board on interior of all exterior walls. Install vapor barrier on masonry wall, then attach board.
- B. Related Sections: The following sections contain requirements that relate to this section:
1. "Gypsum Drywall"

1.3 DEFINITIONS

- A. Thermal Resistivity: Where the thermal resistivity of insulation products are designated by "r-values," they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of insulation product specified.
- C. Samples for verification purposes in full-size units of each type of exposed insulation indicated for each color specified.
- D. Product test reports from and based on tests performed by qualified independent testing laboratory evidencing compliance of insulation products with requirements including r-values (aged values for plastic foam insulations), fire performance characteristics, perm ratings, water absorption ratings, and

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other properties, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction.

Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristic: ASTM E 84
2. Fire Resistance Ratings: ASTM E 119
3. Combustion Characteristics: ASTM E 136

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.
- B. Protect plastic insulation as follows:
1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide insulation products of one of the following:
1. Blown or batt Insulation (batt insulation in walls to provide moisture control – CertainTeed Smartbatt or equal:
 - a. CertainTeed Corp.
 - b. Owens Corning
 - c. Dow Industrives

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d. OR EQUAL

2.2 INSULATING MATERIALS

- A. Polyisoanurate Boards –
- B. Kor-fil Block insulation or equal.
- C. R-40 Batt Insulation. R- 19 in walls.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.
- B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.
- C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

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B. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

3.5 PROTECTION

A. General: Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 08 14 33
STILE AND RAIL WOOD DOORS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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SECTION 081433 - STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior stile and rail wood doors[**and sidelites**].
2. Interior stile and rail wood doors.
3. Interior fire-rated, stile and rail wood doors.
4. **[Priming] [Finishing]** stile and rail wood doors.
5. Fitting stile and rail wood doors to frames and machining for hardware.
6. Prehanging doors in frames.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For stile and rail wood doors. Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and other pertinent data.
- C. Samples: Represent typical range of color and grain for each species of veneer and solid lumber required.[**Finish Sample with same materials proposed for factory-finished doors.**]

1.3 INFORMATIONAL SUBMITTALS

- A. Quality Standard Compliance Certificates: **[AWI Quality Certification]** Program certificates.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Use only materials that comply with referenced standards and other requirements specified. Assemble exterior doors and sidelites with wet-use adhesives.

SECTION 08 14 33
STILE AND RAIL WOOD DOORS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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2.2 EXTERIOR STILE AND RAIL WOOD DOORS

- A. Thermal Transmittance: Maximum whole fenestration product U-factor of [**0.25 (1.41)**], according to AAMA 1503, ASTM E 1423, or NFRC 100.
- B. Exterior Stile and Rail Wood Doors[**Type SRD-<#>**]: Exterior doors complying with WDMA I.S.6, "Industry Standard for Wood Stile and Rail Doors," and with other requirements specified.
 - 1. Finish and Grade: [**Transparent and Premium or Select**].
 - 2. Wood Species: [**Idaho white, lodgepole, ponderosa, or sugar pine**].
 - 3. Glass: Uncoated, clear, **insulating-glass units made from two lites of 3.0-mm-thick, fully tempered glass with 1/4-inch (6.4-mm) interspace**] complying with Section 088000 "Glazing."
- C. Exterior Stile and Rail Wood Doors[**Type SRD-<#>**]: Exterior [**custom**] doors complying with [**the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards,"**] and with other requirements specified.
 - 1. Grade: [**Custom**].
 - 2. Finish: [**Transparent**].
 - 3. Wood Species and Cut for Transparent Finish: [**Idaho white, lodgepole, ponderosa, or sugar pine, plain sawed/sliced**] [**Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels**]
 - 4. Door Construction for Transparent Finish:
 - a. Stile and Rail Construction: Clear lumber; may be edge glued for width.
 - b. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered, edge- and end-glued clear lumber**].
 - c. Raised-Panel Construction: Clear lumber; edge glued for width.
 - d. Raised-Panel Construction: Edge-glued, clear lumber; glued to both sides of a wood-based panel product.
 - e. Raised-Panel Construction: Veneered, wood-based panel product with mitered, raised rims made from matching clear lumber.
 - f. Raised-Panel Construction: Veneered, shaped, wood-based panel product with veneer conforming to raised-panel shape.
 - 5. Door Construction for Opaque Finish:
 - a. Stile and Rail Construction: Clear softwood; may be edge glued for width and finger jointed.
 - b. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered edge- and end-glued lumber**].
 - c. Raised-Panel Construction: Clear softwood lumber; edge glued for width.

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- d. Raised-Panel Construction: Veneered, wood-based panel product.
- 6. Raised-Panel Thickness: [Manufacturer's standard, but not less than **1-1/8 inches (29 mm)**].
- 7. Glass: Uncoated, clear, [insulating-glass units made from two lites of **3.0-mm-thick, fully tempered glass with 1/4-inch (6.4-mm) interspace**], complying with Section 088000 "Glazing."

2.3 INTERIOR STILE AND RAIL WOOD DOORS

- A. Interior Stile and Rail Wood Doors[**Type SRD-<#>**]: Interior doors complying with WDMA I.S.6, "Industry Standard for Wood Stile and Rail Doors," and with other requirements specified.
 - 1. Finish and Grade: [**Transparent and Premium or Select**].
 - 2. Wood Species: [**Idaho white, lodgepole, ponderosa, or sugar pine**] [**Douglas fir or western hemlock, vertical sawed/sliced**] [**Red oak, quarter sawed/sliced**]
 - 3. Glass: Uncoated, clear, [**fully tempered float glass, 5.0 mm thick**] complying with Section 088000 "Glazing."
- B. Interior Stile and Rail Wood Doors[**Type SRD-<#>**]: Interior [**custom**] doors complying with [**the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards,"**] and with other requirements specified.
 - 1. Grade: [**Custom**].
 - 2. Finish: [**Transparent**].
 - 3. Wood Species and Cut for Transparent Finish: [**Idaho white, lodgepole, ponderosa, or sugar pine, plain sawed/sliced**] [**Douglas fir or western hemlock, quarter sawed/sliced (vertical grain)**] [**Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels**]
 - 4. Door Construction for Transparent Finish:
 - a. Stile and Rail Construction: Clear lumber; may be edge glued for width.
 - b. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered, edge- and end-glued clear lumber**].
 - c. Raised-Panel Construction: Clear lumber; edge glued for width.
 - d. Raised-Panel Construction: Edge-glued, clear lumber; glued to both sides of a wood-based panel product.
 - e. Raised-Panel Construction: Veneered, wood-based panel product with mitered, raised rims made from matching clear lumber.
 - f. Raised-Panel Construction: Veneered, shaped, wood-based panel product with veneer conforming to raised-panel shape.
 - g. Flat-Panel Construction: Veneered, wood-based panel product.
 - 5. Door Construction for Opaque Finish:

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- a. Stile and Rail Construction: Clear softwood; may be edge glued for width and finger jointed.
 - b. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered edge- and end-glued lumber**].
 - c. Raised-Panel Construction: Clear softwood lumber; edge glued for width.
 - d. Raised-Panel Construction: Shaped, medium-density fiberboard.
 - e. Flat-Panel Construction: [**Veneered, wood-based panel product**]
- 6. Raised-Panel Thickness: [**Manufacturer's standard, but not less than 1-1/8 inches (29 mm)**]
 - 7. Flat-Panel Thickness [**3/8 inch (10 mm)**].
 - 8. Glass: Uncoated, clear, [**fully tempered float glass, 5.0 mm thick**] complying with Section 088000 "Glazing."

2.4 INTERIOR FIRE-RATED, STILE AND RAIL WOOD DOORS

- A. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to [**NFPA 252**].
 - 1. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
 - 2. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
- B. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.
- C. Interior Fire-Rated Stile and Rail Wood Doors[**Type SRD-<#>**]: Fire-rated (20-minute rating) doors complying with [**the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards,"**] and with other requirements specified.
 - 1. Grade: [**Premium**] OR [**Custom**].
 - 2. Finish: [**Transparent**].
 - 3. Wood Species and Cut for Transparent Finish: [**Idaho white, lodgepole, ponderosa, or sugar pine, plain sawed/sliced**] [**Douglas fir or western hemlock, quarter sawed/sliced (vertical grain)**] [**Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels**]
 - 4. Door Construction for Transparent Finish: **1-3/4-inch- (44-mm-)** thick stiles and rails and veneered [**raised panels not less than 1-1/8 inches (29 mm) thick**].
 - a. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered, edge- and end-glued clear lumber**]. Select veneers for similarity of grain and

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- color, and arrange for optimum match between adjacent pieces.[**Use veneers not less than 1/16 inch (1.6 mm) thick.**]
 - b. Raised-Panel Construction: Veneered, shaped, wood-based panel product with veneer conforming to raised-panel shape.
 - c. Flat-Panel Construction: Veneered, wood-based panel product.
5. Door Construction for Opaque Finish: stiles and rails and veneered [**flat panels not less than 5/8 inch (16 mm) thick**].
- a. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered edge- and end-glued lumber**].
 - b. Raised-Panel Construction: Shaped, medium-density fiberboard.
 - c. Flat-Panel Construction: [**Veneered, wood-based panel product**].
- D. Interior Fire-Rated Stile and Rail Wood Doors[**Type SRD-<#>**]: Fire-rated (45-minute rating) doors complying with the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards," and with other requirements specified.
- 1. Grade: [**Premium**] OR [**Custom**].
 - 2. Finish: [**Transparent**].
 - 3. Wood Species and Cut for Transparent Finish: [**Idaho white, lodgepole, ponderosa, or sugar pine, plain sawed/sliced**] [**Douglas fir or western hemlock, quarter sawed/sliced (vertical grain)**] [**Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels**] [**Species indicated in schedule, plain sawed/sliced**] <Insert species and cut>.
 - 4. Interior Fire-Rated Door Construction: **1-3/4-inch- (44-mm-)** thick, edged and veneered mineral-core stiles and rails and **1-1/8-inch- (29-mm-)** thick, veneered mineral-core raised panels.
 - 5. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.5 STILE AND RAIL WOOD DOOR FABRICATION

- A. Fabricate stile and rail wood doors in sizes indicated for field fitting.
- B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels unless otherwise indicated:
 - 1. Clearances: Provide **1/8 inch (3 mm)** at heads, jambs, and between pairs of doors. Provide **1/2 inch (13 mm)** from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide not more than **3/8 inch (10 mm)** from bottom of door to top of threshold.

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- a. Comply with NFPA 80 for fire-rated doors.
 - 2. Bevel non-fire-rated doors **1/8 inch in 2 inches (3-1/2 degrees)** at lock and hinge edges.
 - 3. Bevel fire-rated doors **1/8 inch in 2 inches (3-1/2 degrees)** on lock edge; trim stiles and rails only to extent permitted by labeling agency.
 - C. Factory machine doors for hardware that is not surface applied.
 - D. Glazed Openings: Trim openings indicated for glazing with solid wood moldings, with one side removable. Miter wood moldings at corner joints.
 - E. Glazed Openings: Factory install glazing in doors, complying with Section 088000 "Glazing." Install glass using manufacturer's standard elastomeric glazing sealant complying with ASTM C 920. Secure glass in place with removable wood moldings. Miter wood moldings at corner joints.
 - F. Transom and Side Panels: Fabricate panels to match adjoining doors in materials, finish, and quality of construction.
 - G. Exterior Doors: Factory treat exterior doors after fabrication with water-repellent preservative to comply with WDMA I.S.4. Flash top of outswinging doors with manufacturer's standard metal flashing.
 - H. Prehung Doors: Provide stile and rail doors complete with frames, [**weather stripping**,] and hardware.
 - 1. Provide hollow metal wood door frames.
 - 2. Provide hardware[, **including weather stripping**,]
- 2.6 SHOP PRIMING
- A. Doors for Opaque Finish: Shop prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in [**Section 099113 "Exterior Painting**].
- 2.7 FINISHING
- A. Finish wood doors at [**woodworking shop**] that are indicated to receive transparent finish.
 - B. For doors indicated to be [**shop**] finished, comply with [**the AWT's, AWMAC's, and WI's "Architectural Woodwork Standards,"**] and with other requirements specified.
 - C. Transparent Finish:

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1. Grade: [**Premium**]or [**Custom**].
 2. Finish: AWT's, AWMAC's, and WI's "Architectural Woodwork Standards" [**System 5, conversion varnish**].
 3. Finish: [**WDMA TR-4 conversion varnish**] .
 4. Staining: [**As selected by Architect from manufacturer's full range**].
 5. Effect [**Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores**].
 6. Sheen: [**Semigloss**].

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hardware: For installation, see hardware specification section.
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
 1. Install fire-rated doors according to NFPA 80.
 2. Install smoke- and draft-control doors according to NFPA 105.
- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 1. Clearances: Provide **1/8 inch (3 mm)** at heads, jambs, and between pairs of doors. Provide [**3/8 inch (10 mm)**] from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide [**1/4 inch (6 mm)**] from bottom of door to top of threshold unless otherwise indicated.
 - a. Comply with NFPA 80 for fire-rated doors.
 2. Bevel non-fire-rated doors **1/8 inch in 2 inches (3-1/2 degrees)** at lock and hinge edges.
 3. Bevel fire-rated doors **1/8 inch in 2 inches (3-1/2 degrees)** on lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

END OF SECTION 081433

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FINISH HARDWARE

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PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

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

PROVIDE PANIC HARDWARE ON ALL EXTERIOR DOORS, CORRIDOR DOORS, DOORS LEADING INTO LOBBIES AND OTHER DOORS IN PATH OF EGRESS OR IN ROOMS CONTAINING MORE THAN 50 OCCUPANTS.

1.02 DESCRIPTION OF WORK

- A. Definition: "Builders Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frames.
- B. Extent of finish hardware required is to be scheduled by hardware supplier based on the location and operation of each door. The Architect and Owner will review and verify the function of each and every door in the facility.
- C. Types of finish hardware required include the following:
1. Hinges
 2. Pivots
 3. Lock cylinders and keys
 4. Lock and latch sets
 5. Bolts
 6. Exit devices
 7. Push/pull units
 8. Closers
 9. Overhead holders
 10. Miscellaneous door control devices
 11. Door trim units
 12. Protection plates
 13. Weatherstripping, door seals
 14. Thresholds
 15. Electronic Security Products
 16. Silencers

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1.03 QUALITY ASSURANCE:

- A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.
- B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or who employs an experienced architectural consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.
- C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware which has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels.
 - 1. Where emergency exit devices are required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL or FM label on exit devices indicating "Fire Exit Hardware."

1.04 SUBMITTALS

- A. Product Data: Submit manufacturers technical product data for each item of hardware in accordance with Division 1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. **Hardware Schedule: Submit a hardware schedule in manner indicated below PREPARED BY A CERTIFIED, LICENSES HARDWARE SPECIFIER. Coordinate hardware with fire ratings, applications, doors, frames, and related work to ensure proper size, thickness, hand, function and finish of hardware.**
- C. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
 - 1. Type, style, function, size and finish of each hardware item.
 - 2. Name and manufacturer of each item.
 - 3. Fastenings and other pertinent information.
 - 4. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.

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- 5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
 - 6. Mounting locations for hardware.
 - 7. Door and frame sizes and materials.
- D. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.
- E. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit one sample of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.
- 1. Samples will be returned to the supplier. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.
- F. Templates: Finish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.
- 1.05 **PRODUCT HANDLING:**
- A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.
 - B. Packaging of hardware, is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.
 - C. Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.
 - D. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.
 - E. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

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PART 2 - PRODUCTS

2.01 SCHEDULED HARDWARE

HARDWARE IS TO MATCH BULLOCH COUNTY'S HARDWARE STANDARD - VERIFY WITH OWNER.

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is to be determined by the door use and location in conjunction with the Hardware Allowance contained in this Project Manual.
- B. Manufacturer's product designations: One or more manufacturers are listed for each hardware type required. An asterisk (*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.

2.02 MATERIALS AND FABRICATION:

- A. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
- B. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
 - 1. Manufacturer's identification will be permitted on rim of lock cylinders only.
- C. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the application hardware units by applicable ASNI A156 series standard for each type hardware item and with ASNI A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- D. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- E. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including

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"prepared for paint" in surfaces to receive painted finish.

- F. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of the type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.
- G. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.03 HINGES, BUTTS, AND PIVOTS:

- A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- B. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated, provide continuous hinges per door specification.
- D. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.
- E. Number of hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
- F. Size of hinges: Unless otherwise scheduled, size hinges in accordance with the published recommendations of the specified manufacturer.

2.04 LOCK CYLINDERS AND KEYING:

- A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.
- B. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster), integrated with Owner's existing system.
- C. Equip locks with high security cylinders which comply with performance requirements for Grade 1 cylinders as listed in ANSI A156.5 and which have been tested for pick and drill resistance requirements of UL 437 and are UL listed.
- D. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products

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which may be incorporated in the work include, but are not limited to, the following:

- E. Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.
- F. Comply with Owner's instructions for masterkeying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.
- G. Key Material: Provide keys of nickel silver only.
- H. Key Quantity: Furnish 3 change keys for each lock; 5 master keys for each master system; and 5 grandmaster keys for each grandmaster system.
- I. Deliver keys to Owner's representative.

2.05 LOCKS, LATCHES, AND BOLTS:

- A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt.
 - 1. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.
 - 2. Provide roller type strikes where recommended by manufacturer of the latch and lock units.
- B. Lock Throw: Provide 3/4" minimum throw of latch and 1" throw of deadbolt. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
- C. Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze, or stainless steel, with minimum 12" long rod for doors up to 7'0" in height. Provide longer rods as necessary for doors exceeding 7'0" in height.
- D. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.
- E. Rabbeted Doors: Where rabbeted door stiles are indicated, provide special rabbeted front on lock and

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latch units and bolts.

2.06 PUSH/PULL UNITS:

- A. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation; through-bolted for matched pairs, but not for single units.

2.07 CLOSERS AND DOOR CONTROL DEVICES:

- A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.
- B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A 117.1 provisions for door opening force and delayed action closing.
- C. Combination Door Closers and Holders: Provide units designed to hold door in open position under normal usage and to release and automatically close door under fire conditions. Incorporate an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.
 - 1. Provide integral smoke detector device in combination door closers and holders complying with UL 228.

2.08 DOOR TRIM UNITS:

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screw.
- B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

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- C. Fabricate protection plates (armor, kick or mop) not more than 1-1/2" less than door width on stop side and not more than 1/2" less than door width on pull side, plate heights shall be 36", 8", and 4" respectively. Armor plates on fire doors shall conform to NFPA 80.

1. Metal Plates: Stainless steel, .050" (U.S. 18 ga).

2.09 WEATHERSTRIPPING:

- A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated.

2.10 THRESHOLDS:

- A. General: Except as otherwise indicated provide standard metal threshold unit of type, size, and profile as shown or scheduled.

2.11 SILENCERS:

- A. Provide silencers except at doors equipped with weatherstrip, soundseals, lighseals, or other gasketing. Provide 3 silencers per single door and 4 silencers per pair of doors.

2.12 HARDWARE FINISHES:

- A. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.
- B. Provide finishes which match those established by BHMA or, if none established, match the Architect's sample.

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- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.
- D. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI A156.18 "Materials & Finishes Standard" by BHMA, including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.
- B. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
- C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- D. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

SECTION 08 71 10
FINISH HARDWARE

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- F. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

3.02 ADJUST AND CLEAN:

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- D. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

3.03 FINISHES

All finishes to be US 32D. Hinges on metal doors shall be primed for painting, ANSI 600.
Surface mounted door closers shall be painted to match adjacent hardware.

END OF SECTION

SECTION 09 29 00

GYPSUM BOARD

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Extent of each type of gypsum drywall construction required is indicated on Drawings.
- B. This Section includes the following types of gypsum board construction:
 - 1. Steel framing members to receive gypsum board
 - 2. Gypsum board (all to be Type X 5/8" except in wet areas use green-board, 5/8") screw-attached to steel framing and furring members

1.3 DEFINITIONS

- A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA 505 for definitions of terms for gypsum board construction not otherwise defined in this section or other referenced standards.

1.4 SUBMITTALS

- A. Product data from manufacturers for each type of product specified.

1.5 QUALITY ASSURANCE

- A. Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.
 - 1. Provide fire-resistance-rated assemblies identical to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.
- B. Single Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

SECTION 09 29 00

GYPSUM BOARD

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- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.
- C. Handle gypsum boards to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.7 PROJECT CONDITIONS

- A. Environmental Conditions, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.
- B. Minimum Room Temperatures: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously thereafter until drying is complete.
- C. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

- 1. Steel Framing and Furring
 - a. Bostwick Steel Framing Co.
 - b. Dale Industries, Inc.e
 - c. Gold Bond Building Products Div., National Gypsum Co.
 - d. Incor, Inc.
 - e. Marino Industries Corp.
 - f. United States Gypsum Co.
- 2. Gypsum Boards and Related Products:
 - a. Centex American Gypsum Co.
 - b. Domtar Gypsum Co.
 - c. Georgia-Pacific Corp.
 - d. Gold Bond Building Products Div., National Gypsum Co.

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e. United States Gypsum Co.

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

- A. General: provide components which comply with ASTM C 754 for materials and sizes, unless otherwise indicated.
- B. Concrete Inserts: Inserts designed for attachment to concrete forms and for embedment in concrete, fabricated from corrosion-resistant materials, with holes or loops for attachment of hanger wires and capability to sustain, without failure, a load equal to 3 times that imposed by ceiling construction, as determined from testing per ASTM E 488, conducted by an independent testing laboratory.
- C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.
- D. Channels: Cold-rolled Steel, 0.0598 inch minimum thickness of base (uncoated) metal and 7/16 inch wide flanges, protected with rust-inhibitive paint, and as follows:
 - 1. Carrying Channels: 2 inches deep, 590 lbs per 1000 ft., unless otherwise indicated.
- E. Steel Studs for Furring Channels: ASTM C 645, with flange edges bent back 90 deg and doubled over to form 3/16 inch minimum lip return), minimum thickness of base (uncoated) metal and minimum depth as follows:
 - 1. Thickness: 0.0329 inch, unless otherwise indicated
 - 2. Depth: 3-5/8 inches, unless otherwise indicated
- F. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth of 7/8 inch, a minimum thickness of base (uncoated) metal as follows:
 - 1. Thickness: 0.0179 inch, unless otherwise indicated

2.3 GYPSUM BOARD

- A. General: Provide gypsum board, all "green-board" (Georgia Pacific "Tough-Rock" or equal) in maximum lengths available to minimize end-to-end joints.
 - 1. Thickness: Provide gypsum board in thicknesses indicated to comply with ASTM C 840 for application system and support spacing indicated.
- B. Gypsum Wallboard: ASTM C 36, and as follows:
 - 1. Type: Green-board, water-resistant (Georgia Pacific "Tough-Rock" or equal, throughout the entire facility.
 - 2. Type: Type X for fire-resistance-rated assemblies
 - 3. Edges: Tapered
 - 4. Thickness: 5/8 inch

SECTION 09 29 00

GYPSUM BOARD

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5. Products: Subject to compliance with requirements, provide one of the following products where Type X gypsum wallboard is indicated:
 - a. "Gyprock Fireguard 'C' Gypsum Board"; Domtar Gypsum Co.
 - b. "Fire-Shield G"; Gold Bond Building Products, Div., National Gypsum Co.
 - c. "SHEETROCK Brand FIRECODE 'C' Gypsum Panels"; United States Gypsum Co.
- C. Gypsum Backing Board for Multi-Layer Applications: ASTM C 442 or, where backing board is not available from manufacturer, gypsum wallboard, ASTM C 36, and as follows:
 1. Type: Regular, unless otherwise indicated
 2. Type: Type X for fire-resistance-rated assemblies
 3. Edges: Manufacturer's standard
 4. Thickness: 5/8 inch
- D. Water-Resistant Gypsum Backing Board: ASTM C 630, and as follows:
 1. Type: Regular, unless otherwise indicated
 2. Type: Type X for fire-resistance-rated assemblies
 3. Thickness: 5/8 inch

2.4 TRIM ACCESSORIES

- A. Cornerbead and Edge Trim for Interior Installation: Provide corner beads, edge trim and control joints which comply with ASTM C 1047 and requirements indicated below:
 1. Material: Formed metal, plastic or metal combined with paper, with metal complying with the following requirement:
 - a. Sheet Steel zinc-coated by hot-dip process
 2. Edge trim shapes indicated below by reference to designations of Fig. 1 in ASTM C 1047:
 - a. "LC" Bead, unless otherwise indicated
 - b. "LK" Bead with square nose for use with kerfed jambs
 - c. "L" Bead where indicated
 - d. "U" Bead where indicated
 3. Metal Cornerbead and Edge Trim for Exterior Ceilings: Comply with the following requirements:
 1. Edge trim complying with ASTM C 1047, formed from rolled zinc, shape "LC" Bead per Fig. 1, unless otherwise indicated.

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GYPSUM BOARD

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2.5 GYPSUM BOARD JOINT TREATMENT MATERIALS

- A. General: Provide materials complying with ASTM C 475, ASTM C 840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.
- B. Joint Tape: Paper reinforcing tape, unless otherwise indicated.
- C. Setting-Type Joint Compounds: Factory-prepackaged, job-mixed, chemical-hardening powder products formulated for uses indicated.
 - 1. Where setting-type joint compounds are indicated for use as taping and topping compounds, use formulation for each which develops greatest bond strength and crack resistance and is compatible with other joint compounds applied over it.
 - 2. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
 - 3. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile, use formulation recommended by gypsum board manufacturer for this purpose.
- D. Drying-Type Joint Compounds: Factory-prepackaged vinyl-based products complying with the following requirements for formulation and intended use.
 - 1. Ready-Mix Formulation: Factory-premixed product
 - 2. Taping compound formulated for embedding tape and for first coat over fasteners and flanges of corner beads and edge trim.
 - 3. Topping compound formulated for fill (second) and finish (third) coats.
 - 4. All-purpose compound formulated for use as both taping and topping compound.

2.6 MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.
- B. Spot Grout: ASTM C 475, setting-type joint compound of type recommended for spot grouting hollow metal door frames.
- C. Gypsum Board Screws: ASTM C 1002
- D. Asphalt Felt: ASTM D 226, Type I (No. 15)
- E. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division 7 section "Joint Sealers".

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to which drywall construction attaches or abuts, preset hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Ceiling Anchorages: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling anchors in a manner that will develop their full strength and at spacing required to support ceiling.
 - 1. Furnish concrete inserts and other devices indicated, to other trades for installation well in advance of time needed for coordination with other construction.

3.3 INSTALLATION OF STEEL FRAMING, GENERAL

- A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.
- C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below:
 - 1. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetration of structural elements.
 - 2. Where partition and wall framing abuts overhead structure.
- D. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members.

3.4 INSTALLATION OF STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

- A. Secure hangers to structural support by connecting directly to structure where possible.
- B. Do not connect or suspend steel framing from ducts, pipes or conduit.

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GYPSUM BOARD

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- C. Keep hangers and braces 2 inches clear of ducts, pipes and conduits.
- D. Sway-brace suspended steel framing with hangers used for support.
- E. Install suspended steel framing components in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard.
 - 1. Wire Hangers: 0.1620 inch diameter (8 gage), 4 ft. on center
 - 2. Carrying Channels (Main Runners): 1-1/2 inch, 4 ft. on center
 - 3. Rigid Furring Channels (Furring Members): 16 inches on center
- F. Installation Tolerances: Install steel framing components for suspended ceiling so that cross furring members or grid suspension members are level to within 1/8 inch in 12 ft. as measured both lengthwise on each member and transversely between parallel members.
- G. Wire-tie or clip furring members to main runners and to other structural supports as indicated.

3.5 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

- A. Gypsum Board Application and Finishing Standard: Install and finish gypsum board to comply with ASTM C 840.
- B. Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed.
- C. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.
- D. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, which avoids end joints in the central area of each ceiling. Stagger end joints at least 24 inches.
- E. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.
- F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.
- G. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

SECTION 09 29 00

GYPSUM BOARD

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- H. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.
- I. Attach gypsum board to supplementary framing and blocking provides for additional support at openings and cutouts.
- J. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.
- K. Form control joints and expansion joints at locations indicated, with space between edges of boards, prepared to receive trim accessories.
- L. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are braced internally.
 - 1. Except where concealed application is indicated or required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq ft area, and may be limited to not less than 75 percent of full coverage.
 - 2. Fit gypsum board around ducts, pipes, and conduits.
 - 3. Where partitions intersect open concrete coffers, cut gypsum board to fit profile of coffers and allow 1/4 to 1/2 inch wide joint for sealant.
- M. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4 inch to 1/2 inch space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.
- N. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.6 METHODS OF GYPSUM BOARD APPLICATION

- A. Single-Layer Application: Install gypsum wallboard as follows:
 - 1. On ceilings apply gypsum board prior to wall/partition board application to the greatest extent possible.
 - 2. On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.
- B. Wall Tile Base: Where drywall is base for thin-set ceramic tile and similar rigid applied wall finishes, install gypsum backing board.
 - 1. In "dry" areas install gypsum backing board or wallboard with tapered edges taped and finished to produce a flat surface.
 - 2. At tubs, toilets, janitor closets, and similar "wet" areas, install water-resistant gypsum backing board to comply with ASTM C 840 and recommendations of gypsum board manufacturer.

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3. At showers, tubs and similar "wet areas" install glass mesh mortar units and treat joints to comply with manufacturer's recommendations for type of application indicated.
- C. Double-Layer Application: Install gypsum backing board for base layer and gypsum wallboard for face layer.
 1. On partitions/walls apply base layer and face layers vertically (parallel to framing) with joints of base layer over supports and face layer joints offset at least 10 inches with base layer joints.
- D. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:
 1. Fasten with screws.
- E. Double-Layer Fastening Methods: Apply base layer of gypsum board and face layer to base layer as follows:
 1. Fasten both base layers and face layers separately to supports with screws.

3.7 INSTALLATION OF DRYWALL TRIM ACCESSORIES

- A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.
- B. Install corner beads at external corners.
- C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where "U" bead (semi-finishing type) is indicated.
 1. Install "LC" bead where drywall construction is tightly abutted to other construction and back flange can be attached to framing or supporting substrate.
 2. Install "LK" bead where substrate is kerfed to receive long flange of trim.
 3. Install "L" bead where edge trim can only be installed after gypsum board is installed.
 4. Install U-Type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).
- D. Install control joints at locations indicated, or if not indicated, at spacing and locations required by referenced gypsum board application and finish standard, and approved by the Architect for visual effect.

3.8 FINISH OF DRYWALL

SECTION 09 29 00

GYPSUM BOARD

09 29 00-10

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- A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.
- B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.
- C. Apply joint tapes at joints between gypsum boards, except where trim accessories are indicated.
- D. Finish interior gypsum wallboard by applying the following joint compounds in 3 coats (not including prefill of openings in base), and sand between coats and after last coat:
 - 1. Embedding and First Coat: Ready-mix drying-type all-purpose or taping compound.
 - 2. Fill (Second) Coat: Ready-mix drying-type all-purpose or topping compound.
 - 3. Finish (Third) Coat: Ready-mix drying-type all -purpose or topping compound.
- E. Water-Resistant Backing Board Base for Ceramic Tile: Finish joints between water-resistant backing board with tape and setting-type joint compound to comply with gypsum board manufacturer's recommendations and installation standards referenced in Division 9 Section "Tile.
- F. Partial finishing: Omit third coat and sanding on concealed drywall construction which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

3.9 PROTECTION

- A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION

**SECTION 09 30 13
CERAMIC TILE**

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Glazed tile.
 - 2. Natural Floor Tile – floors and stairs.
 - 3. Waterproof membrane for **thin-set** tile installations.
 - 4. Crack-suppression membrane for thin-set tile installations.
 - 5. Cementitious backer units installed as part of tile installations.

1.3 DEFINITIONS

- A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.
- B. Facial Dimension: Actual tile size (minor facial dimension as measured per ASTM C 499).
- C. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.
- D. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least **12 inches (300 mm)** square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.

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CERAMIC TILE**

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3. Full-size units of each type of trim and accessory[**for each color and finish required**].
4. Stone thresholds in **6-inch (150-mm)** lengths.
5. Metal edge strips in **6-inch (150-mm)** lengths.

- E. Product Certificates: For each type of product, signed by product manufacturer.
- F. Qualification Data: For Installer.
- G. Material Test Reports: For each tile-setting and -grouting product[**and special-purpose tile**].

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store [**liquid latexes**] [**and**] [**emulsion adhesives**] in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Tile and Trim Units: **Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

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CERAMIC TILE**

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1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
5. Basis-of-Design Product: The design for each tile type is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
 1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
 2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- C. Colors, Textures, and Patterns: Architect to select from Manufacturer's full range of colors for any series specified. Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
 1. BATHROOMS – WALLS TO BE DAL TILE "RETROSPACE" WITH THREE COLORS.
FLOORS TO BE DAL TILE MARBLE 3" X 6" TILES OF CARRARRA WHITE M701
POLISHED IN ALTERNATING BANDS WITH EMPRESS GREEN M741 BANDS.
 2. LOBBY TO HAVE THE SAME TILES BUT WITH THE REPLICATION OF THE ORIGINAL
PATTERN WHICH HAD THE EMPRESS GREEN IN TWO SYMMETRICAL 16 COURSE
ROWS FROM DOOR TO DOOR LEFT TO RIGHT OF LOBBY.
- D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

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E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.

1. Where tile is indicated for installation **in wet areas**, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

F. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.3 TILE PRODUCTS

A. Manufacturers:

1. American Marazzi Tile, Inc.
2. American Olean; Div. of Dal-Tile International Corp.
3. Buchtal Corporation USA.
4. Cerim-Floor Gres Ceramiche.
5. Crossville Ceramics Company, L.P.
6. Daltile; Div. of Dal-Tile International Inc.
7. Florida Tile Industries, Inc.
8. GranitiFiandre.
9. Interceramic.
10. KPT, Inc.
11. Laufen USA.
12. Lone Star Ceramics Company.
13. Metropolitan Ceramics.
14. Monarch Tile, Inc.
15. Porcelanite, Inc.
16. Quarry Tile Company.
17. Seneca Tiles, Inc.
18. Summitville Tiles, Inc.
19. United States Ceramic Tile Company.
20. Winburn Tile Manufacturing Company.

B. Accessories for Glazed Wall Tile: Provide vitreous china accessories of type and size indicated, in color and finish to match adjoining wall tile, and intended for installing by same method as adjoining wall tile.

2.4 THRESHOLDS

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- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 - 1. Bevel edges at 1:2 slope, aligning lower edge of bevel with adjacent floor finish. Limit height of bevel to **1/2 inch (12.7 mm)** or less, and finish bevel to match face of threshold.
- B. Marble Thresholds: ASTM C 503 with a minimum abrasion resistance of **[10] [12]** per ASTM C 1353 or ASTM C 241 and with honed finish.

- 1. Description: Uniform, fine- to medium-grained white stone with gray veining.

2.5 SETTING AND GROUTING MATERIALS

- A. Manufacturers:
 - 1. Atlas Minerals & Chemicals, Inc.
 - 2. Boiard Products Corporation.
 - 3. Bonsal, W. R., Company.
 - 4. Bostik.
 - 5. C-Cure.
 - 6. Custom Building Products.
 - 7. DAP, Inc.
 - 8. Jamo Inc.
 - 9. LATICRETE International Inc.
 - 10. MAPEI Corporation.
 - 11. Southern Grouts & Mortars, Inc.
 - 12. Summitville Tiles, Inc.
 - 13. TEC Specialty Products Inc.
- B. Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.
 - 1. For wall applications, provide nonsagging mortar that complies with Paragraph C-4.6.1 in addition to the other requirements in ANSI A118.1.
- C. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:
 - 1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
 - 2. Prepackaged dry-mortar mix combined with **[acrylic resin] [or] [styrene-butadiene-rubber]** liquid-latex additive.
 - a. For wall applications, provide nonsagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4.

2.7 CEMENTITIOUS BACKER UNITS

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- A. Provide cementitious backer units complying with ANSI A118.9 in maximum lengths available to minimize end-to-end butt joints.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
 - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
 - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
- B. Provide concrete substrates for tile floors installed with **[adhesives]** **[or]** **[thin-set mortar]** that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.

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1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
 2. Remove protrusions, bumps, and ridges by sanding or grinding.
- C. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
- D. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.

3.4 [WATERPROOFING] [AND] [CRACK-SUPPRESSION MEMBRANE] INSTALLATION

- A. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate.
- B. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.
- C. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.5 FLOOR TILE INSTALLATION

- A. General: Install tile to comply with requirements in the Floor Tile Installation Schedule, including those referencing TCA installation methods and ANSI A108 Series of tile installation standards.
1. For installations indicated below, follow procedures in ANSI A108 Series tile installation standards for providing 95 percent mortar coverage.
 - a. Exterior tile floors.

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- b. Tile floors in wet areas.
 - c. Tile swimming pool decks.
 - d. Tile floors in laundries.
 - e. Tile floors composed of tiles **8 by 8 inches (200 by 200 mm)** or larger.
 - f. Tile floors composed of rib-backed tiles.
- B. Joint Widths: Install tile on floors with the following joint widths:
 - 1. Ceramic Mosaic Tile: **1/16 inch (1.6 mm)**.
 - 2. Quarry Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].
 - 3. Paver Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].
- C. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.
 - 1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.
- D. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.
- E. Grout Sealer: Apply grout sealer to[**cementitious**] grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer that has gotten on tile faces by wiping with soft cloth.

3.6 WALL TILE INSTALLATION

- A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.
- B. Install metal lath and scratch coat for walls to comply with ANSI A108.1A, Section 4.1.
- C. Joint Widths: Install tile on walls with the following joint widths:
 - 1. Ceramic Mosaic Tile: **1/16 inch (1.6 mm)**.
 - 2. Glazed Wall Tile: **1/16 inch (1.6 mm)**.
 - 3. Quarry Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].

3.7 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

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1. Remove [**epoxy**] [**and**] [**latex-portland cement**] grout residue from tile as soon as possible.
 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 09310

SECTION 09 65 19
RESILIENT FLOORING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications sections, apply to this Section.

1.2 DESCRIPTION OF WORK

- A. Extent of resilient flooring and accessories is shown on drawings and in schedules. Products will include 6" Rubber base; Luxury Vinyl Tile, and any other accessories/products.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Provide each type of resilient flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.
- B. Fire Test Performance: Provide resilient flooring which complies with the following fire test performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction.
1. Critical Radiant Flux (CRF): Not less than the following rating per ASTM E 648.
 - a. 0.45 watts per sq cm
 2. Flame Spread: Not more than 25 per ASTM E 84
 3. Smoke Developed: Not more than 450 per ASTM E 84
 4. Smoke Density: Not more than 450 per ASTM E 662
- C. Installer's Qualifications: Engage Installer who is certified in writing by resilient flooring manufacturer as qualified for installation of sheet vinyl employing heat welded seams.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each type of resilient flooring and accessory.
- B. Samples for Initial Selection Purposes: Submit manufacturer's standard color charts in form of actual sections of resilient flooring, including accessories, showing full range of colors and patterns available, for each type of resilient flooring required.
- C. Samples for Verification Purposes: Submit the following samples of each type, color and pattern of resilient flooring required, showing full-range of color and pattern variations.
1. Full-size tile samples
 2. 6" x 9" samples of sheet flooring
 3. 2-1/2" long samples of resilient flooring accessories
 4. Welding beads for sheet flooring
 5. Other materials as required
- D. Certification for Fire Test Performance: Submit certification from an independent testing laboratory acceptable to authorities having jurisdiction that resilient flooring complies with fire test performance requirements.
- E. Maintenance Instructions: Submit 2 copies of manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.

1.5 PROJECT CONDITIONS

- A. Maintain minimum temperature of 65 degrees F (18 deg C) in spaces to receive resilient flooring for at least 48 hours prior to installation, and for not less than 48 hours after installation. Store resilient flooring

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materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 deg F (13 deg C) in areas where work is completed.

- B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by resilient flooring manufacturer's recommended bond and moisture test.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide products of the following:

1. Manufacturers of Vinyl Luxury Tile:

- a. ROPPE, or equal.

2.

2.2 RESILIENT FLOORING COLORS AND PATTERNS

- A. Provide colors and patterns as indicated, or if not otherwise indicated, as selected by Architect from manufacturer's standards.

2.3 LUXURY VINYL FLOOR TILE

- A. Manufacturer: Roppe Corporation or equal –

1. Description: Solid Vinyl Floor Tile meeting the requirements of ASTM F 1700.
2. Resistance to Chemicals per ASTM F 925: Pass (List of chemicals provided by manufacturer on request)
3. Light Stability per ASTM F 1515: Pass.(Delta E < 8.00)
4. Abrasion resistance per ASTM D 3389: Excellent (<0.15 weight loss after 1,000 cycles using H-18 wheels with 500 gram load applied)
5. Design and Color: As selected by Architect from manufacturer's standard designs and colors.
6. Does not contain any of the hazardous chemicals listed in California Proposition 65
7. Collaborative for High Performance Schools 01350 Low-Emitting Material Criteria: Pass

- B. Roppe Solid Vinyl Floor Tile (or equal)

1. Northern Parallels Premium Chevron vinyl plank. Allow for FOUR SEPARATE FLOORING SELECTIONS selected from all available pattern options (stone, desert, chevron, mini wood travertine, or coastal) and from all available colors in each pattern group.

- a. Classification: ASTM F 1700, Class III, Type A.
- b. Thickness: 28 mil
- c. Wear Layer Thickness: exceeds ASTM F 1700, Commercial Use.

2.4 RUBBER STAIR TREADS, RISERS, AND LANDINGS –

1. Provide Roppe or equal Raised design rubber tread, riser and landings. Color and pattern to be selected from complete series of patterns and colors available in each series. Provide for accent

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strip or tread at the top of landings and at bottom treads.

2.5 ACCESSORIES

- A. Rubber Wall Base: Provide Roppe or equal Contours profiled base with matching end stops and preformed or molded corner units, and as follows:
 - 1. Height: 6"
 - 2. Finish: Matte
- B. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.
- C. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
- D. Leveling and Patching Compounds: Latex type as recommended by flooring manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Require Installer to inspect subfloor surfaces to determine that they are satisfactory. A satisfactory subfloor surface is defined as one that is smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance.
- B. Perform bond and moisture tests on concrete subfloors to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compounds.
- C. Do not allow resilient flooring work to proceed until subfloor surfaces are satisfactory.

3.2 PREPARATION

- A. Prepare subfloor surfaces as follows:
 - 1. Use leveling and patching compounds as recommended by resilient flooring manufacturer for filling small cracks, holes and depressions in subfloors.
 - 2. Remove coatings from subfloor surfaces that would prevent adhesive bond, including curing compounds incompatible with resilient flooring adhesives, paint, oils, waxes and sealers.
- B. Broom clean or vacuum surfaces to be covered, and inspect subfloor.
- C. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

3.3 INSTALLATION, GENERAL

- A. Where movable partitions are shown, install resilient flooring before partitions are erected.
- B. Install resilient flooring using method indicated in strict compliance with manufacturer's printed instructions. Extend resilient flooring into toe spaces, door reveals, and into closets and similar openings.
- C. Scribe, cut, and fit resilient flooring to permanent fixtures, built-in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.
- D. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.
- E. Install resilient flooring on covers for telephone and electrical ducts, and other such items occurring within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed in these covers. Tightly cement edges to perimeter of floor around covers and to covers.
- F. Tightly cement resilient flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll resilient flooring at perimeter of each covered area to assure adhesion.

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3.4 INSTALLATION OF TILE FLOORS

- A. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.
- B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped or deformed tile are not acceptable.
 - 1. Lay tile with grain running in alternating directions.
- C. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

3.5 INSTALLATION OF SHEET FLOORING

- A. Lay sheet flooring to provide as few seams as possible with economical use of materials. Match edges for color shading and pattern at seams in compliance with manufacturer's recommendations.
- B. Adhere sheet flooring to substrates using method approved by flooring manufacturer for type of sheet flooring and substrates condition indicated:
 - 1. Use conventional full spread adhesive method for filled vinyl without backing.
- C. Prepare seams in vinyl sheet flooring with manufacturer's special routing tool and heat weld with vinyl thread in accordance with manufacturer's instructions.
- D. Provide integral flash cove base where shown on drawings, including cove support strip and metal top edge strip. Construct coved base in accordance with manufacturer's instructions.

3.6 INSTALLATION OF ACCESSORIES

- A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with preformed corner units, or fabricated from base materials with mitered or coped inside corners. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.
- B. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.
- C. Apply resilient accessories at stair as indicated and in strict accordance with manufacturer's installation instructions.

3.7 CLEANING AND PROTECTION

- A. Perform following operations immediately upon completion of resilient flooring:
 - 1. Sweep or vacuum floor thoroughly
 - 2. Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive
 - 3. Damp-mop floor being careful to remove black marks and excessive soil
 - 4. Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturer.
- B. Protect flooring against damage during construction period to comply with resilient flooring manufacturer's directions.
 - 1. Protect resilient flooring against damage from rolling loads for initial period following installation by covering with plywood or hardboard. Use dollies to move stationary equipment or furnishings across floors.
 - 2. Cover resilient flooring with undyed, untreated building paper until inspection for substantial

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- completion.
- C. Clean resilient flooring not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Clean resilient flooring by method recommended by resilient flooring manufacturer.
- 3.8 **EXTRA STOCK**
- A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.
1. Tile Flooring: Furnish not less than one box for each 50 boxes or fraction thereof, for each type, color, pattern, and size installed.
 2. Sheet Flooring: Furnish not less than 5 linear yards for each type, color and pattern installed.

END OF SECTION

SECTION 09 68 16

CARPET

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes carpet, installation, accessories, and cushion.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of carpet material and installation accessory required. Submit written data on physical characteristics, durability, resistance to fading, and flame resistance characteristics.
- C. Shop drawings showing layout and seaming diagrams. Indicate pile or pattern direction and locations and types of edge strips. Indicate columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet. Show installation details at special conditions.
- D. Samples for verification purposes in manufacturer's standard size, showing full range of color, texture, and pattern variations expected. Prepare samples from same material to be used for the Work. Submit the following:
 - 1. 12-inch-square samples of each type of carpet material required.

1.4 QUALITY ASSURANCE

- A. Carpet Surface Burning Characteristics: Provide carpet identical to that tested for the following fire performance characteristics, per test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify carpet with appropriate markings of applicable testing and inspecting organization.
 - 1. Test Method: DOC FF 1-70
 - 2. Rating: Pass

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original factory wrappings and containers, labeled with identification of manufacturer, brand name, and lot number.

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CARPET

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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- B. Store materials in original undamaged packages and containers, inside well-ventilated area protected from weather, moisture, soilage, extreme temperatures, and humidity. Lay flat, blocked off ground. Maintain minimum temperature of 68 deg F (20 deg C) at least three days prior to and during installation in area where materials are stored.

1.6 PROJECT CONDITIONS

- A. Substrate Conditions: No condensation within 48 hours on underside of 4-foot by 4-foot polyethylene sheet, fully taped at perimeter to substrate.
- B. Substrate Conditions: pH of 9 or less when substrate wetted with portable water and pHDrion paper applied.

1.7 EXTRA MATERIALS

- A. Deliver extra materials to Owner. Furnish extra materials matching products installed as described below, packaged with protective covering for storage and identified with labels describing contents.
 - 1. Carpet: Before installation begins, furnish quantity of full width for each type of material equal to 5 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Provide carpets as follows:
 - 1. Carpet designated to be Dalton Hospitality Carpet "Essence I" or equal.— Color to be selected from full range of manufacturer's colors.

Style Name Essence I

Construction Intrepid – Multi-Color Servo Loop Tip Shear

Fiber Content 100% C.F. Lextron Enviro-Green Solution Dyed Nylon

Machine Gauge 1/10

Tufted Pile Weight Standard 42 oz. per sq. yd.

Pattern Repeat 90"x200" for this hotel and motel carpeting

Finished Pile Height Approximately .250 High/.187 Med./.062 Low

Primary Backing Woven Polypropylene (specialty backings available)

Secondary Backing Unitary w/Actionbac®

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CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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Dye Solution Dyed

Total Weight Approximately 78 oz. per sq. yd.

Production Width 15 ft.

Yarn Size 1360/2 ply

Radiant Panel Class 1

Smoke Density Less than 450

Warranty 10 Year Wear Guarantee

Traffic Class Recommended for moderate (room) carpet traffic levels.

Recycled Content Lextron Enviro-Green Solution Dyed Nylon contains 10% pre-consumer recycled content.

Environmental Information • CRI Green Label Plus™ Certified.

- Product qualifies for 1 LEED Point.
- Enviro-Green yarn has 10% pre-consumer recycled content.

2.2 ACCESSORIES

- A. Seaming Cement: Hot-melt adhesive tape or similar product recommended by carpet manufacturer for taping seams and butting cut edges at backing to form secure seams and to prevent pile loss at seams.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clear away debris and scrape up cementitious deposits from concrete surfaces to receive carpet; apply sealer to prevent dusting.
- B. Patch holes and level to a smooth surface. If previous finish chemically stripped, reseal concrete. Seal powdery or porous surfaces with sealer recommended by carpet manufacturer.
- C. Patch holes and cracks. Sand to level. Remove wax. Seal surface with sealer recommended by carpet manufacturer.

3.2 INSTALLATION

- A. Comply with manufacturer's recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under door in closed position; do not place seams perpendicular to door frame, in direction of traffic through doorway. Do not bridge building expansion joints with continuous carpet.

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CARPET

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- B. Extend carpet under removable flanges and furnishing and into alcoves and closets of each space.
- C. Provide cutouts where required, and bind cut edges where not concealed by protective edge guards or overlapping flanges.
- D. Fit sections of carpet prior to application of adhesive. Trim edges and butt cuts with seaming cement.
- E. Apply adhesive uniformly to substrate in accordance with manufacturer's instructions. Butt edges tight to form seams without gaps. Roll entire area lightly to eliminate air pockets and ensure uniform bond.

3.3 CLEANING

- A. Remove adhesive from carpet surface with manufacturer's recommended cleaning agent.
- B. Remove and dispose of debris and unusual scraps. Vacuum with commercial machine with face-beater element. Remove soil. Replace carpet where soil cannot be removed. Remove protruding face yarn.

3.4 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, to ensure carpet is not damaged or deteriorated at time of Substantial Completion.

END OF SECTION

SECTION 09 91 00

PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this section.

1.2 SUMMARY

- A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.
 - 1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.
- B. Paint exposed surfaces whether or not colors are designated in "schedules," except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color of finish is not designated, the Architect will select from standard colors or finishes available.
- C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 - 1. Labels: Do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.3 DEFINITIONS

- A. "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical information, label analysis, and application instructions for each material proposed for use.
 - 1. List each material and cross-reference the specific coating and finish system and application. Identify each material by the manufacturer's catalog number and general classification.
- B. Samples for verification purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate. Define each separate coat, including block fillers and primers. Use representative colors when preparing samples for

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PAINTING

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review. Resubmit until required sheen, color, and texture are achieved.

1. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.
2. Submit samples on the following substrates for the Architect's review of color and texture only:
 - a. Interior Walls
 - b. Interior Ceilings.

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.
- B. Coordination of Work: Review other sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify the Architect of problems anticipated using the materials specified.
- C. Material Quality: Provide the manufacturer's best quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 1. Product name or title of material
 2. Product description (generic classification or binder type)
 3. Federal Specification number, if applicable
 4. Manufacturer's stock number and date of manufacture
 5. Contents by volume, for pigment and vehicle constituents
 6. Thinning instructions
 7. Application instructions
 8. Color name and number
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

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1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 JOB CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).
- C. Do not apply paint in snow, rain, fog, or mist, when the relative humidity exceeds 85 percent, at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.
 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide products of the following:
 1. Paints: MATCH COUNTY STANDARD COLORS – WALLS TO BE COUNTY STANDARD “URBAN PUTTY” Apply one coat primer and two coats finish to all wall surfaces.

Use top quality of one of the following:

 - a. Benjamin Moore Company used as basis of color
 - b. Sherwin Williams
 - c. Devoe

2.2 PRIMERS

- A. Ceilings and Walls to receive epoxy primer and two coats epoxy paint finish.
- B. Exterior materials to receive two coats of latex primer then two coats of latex paint.

2.3 INTERIOR FINISH PAINT MATERIAL

- A. Walls and ceilings to be latex-acrylic, semi-gloss finish.
- B. Doors and Trim to be latex-acrylic, gloss finish.
- C. Epoxy paint to be used in all Bathrooms.

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2.4 EXTERIOR FINISH PAINT MATERIAL

- A. 100 Acrylic Latex Semi-Gloss.
 - 1. Duron Ultra Deluxe Exterior.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.
 - 1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

3.2 PREPARATION

- A. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
 - 1. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing of problems anticipated with using the specified finish-coat material with substrates primed by others.
 - 2. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges,

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ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.

c. When transparent finish is required, backprime with spar varnish.

d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.

3. Ferrous Metals: Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.

a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.

C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.

1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3. Use only thinners approved by the paint manufacturer, and only within recommended limits.

3.3 APPLICATIONS

A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

1. Paint colors, surface treatments, and finishes are indicated in "schedules".

2. Provide finish coats that are compatible with primers used.

3. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.

4. Apply additional coats when undercoats, stains, or other conditions show through final coat

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of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

5. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
 6. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
 7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 8. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 9. Sand lightly between each succeeding enamel or varnish coat.
 10. Omit primer on metal surfaces that have been shop-primed and touch up painted.
- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- D. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.
- E. Prime Coats: Before application of finish coats, apply a prime coat of material as recommended by the manufacturer to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

3.4 CLEANING

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint

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materials from the site.

- B. Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.
 - 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

- 1. SCHEDULES – See the following scheduling. Provide elastomeric coating on all brick after it has been cleaned, repaired, and re-pointed.

A. GENERAL

- A. Provide paint finishes of even, uniform color, free from cloudy or mottled appearance. Properly correct non-complying work to satisfaction of Owner's representative and representative of Behr Paint Company.
- B. Some colors, especially accent colors, may require multiple finish coats for adequate coverage and opacity.
- C. The specified number of primer and finish coats is minimum acceptable. If full coverage and opacity is not obtained with specified number of coats, apply additional coats as necessary to produce required finish.

B. EXTERIOR PAINT SCHEDULE:

A. STUCCO and CEMENT PLASTER

- A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
- B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
- C. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
- D. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)

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- C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
- E. Semi-Gloss - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - C. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
- B. STUCCO and CEMENT PLASTER
 - A. Flat - Premium High Build Coating, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Exterior High Build Coating (4700)
 - C. Third Coat: BEHR PREMIUM Exterior High Build Coating (4700)
- C. STUCCO, CEMENT PLASTER, MASONRY & BRICK
 - A. Low Sheen - Premium Elastomeric, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Elastomeric Masonry, Stucco & Brick Paint (67/68)
 - C. Third Coat: BEHR PREMIUM Elastomeric Masonry, Stucco & Brick Paint (67/68).
- D. CONCRETE, CAST-IN PLACE / PRECAST / TILT-UP
 - A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Semi-Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - D. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - E. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - F. Semi-Gloss - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - C. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)

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E. CONCRETE, TILT-UP

- A. Flat - Premium High Build Coating, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Exterior High Build Coating (4700)
 - C. Third Coat: BEHR PREMIUM Exterior High Build Coating (4700)

F. CONCRETE MASONRY UNITS (CMU)

- A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
- B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
- C. Semi-Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
- D. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
- E. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
- F. Semi-Gloss - Professional, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - C. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)

G. CONCRETE MASONRY UNITS (CMU)

- A. Flat - Premium High Build Coating, 100% Acrylic
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM Exterior High Build Coating (4700)
 - C. Third Coat: BEHR PREMIUM Exterior High Build Coating (4700)

H. CEMENTITIOUS COMPOSITION BOARD - Fiber Cement Siding, Panel and Trim

- A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
- B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
- C. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)

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- C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
- D. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
- I. CONCRETE, Porches and Patios
 - A. Low-Lustre - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM Concrete & Masonry Bonding Primer (880)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - B. Eggshell (Satin) - Premium High-Performance Epoxy/Acrylic
 - A. Two Coats: BEHR PREMIUM 1-Part Epoxy Acrylic Concrete & Garage Floor Paint (900)
- J. CONCRETE, Horizontal Surfaces
 - A. Eggshell (Satin) - Premium High-Performance Epoxy/Acrylic
 - A. Two Coats: BEHR PREMIUM 1-Part Epoxy Acrylic Concrete & Garage Floor Paint (900)
- K. CONCRETE, Porches and Patios
 - A. Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM Concrete & Masonry Bonding Primer (880)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705, Gloss)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705, Gloss)
- L. CONCRETE, Solid Color Coating: Decks, Walkways, Pool Decks, Sidewalks
 - A. Flat - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM DECKOVER Solid Color Wood & Concrete Coating (5000)
 - B. Texture - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM DECKOVER Textured Wood & Concrete Coating (5005)
- M. CONCRETE, Solid Color Stain
 - A. Flat - Premium, Siliconized, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM Solid Color Concrete Stain (800/830)
- N. CONCRETE, Semi-Transparent Stain
 - A. Flat - Premium, Siliconized, 100% Styrene Acrylic
 - A. Two Coats: BEHR PREMIUM Semi-Transparent Concrete Stain (850)
- O. CONCRETE, SEALER: Wet Look (Vertical or Horizontal Substrates)
 - A. High-Gloss - Premium, Acrylic
 - A. Two Coats: BEHR PREMIUM Wet-Look Sealer (985)
- P. CONCRETE, SEALER: Wet Look (Vertical or Horizontal Substrates)
 - A. Low Lustre - Premium, Acrylic
 - A. Two Coats: BEHR PREMIUM Low-Lustre Sealer (986)
- Q. WOOD - Paint Finish
 - A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)

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- C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
- C. Semi-Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
- D. High Gloss - Premium, 100% Acrylic.
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
- E. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
- F. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
- G. Semi-Gloss - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - C. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
- R. WOOD - Paint Finish, Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- S. WOOD - Stain Finish - Water-Based Semi-Transparent
 - A. Flat - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM Semi-Transparent Waterproofing Stain & Sealer (5077 Tint Base; 5333 Redwood; 5533 Cedar Naturaltone)
- T. WOOD - Stain Finish - Solid Color
 - A. Flat - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM Solid Color Waterproofing Stain & Sealer (5011 White; 5013 Deep Base; 5533 Cedar Naturaltone)
- U. WOOD - Decks, Patios, Railings, Boat Docks and Composite Decks
 - A. Flat - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM DECKOVER Solid Color Wood & Concrete Coating (5000)

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- B. Texture - Premium, 100% Acrylic
 - A. Two Coats: BEHR PREMIUM DECKOVER Textured Wood & Concrete Coating (5005)
- V. WOOD, Porches and Patios
 - A. Low-Lustre - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - B. Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705)
- W. FERROUS METAL
 - A. Flat - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM Exterior Flat Paint (4050)
 - C. Third Coat: BEHR PREMIUM Exterior Flat Paint (4050)
 - B. Satin - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Semi-Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - D. High Gloss - Premium, 100% Acrylic.
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Exterior Hi-Gloss Enamel (2-8050)
 - E. Flat - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - C. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - F. Satin - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - C. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - G. Semi-Gloss - Professional, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - C. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)

SECTION 09 91 00

PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

JUNE 03, 2019

- X. FERROUS METAL - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- Y. FERROUS METAL - High Performance Direct-To-Metal Coating, Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - C. Third Coat: BEHR Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - C. Third Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- Z. GALVANIZED METAL
 - A. Flat - Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - D. Third Coat: BEHR PREMIUM PLUS Exterior Flat Paint (4050)
 - B. Satin - Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - D. Third Coat: BEHR PREMIUM PLUS Exterior Satin Enamel (9050)
 - C. Semi-Gloss - Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - D. Third Coat: BEHR PREMIUM PLUS Exterior Semi-Gloss Enamel (5050)
 - D. High Gloss - Premium, 100% Acrylic.
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Exterior Hi-Gloss Enamel (2-8050)
 - D. Third Coat: BEHR PREMIUM PLUS Exterior Hi-Gloss Enamel (2-8050)
 - E. Flat - Professional, 100% Acrylic

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

JUNE 03, 2019

- A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
 - D. Third Coat: BEHR Pro e600 Exterior Flat Paint (PR610)
- F. Satin - Professional, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
 - D. Third Coat: BEHR Pro e600 Exterior Satin Paint (PR640)
- G. Semi-Gloss - Professional, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
 - D. Third Coat: BEHR Pro e600 Exterior Semi-Gloss Paint (PR670)
- AA. GALVANIZED METAL - Alkyd, Low VOC Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- BB. GALVANIZED METAL - High Performance, Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - D. Third Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - D. Third Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- CC. ALUMINUM - High Performance Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: KILZ ADHESION Interior/Exterior Water-Base Bonding Primer (2111)
 - C. Second Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - D. Third Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

JUNE 03, 2019

- B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: KILZ ADHESION Interior/Exterior Water-Base Bonding Primer (2111)
 - C. Second Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - D. Third Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- C. INTERIOR PAINT SCHEDULE:
 - A. GYPSUM BOARD
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - B. Eggshell - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - E. High-Gloss - Premium, 100% Acrylic - Low Odor/VOC.
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - F. Flat - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - C. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - G. Eggshell - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - C. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - H. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - C. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - B. GYPSUM BOARD - LIGHT INDUSTRIAL COATING
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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- C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- C. GYPSUM BOARD - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd, Low VOC, Water-Reducible Enamel
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- D. GYPSUM BOARD - CEILINGS
 - A. Flat - Premium, 100% Acrylic - Low VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR PREMIUM PLUS ULTRA Stain-Blocking Ceiling Paint (5558)
 - C. Third Coat: BEHR PREMIUM PLUS ULTRA Stain-Blocking Ceiling Paint (5558)
- E. GYPSUM BOARD - DRY FALL COATING (Spray Applied)
 - A. Flat - Professional, 100% Acrylic - Low VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior Drywall Primer & Sealer (73)
 - B. Second Coat: BEHR Pro Dryfall Paint White (890) Black (891)
 - C. Third Coat: BEHR Pro Dryfall Paint White (890) Black (891)
- F. CONCRETE, PLASTER and MASONRY
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - B. Eggshell - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - E. High-Gloss - Premium, 100% Acrylic - Low Odor/VOC.
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - F. Flat - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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- (75)
 - B. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - C. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
- G. Eggshell - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - C. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
- H. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - C. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
- G. CONCRETE, PLASTER And MASONRY - Light Industrial Coating
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. Third Coat: BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
 - C. Third Coat: BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- H. CONCRETE, PLASTER and MASONRY - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd,
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd, Low VOC, Water-Reducible Enamel
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- I. CONCRETE, Porches and Patios
 - A. Low-Lustre - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM Concrete & Masonry Bonding Primer (880)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6050)
 - B. Gloss - Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM Concrete & Masonry Bonding Primer (880)
 - B. Second Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705)
 - C. Third Coat: BEHR PREMIUM Porch & Patio Floor Paint (6705)
- J. CONCRETE MASONRY UNITS (CMU)
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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- C. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
- B. Eggshell - Premium, 100% Acrylic - Low odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
- C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
- D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
- E. Flat - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - C. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
- F. Eggshell - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - C. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
- G. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR Pro Block Filler Primer (PR50)
 - B. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - C. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
- K. CONCRETE MASONRY UNITS (CMU) - Light Industrial Coating
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR Pro Block Filler Primer (PR50)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR Pro Block Filler Primer (PR50)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- L. CONCRETE MASONRY UNITS (CMU) - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd,
 - A. First Coat: BEHR PRO Block Filler Primer (PR50)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd, Low VOC, Water-Reducible Enamel
 - A. First Coat: BEHR PRO Block Filler Primer (PR50)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- M. FERROUS METAL
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - B. Eggshell - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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- & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
- C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
- D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
- E. High Gloss - Premium, 100% Acrylic - Low Odor/ VOC.
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
- F. Flat - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - C. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
- G. Eggshell - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - C. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
- H. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - C. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
- N. FERROUS METAL - Light Industrial Coating
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR PREMIUM PLUS interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. BEHR PREMIUM PLUS interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- O. FERROUS METAL - Alkyd, Low VOC, Water-Reducible
 - A. Semi-Gloss - Alkyd,
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)

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PAINTING

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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- C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
- B. Satin - Alkyd
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- P. FERROUS METAL - High Performance Direct-To-Metal Coating, Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - C. Third Coat: BEHR Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - C. Third Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- Q. GALVANIZED METAL
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - D. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - B. Eggshell - Premium, 100% Acrylic - Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - D. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - D. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - D. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
 - E. High Gloss - Premium, 100% Acrylic - Low VOC. Premium Plus 2-8050 Enamel complies with VOC content limits of South Coast AQMD Rule 1113.
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)

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- D. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
- F. Flat - Professional, Latex, Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - D. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
- G. Eggshell - Professional, Latex, Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - D. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
- H. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - D. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
- R. GALVANIZED METAL - Light Industrial Coating
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
 - D. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- S. GALVANIZED METAL - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - D. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd, Low VOC, Water-Reducible Enamel
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - D. Third Coat: BEHR Alkyd Satin Enamel (7900)
- T. GALVANIZED METAL - High Performance Direct-To-Metal Coating, Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

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- D. Third Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
- B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - C. Second Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - D. Third Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- U. FERROUS and NON-FERROUS METALS - Dry Fall Coating (Spray applied) Flat - Professional, Acrylic
 - A. Flat - 100% Acrylic
 - A. First Coat: BEHR PREMIUM PLUS Interior/Exterior Multi-Surface Primer & Sealer (436)
 - B. Second Coat: BEHR Pro Dryfall Paint White (890) Black (891)
 - C. Third Coat: BEHR Pro Dryfall Paint White (890) Black (891)
- V. ALUMINUM - High Performance Industrial Maintenance
 - A. Semi-Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: KILZ ADHESION Interior/Exterior Water-Base Bonding Primer (2111)
 - C. Second Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - D. Third Coat: BEHR PREMIUM Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)
 - B. Gloss - Light Industrial, Premium, 100% Acrylic
 - A. Pretreatment: Kleen Strip Phosphoric Prep & Etch
 - B. First Coat: KILZ ADHESION Interior/Exterior Water-Base Bonding Primer (2111)
 - C. Second Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
 - D. Third Coat: BEHR Interior/Exterior Direct-To-Metal Gloss Paint (8200)
- W. WOOD - Paint Finish
 - A. Flat - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Flat Paint (1050)
 - B. Eggshell - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Eggshell Enamel (2050)
 - C. Satin - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior Satin Enamel (7050)
 - D. Semi-Gloss - Premium, 100% Acrylic - Low Odor/VOC
 - A. First Coat: PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)

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- C. Third Coat: BEHR PREMIUM PLUS Interior Semi-Gloss Enamel (3050)
- E. High Gloss - Premium, 100% Acrylic - Low VOC.
 - A. First Coat: PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
 - C. Third Coat: BEHR PREMIUM PLUS Interior/Exterior Hi-Gloss Enamel (2-8050)
- F. Flat - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
 - C. Third Coat: BEHR Pro i300 Interior Dead Flat Paint (PR310)
- G. Eggshell - Professional, Latex, Low Odor/VOC
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
 - C. Third Coat: BEHR Pro i300 Interior Eggshell Paint (PR330)
- H. Semi-Gloss - Professional, Latex, Low Odor/VOC
 - A. First Coat: PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
 - C. Third Coat: BEHR Pro i300 Interior Semi-Gloss Paint (PR370)
- X. WOOD - Light Industrial Coating
 - A. Eggshell - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer (75)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)
 - B. Semi-Gloss - High Performance, Water-Based Epoxy, Low VOC Coating
 - A. First Coat: BEHR PREMIUM PLUS Interior All-In-One Primer (75)
 - B. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
 - C. BEHR PRO Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
- Y. WOOD - Paint Finish, Alkyd, Low VOC, Water-Reducible Enamel
 - A. Semi-Gloss - Alkyd
 - A. First Coat: PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - C. Third Coat: BEHR Alkyd Semi-Gloss Enamel (3900)
 - B. Satin - Alkyd
 - A. First Coat: PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. Second Coat: BEHR Alkyd Satin Enamel (7900)
 - C. Third Coat: BEHR Alkyd Satin Enamel (7900)
- Z. WOOD - Dry Fall Coating (Spray applied) Flat - Professional, Acrylic
 - A. Flat - Acrylic Latex
 - A. BEHR PREMIUM PLUS Interior All-In-One Primer & Sealer (75)
 - B. BEHR Pro Dryfall Paint White (890) Black (891)
 - C. BEHR Pro Dryfall Paint White (890) Black (891)

END OF SECTION

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Interior integrated modular signage system for directional, control, and informational signage. Provide signage at each and at all rooms.
- B. Cast bronze Dedication Plaque.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete.
- B. Section 04220 - Concrete Unit Masonry.
- C. Section 08110 - Steel Doors and Frames.
- D. Section 08210 - Wood Doors.
- E. Section 09260 - Gypsum Board Systems.
- F. Section 09510 - Acoustical Ceilings.
- G. Section 09900 - Painting.
- H. Section 09960 - Vinyl Wall Covering.

1.3 REFERENCES

- A. ANSI A117.1: Providing Accessibility and Usability for Physically Handicap People, 1986 edition.
- B. Department of Justice, Office of the Attorney General, "Americans with Disabilities Act", Public Law 101-336, (ADA).
- C. 2010 Standards for Accessible Design (SAD): The updated ADAAG (ADA Accessibility Guidelines), effective on March 15, 2011 and made mandatory on March 16, 2012.

1.4 SYSTEM DESCRIPTION

- A. Signage under this section is intended to include items for identification, direction, control, and information of building where installed as complete integrated system from a single manufacturer.

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- B. ADA design requirements:
 - 1. Provide signage that conforms to the requirements of all regulatory agencies holding jurisdiction.
 - 2. Comply with all applicable provisions of the 2010 Standards for Accessible Design (the updated ADA Accessibility Guidelines, ADAAG), effective in March 2011. Requirements include, but are not limited to the following:
 - a. Tactile copy must be all upper case and raised at least 1/32". Tactile characters must be sans serif, not italic, not oblique, script or highly decorative.
 - b. The stroke width of the upper case "I" has to be 15% of the letter height or less. The character width of the uppercase "O" must be between 55% and 100% of the height of the corresponding uppercase "I".
 - c. The copy height for tactile information must be between 5/8" and 2". If separate visual characters are provided, raised characters can be 1/2" and need not contrast with the background.
 - d. The distance between characters on tactile copy must be a minimum of 1/8" and a maximum of 4 times the character stroke width. These distances are measured between the closest points of adjacent characters.
 - e. Spacing between lines of tactile copy needs to be a minimum of 135% and a maximum of 170% of the corresponding upper case "I" height (measured from baseline to baseline).
 - f. Braille must be Grade II and positioned directly below the corresponding raised characters. If text is multi-lined, Braille is placed below the entire body of text and separated 3/8" from any other tactile characters and 3/8" minimum from raised borders and decorative elements.
 - g. Visual characters and symbols, and their background, are to have a non-glare finish. The color of raised characters must contrast as much as possible with their background to make sure signs are more legible for persons with low vision.
 - h. Pictograms, selected from International Standards, are to be located within a 6" vertical void and accompanying text descriptions are to be located directly below the pictogram.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's product literature indicating units and designs selected.
 - 2. Evidence of manufacturer's computerized data retrieval program for tracking of project for sign typography, message strip requirements and other pertinent data from schedule input to final computerized typography on finished product.
 - 3. Preparation instructions and recommendations.

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4. Storage and handling requirements and recommendations.
 5. Installation methods.
- B. Samples: One full size sign sample illustrating the design, construction, colors, typestyles, mounting method and other details as specified. Provide sample in small size sign.
 1. Samples will be returned for use in Project.
 2. Samples will not be returned for use in Project.
- C. Shop Drawings:
 1. Indicate materials, sizes, configurations, and applicable substrate mountings.
 2. Typography sample for message strips and headers copy.
 3. Artwork for special graphics.
 4. Artwork for special headers.
- D. Signage Schedule: Complete with location of each sign and the required copy/text.
- E. Sign Program Maintenance Plan:
 1. Manufacturer shall provide details of software and system of color coated, pre-perforated paper sign inserts allowing client to update and maintain signage graphics in-house.
 2. Manufacturer shall provide details of an Online Reordering & Maintenance Application whereby the client can submit sign reorders online and store relevant project information such as sign type drawings, message schedules and product instructions.
- F. Contract close out:
 1. Furnish appropriate checklist for aiding in reordering after Date of Substantial Completion. Maintain computer schedule program for five years for ordering new signage required by Owner.
 2. Maintenance data and cleaning requirements for exterior surfaces.
 3. Furnish one complete SignWord Pro software package Windows 3.0 or Windows 95 or later, Windows NT 4.0 or later in Owner selected format for PC type computer.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 1. Work required under this section from manufacturer regularly engaged in work of this type and scope for a minimum of 5 years.
 2. Maintain computer link between schedule input and computerized typography production.
- B. Installer Qualifications: Trained and authorized by manufacturer for installations of required scope and product.

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- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, graphics, and installation are approved by Architect.
 - 3. Refinish mock-up as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Package signs to prevent damage during shipment, handling, storage and installation. Products are to remain in their original packaging (unless otherwise specified) until removal is necessary for installation.
- B. If installation site is not ready for signage upon delivery, store signs in a dry, air-conditioned environment.
- C. Handle signage in accordance with manufacturer's instructions.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 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.

1.9 SEQUENCING AND SCHEDULING

- A. Schedule system installation after room finishes and fixtures have been completed.

1.10 WARRANTY

- A. Product Warranty: Provide manufacturer's warranty against defects in materials and workmanship for a period of one year.

PART 2 PRODUCTS

2.1 MODULAR ROOM SIGNAGE

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- A. Accord15 Modular Sign System as manufactured by APCO Signs. End Clip System Identification/Room signs with numbers ON ALL DOORS. Provide TWO (2) Side Track Emergency Plan signs – . Provide Side-track system Directory in First and Second Floor Lobbies.
- B. Substitutions: EQUALS.

2.2 SYSTEM REQUIREMENTS

- A. General:
 - 1. Sign system shall feature solutions for all required sign types, including but not limited to wall mounted personnel signs, work station personnel signs, primary room identification, overhead signs, projection wall signs, free standing signs, restroom signs, regulatory and information signs, stair signs and changeable slide conference room signs. All signs within the system must feature the same family of components and convey a uniform look throughout.
- B. Features:
 - 1. Updatibility: Signs shall allow for updating of message inserts without the need to replace the entire sign assembly. System shall offer a solution for in-house updating of laser printed sign inserts for all sign types, including personnel signs, directories and directional signs.
 - 2. Mounting: Signs shall accommodate installation via fully concealed mechanical fasteners.
 - 3. Front-Loading: System inserts must be front-loading to avoid any problems with installation locations where space does not permit inserts to be removed from the side(s) of the sign.
- C. Graphics and Typography: As selected from manufacturer's standards. Reference sign drawings.
- D. Colors and Finishes: As selected from manufacturer's standards. Reference sign drawings.
- E. ADA Compliance: Sign system shall comply with all applicable provisions of the 2010 Standards for Accessible Design (the updated ADA Accessibility Guidelines, ADAAG), effective in March 2011. This includes requirements regarding which sign types require Braille/tactile features, character heights, raised character spacing, raised character stroke width, color contrast and installation locations and mounting heights within the facility.
- F. Materials and Construction:
 - 1. Frames/Holders: Sign frame/holder assemblies shall feature extruded aluminum edge profiles with an option of low-profile injection molded plastic edge profiles for

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small signs. Aluminum extrusions shall be alloy 6063-T6. Optional plastic edge profiles shall be integrally colored injection molded UV and impact resistant ASA (Acrylonitrile Styrene Acrylate) for durability and product longevity. Sign frames shall feature an overall depth of 5/8" or less and must accommodate front-loading, updatable message panels and inserts.

2. Braille / Tactile Components: PETG-backed photopolymer with raised characters and Braille of minimum 1/32 inch (0.8 mm) depth/thickness. Braille/tactile plaques shall contain a minimum of 40% recycled content. Adhesive applied tactile characters and applied Braille dots will not be acceptable.
3. Substrate for Optional Decorative Laminate Backers: Any decorative laminate backers such as Formica or Wilsonart shall be pressure adhered to SiennaCORE, a natural fiber thermoset composite backer with a minimum 50% recycled content and comprised of materials from FSC certified sources. Non-thermoset composite substrates such as PVC or acrylic will not be accepted.
4. Fasteners: Signs shall be able to accommodate fully concealed mechanical fasteners.

2.3 SIGN SYSTEM COMPONENTS

- A. Product: Accord15 Signs with Elements2 decorative shapes as Designed Using APCO Online Design Studio: Reference drawings for location of colors, finishes, sizes and details.
 1. Comprehensive range of modular sign holders with a wide selection of edge profiles, graphics inserts and displays. Reference drawings for colors, finishes, typestyles and other details. Reference sign schedule for exact messages.
 2. Aluminum Frame Edge Profile Shape
 - a. Square (SBST-S)
 3. Aluminum Frame Finish:
 - b. Painted Finish: Manufacturer's Standard.
 4. Injection Molded Edge Profile Shape for Small Signs
 - a. Square (SBEC-S)
 5. Injection Molded Frame Finish.
 - a. Painted Finish: Manufacturer's standard.
 6. Provide Optional 15mm h (9/16 inch) Decorative Divider Bar
 - a. Decorative wood laminate.
 7. Core Sign Types: Other sign types, including ceiling and freestanding signs may be included within the Project. See Signage Schedule and/or drawings for details.
 - a. Sign Type - eAC-A, ID – 60mm h by 210mm w (2-3/8 inches by 8-1/4 inches), Description - Personnel Sign-SM.
 - b. Sign Type - eAC-A2, ID – 120mm h by 210mm w (4-3/4 inches by 8-1/4 inches), Description - Personnel Sign/ADA-LG.
 - c. Sign Type – eAC-A3, ID – 120mm h by 210mm w (4-3/4 inches by 8- 1/4 inches), Description – 2-Slot Personnel Sign.

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- d. Sign Type – eAC-B, ID – 150mm h by 210mm w (5-7/8 inches by 8-1/4 inches), Description – Room/Dept ID.
- e. Sign Type – eAC-C, ID – 90mm h by 210mm w (3-1/2 inches by 8-1/4 inches), Description – Mech/Elec/Etc ID.
- f. Sign Type – eAC-D, ID – 210mm h by 210mm w (8-1/4 inches by 8-1/4 inches), Description – Conference/Meeting Room.
- g. Sign Type – eAC-E, ID – 210mm h by 210mm w (8-1/4 inches by 8-1/4 inches), Description - Restroom.
- h. Sign Type – eAC-F, ID – 150mm h by 150mm w (5-7/8 inches by 5-7/8 inches), Description – Room Number/ADA-SM..
- i. Sign Type – eAC-G, ID – 120mm h by 210mm w (4-3/4 inches by 8-1/4 inches), Description – In Case of Fire.
- j. Sign Type – eAC-H, ID – 210mm h by 210mm w (8-1/4 inches by 8-1/4 inches), Description - Stairs.
- k. Sign Type – eAC-J, ID – 210mm h by 210mm w (8-1/4 inches by 8-1/4 inches), Description – Regulatory Sign.
- l. Sign Type – eAC-K, ID – 315mm h by 11 inches w (12-1/2 inches by 280mm), Description – Emergency Plan.
- m. Sign Type - eAC-M, ID – 670mm h by 14 inches w (26-3/8 inches by 360mm), Description - Primary Directional.
- n. Sign Type - eAC-M2, ID – 570mm h by 11 inches w (22-1/2 inches by 280mm), Description - Secondary Directional.
- o. Sign Type - eAC-N, ID – 510mm h by 24-1/4 inches w (20 inches by 615mm), Description - Directory.
- 8. Elements2 Decorative Backer Shape/Style:
 - a. Shape/Style: Modular System Only with No Decorative Backer.
 - b. Shape/Style: Arc1
 - c. Shape/Style: Arc2
 - d. Shape/Style: Arc3
 - e. Shape/Style: Arc4
 - f. Shape/Style: Scroll1
 - g. Shape/Style: Scroll2
 - h. Shape/Style: Scroll3
 - i. Shape/Style: Scroll4
 - j. Shape/Style: Ortho1
 - k. Shape/Style: Ortho2
 - l. Shape/Style: Ortho3
 - m. Shape/Style: Ortho4
 - n. Shape/Style: Blade1
 - o. Shape/Style: Blade2
 - p. Shape/Style: Blade3
 - q. Shape/Style: Blade4
 - r. Shape/Style: Peak1

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- s. Shape/Style: Peak2
- t. Shape/Style: Curve1
- u. Shape/Style: Cloud1
- 9. Elements2 Decorative Backer Finishes/Patterns – Top Layer.
 - a. Modular System Only – No Backers.
 - b. Top Layer: L05 Zito.
 - c. Top Layer: L03 Ginkgo.
 - d. Top Layer: L04 Natural Leaves.
 - e. Top Layer: L02 Coastal Grass.
 - f. Top Layer: L01 Bamboo Rings.
 - g. Top Layer: ACF Cool Frost.
 - h. Top Layer: W01 Walnut.
 - i. Top Layer: F04 Victorian Mahogany.
 - j. Top Layer: F03 Cognac Maple.
 - k. Top Layer: F02 Cherry Birch.
 - l. Top Layer: W02 Monticello Maple.
 - m. Top Layer: F01 Amber Maple.
 - n. Top Layer: F17 Charcoal Bloomberg.
 - o. Top Layer: F16 Beluga Beige.
 - p. Top Layer: F20 Tangle Seaweed.
 - q. Top Layer: F21 Tangle Wheat.
 - r. Top Layer: F18 Tangle Smoke.
 - s. Top Layer: F09 Ubatuba Granite.
 - t. Top Layer: F08 Labrador Granite.
 - u. Top Layer: F07 Jamocha Granite.
 - v. Top Layer: W07 Mystique Night.
 - w. Top Layer: F06 Colorado Slate.
 - x. Top Layer: W06 Mystique Dusk.
 - y. Top Layer: W04 Antique Topaz.
 - z. Top Layer: W08 Sandy Topaz.
 - aa. Top Layer: W05 Greystone.
 - bb. Top Layer: W03 Amber Fusion.
 - cc. Top Layer: F05 Carrara Envision.
 - dd. Top Layer: W11 Saffron Tigris.
 - ee. Top Layer: W10 Natural Tigris.
 - ff. Top Layer: W09 Green Tigris.
 - gg. Top Layer: F14 Seagrass Strand.
 - hh. Top Layer: F15 Wheat Strand.
 - ii. Top Layer: F13 Fallen Leaves.
 - jj. Top Layer: F11 Burnished Glaze.
 - kk. Top Layer: Solid Color #1:
 - ll. Top Layer: Solid Color #2:
- 10. Elements2 Decorative Backer Finishes/Patterns – Bottom Layer.

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- mm. Bottom layer: L05 Zito.
- nn. Bottom layer: L03 Ginkgo.
- oo. Bottom layer: L04 Natural Leaves.
- pp. Bottom layer: L02 Coastal Grass.
- qq. Bottom layer: L01 Bamboo Rings.
- rr. Bottom layer: ACF Cool Frost.
- ss. Bottom layer: W01 Walnut.
- tt. Bottom layer: F04 Victorian Mahogany.
- uu. Bottom layer: F03 Cognac Maple.
- vv. Bottom layer: F02 Cherry Birch.
- ww. Bottom layer: W02 Monticello Maple.
- xx. Bottom layer: F01 Amber Maple.
- yy. Bottom layer: F17 Charcoal Bloomberg.
- zz. Bottom layer: F16 Beluga Beige.
- aaa. Bottom layer: F20 Tangle Seaweed.
- bbb. Bottom layer: F21 Tangle Wheat.
- ccc. Bottom layer: F18 Tangle Smoke.
- ddd. Bottom layer: F09 Ubatuba Granite.
- eee. Bottom layer: F08 Labrador Granite.
- fff. Bottom layer: F07 Jamocha Granite.
- ggg. Bottom layer: W07 Mystique Night.
- hhh. Bottom layer: F06 Colorado Slate.
- iii. Bottom layer: W06 Mystique Dusk.
- jjj. Bottom layer: W04 Antique Topaz.
- kkk. Bottom layer: W08 Sandy Topaz.
- lll. Bottom layer: W05 Greystone.
- mmm. Bottom layer: W03 Amber Fusion.
- nnn. Bottom layer: F05 Carrara Envision.
- ooo. Bottom layer: W11 Saffron Tigris.
- ppp. Bottom layer: W10 Natural Tigris.
- qqq. Bottom layer: W09 Green Tigris.
- rrr. Bottom layer: F14 Seagrass Strand.
- sss. Bottom layer: F15 Wheat Strand.
- ttt. Bottom layer: F13 Fallen Leaves.
- uuu. Bottom layer: F11 Burnished Glaze.
- vvv. Bottom layer: Solid Color #1:
- www. Bottom layer: Solid Color #2:

B. Graphics:

1. Type Sizes: Selected from manufacturer's standard sizes indicated in SCHEDULE for particular units; meet ADA requirements for letter proportions and sizes.
2. Typography: Reference signage schedule and drawings for details. Font(s) selected from manufacturer's standards unless otherwise specified. All text

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and graphics shall be a true representation of the typeface(s) and/or graphics specified. Letter spacing and interline spacing shall be set by the manufacturer.

- a. HelveticaNeue-Roman (HR)
 - b.
 3. Type Code(s): Uppercase.
 4. Type Code(s): Initial caps.
 5. Type Code(s): Combination.
 6. Type Code(s): Indicated in SCHEDULES Article.
 7. Imprint Colors: Selected by Architect from manufacturer's standard direct-print colors and indicated in SCHEDULE; color contrast background colors in accord with ADA requirements.
 8. Copy/Message List: Indicated in SCHEDULE.
 9. Reference drawings and Signage Schedule for details.
 10. All text and graphics shall be a true representation of typeface(s) and/or graphics specified.
- C. Accord15 Modular Signs as Custom Specified and Designed: Reference drawings for location of colors, finishes, sizes and details. Reference signage schedule for sign text.
1. Injection Molded EndClip Shape
 - a. Square (SBEC-S)
 2. Injection Molded EndClip Finish
 - a. Painted Finish: Selected from manufacturer's standards.
 3. Extruded Aluminum SideTrack Shape
 - a. Bevel (SBST-B)
 4. Extruded Aluminum SideTrack Finish
 - a. Painted Finish: Selected from manufacturer's standards.
 5. Frame Sizes Selected from Manufacturer's Standards.
 6. Insert/Display Components to include:
 - a. Aluminum SignBands with silkscreen printed graphics. (SB)
 - b. Aluminum SignBand InsertSlots (SBIS) with:
 - 1) SignWord Paper Insert with Protective Non-Glare Overlay (SWMS)
 - 2) 10mil Lexan Insert with Subsurface screen printed graphics (SB010)
 - 3) 20mil Polyester Insert with 1st Surface screen printed graphics (SB020)
 - 4) Photopolymer tactile/Braille ADA Band (SBADA)
 - c. PETG-Backed Photopolymer ADA Plaque (SB080-A)
 - d. Acrylic Plaque (SB241)
 - e. 30mm(1-1/8 in) h Changeable Slide Band (SBSL)
 - f. Perforated Metal Plaque (SBPF)
 - g. Decorative Wood Vinyl Band (SBDW)
 - 1) Mahogany (DWM5)
 - h. Emergency Plan Window Pocket (STEP8511)
 - i. Aluminum DecoBar (SBDB)

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- 1) Bevel (SBDB-B)
 - 3)
 - j. Accord Notifier Message Strip (SB30N)
- 7. Mounting/installation Types to Include:
 - a. Surface Wall Mount
 - 1) Mechanical Fasteners (MF)
 - b. Concealed Pin Mount to Fabric Surface (PIN)
- D. Graphics:
 - 1. Type sizes: Selected from manufacturer's standard sizes indicated in SCHEDULE for particular units; meet ADA requirements for letter proportions, sizes, spacing, etc.
 - 2. Typography: Reference signage schedule and drawings for details. Font(s) selected from manufacturer's standards unless otherwise specified. All text and graphics shall be a true representation of the typeface(s) and/or graphics specified. Letter spacing and interline spacing shall be set by the manufacturer.
 - a. HelveticaNeue-Roman (HR)
 - b. Futura Book (FUB)
 - c. Arial (AR)
 - d. Frutiger-Normal (F55)
 - e. Myriad Pro (MP)
 - f. Typeface(s) as indicated in SCHEDULES Article and Drawings.
 - 3. Type Code(s): Uppercase.
 - 4. Type Code(s): Initial caps.
 - 5. Type Code(s): Combination.
 - 6. Type Code(s): Indicated in SCHEDULES Article.
 - 7. Imprint Colors: Selected by Architect from manufacturer's standard colors and indicated in SCHEDULE; color contrast background colors in accord with ADA requirements.
 - 8. Copy/Message List: Indicated in SCHEDULE.
 - 9. Reference drawings and Signage Schedule for details.
 - 10. All text and graphics shall be a true representation of typeface(s) and/or graphics specified.

2.4 FABRICATION

- A. Shop assembly:
 - 1. Fabricate units to configurations indicated on reviewed shop drawings.
 - 2. Provide copy on inserts, and covers required on reviewed shop drawings and in accord with ADA requirements.
 - 3. Provide additional blank paper as specified.
 - 4. Include instruction sheets for removal and replacement inserts and installation.

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PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install products in accordance with manufacturer's instructions, in locations and with mounting methods as specified in sign and location drawings.
- B. Square, plumb and level all installed products.
- C. Install all signage in accordance with the 2010 Standard for Accessible Design (SAD) effective in March 2011, and any applicable local regulations and/or codes.
- D. Upon completion of the work, sign installer shall remove any unused products, materials, packaging and debris from the installation site.

3.4 CLEANING

- A. Clean all exposed surface not more than 48 hours prior to Date of Substantial Completion in accordance with manufacturer's written cleaning instructions.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 SIGN SCHEDULES

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- A. Refer to Signage Schedule and Drawings for sizes, locations, sign types, layouts, typography specifications, sign text/copy and sign graphics.

END OF SECTION

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SECTION 116143 - STAGE CURTAINS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes stage curtains, draw-curtain tracks, and rigging accessories.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design rigging using performance requirements and design criteria indicated.
- B. Structural Performance: Rigging shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Design Loads: Weight of curtains and 200 POUNDS PER LINEAR FOOT.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. **For draw-curtain machines, include rated capacities, operating characteristics, and electrical characteristics.**
- B. Shop Drawings: Show fabrication and installation details for stage curtains. Include plans, elevations, sections, details, attachments to other work, and the following:
 - 1. Operating clearances.
 - 2. Requirements for supporting curtains, track, and equipment. Verify capacity of each track and rigging component to support loads.
 - 3. Locations of equipment components, switches, and controls. Differentiate between manufacturer-installed and field-installed wiring.

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4. Wiring Diagrams: For power, signal, and control wiring.

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- C. Samples for Initial Selection: For each type of stage curtain indicated. Include color charts showing the full range of colors, textures, and patterns available, together with a 12 square-inch Sample (any color) of each type of fabric.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified **Installer**.
- B. Product Certificates: For the following, from manufacturer:
 - 1. Fabric: Provide name of flame-retardant chemical used, identification of applicator, treatment method, application date, allowable life span for treatment, and details of any restrictions and limitations.
 - 2. Rigging: Compliance of suspended **battens and** tracks with requirements.
- C. Warranty: Minimum of 2 year warranty against manufacturing defects.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For stage curtains and rigging to include in operation and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of stage curtains.
- B. Fire-Test-Response Characteristics: Provide stage curtains with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Flame-Resistance Ratings: Passes NFPA 701.
 - a. Permanently attach label to each fabric of curtain assembly in a location accessible from the floor, indicating whether fabric is inherently and permanently flame resistant or treated with flame-retardant chemicals, and whether it requires retreatment after designated time period or cleaning.
 - b. Permanently attach a 1-square foot piece of fabric from the same dye lot to the back of the curtain to be used as an FR test strip.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- D. Preinstallation Conference: Conduct conference at **Project site** to coordinate curtain and
- STAGE CURTAINS

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stage lighting location.

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1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings and construction contiguous with stage curtains and rigging by field measurements before fabrication.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of rigging equipment that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, faulty operation of rigging equipment.
 - 2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CURTAIN FABRICS

- A. General: Provide fabrics inherently and permanently flame resistant or chemically flame resistant by immersion treatment to comply with requirements indicated. Provide fabrics of each type and color from same dye lot.
- B. Heavyweight Woven Cotton Velour: Napped fabric of 100 percent cotton weighing not less than 25 oz./linear yd. before flame-retardant treatment, with pile height not less than 79 mils; 54-inch minimum width.
 - 1. Products: Subject to compliance with requirements, **available products that may be incorporated into the Work include, but are not limited to, the following:**
 - a. JB Martin Company; #2703 Overture
 - b. KM Fabrics, Inc.; Memorable.
 - c. Valley Forge Fabrics, Inc.; 2525 Velour.
 - d. All equals.
- C. Color and Texture: **As selected by Architect from manufacturer's full range.**
- D. Commando: 100 percent cotton, short-napped fabric weighing not less than 16 oz./linear yd. before flame-retardant treatment; twill weave with soft uniform texture; 54-inch minimum width; **color to be selected from full range of manufacturer's available colors.**

2.2 CURTAIN FABRICATION

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- A. General: Affix permanent label, stating compliance with requirements of authorities having jurisdiction, in accessible location on curtain not visible to audience. Provide vertical seams unless otherwise indicated. Arrange vertical seams so they do not fall on faces of pleats. Do not use fabric cuts less than one-half width.
1. Vertical Hems: Provide vertical hems not less than 2 inches wide, **and not less than 4 inches wide at borders, valance, teasers, and tormentors**, with not less than a 1-inch tuck, and machine sew, **trim all selvage, serge and overcast all seams**. Sew open ends of hems closed.
 2. Leading and Trailing Edge Turnbacks: Provide turnbacks formed by folding back not less than **2 inches** of face fabric, with not less than a 1-inch tuck.
 3. Top Hems: Reinforce top hems by double-stitching [**triple-stitching**] 3-1/2-inch- wide, **inherently flame retardant synthetic webbing** to top edge on back side of curtain with not less than 2 inches of face fabric turned under.
 4. Flat: Provide zero percent fullness in curtains.
 5. Pleats: Provide 100 percent fullness in curtains, exclusive of turnbacks and hems, [**by grommetting, not sewed. Six inches of material shall be gathered into a pleat every 6 inches and secured with a 2 1/8" S-hook or a tie line, whichever is appropriate, to make a round pleat**]. Grommets: Brass, No. 3 or No. 4.
 - a. Black Curtains: Provide brass or aluminum grommets with black finish.
 - b. Flat Curtains: Place 12 inches o.c. and 1 inch from corner of curtain; for ties, snap hooks, or S-hooks.
 - c. Flat Curtains: Provide blind grommet top finish to mask battens using hidden pairs of grommets; place 12 inches o.c. and 1 inch from corner of curtain; for ties.
 - d. Pleated Curtains: [**with two grommets spaced 6" apart every 12"**] [**Centered on each box pleat**] and 1 inch from corner of curtain; for snap hooks or S-hooks.
 6. Bottom Hems: For flat curtains without fullness.
 - a. Provide a 4-inch lined hem with a pocket that allows the sliding of a pipe or conduit stiffener into the bottom of the curtain [, **and provide a concealing flap of same fabric in front of pocket and made 2 inches longer than the bottom edge of the pocket**].
 7. Bottom Hems: For curtains with fullness.
 - a. For curtains that do not hang to the floor, provide hems not less than 3 inches deep. Sew open ends of hems closed.
 - b. For floor-length curtains, provide hems not less than 6 inches deep with manufacturer's standard series of individual weights in individual closed pockets sewn above the finished bottom edge of curtain. Sew open ends of hems closed.
 - c. For floor-length curtains, provide hems not less than 6 inches deep with separate, interior, 100 percent cotton, heavy canvas chain pockets equipped with proof coil chain. Stitch chain pockets so chain rides 2 inches above finished bottom edge of curtain. Sew open ends of hems closed.
 8. Velour Curtains: Fabricate with the fabric nap down.

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9. Lining: Provide lining for each curtain in same fullness and fabric type, cotton or polyester, as face fabric and finished 2 inches shorter than face fabric. Sew or otherwise securely attach lining to top hem of face fabric. Attach lining to face fabric along **[bottom and]**side seams with 4-inch- long strips of heavy woven cotton tape. **[Sew lining to bottom edge of curtain allowing sufficient lining fabric for tucking to prevent shrinkage.**
- B. Scrim: Fabricate from scrim curtain fabric, sewn flat. Provide a continuous 6-inch pipe pocket at bottom with a 6-inch flap of same fabric in front of pocket. Provide double-stitched, 3-1/2-inch **inherently flame retardant synthetic** webbing at top with not less than No. 2 brass grommets spaced at 12 inches o.c. and 1 inch from corner of curtain. Provide not less than a 2-inch side hem and a 4-inch bottom hem.
- C. Drop: Fabricate from muslin fabric, sewn flat, with either horizontal or vertical seams to suit project and selvage to the rear. Provide 6-inch pipe pocket at bottom with a 6-inch flap of same fabric in front of pocket. Provide double-stitched, 3-1/2-inch **[inherently flame retardant synthetic] [jute]**webbing at top with not less than No. 2 brass grommets spaced at 12 inches o.c. and 1 inch from corner of curtain. Provide not less than a 2-inch side hem and a 4-inch bottom hem.
- D. S-Hooks: **Track** Manufacturer's standard heavy-duty plated-wire hooks, not less than **[2 inches]** long.
- E. Tie Lines: No. 4 or No. 4-1/2 cord or braided soft cotton tape, black or white to best match curtain; not less than 5/8 inch wide by 36 inches long, **threaded through grommets.**
- F. Motorized Operation: Fabricate curtain track with cord and pulleys.
 1. Operating Line: Manufacturer's standard **[1/4-inch-]** diameter, stretch-resistant operating cable consisting of braided synthetic-fiber jacket over galvanized wire cable.
 2. End Pulleys: One single dead-end and one double live-end pulley. Provide sheave(s) with shielded ball bearing(s), housed in plated-steel body finished to match track. Provide with bracket for securing off-stage curtain end.
 3. Floor Block: Sheave with shielded ball bearing housed in plated-steel body finish. **Spring-tensioned type. painted black**

2.3 STEEL-CURTAIN TRACK <Insert drawing designation>

- A. Steel Track: Fabricate of roll-formed, galvanized, commercial-quality, zinc-coated steel sheet; complying with ASTM A 653/A 653M; G60 coating designation with continuous bottom slot and with each half of track in one continuous piece **[black paint finish]**.
 1. Products: Subject to compliance with requirements, **[available products that may be incorporated into the Work include, but are not limited to, the following:**
 - a. Automatic Devices Company; **Silent Steel 280 series.**

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- b. H & H Specialties Inc.; **400 series**.
- c. Equals.

2 Thickness: **0.079 inch**.

- B. Suspended Track: NPS 1-1/2 steel pipe stiffener for supporting both sections of suspended curved tracks.
- C. Clamp and Bracket Hangers: Manufacturer's steel clamps and brackets of sufficient strength required to support loads for attaching track to overhead support.
- D. Track Lap Clamp: Metal to match track channel for attaching double-sectioned track at center overlap.
- E. Fold Guide: Equip carriers with rear-fold or backpack guide and rubber spacers to permit offstage curtain folding; sized for use with operating line if any.
- F. Heavy-Duty Track System: Equip track with heavy-duty components. Provide end stops for track.

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1. Curtain Carriers: Standard carriers of **plated steel** with a pair of **nylon**-tired ball-bearing wheels riveted parallel to body. Equip carriers with rubber or neoprene bumpers to reduce noise, and heavy-duty, plated-steel swivel eye and manufacturer's standard trim chain for attaching curtain snap or S-hook. Provide quantity of curtain carriers sufficient for track length, to suit curtain fabrication.
 - a. Master Curtain Carriers: One master carrier, for each leading curtain edge, of plated steel with two pairs of **nylon** tired ball-bearing wheels and with two line guides per carrier.
2. End Pulleys and Floor Block: One dead-end, single-wheel pulley; one live-end, double-wheel pulley; and one adjustable, floor block; each with not less than [**5-inch**] molded-nylon- or glass-filled-nylon-tired ball-bearing sheaves enclosed in steel housings. Provide pulleys with steel housing finished to match track and with bracket for securing off-stage curtain end. Provide an adjustable floor block to maintain proper tension on operating line with steel housing painted black.

2.4 DRAW-CURTAIN MACHINE

- A. General: Provide **floor mounted** operating machine of size and capacity recommended and provided by track manufacturer for curtain specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, and remote controls. Coordinate wiring requirements and electrical characteristics with building electrical system.
 1. Products: Subject to compliance with requirements, **available products that may be incorporated into the Work include, but are not limited to, the following:**
 - a. Automatic Devices Company; **Autodrape Model No. 1454**
 - b. H & H Specialties Inc.; Atlas Silk Model **No. 459**.
 - c. Tru-Roll, Inc.; Tru-Roll Traction Drive.
 - d. Equals..
- B. Operator Type: Cable drum with grooved drum and cable tension device to automatically take up cable slack and retain cable in grooves.
- C. Operator Type: Traction drive.
- D. Motor Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds within installed environment and with indicated operating sequence, and without exceeding nameplate rating or considering service factor. Comply with NEMA MG 1 and the following:
 1. Voltage: Confirm with electrical drawings.
 2. Horsepower: **1/2**
 3. Enclosure: **Totally enclosed**.
 4. Duty: Continuous duty at ambient temperature of 105 deg F and at altitude of 3300 feet

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- above sea level.
- 5. Service Factor: 1.15 for open dripproof motors; 1.0 for totally enclosed motors.
- 6. Phase: **Polyphase**.
- E. Remote-Control Station: Provide momentary-contact, three-button control station with push-button controls labeled "Open," "Close," and "Stop."
 - 1. Provide key-operated switches, keyed alike, with one key per switch plus one extra key.
 - 2. Provide key-accessed control enclosures, keyed alike, with one key per switch plus one extra key.
- F. Limit Switches: Fully closed and fully opened preset stops.

2.5 CURTAIN RIGGING

- A. Curtain Battens: Fabricate battens from steel pipe with a minimum number of joints. As necessary for required lengths, connect pipe with a drive-fit pipe sleeve not less than 18 inches long, and secure with four flush rivets, plug welds, threaded couplings, or another equally secure method. Shop-paint completed pipe battens with black paint and with a 1-inch- wide yellow stripe at the center of each.
 - 1. Steel Pipe: ASTM A 53/A 53M, Grade A, standard weight (Schedule 40), black, NPS 1-1/2 nominal diameter unless otherwise indicated.
- B. Supports, Clamps, and Anchors: Sheet steel in manufacturer's standard thicknesses, galvanized after fabrication according to ASTM A 153/A 153M, Class B.
- C. Trim and Support Cable: 1/4-inch- diameter, 7x19 galvanized-steel cable with a breaking strength of 7000 lb. Provide fittings complying with cable manufacturer's written recommendations for size, number, and method of installation, including a drop-forged galvanized turnbuckle to allow for leveling.
- D. Trim and Support Chain: Grade 30 Proof coil chain
- E. Inserts, Bolts, Rivets, and Fasteners: Manufacturer's standard corrosion-resistant units.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with installer present, for compliance with requirements for supporting members, blocking, installation tolerances, clearances, and other conditions affecting performance of stage-curtain work. Examine inserts, clips, blocking, or other supports required to be installed by others to support tracks and battens.

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- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Install stage-curtain system according to track manufacturer's and curtain fabricator's written instructions.

3.3 BATTEN INSTALLATION

- A. Install battens by suspending at heights indicated with trim and support spaced to support load, but do not exceed **10 feet** o.c.
 - 1. Cable Trim and Support: Secure cables either directly to structures or to inserts, eye screws, or other devices that are secure and appropriate to substrate and that are not subject to deterioration or failure with age or elevated temperatures. Attach other cable end to pipe clamps with turnbuckles, housed or fixed with nuts after adjustment, to prevent loosening.
 - 2. Chain Trim and Support: Secure chain with load-rated terminations.

3.4 TRACK INSTALLATION

- A. Beam-Mounted Tracks: Install tracks by suspending from manufacturer's special beam clamps securely mounted to I-beam structure at spacing, according to manufacturer's written instructions.
- B. Spacing: Do not exceed the following dimensions between supports:
 - 1. Heavy-Duty Track: 84 inches.
 - 2. Medium-Duty Track: 72 inches.
 - 3. Curved Walk-Along Track: 48 inches. Provide additional supports at curves and splices.
- C. Install track for center-parting curtains with not less than 24-inch overlap of track sections at center, supported by special lap clamps.

3.5 CURTAIN INSTALLATION

- A. Track Hung: Secure curtains to track carriers with **snap hooks**.
- B. Batten Hung: Secure curtains to pipe battens with **ties**.

3.6 DRAW-CURTAIN-MACHINE INSTALLATION

- A. Install draw-curtain machines by securely mounting to **track**, according to manufacturer's written instructions.

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3.7 DEMONSTRATION

- A. **Engage a factory-authorized service representative to train** Owner's maintenance personnel to adjust, operate, and maintain stage curtains , **draw-curtain machines**, and tracks.

END OF SECTION 116143

SECTION 08 80 00
PLASTIC LAMINATE CASEWORK

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HISTORIC 1937 ROYAL THEATER REHABILITATION

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes all cabinets.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For residential casework. Include plans, elevations, details, and attachments to other work.
- C. Samples: For casework and hardware finishes.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For casework.

PART 2 - PRODUCTS

2.1 CABINETS

- A. Quality Standard: Provide cabinets that comply with KCMA A161.1.
 - 1. KCMA Certification: Provide cabinets with KCMA's "Certified Cabinet" seal affixed in a semiexposed location of each unit and showing compliance with KCMA A161.1.
- B. Door and Drawer Face Style: **[Flush overlay]**.
 - 1. Door and Drawer Fronts: ~~1/2-inch-~~ (13-mm-) thick, plastic-laminate-faced particleboard[, with continuous solid-wood pulls on one edge][, with PVC edgebanding].
- C. Cabinet Style: **[Frameless]**.
 - 1. Face Frames: ~~5/8-inch-~~ (16-mm-) thick particleboard with plastic laminate on exposed and semiexposed surfaces.
- D. Exposed Cabinet End Finish: **[Plastic laminate]**.

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PLASTIC LAMINATE CASEWORK

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2.2 CABINET MATERIALS

- A. Hardwood Lumber: Kiln dried to 7 percent moisture content.
- B. Softwood Lumber: Kiln dried to 10 percent moisture content.
- C. Hardwood Plywood: HPVA HP-1.
- D. Particleboard: ANSI A208.1, Grade M-2.
- E. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
- F. MDF: Medium-density fiberboard, ANSI A208.2, Grade MD.
- G. Hardboard: ANSI A135.4, Class 1 tempered.
- H. Exposed Materials:
 - 1. Plastic Laminate: Particleboard faced with high-pressure decorative laminate complying with NEMA LD 3, [**Grade HGL**] and edgebanded.
 - a. Colors, Textures, and Patterns [**As selected by Architect from cabinet manufacturer's full range**] .
 - b. Plastic-Laminate Edgebanding: Of same grade, pattern, color, and texture of plastic laminate as for faces.
 - c. PVC Edgebanding: Rigid PVC extrusions, through color with satin finish, [**3 mm thick at doors and drawer fronts, and 1 mm thick elsewhere**].
 - 1) Color: [**As selected by Architect from cabinet manufacturer's full range**] .
- I. Concealed Materials: Solid wood or plywood, of any hardwood or softwood species, with no defects affecting strength or utility; particleboard; MDF; or hardboard.

2.3 CABINET HARDWARE

- A. General: Manufacturer's standard units complying with BHMA A156.9, of type, size, style, material, and finish [**as selected by Architect from manufacturer's full range**].
- B. Pulls: [**Back-mounted decorative pulls**] Provide Chrome-finish 8" straight-bar pull handles with inset mounting posts.
- C. Hinges:[**Concealed European-style, self-closing hinges**] .

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- D. Drawer Guides: Epoxy-coated-metal, self-closing drawer guides; designed to prevent rebound when drawers are closed; with nylon-tired, ball-bearing rollers; and complying with BHMA A156.9, Type B05011 or Type B05091.
 - E. Door and Drawer Bumpers: Self-adhering, clear silicone rubber.
 - 1. Doors: Provide one bumper at top and bottom of closing edge of each swinging door.
 - 2. Drawers: Provide one bumper on back side of drawer front at each corner.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install casework with no variations in adjoining surfaces; use concealed shims. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match casework.
- B. Install casework without distortion so doors and drawers fit the openings, are aligned, and are uniformly spaced. Complete installation of hardware and accessories as indicated.
- C. Install casework level and plumb to a tolerance of **1/8 inch in 8 feet (3 mm in 2.4 m)**.
- D. Fasten casework to adjacent units and to backing.
 - 1. Fasten wall cabinets through back, near top and bottom, and at ends not more than **16 inches (400 mm)** o.c.
 - a. Fasteners: **[No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips.**
- E. Adjust hardware so doors and drawers are centered in openings and operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.
- F. Clean casework on exposed and semiexposed surfaces. Touch up as required to restore damaged or soiled areas to match original factory finish, as approved by Architect.

END OF SECTION 123530

SECTION 12 36 23.13
PLASTIC LAMINATE COUNTERTOPS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes plastic-laminate-clad countertops.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For plastic-laminate-clad countertops.
 - 1. Apply [**AWI Quality Certification**] Program label to Shop Drawings.
- C. Samples: Plastic laminates in each type, color, pattern, and surface finish required.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For the following:
 - 1. Composite wood products.
 - 2. High-pressure decorative laminate.
 - 3. Adhesives.
- B. Quality Standard Compliance Certificates: [**AWI Quality Certification Program**].

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - 1. Shop Certification: [**AWI's Quality Certification Program accredited participant**].
- B. Installer Qualifications: [**Fabricator of products**]OR [**AWI's Quality Certification Program accredited participant**].

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PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-CLAD COUNTERTOPS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of plastic-laminate-clad countertops indicated for construction, finishes, installation, and other requirements.
 - 1. Provide inspections of fabrication and installation together with labels and certificates from **[AWI]** certification program indicating that countertops comply with requirements of grades specified.
- B. Grade: **[Economy]**.
- C. High-Pressure Decorative Laminate: NEMA LD 3, **[Grade HGL]**
- D. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As indicated by manufacturer's designations.
 - 2. Match Architect's sample.
 - 3. As selected by Architect from manufacturer's full range in the following categories:
 - a. Solid colors, **[matte]** finish.
 - b. Solid colors with core same color as surface, **[matte]** finish.
 - c. Wood grains, **[matte]** finish with grain running parallel to length of countertop.
 - d. Patterns, **[gloss]** finish.
- E. Edge Treatment: **[Same as laminate cladding on horizontal surfaces]** [**3-mm (0.12 inch)** **PVC edging**].
- F. Core Material: **[Particleboard]**.
- G. Core Material at Sinks: **[Particleboard made with exterior glue]**. Second option in "Core Thickness" Paragraph below is for heavy-duty applications and costs approximately 20 percent more than first option.
- H. Core Thickness: **[3/4 inch (19 mm)]** .
 - 1. Build up countertop thickness to **1-1/2 inches (38 mm)** at front, back, and ends with additional layers of core material laminated to top.
- I. Backer Sheet: Provide plastic-laminate backer sheet, NEMA LD 3, Grade BKL, on underside of countertop substrate.

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- J. Paper Backing: Provide paper backing on underside of countertop substrate.

2.2 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard unless otherwise indicated.
1. Wood Moisture Content: **[5 to 10]** percent.
- B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of countertop and quality grade specified unless otherwise indicated.
1. Particleboard: ANSI A208.1, **[Grade M-2] [Grade M-2-Exterior Glue]**.
 2. Softwood Plywood: DOC PS 1.

2.3 ACCESSORIES

- A. Wire-Management Grommets: Circular, molded-plastic grommets and matching plastic caps with slot for wire passage.
1. Outside Diameter: **[2 inches (51 mm)]** .
 2. Color: **[Black]** ,
- B. Paper Slots: **[12 inches (305 mm)]** long by wide by **1 inch (25 mm)** deep; molded-plastic, paper-slot liner with **1/4-inch (6.4-mm)** lip.
1. Color: **[Black]**.

2.4 MISCELLANEOUS MATERIALS

- A. Adhesive for Bonding Plastic Laminate: **[Unpigmented contact cement] [As selected by fabricator to comply with requirements]**.
1. Adhesive for Bonding Edges: Hot-melt adhesive **or adhesive specified above for faces**.

2.5 FABRICATION

- A. Fabricate countertops to dimensions, profiles, and details indicated. Provide front and end overhang of **1 inch (25 mm)** over base cabinets. Ease edges to radius indicated for the following:

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1. Solid-Wood (Lumber) Members: 1/16 inch (1.5 mm) unless otherwise indicated.
- B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Grade: Install countertops to comply with same grade as item to be installed.
- B. Assemble countertops and complete fabrication at Project site to the extent that it was not completed in the shop.
 1. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately, and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 2. Seal edges of cutouts by saturating with varnish.
- C. Field Jointing: Where possible, make in the same manner as shop jointing, using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.
 1. Secure field joints in countertops with concealed clamping devices located within 6 inches (150 mm) of front and back edges and at intervals not exceeding 24 inches (600 mm). Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- D. Scribe and cut countertops to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Countertop Installation: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 1. Install countertops level and true in line. Use concealed shims as required to maintain not more than a 1/8-inch-in-96-inches (3-mm-in-2400-mm) variation from a straight, level plane.
 2. Secure backsplashes [to walls with adhesive].

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- 3. Seal joints between countertop and backsplash, if any, and joints where countertop and backsplash abut walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.
 - F. Protection: Provide Kraft paper or other suitable covering over countertop surfaces, taped to underside of countertop at a minimum of 48 inches (1220 mm) o.c. Remove protection at Substantial Completion.

END OF SECTION 123623.13

SECTION 23 05 00
GENERAL MECHANICAL PROVISIONS

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PART 1 - GENERAL

1.01 CONDITIONS OF THE CONTRACT

- A. Work included under this section of the specifications is subject to the provisions of the Contract Documents, General and Special Conditions.

1.02 SCOPE

- A. This section of the specifications describes materials and equipment to be incorporated into the plumbing, heating, ventilation, and air conditioning systems and requirements for performing related work. The contractor shall coordinate his work with other crafts to avoid conflicts.

1.03 WORK INCLUDED

- A. The work covered by this section includes providing all labor, equipment and materials as specified herein, shown on the drawings or required for a complete and satisfactory installation.

1.04 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Division 1: General Requirements.
- B. Cutting and repairing of walls, ceilings, roofs and structure, except as specified herein.
- C. Painting, except as specified herein.
- D. Providing electric wiring systems for power, interlock, remote starting, and control service except as specified herein.
- E. Installing motor starters and thermal overload switches.
- F. Installing remote push button stations and breakglass stations.
- G. Casework.

1.05 CODES AND STANDARDS

- A. Perform work in accordance with local, state, and federal regulations. Code requirements are minimum and shall be complied with at no additional cost to owner.
- B. In event of a discrepancy between contract documents and governing codes, comply with the codes. It will be assumed that such discrepancy was noted and cost of adjustment included in the bid price. Before starting work, submit to architect in writing a description of such adjustments or changes as may exist.

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C. Where requirements of the contract documents exceed code requirements, perform work in accordance with the contract documents.

D. The following shall be adhered to as a minimum:

1. Standard Building Code, 1994 Edition.
2. NFPA Standard 90A, 1996 Edition.
3. NFPA Standard 70 (Electrical Code), 1991 Edition.
4. SMACNA HVAC Duct Construction Standards, Latest Edition.
5. The Standard Plumbing Code, 1991 Edition.
6. Standard Mechanical Code, 1996 Edition.
7. Standard Gas Code, 1996 Edition.
8. The heating and cooling equipment and installation shall conform to Standard No. 70
(Electrical Code) of the National Fire Protection Association 1991 Edition.

1.06 ABBREVIATIONS & ACRONYMS

A. These abbreviations and acronyms are used in this section:

ASHRAE - American Society of Heating, Refrigerating, and Air Conditioning Engineers, INC.

NFPA - National Fire Protection Association

SMACNA - Sheet Metal and Air-Conditioning Contractors National Association

UL - Underwriters' Laboratory

1.07 DEFINITIONS

A. To establish common meaning of terms in the mechanical work, use these definitions:

- | | | |
|-----------|---|--|
| Provide | - | Furnish and install subject item, complete with accessory items for safe operation within the design intent. |
| Furnish | - | deliver subject item to project at point of final installation or use, except where other point is specified. |
| Install | - | make a final installation of items furnished. |
| Complete | - | with all accessory items required for safe operation within the design intent. |
| Indicated | - | as shown on drawings. |
| Concealed | - | where used in connection with insulation and painting of piping, ducts and accessories to mean hidden from sight, as in chases, furred spaces, pipe shaft or suspended ceilings. |

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Exposed	-	not concealed.
Condensation	-	visible moisture on surfaces.

1.08 PERMITS, INSPECTIONS AND STREET CONNECTIONS

- A. Secure and pay for permits and inspections required for installation of the work. Deliver certification of inspections to architect.
- B. Arrange for and pay costs incurred for connections of water, gas and sewer, including furnishing of water meter, excavating, trenching, backfilling, and repairing payment as required for installation of the work where indicated on the drawings or specifically noted on the drawings.

1.09 VERIFY EXISTING CONDITIONS

- A. Contractor, before commencing work, shall examine all conditions on which this work is in any way dependent for perfect workmanship according to the intent of drawings and specifications and shall report to the general contractor, in writing, and conditions which prevent this contractor from performing acceptable work.
- B. It shall be assumed that contractor, before submitting his bid, shall have made an "on-site" inspection of the premises to determine the conditions under which he will be expected to perform this contract. No increase in contract price shall be allowed due to failure of the contractor to perform this "on -site" inspection.

1.10 DESIGN CONDITIONS

- A. Outdoor design conditions are in accordance with the ASHRAE Handbook of Fundamentals.

1.11 DRAWINGS

- A. Refer to the architectural drawings for such details as finishes, dimensions, materials, etc., of the building. Check architectural features such as door openings, wall thicknesses, wall locations, etc./ against the architectural drawings prior to the installation of the work.
- B. Mechanical drawings are diagrammatic, showing general locations of fixtures, pipes, etc., and are not to be scaled. Check all dimensions, existing conditions, etc., at building site. Provide off-sets, bends, fittings, and swing joints not shown, but required for proper installation of mechanical work.
- C. Furnish material and labor necessary to make a complete operating system except in such cases that are specifically indicated by others.

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D. This division of the specifications and accompanying drawings shall be considered as supplemental one to the other; materials and equipment and labor called for by one and not the other shall be supplied and installed as though specifically called for by both.

E. As Built Drawings:

Keep a blueline set of the contract or shop drawings exclusively for the purpose of recording the exact installed locations of piping and equipment as the project progresses. Upon completion of the work the contractor shall modify reproducible transparencies to reflect the noted changes throughout the project. The changes indicated on the transparencies shall be drafted in a neat and legible manner.

The as-built drawings shall include:

1. Mark all drawings "AS- BUILT CONSTRUCTION DOCUMENTS".
2. Indicate the date drawings were prepared.
3. The Contractor's name, address, and phone number.
4. Revise schedules per equipment submittal, including manufacturer and capacities.

1.12 CONTRACTOR'S CLOSE-OUT CHECKLIST

- A. The contractor shall, at the end of the projects, submit to the owner the PROJECT CLOSE-OUT CHECKLIST filled in, in its entirety. Final payment shall not be approved until checklist is approved. The checklist is found at the end of this section.

PART 2 - PRODUCTS

2.01 LAYOUT BASIS

- A. The system layout is based upon the use of particular items of equipment with such items identified by manufacturer's make and model number. Physical dimensions, arrangement and service connections required for these particular items have been considered in making the layout. The equipment of another manufacturer listed as "acceptable" on that item of equipment may be submitted provided that energy requirements are no greater than for layout basis, and that additional service connections will be made at no additional cost to the owner.
- B. Should shop drawings disclose that the above requirements cannot be met on the basis of the submitted equipment, contractor shall furnish equipment as specified for "Layout Basis".
- C. If equipment other than layout basis is proposed, the cost of all such changes as may be required in service connections and in structural systems to accommodate the proposed substitution, including

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additional engineering services, become the responsibility of the contractor and impose no additional cost to owner

2.02 MATERIALS

- A. All materials used in the job shall conform to the standards cited.
- B. Where mention of trade names and brands are used in describing materials for this installation, they are to indicate type, quality and arrangement of material required. Equal materials by other manufacturers, if used, must be approved by architect, prior to installation.
- C. There shall be no asbestos in any material furnished under this contract.

2.03 DATA AND DRAWINGS TO BE SUBMITTED

- A. Within 30 days after contract is signed, nine (9) copies of ALL equipment and ALL materials data requiring review shall be submitted thru proper channels after having been reviewed and stamped by subcontractor and general contractor.
 - 1. Data shall be bound in loose-leaf, three-ring, hard-back binders with pockets for diagrams
Sectionalize with numbered tabs and preface with reference index.
 - 2. Cover sheet shall list project name, location, architect, engineer and general contractor.
 - 3. All items of equipment shall be submitted at same time except items such as temperature controls and diagrams that are dependent upon "reviewed" data. They may be submitted separately at a later date. Provide sections in binders tabbed for these items to be inserted at a later date.
- B. All submittal data shall include project name, the model, style and size of item being submitted, local manufacturer's representative and telephone number and all criteria shown on schedule on plans. Submitted items shall include but not be limited to the following:
 - 1. Pipe Specialties
 - a. Include capacity curve with pump suction diffuser.
 - b. Valves
 - c. Valve Tags
 - 2. Calibrated Balancing Valves
 - 3. Inertia Bases
 - 4. Pumps
 - a. Submit curves

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5. Chemical Treatment System
6. Insulation
7. Sump Pumps
 - a. Submit pump curves
8. Fans
 - a. Submit fan curves on all fans including AHU's and RTU's.
9. Flexible Duct
10. Roof Curbs

- C. After reviewed data has been returned, contractor shall proceed with shop drawings of duct work and equipment room piping shall be submitted.
 1. Duct Work Shop Drawings shall not be smaller than 1/4" = 1' -0" scale and must include duct size; equipment connections and pad layout; location, dimensioned from building structure; off-sets, bottom elevation above finished floor; liner where required, plenums and all accessories.
 2. Equipment Room Drawings shall include boilers, pumps, major piping (including control, check, isolation, balancing, and drain valves), pad layouts for all floor mounted equipment, air handlers and associated accessories. Scale to be not less than 1/4" = 1' -0".
 3. Duct Work and Equipment Room Shop Drawings shall be prepared on sheets the same size as contract documents. Enlarged copies of contract documents shall not be acceptable as shop drawings.
- D. Separate binders may be submitted for major sub-contractors such as HVAC; Plumbing; Fire Protection.
- E. Attention is directed to a paragraph entitled "Operation and Maintenance Instructions", Section 15 905 requiring copies of reviewed data to be included in O&M manuals.

2.04 CERTIFICATES

- A. Upon acceptance by authorities having jurisdiction, certificates of occupancy required for this project including plumbing, HVAC, fire protection and Health Department certification of portable water shall be indicated by the responsible contractor(s).

2.05 EQUIPMENT FOUNDATIONS

- A. All floor mounted equipment, unless otherwise detailed, shall be mounted on 4" high concrete pads extending a minimum of 4" beyond longest dimension in each direction. Concrete shall be 3,000 psi.

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2.06 FIRE STOPPING

- A. Piping penetrations in fire walls shall be sealed with UL listed fire stopping materials meeting requirements of ASTM E-814.
- B. Acceptable products are Dow Corning 3-6548 Silicone RTV Foam, Flamesafe T&B Firestop, 3M, Nelson Electric and GE Pensil.

PART 3 - EXECUTION

3.01 PROTECTION OF WORK DURING CONSTRUCTION

- A. Provide protective covers, skids, plugs, caps and coatings to protect equipment and materials from damage and deterioration during construction.
- B. Store equipment and material under cover and off the ground.
- C. When outdoor storage is necessary, provide protective covers of sheet plastic of gauge suitable for the area involved and reinforced to withstand wind and precipitation. Set equipment and materials on skids or platforms of height sufficient to avoid damage from splattering and ground water.
- D. Plug ends of pipes when work is stopped to prevent debris from entering the pipes.
- E. Close open ends of ductwork with temporary closures of sheet plastic taped in place on horizontal ducts and sheet metal caps with drip overhangs for ducts opening upward.
- F. Do not operate any air handling systems during the construction period without filters in place to filter air entering the fan. Protect the exhaust fans by temporary filters cut from roll media and fastened over the air inlets.

3.02 WORKMANSHIP

- A. The entire contract shall be executed in a neat, substantial and workmanlike manner, according to the true intent and meaning of the plans and specifications. Any work not installed in a neat, substantial and workmanlike manner shall, when directed in writing, be removed and replaced at the contractor's expense without additional cost to the owner.

3.03 TOOLS

- A. The Contractor for this work shall furnish all tools, machinery, hoists and other means for proper installation of the work.

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3.04 TRENCHING, BACKFILLING AND PAVING

- A. Install water service piping and sewers below recorded frost penetration line in compliance with applicable codes.
- B. Excavate trenches to sufficient width, shore trenches, and remove water as necessary to permit proper installation of the work.
- C. Backfill trenches only after piping has been tested, inspected, and locations of pipes and appurtenances properly recorded.
- D. Maintain clearance from excavation to footings and outside bearing walls of 3 feet and an angle of not greater than 45-degrees to bottom of such footings or outside bearing wall.
- E. Provide shoring when soil conditions and depth of excavation warrant shoring.
- F. Where rock is encountered, remove rock to a depth of 6" below desired bottom of excavation and backfill with clean earth to desired level.
- G. When piping is laid in fill or loose sand, tamp bottom of trenches to obtain 95% of dry maximum density compaction as determined by Standard Proctor Compaction Test, ASTM D698-58, prior to installation of pipes.
- H. Use backfill free from rocks and debris, compacted in 6" layers as the excavation is filled. Take precaution to prevent damage to the piping.
- I. Hand tamp backfill around the lines to depth of 2 feet above top of the lines and compact to obtain 95% of dry maximum density compaction as determined by the Standard Compaction Test ASTM D698-58.
- J. Provide bell holes and continuous firm bedding for piping.

3.05 CUTTING AND PATCHING

- A. All cutting and patching needed for installation of mechanical system shall be included under this Division.
- B. No cutting will be permitted without prior approval by the owner.
- C. Patching will be done by the trade whose work has been cut and shall be paid for under the mechanical division of the specifications.
- D. Contractor shall furnish to other trades information such as size, position and arrangement of materials and equipment, so that openings in floors, walls, roofs, beams, and ceilings can be provided as construction progresses. When openings are omitted because of his failure to furnish information to the contractor, this trade at his expense, shall direct and pay general contractor to do cutting and patching required.

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3.06 EQUIPMENT FOUNDATIONS

- A. Concrete foundations and steel supports, etc., shall be provided in accordance with the Concrete and Structural Division of the specifications.
- B. Concrete foundations shall have 3/4" beveled edges and all surfaces rubbed smooth prior to mounting equipment.
- C. Prepare structural slabs to receive pad and curbs. Roughen contact surface before pouring concrete.
- D. For equipment provided with gout holes, fill voids with non-shrinking grout after alignment and before operation of equipment.

3.07 COORDINATION OF INSTALLATION

- A. Coordinate work under this division with work under other divisions.
- B. Install work to fit into the spaces provided. Avoid damage on account of ill-timed work.
- C. Arrange work to provide maximum headroom and clearance consistent with the requirements of the documents.
- D. Except where otherwise noted, arrange piping to run either parallel or normal to building lines, and true to grade.
- E. Provide supports and anchors for work to avoid damage from movement.
- F. Place equipment, valves and unions requiring service in accessible locations.
- G. Install materials and equipment completely with piping, controls and accessories.
- H. Coordination of equipment located in ceiling plenums (air conditioning equipment, ductwork, plumbing, lights, fire protection lines, structure, etc.) shall be done before installation is begun and continued during construction to assure proper space for maintenance of equipment and maneuverability of light fixtures in the grid.

3.08 COUNTER FLASHING

- A. All flashing methods and materials shall provide a complete watertight installation.
- B. Provide counter flashing for items placed on roof or piercing roof. General Contractor shall provide base flashing.
- C. Riser sleeves for piping and conduits in membrane waterproofed floors shall have flashing clamps attached to membrane. Large sleeves shall be shop fabricated. Sleeves shall extend 2 inches above finished floor.

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- D. Drains and cleanouts in membrane water proofed floors shall have flashing clamps attached to the membrane.
- E. Ducts passing through roof shall be counterflashed with sheet metal, soldered to duct riser and extended down over roof curbs, which is properly flashed by the General Contractor. Apply heavy coating of roofing cement at junction of duct and counterflashing collar.

3.09 CLEANING AND ADJUSTING

- A. All equipment, pipe, valves and fittings shall be wiped clean, with all traces of oil, dust, dirt, and paint spots removed. Bearings shall be lubricated as recommended by the equipment manufacturer. All control equipment shall be adjusted to setting indicated.

3.10 PAINTING

- A. Clean surfaces of work under this Division and leave surfaces ready for painting. Colors shall be selected by Architect.
- B. Where surfaces of factory finished items are marred, refinish those surfaces to original condition with factory furnished touch up paint.
- C. The following, as a minimum, shall be painted:
 - 1. Steel equipment supports.
 - 2. Exposed ductwork where specified.
 - 3. Ferrous louvers and grilles where specified elsewhere.
 - 4. Exposed ferrous pipe hangers.

3.11 NOTIFICATION BEFORE INSPECTION

- A. Notify the architect/engineer in writing not less than five (5) working days before work is ready for inspection.

3.12 COORDINATION OF ELECTRICAL WORK

- A. Provide electrically operated equipment designed and built for operation with electric characteristics provided by Division 16. Verify voltage, horsepower, wattage and phase from electrical drawings before ordering equipment.
- B. Provide motor controls, systems controls, starters, contractors, etc., required for the mechanical systems complete as a part of the motor or apparatus which it operates, unless specifically noted to be provided under another section.

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- C. Provide under the work of this section all other devices, line and low voltage control and interlock wiring, and additional conduit necessary but not indicated on the electrical drawings, all in accordance with material and installation requirements.
- D. Provide wiring diagrams required for the proper installation of the equipment under the work of this section.
- E. All mechanical assemblies containing multi-motors or electric heating elements shall be factory equipped with integral over-current protection for each motor/heater in accordance with the requirements of the N.E.C.

3.13 GUARANTEE

- A. Contractor shall guarantee this work and make good without cost to the owner any defects in equipment, materials or workmanship which may develop within the period of one (1) year from date of acceptance or beneficial use by the owner.
- B. Refrigeration Compressors shall be provided with an additional 4 year warranty which shall include labor and refrigerant.

END OF SECTION

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MECHANICAL PROJECT CLOSE-OUT CHECKLIST

The following items as stipulated by Carter Watkins Associates and/or their Consultants are to be provided.
The project will not be accepted as 100% complete until these items are provided to the appropriate parties.

	<u>ITEM</u>	<u>ACCEPTED BY</u>	<u>REPRESENTING</u>	<u>DATE</u>
1.	O & M Manuals	_____		_____
2.	Copy of shop drawings and submittals	_____		_____
3.	Extended warranties for HVAC equipment	_____		_____
4.	Certification of welders	_____		_____
5.	Controls under glass	_____		_____

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6.	As-builts	_____	_____
7.	Test and balance report	_____	_____
8.	Change out construction filters in air moving equipment	_____	_____
9.	Fire protection documents reviewed by Insurance Underwriter	_____	_____
10.	Valve tags and charts	_____	_____

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PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work covered by this section includes furnishing all labor, equipment, and materials as specified herein, shown on the drawings, or required for a complete and satisfactory installation.

1.02 REFERENCE STANDARDS

- A. American National Standards Institute (ANSI)
B. American Society of Mechanical Engineers (ASME)
C. National Fire Protection Association (NFPA)
D. Underwriters Laboratory

PART 2 - PRODUCTS

2.01 PIPING

- A. Domestic Water Systems:
1. Pipe, 3" size and smaller: Copper water tube manufactured in accordance with ANSI H23-1.
 - a. Type "L" hard copper above ground.
 - b. Type "K" hard or soft copper underground or in pipe trench.
 2. Fittings: Wrought copper seat joint conforming to ANSI B16.22.
 3. Screwed or flanged to sweat pipe connections cast brass, ASA B16.18.
 4. Joints:
 - a. 2" and smaller: 95-5 (95% tin and 5% antimony) solder.
 - b. 2 - 1/2" and larger: 95-5 (95% tin and 5% antimony) solder.
 - c. All joints below slab on grade shall be alloy solder melting not less than 1000 degrees F.
 5. Unions:
 - a. Cast brass or bronze with soldered connections. Unions 2" and smaller, ground joint; 2 - 1/2" and larger, flanged.
 6. Pipe, 4" diameter and larger:
 - a. Underground: 4" size shall be Class 51, 6" and larger shall be Class 50 ductile iron, ANSI A21.51-1976 with push on or mechanical joints with the bituminous outer coating. Fittings shall be 250 psi ductile iron, mechanical

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- joints with bituminous outer coating.
- b. Above Ground: 4" size and larger shall be type L hard drawn copper with wrought copper or cast brass fittings.
- B. Soil, Waste, and Vent piping within the building and where indicated on the drawings.
 - 1. Pipe and Fittings:
 - a. Above slab-on grade and inside the building shall be PVC pipe and fittings properly marked to indicate the system complies with all Soil Pipe Standards 301-74.
 - b. Below slab-on grade and under floor shall be hub and spigot with oakum and lead caulked joints or at contractor's option, neoprene one-piece elastomeric compression gasket joints for pipe bearing on virgin soil.
 - c. Sanitary outside building may be PVC or at Contractor's option, extra strength vitrified clay with PVC joints.
 - 2. Pipe and Fittings:
 - a. ABS or PVC piping above and below slab on grade except in return air plenums.
 - b. ABS plastic DWV piping and fittings shall conform to ASTM Standard D2661 and shall be so marked. ABS solvent cement shall conform to ASTM Standard D-2235.
 - c. PVC plastic DWV piping and fittings shall conform to ASTM Standard D2665 and shall be so marked. PVC solvent cement shall conform to ASTM Standard D-2564. PVC primer shall be applied to pipe and inside of socket fittings before applying PVC solvent cement.
 - d. Pipe cement that is recommended by the manufacturer for use on neither ABS or PVC pipe shall not be permitted on the project.
 - e. All plastic pipe and fittings shall be NSF approved and shall be so marked.
 - f. All ABS and PVC plastic pipe and fittings shall have solvent socket ends.
- C. Waste connections to service sink trap standards:
 - 1. Pipe: Galvanized Schedule 40 steel pipe.
 - 2. Fittings: 125 lb. galvanized, screwed, recessed pattern, drainage fittings.
 - 3. Options: Type "L" copper with adapters.
- D. Waste connections to lavatories, sinks, and drinking fountains:
 - 1. Pipe: Type "L" hard copper manufactured in accordance with ANSI H23.1.

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2. Fittings: Cast brass alloy or wrought copper drainage fittings manufactured in accordance with ANSI B16.23.
- E. Soil connections to urinals:
 1. Pipe: Type "K" copper with wrought copper pressure fitting or red brass nipples and cast brass fittings.
- F. Waste connections to water closet:
 1. Floor Mounted - Cast iron closet flange bolted to fixture with fixture setting seal gasket.
 2. Wall Hung - Chair carriers as specified with fixture.
- G. Condensate Drain Piping:
 1. Type "M" copper tubing.
 2. Fittings:
 - a. Copper pipe: Sweat type wrought copper or cast brass.
 - b. Provide cleanout for all changes of direction exceeding 45 degrees.
- H. Chilled Water and Hot Water Space Heating Piping:
 1. Pipe: Schedule 40 black steel conforming to ASTM A120.
 2. Fittings: Wrought carbon steel butt welding fittings, conforming to ASTM A234, for pipe sizes 2-1/2" and larger. Malleable iron, 150 lb. class, screwed conforming to ASTM A47, for pipe sizes 2" and smaller.
 3. Alternate Fittings: Grooved piping and fittings.
 - a. Acceptable manufacturers are Victaulic and Grinnell Groove-loc.
 - b. Fittings shall be rigid type unless noted otherwise on plans.
 - c. Manufacturer shall submit piping shop drawings.
- I. Gas Piping:
 1. Pipe: Schedule 40, black steel pipe conforming to ASTM A-120, factory coated and wrapped for underground, uncoated for above ground.
 2. Fittings: Carbon steel, butt weld for sizes 2-1/2" and larger and black malleable iron, screwed for 2" and smaller. Brushings are not permitted.
 3. Corrosion protection: Apply corrosion resistant coating, to all underground joints and damaged factory wrap.
 4. Gas pipes shall not be installed below floor slabs on grade, in partitions, walls or plenums except as directed and as approved by local codes.
 5. Provide gas cock for each piece of equipment.

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- J. Compressed Air Piping: (125 psig)
1. Pipe: Type "L" copper.
 2. Fittings: Wrought copper sweat joint conforming to ANSI B16.22. Construct joints with Silfos.
- OR
3. Pipe: Schedule 40, black steel conforming to ASTM A-120.
 4. Fittings: Carbon steel, 125 lb. butt weld for size 2-1/2" and larger; black malleable screwed for 2" and smaller.
- K. Underground Piping Systems:
1. The layout basis of the following chilled water, hot water systems is Thermal Pipe Systems. Acceptable alternates are Ricwil, Permapipe, and Thermacore.
 2. Space Heating Hot Water Piping:
 - a. HEAT-TITE shall be used for hot water supply and return using a rubber ring jointing method. Unless otherwise specified, all pipe, fittings, valves, and accessories shall conform to the requirements of ANSI B31.1, and shall be of the proper type for pressure and temperature of the heating or cooling water.
 - b. Steel Carrier Pipe: Carrier pipe shall be steel pipe.
 - c. HEAT-TITE COUPLING: The HEAT-TITE coupling shall be Reinforced Thermosetting Resin Plastic (RTRP). The RTRP coupling shall be glass filament wound epoxy ring, shall be machined into the coupling. The length of the coupling shall be such that when correctly assembled it will give the proper end separation.
 - d. Rubber Sealing Rings: Rubber sealing rings for HEAT-TITE piping shall be molded heat resistant Ethylene Propylene Diene Monomer (EPDM) using a properly vulcanized compound. The ring surfaces shall be smooth and free from all porosity and internal voids.
 - e. PVC Casing Pipe: The Polyvinyl Chloride (PVC) Casing Pipe shall be of virgin PVC resin meeting the classification requirements of ASTM D1784. The thickness shall be as shown on the following pages.
 - f. Rubber End Seals: Rubber end seals for insulated HEAT-TITE shall be a high temperature (HT) heat resistant Ethylene Propylene Diene Monomer (EPDM) molded rubber compound. All surfaces shall be smooth and free of voids.

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- g. Polyurethane Foam Insulation: Polyurethane foam insulation shall meet the following specifications:

Type:	Two component urethane
Compressive Strength:	25 psi parallel min at 5% comp
Shrinkage:	None at 70 F
Free Rise Density:	1.5 to 2.5 lbs / cu. ft.
Aged "K" (70 F - 72 hrs):	0.140 BTU per inch, per hour, per degree Fahrenheit, per s.f.
Closed Cell Content:	90%
Insulation Concentricity:	Carrier Pipe shall be concentric to casing pipe. The allowable maximum deviation from center line of carrier pipe shall be plus or minus 1/4 inch at the casing center point and plus or minus 1/16 inch at the end seals.

- h. Casing-Tite Coupling: The Casing-Tite coupling shall be of virgin PVC Resin meeting classification requirements of ASTM D1784. The coupling shall be SDR 51 or heavier. The rubber rings shall meet ASTM D1869. The Casing Tite coupling shall have a groove molded into each end and the sealing rings inserted into the groove at the factory.
- i. Insulated Fittings: Fittings may be preinsulated by Thermal Pipe Systems, Inc. using the same insulation thickness and casing as the pipe. Where necessary laid-up fiberglass casing will be substituted in all or part of the fitting. A thrust plate of the proper size shall be provided. End seals on fittings shall be the same as used on the pipe.
- j. Wall Penetration Sleeves: Provide where piping passed masonry or concrete walls, floors, and roofs. Sleeves in outside walls below and above grade, in floor, or in roof slabs, shall be schedule 40 or standard weight coated black steel pipe. Space

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between piping or insulation casing, and the sleeve shall be sufficient to allow proper water tight sealing, but never less than 1/2". Sleeves shall be held securely in proper position and location during construction. Sleeves shall be of sufficient length to pass through entire thickness of walls or slabs. Sleeves in floor slabs shall extend 2 inches above the finished floor. In existing concrete manholes or building, wall penetrations may be made using the "core drilling" methods providing proper care is taken to drill the holes to the size needed and square to the line of the pipe.

- k. Wall Penetration Seals: All wall penetrations shall be sealed to prevent water from entering the building or manhole. The sealing material shall be as specified by the engineer.
- l. Insulation: Thickness of insulation for HEAT-TITE pipe and fittings shall be as shown below.
- m. Temperature and Pressure: The HEAT-TITE piping system and all of its components to operate up to 150 psig at 250 degrees F, plus typical surges.
- n. Dimensions and Weights of insulated HEAT-TITE piping and fittings are as shown below.

SCHEDULE	PIPE SIZE	INSULATION THICKNESS	WT. (LBS/FT)
80	2	.92	105.6
80	2	1.20	209.4
80	4	1.67	316.8
80	6	1.59	531.8
80	8	1.57	781.8

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80	10	1.49	1028.2
80	12	1.38	1416.0

3. Chilled Water Piping:

- a. KOOL-KORE shall be used for chilled water service, using a rubber ring jointing method.
- b. PVC Carrier Pipe: Carrier pipe shall be Polyvinyl Chloride (PVC) 160 psi pipe - SDR 26 in accordance with ASTM D2241. Pipe shall be extruded from clean, virgin approved class 12454A PVC compound conforming to ASTM D1784.
- c. PVC Casing Pipe: The PVC casing pipe shall be of virgin PVC resin meeting the minimum classification requirements of ASTM D1784. The thickness shall be as shown on the following pages.
- d. Rubber Sealing Rings: Sealing rings for the PVC carrier pipe shall be a molded solid compression type rubber compound suitable for the service and pressure of the system.
- e. Rubber End Seals: End seals for insulated KOOL-KORE shall be molded rubber with a compression type seal.
- f. Polyurethane Foam Insulation: Polyurethane foam insulation shall meet the following specifications:

Type: Two component urethane

Compressive Strength: 25 psi parallel min at 5% comp

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Shrinkage:	None at 70 F
Free Rise Density:	1.5 to 2.5 lbs / cu. ft.
Aged "K": (70 F - 72 hrs)	0.140 BTU per inch, per hour, per degree Fahrenheit, per s.f.
Closed Cell Content:	90%

Insulation Concentricity:

Carrier Pipe shall be concentric to casing pipe. The allowable maximum deviation from center line of carrier pipe shall be plus or minus 1/4 inch at the casing center point and plus or minus 1/16 inch at the end seals.

g. Wall Penetration Sleeves: Provide where piping passes through masonry or concrete walls, floors, and roofs. Sleeves in outside walls below and above grade, in floor, or in roof slabs, shall be schedule 40 or standard weight coated black steel pipe. Space between piping or insulation casing, and the sleeve shall be sufficient to allow proper water tight sealing, but never less than 1/2". Sleeves shall be held securely in proper position and location during construction. Sleeves shall be of sufficient length to pass through entire thickness or walls or slabs. Sleeves in floor slabs shall extend 2 inches above the finished floor. In existing concrete manholes or building, wall penetrations may be made using the "core drilling" methods providing proper care is taken to drill the holes to the size needed and square to the line of the pipe.

h. Wall Penetration Seals: All wall penetrations shall be sealed to prevent water from entering the building or manhole. The sealing material shall be as specified by the engineer.

i. Insulation: Thickness of insulation for KOOL-KORE pipe shall be as shown

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below.

- j. Temperature and Pressure: The KOOL-KORE piping system and all of its components are designed to operate at temperatures up to 70 F at 160 psig or at reduced pressures for elevated temperatures, as follows:

<u>TEMP. F</u>	<u>PRESSURE psig</u>
80	144
90	121
100	102
110	80
120	64
130	49

- k. Dimensions and weights of insulated KOOL-KORE piping systems are as shown below.

<u>SCHEDULE</u>	<u>PIPE SIZE</u>	<u>INSULATION THICKNESS</u>	<u>WT. (LBS/FT)</u>
40	4"	1.67	143

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A. Escutcheon Plates:

1. Escutcheon plates: Chromium-plated, not less than 20 gauge steel, split pattern, set screws on ceiling plates, spring clips on others, sized to fit over insulation and to cover sleeves.
2. For exposed piping in flush sleeves in finished areas: Grinnell Fig. 10, F & S Fig. 602, Perfection Fig. 10.
3. For exposed piping where sleeves extend beyond penetrated surface, provide deep pattern type.

B. Pump Suction Diffuser:

1. Cast iron body, steel or cast iron outlet guide vanes, removable stainless steel strainer and fine mesh brass start-up strainer.

C. Triple Duty Valve:

1. Angle or straight type combination shut-off, balancing, non-slam check valve with cast iron body, bronze disc and seat, and stainless steel valve stem and spring.
2. Install valve with ample clearance for valve stem and service.

D. Air Purger:

1. Steel or cast iron body, flanged connections for horizontal, in-line installation, and tapings for vent and drain connections.

E. Air Vents:

1. Automatic Air Vents shall be Armstrong Model AAE-750, or equal, installed in a vertical position with a gate valve to isolate vent for service or replacement.

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2. Manual Air Vents shall be Armstrong No. 72, or equal up to 75 psig operating pressure or lever handle brass cock rated for operating pressure. Provide brass goose neck termination.

F. Automatic Fill Valve:

Armstrong Model RD or HRD or equal as required for operating pressure of installation.

G. Expansion Tank:

Taco Model CAX or equal ASME precharged bladder expansion tank stamped 125 psig working pressure with replaceable bladder, rated for 240-degrees F. at the tank and air charging valve to facilitate precharge pressure to meet actual system conditions.

H. Backflow Preventer: (Make-up Water System)

1. Watts Model 9D or equal, tested and certified under A.S.S.E. Standard 1012-1980 or CSA Standard B64.3.

I. Water Pressure Reducing Valve (Make-up water system) - Armstrong RD-40, or equal bronze construction with built-in strainer.

- J. Strainers shall be Y-pattern type with cast iron body. Strainers shall have removable 316 stainless steel or monel screens and shall have perforations to provide a net free area through the screen of at least 3 times that of the entering pipe. Perforations shall be 1/8" diameter for chilled, hot, and make-up water service. Strainers 2-1/2" and larger shall be provided with a plugged gate valve and nipple the full size of the strainer blowdown outlet. Blowdown outlets shall be located at the low point of the strainer. Strainers 2" and smaller shall be threaded. Strainers 2-1/2" and larger shall be flanged.

K. Flexible Pipe Connections: Flexible pipe connections shall be stainless steel corrugated metal hose with high tensile stainless steel wire braid for ferrous pipe and bronze corrugated metal hose with high tensile bronze wire braid with copper pipe. Connections for pipe 2-1/2"

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and smaller shall be male pipe thread, and for pipe 3" and larger shall be 150 lb. flange ends.
Minimum pressure rating shall be 150 psig wwp. Rubber hose connectors for closed loop heat pumps will be furnished with the heat pump units.

2.03 ACCESS PANELS - BUILDING

- A. Flush, hinged door, locking type steel access panel and frame. Access panels shall be UL fire rated same as structure in which installed.
- B. Panel size 24" x 24" unless indicated otherwise on drawings.
- C. Frame styles specifically designed for setting in bare masonry, plastered surfaces, dry wall, or in acoustical tile as required.

2.04 CORROSION RESISTANT COATINGS

- A. Acceptable manufacturers: Koppers Bitumastic Super Service Black, Royston Laboratories A-51, Johns-Manville "Transtex V20".

2.05 PIPE HANGERS AND SUPPORTS

- A. Products manufactured in accordance with MSS SP58 and conforming to Federal Specification WWH171e, MSS SP69, UL203, NFPA13, and NFPA24 are acceptable. The following Grinnell figure numbers are used as a guide.
 - 1. Bare Copper Pipe - Fig. CT-99.
 - 2. Bare Steel Pipe - Fig. 260.
 - 3. Insulated Pipe - Fig. 260 sized to fit over insulation and with properly sized Fig. No. 167 shield.
 - 4. Vertical Pipe - Fig. CT-121 or Fig. 261.

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- a. Bare copper pipe must be isolated from contact with steel riser clamp by rapping with sheet lead or other acceptable material. Fig. CT-121 coated clamp may be used.

- 5. Several horizontal pipes in the same plane may be supported on trapeze hangers spaced as required for the smallest pipe.

2.06 SLEEVES

- A. Sleeves shall be standard weight steel pipe.
- B. Sleeves shall be of sufficient size for pipe and insulation to pass through.
- C. Exposed sleeves through floors shall project 1/2" min. above finished floor.
- D. Pro-Set or equal sleeve system may be used in lieu of above.

2.07 DIELECTRIC COUPLINGS

- A. Acceptable: Capitol Type CS, Epco FX, and Clearflow Dielectric Waterway.
- B. Description: Screwed ends, dielectric isolating section.

2.08 VALVES

- A. General:
 - 1. All gate and globe valves shall be designed for repacking under pressure when fully opened and shall be equipped with packing suitable for the intended service.
 - 2. Valves used in copper pipe systems up to and including 3" size shall be similar and equal to those described herein for threaded valves up to 2" size.

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3. Face to face and end to end dimensions of valves shall conform to ANSI B16.10.
4. Insofar as possible, all valves of the same type shall be of the same manufacturer.

B. Gate Valves:

1. Valves 2" and smaller shall be bronze body, solid wedge, rising stem, union bonnet, equal to Crane 428UB, Jenkins 4TU, Milwaukee 1152 or Stockham B-105.
2. Valves 2-1/2" and larger shall be flanged and iron body, bronze trim, OS&Y equal to Crane 465-1/2, Jenkins 651-C, Milwaukee F-2885 or Stockham G-623.

C. Globe Valves:

1. Valves 2" and smaller shall be bronze body, union bonnet, integral seat, renewable disc, equal to Crane 7, Jenkins 106A, Milwaukee 590, or Stockham B-22.
2. Valves 2-1/2" and larger shall be iron body, composition disc, flanged ends, bolted bonnet, bronze mounted, equal to Crane 351, Jenkins 613C, Milwaukee F-2981, or Stockham G-512.

D. Check Valves:

1. Valves 2" and smaller shall be bronze body, horizontal swing, Y pattern with removable discs equal to Crane 37, Jenkins 92A, Milwaukee 509, Stockham B-319.
2. Valves 2-1/2" and larger installed horizontally shall be iron body, bolted bonnet, horizontal swing with removable seat and disc equal to Crane 373, Jenkins 624-C, Milwaukee F-2974, Stockham G-931.
3. Valves 2-1/2" and larger installed in vertical position shall be iron body, globe type, silent design, bronze mounted with stainless steel spring and flanged end connections equal to Milwaukee 1800, Mueller 105-AP, APCO 600.

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E. Ball Valves:

1. Ball valves shall be 2" and smaller for water and air service and shall have a 2-piece bronze body, teflon seat and brass ball equal to Crane 2180, Jenkins 902-T, Milwaukee BA-200, Stockham S-216-BR-RT. Provide extended handles on insulated piping and memory stop for manual balancing.

F. Butterfly Valves:

1. Butterfly valves for water piping 2-1/2" and larger shall be lug type with extended neck, cast iron body, bronze alloy disc, stainless steel stem equal to Crane 14, Jenkins 232E, Milwaukee ML-1233-E, Stockham LG711BS3E. Provide lever handles on valves 12" and smaller and gear operators on valves larger than 12".

G. Hose end drain valves shall be gate valves with 3/4" hose thread adapter screwed or soldered into valve.

H. Manual balancing valves, non-calibrated-semi-steel body, neoprene coated, eccentric plug, wrench operator, straightway, memory stop 175 #wog rating.

1. 2" and smaller, screwed ends - Homestead 1512; DeZurik 118S; OIC 811; Milwaukee BBFS100.
2. 2-1/2" and larger, flanged ends - Homestead 1522 and 3" and 4", 1232 larger; DeZurik 118F, Illinois Products Series 5000.

I. Calibrated Balancing Valves - calibrated for flow balancing, pressure tapping takeoffs, positive shut-off valve with memory stop. Valves shall be supplied with preformed Polyurethane insulation cover.

1. 2" and smaller, screwed ends - Armstrong CBVI; Illinois Series 6000.
2. 2-1/2" and larger, flanged ends - Armstrong CBVII; Illinois Series 6000. (Note: Illinois flow measuring device larger than 1-1/4" must be accompanied by balancing valve

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series 5000.

3. A compatible portable flow measurement meter shall be furnished to the owner at the end of the job.

J. Automatic Flow Control Valves:

1. Autoflow, Griswold, or equal, pressure compensating flow control valves in one piece configuration consisting of ground joint union and factory-set flow control unit.
2. Valves shall be brass or stainless steel.
3. Valves must be marked to show direction of flow.

2.09 VIBRATION ISOLATION DEVICES

- A. Acceptable: Amber / Booth, Consolidated Kinetics, Korfund, Mason, VECO, and Vibration Mountings and Controls, Inc.
- B. Supply all vibration isolation devices from a single manufacturer.
- C. Select vibration isolation equipment to give uniform loading and deflection, according to weight distribution of equipment.
- D. Spring isolation, generally: spring diameter not less than 0.8 of spring operating height. Provide springs with a minimum additional travel to solid equal to 50% of the rated deflection. Select spring with ratio of horizontal spring constant to vertical spring constant between 1 and 2.
- E. Un-housed Spring Type: Provide with leveling bolts for attaching to equipment, vertical

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resilient limitstops with a minimum clearance of 1/2" maintained around restraining bolts and between the housing and spring, limit stops out of contact during normal operation. Size for 1" static deflection.

- F. Vibration Hanger: Provide with a steel spring and a double deflecting neoprene element in series. Elastomer element with a minimum static deflection of 1/4"; steel spring static deflection of 1", except for the two isolators nearest the vibrating equipment with a static deflection of 1-1/2 times, and equal to, the static deflection of the isolated equipment, respectively. Install with spring element concentric to rod. Isolate hanger rod from steel housing with neoprene bushing.

2.12 TEST PLUGS

- A. Universal National, 1/2" N.P.T. brass body, with neoprene test plug valve insert.
- B. Acceptable Manufacturers: No. 700 Pete's Plug or equal.

2.13 PIPING IDENTIFICATION

- A. General: Install color coded identification and direction markers after completion of painting and thermal insulation work unless otherwise noted, all in accordance with ANSI Standard A13.1, 1975.
- B. Materials: Equal to W.H. Brady Co. cataloged systems. Black stencil.
- C. Locations:
1. Mechanical Equipment Rooms:
- Within 18" of each point of entry and exit from all rooms.
- Withing 3 feet on each side of each 90-degree elbow, tee, and connection to equipment or vessel.

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At not over 20 foot intervals, measured along centerline of pipe.

2. Above Suspended Ceilings:

Within 18 inches of each valve or valve assembly.

At tees, identify both main and branch within 3'-0" of tee.

Within 3 feet of each 90-degree elbow.

3. Piping Concealed in Chases or Shafts: Identify each pipe visible through access door or panel.

4. Piping exposed in rooms other than Mechanical Equipment Areas:

Omit identification on piping 1/2 inch size and smaller exposed at connections to equipment or plumbing fixtures.

With the above exception, identify at not less than one point each piping run visible in each room, with identification at not over 20 foot intervals measured along centerline of pipe.

2.14 VALVE IDENTIFICATION

- A. General: Valves shown on drawings except those isolating individual pieces of equipment shall be identified with brass tags and chart listing all valves by numbers. Each valve identification tag shall be 18-gauge polished brass, 1-1/2 inch diameter with service indicated by 1/4 inch, stamped, black-filled letters and valve number indicated by 7/16-inch stamped, black-filled numerals. Tags shall be fastened to valves with meter seals, brass 'S' hooks or brass jack chain to permit easy reading.
- B. Identification: Each valve tag shall have an identifying letter designating the system, and an identifying number designating the valve. Identifying letters shall be those utilized in the Legend.

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- C. A chart of all valves showing the valve identification number, location, purpose, and / or special information shall be mounted in an aluminum frame under 1/8" sheet plastic and secured to a wall as directed. Valve chart wording and numbering shall be approved prior to fabricating tags.
- D. Manufacturer: Tags shall be as manufactured by W.H. Brady Company, Seton Name Plate Corporation, or Markem Corporation.

2.15 NAMEPLATES

- A. General: Provide for all equipment, motor starters, remote push-button stations, insertion type thermostats, remote bulb thermometers, filter gauges, remote pressure gauges, fans, pumps, equipment, and panel mounted controls. Submit identification number and wording 6
review by engineer.
- B. Designation: The name of each piece of equipment or usage shall be etched in 1/4" maximum, 1/8" minimum high letters and mounted on or adjacent to piece of equipment.
- C. Type: White core black or red Bakelite secured with epoxy glue.

2.16 MOTORS

Provide motors for all equipment furnished under Mechanical Sections unless otherwise specified. Motors shall operate using electrical characteristics as shown on the electrical drawings and as specified. Motors shall be Louis-Allis, Gould, Westinghouse, General Electric, or Emerson, except where furnished as part of packaged equipment.

Standards: Except where otherwise specified, motors shall be manufactured according to NEMA Standards. They shall be NEMA Design B, Insulation Class B or F, 40-degrees C. ambient and 40-degrees C. rise. Hermetic motors shall be manufactured according to ARI Standards. Motors 1/2 HP and larger shall be high efficiency, similar to Gould E plus.

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A. Sizes:

1. Motors with standard NEMA Electrical characteristics shall be selected for the design brake horsepower without overload current at rated voltage.
2. Motors with special electrical characteristics, such as hermetic refrigeration motors, shall be selected to produce the brake horsepower required for the specified load without overload current at rated voltage.

B. Enclosures: Motor enclosures shall be open drip-proof, except where otherwise specified. Motors for equipment installed where subject to weather shall be fan cooled, totally enclosed, weatherproof type.

C. Nameplates: Motors shall have a nameplate showing the specified nominal system voltage as nameplate rated voltage. Each motor shall be guaranteed to operate satisfactorily at the specified nominal system voltage, plus or minus 10%.

2.17 STARTERS

A. Furnish all starters (except where included in motor controls centers), contractors, motor switches, and start-stop stations. Where located inside the building, starter and motor enclosures shall be NEMA type 1 general purpose, and where located outside the building, shall be NEMA type 3R except where otherwise noted on the drawings. See Electrical Division for motor control centers.

B. Three phase motors shall be provided with magnetic across-the-line starters with overload protection on each phase. Furnish starters with hand-off-automatic selector switch and reset button in cover.

C. Single phase motors less than $\frac{1}{2}$ HP shall be provided with relays or switches with overload protection.

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- D. Equipment furnished with factory installed motor starter units shall also be equipped with individual motor branch circuit protective devices interconnected on their line sides to lugs sized to receive a feeder with minimum ampacity of 125% of total connected load.
- E. Starters shall be Allen Bradley, Cutler Hammer, Square-D, General Electric, Westinghouse, Jocelyn Clark, or equal.

2.18 STEEL EQUIPMENT BASES AND SUPPORTS:

- A. Fabricate from steel structural shapes by welding. Where members must be removable, assemble with bolted joints.
- B. Form corners in angle frames with joints mitered, welded, and ground smooth.
- C. Finish steel bases and supports in 2-part rust resistive oil paint system with primer and top coat to light gray color.

PART 3 - EXECUTION

3.01 SLEEVES

- A. Sleeves shall be spaced sufficient distance from adjacent walls and other sleeves so that insulation, floor, wall, and ceiling plates may be installed without cutting insulation or plates.
- B. Sleeves through slabs and outside walls below grade shall be caulked water-proof. Caulk other sleeves in floor slabs with non-shrink grout or concrete.
- C. Piping passing under column footings, or under or through wall footings, foundations or retaining walls shall be provided with a relieving arch, or an iron pipe sleeve two pipe sizes greater than the pipe passing through.
- D. Provide sleeves for piping passing through masonry walls, partitions, floors, and roofs except

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for cast iron piping which may be built into masonry walls and partitions.

- E. Cut wall sleeves full thickness of walls.
- F. Where pipes passing through sleeves are to be covered, size sleeves large enough to allow for full thickness covering.
- G. Omit pipe sleeves in concrete slabs on grade.
- H. Provide sleeve lay-out for slabs above grade, including roof, for approval by structural engineer and architect showing location and size before slabs are formed.
- I. Sleeve system such as Pro-Set or equal shall be installed in accordance with manufacturer's recommendations.
- J. Annular space between sleeve and pipe shall be packed with approved fire stopping material. See "Fire Stopping" in Section 15010.
- K. Provide sleeves on thermally expandable piping penetrations through fire or smoke rated gypsum construction partitions. The sleeves shall extend a minimum of 3" on either side of the partition and the annular space shall be filled with a fire stopping material in such a way as to maintain a fire endurance rating equivalent to that of the adjacent wall.
- L. Isolate non-ferrous piping from slab on grade with armaflex or equal insulation .
- M. Piping penetrations made AFTER installation of wall shall be cored with a coring machine. Block shall not be knocked out with a hammer.

3.02 SUPPORT OF PIPING

- A. Support steel piping 1" and smaller on centers not more than 8' apart. Support piping larger than 1" on centers not more than 10' apart.

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- B. Support copper tubing 1-1/4" or larger size not more than 10' apart. Support copper tubing in sizes 1" and smaller not more than 6' apart.
 - C. Support soil, waste, and vent stacks and inside downspouts at the base by means of heavy hangers or riser clamps close to the bottom of the stack.
 - D. Support each horizontal length of cast iron pipe, not counting the fitting, not exceeding 10'-0" on centers.
 - E. Support all piping within 1' of each change in direction and at each branch connection.
 - F. Provide pipe hangers with rods and supports proportioned to the actual size of pipe supported with allowance for weight of insulation and contents.
 - G. Support hot and cold water plumbing piping in spaces back of plumbing fixtures with heavy duty ABS brackets and u-bolts secured to cast iron stacks.
 - H. Provide insulation protectors for insulated piping supported on gang or clevis hangers.
 - I. Do not penetrate exterior walls of the building below grade with support bolts.
 - J. Do not run piping over or within 3'-6" of electrical switchgear or panelboards in mechanical spaces. No piping is permitted in space dedicated to electrical equipment rooms.
 - K. Condensate drain piping shall be pitched in the direction of flow not less than 1/4" per foot.
 - L. Provide strainer ahead of each pump suction, trap, and automatic valve.
 - M. Provide unions in piping at valves and equipment connections.
 - 1. Screwed Piping - Malleable iron, ground joint, brass seated, 2" pipe size and smaller.
 - 2. Welded Piping - Flanged with same gaskets as at pipe fittings, 2-1/2" pipe size and

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larger.

- N. Bed body of piping underground on solid ground.
- O. Install air piping with slope of 1" fall per 40' toward receiver of blow off point.
- P. Provide vibration isolation device on first three pipe hangers from rotating mechanical equipment over one horsepower.
- Q. Vertical piping shall be supported at each floor. Riser clamp must rest firmly on floor - not on sleeve.
- R. Perforated strap hanger or similar material will not be permitted.

3.03 PROCEDURES FOR PIPE JOINTS

- A. Threaded Pipe Connections:
 - 1. Ends of pipe shall be cleaned and reamed.
 - 2. Joints shall be made with pipe thread lubricant suitable for service intended, applied to male threads only.
- B. Soldering of Pipe:
 - 1. Ends of pipe shall be cleaned with sand cloth or wire brush.
 - 2. Flux shall be evenly applied to both pipe end and fittings. Flux shall be of type recommended by its manufacturer for the type of solder used. Brazing flux shall be used for solder or 1000-degrees F. or higher melting point.
 - 3. Solder shall completely fill socket of joints. Do not back up joints with solder

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dissimilar to that used in joints.

C. Mechanically Formed Tee Connections:

1. Mechanically extracted collars shall be formed in a continuous operation consisting of drilling a pilot hole and drawing out the tube surface to form a collar having a height of not less than three times the thickness of the tube wall. The collaring device shall be fully adjustable as to insure proper tolerance and complete uniformity of the joint.
2. The joining branch tube shall be notched and dimpled in a single process so as to set the proper penetration of the branch tube into the fitting to assure a free flow joint.
3. All joints shall be brazed in accordance with the Copper Development Association Copper Tube Handbook using B-cup series filler metal. Note: Soft soldered joints will not be permitted.
4. All mechanically formed branch collars shall be as approved by local National Standard Plumbing Code, B.O.C.A., I.A.M.P.C., or S.B.C.C.

D. Cast Iron Pipe - Hub and Spigot: Joint shall be firmly packed with white oakum and filled with molten lead not less than one inch (1") deep. Joints shall be well caulked. For gasketed joints, hub, spigot, and gasket manufacturer to prevent damage and facilitate joining.

E. Cast Iron Pipe - No Hub: Couplings shall be used to join pipe in accordance with pipe manufacturer's recommendation and shall be installed using torque wrench made for this purpose. Vent piping shall be joined by standard no-hub couplings. Soil, waste, and rainwater piping shall be joined with heavy duty, Husky or Tyler, no-hub couplings.

3.04 UNDERGROUND PIPING

- A. Underground ferrous piping unless noted otherwise shall have factory applied corrosion resistant coating. Fittings and weld joints shall be coated with product specified here-in.

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3.05 UNIONS

- A. Provide unions at connections to valves and equipment to allow dismantling of pipe connections without cutting pipe.
- B. Flanged connections are considered as unions.

3.06 REDUCERS

- A. Use eccentric reducers for all pipe size changes in horizontal straight thru piping 1 1/4" and larger.
- B. Eccentric Reducers
 - 1. Reducers shall be installed with flat on top in chilled water and hot water piping systems.
 - 2. Reducers shall be installed with flat on bottom in steam piping.
- C. Concentric reducers shall be used only in vertical piping.

3.07 INSTALLATION OF INSTRUMENTATION

- A. Provide water pressure gauges and gauge manifolds, gauge connection points, thermometers and wells, test wells, and instrument ports in locations specified or indicated on the drawings.
- B. Mount instruments in locations and positions to give accurate reading of the measured condition and to be readable from the floor. Locate pairs of instruments to allow reading of both from same point.
- C. Mount instruments for reading pressure drops with taps at points for which published pressure drop data are available.

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- D. Locate test walls with bore more than 30-degrees above horizontal to permit retention of heat transfer material. Locate test wells at chillers to allow use of glass thermometers up to 24" long.
 - E. Select wells for thermometers in piping with 3-1/2" stems for 6" and smaller piping and 6" stems for 8" and larger piping, with extension necks of length to extend clear of insulation.
 - F. Instrument Locations:
 - 1. Where indicated on the drawings.
 - G. Calibrate and adjust instruments after installation. Set up air filter gauges for clean filter pressure drop.
 - H. Mount pressure and temperature measuring stations in side of tee or in coupling on large pipe.

3.08 TESTING

- A. All piping shall be tested to the pressure and for the period of time listed, and shall hold the specified pressures at the low point of the system for the specified length of time without perceptible loss of pressure or leakage.
 - 1. Space Heating, Chilled Water, Hot Water, Compressed Air, Cold Water, Domestic Hot Water, and Hot Water Circulation Piping: One hundred twenty-five pounds hydrostatic pressure for two hours (125 psig - 2 hours).
 - 2. Soil, Waste, and Vent Piping: A water test shall be applied to the system in sections. Each opening shall be tightly plugged except the highest opening of the sections, at least the upper ten feet of the preceding section shall be retested so that all but uppermost ten feet of the system shall have been submitted to a test of not less than 10' of water. The water level shall remain constant for not less than 15

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minutes; the system shall be tight at all points.

3. Compressed Air Piping: 175 PSIG hydrostatic pressure for two hours.
4. Gas Piping - fifty pounds of air pressure for one hour. In addition each joint and connection shall receive a soap bubble test.
5. Correct or replace items shown by test to be defective and retest to assure tightness.

3.09 CLEANING

- A. All water piping shall be thoroughly flushed. All strainers and aerators shall be cleaned after flush.
- B. After cleaning, fill systems with water, vent air from piping and equipment, start pumps and verify flow.

3.10 DISINFECTIONS OF PIPING

- A. All domestic water supply lines shall be disinfected BEFORE THEY ARE PLACED IN OPERATION. The system shall be filled with a chlorinated water solution containing not less than fifty (50) parts per million of chlorine solution. Following a contact period of not less than twenty-four (24) hours, the chlorinated water shall be flushed from the system with clear water until the residual chlorine content is not greater than two-tenths (0.2) parts per million.
- B. Contractor shall submit to the Architect, in triplicate a letter of certification from an independent Testing Lab acceptable to the Georgia Department of Public Health stating that above disinfection procedure has been completed satisfactorily. **b**

3.11 DIELECTRIC CONNECTIONS

- A. Use dielectric couplings to join pipe of dissimilar metals.

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3.12 INSTALLATION OF STEEL EQUIPMENT BASES AND SUPPORTS

- A. Establish base location, coordinate for 4" housekeeping pad under each base, anchor base to pad.
- B. Suspended Equipment
 - 1. Attach steel members to structure over suspension points on equipment.
 - 2. Install hanger rods and bolts at suspension points, attached to steel members.
 - 3. Mount equipment with rods and bolts to suspension points.
 - 4. Adjust hanger rods and bolts to make equipment level.
 - 5. Make screwed attachments secure by double-nutting.
- C. Coordinate installation of bases and supports with vibration isolation requirements where required.

3.13 PUMP SUCTION DIFFUSERS AND STRAINERS

- A. Contractor to furnish and install pipe support leg positioned to relieve any stress on pumps.
- B. Brass start-up strainer shall be removed after flush and reasonable running period and before system balancing procedure.
- C. Allow ample space for removal and service.

3.14 VALVES

- A. All gate, globe, butterfly, and ball valves shall be installed with stems above the horizontal position.

3.15 AIR VENTS

- A. Automatic Air Vents shall be installed on Air Purger and as indicated on plans. Manual Air

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Vents shall be installed at all high points in piping, at all coils and as required for purging system whether shown or not.

B. Automatic air vents shall be piped to drain.

C. Install a 1/4" copper gooseneck on manual air vents.

3.16 Adjust pressure reducing valves serving compression tanks to maintain between 5 and 10 PSIG at highest point in the system. b

3.17 VENT PIPING

A. Provide vent piping from the relief opening of each gas pressure regulator and gas pressure switch in the boiler gas trains to a point outside the building at least 10' above finished grade, and at least 5' from any building opening. The vent connection to each regulator or switch shall be increased when 2 or more appliances have been connected so that the common vent will be equal or greater than the sum of the cross sectional areas of all individual vents involved. The common vent shall be a minimum of 3/4" size. Vents from regulators in high pressure gas piping, above 1/2" psig, shall each be run independently to the exterior. Terminate vent lines with an OPW 113 flash arrestor.

END OF SECTION

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HEATING, VENTILATION & AIR CONDITIONING

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PART 1-GENERAL

1.01 Scope

- A. Division 1 of these Specifications is incorporated herein.
- B. The work covered by this division of the Specifications shall conform to all ordinances and regulations of the County, City, State and/or any Authority having jurisdiction. The work shall conform to the latest issue of Pamphlet No.54, 90A and 96 of the National Board of Fire Underwriters Building code, except where other codes exceed these requirements.

1.02 Obtain all necessary permits and inspections required for the installation of this work and shall pay for all charges incidental thereto. Deliver to the Architect all certificates of said inspection issued by the authorities having jurisdiction.

1.03 Equipment Installation and Workmanship:

- A. The Architect reserves the right to direct the removal of any item which in his opinion does not present an orderly neat and good workmanship appearance, provided such items can be installed in an orderly manner by the usual methods. Such removal and replacement shall be done when written instructions are received from Architect.
- B. In no case shall any equipment be installed contradictory to the manufacture's recommendations.

1.04 Submit catalog data in six (6) copies for approval, as described in Section 15010, paragraph 1.06.

1.05 The Contractor shall be responsible for a trouble free system in every respect for twelve (12) months after final inspection.

1.06 Test, Adjust and Balance: (To be monitored by Architect/Engineer)

Contractor shall test system and submit balance report with three copies to Architect/Engineer for approval. Testing company shall be member of AABC or NEBB.

- A. Report all CFM air quantities.
- B. Report test on new roof top unit.
- C. Report calibration point on controls.
- D. Report outside Air CFM.

1.07 Guarantee:

- A. All work furnished under the HVAC trade shall be guaranteed for a period of one year from date of acceptance thereof to be free of defects in workmanship and materials.
- B. The Contractor shall agree to replace the refrigeration compressor assembly in which defects in material or workmanship become manifest under normal conditions of use and service of a period of 5 years, whereby it fails to operate and which by examination shall be disclosed to be faulty or defective.

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PART 2-PRODUCTS

2.01 Air Conditioning Unit:

- A. Unit shall have factory assembled, piped, internally wired and fully charged. All units shall be designed to operate at outdoor ambient temperatures as high as 100 degrees F. Units certified by ARI Standard 210 and 270. National Rating Standard of the Air Conditioning and Refrigeration Institute. heating/Cooling units design is certified by American Gas Association (A.G.A.) specifically for outdoor applications using propane or natural gas. All cooling units are Underwriter's Laboratories listed. All units shall be designed for indoor installation. Units have welded shell, 3600 RPM compressors.
- B. Casing: All access panels are gasketed and provided with fasteners and handles. One inch, one pound density foil-faced glass fiber insulatin is on heat exchanger section. Same composition mat-faced insulation is in evaporator section.
- C. Refrigeration Controls: Refrigeration controls include condenser fan, evaporator fan and compressor contactors, and 24 volt transformer. Safety controls include winding thermostat and compressor overloads. Cycle guard prevents unit cycling on overloads and safety controls to be reset at thermostat inside the builidng. Each circuit of the unit has a separate set of refrigeration controls.
- D. Compressor: All units have welded shell hermetic compressors, 3600 RPM. Crankcase heaters shall be required on all compressors.
- E. Evaporator Coil: Units have a 2-row coil. All coils have seamless copper tubing of 3/8" OD, mechanically bonded to heavy duty aluminum fins. Factory pressure and lead tested at 300 PSIG. Expansion valves standard.
- F. Drain Pan: Evaporator pan internally sealed insulated. Threaded drain connection in evaporator section.
- G. Condenser Coil: 5-ton units have a 2-row coil. P:rimary surface 3/8" OD seamless copper tube. The secondary surface is mechanically bonded to heavy duty aluminum fins. Factory pressure and leak tested 425 PSIG.
- H. Indoor Air Fans: Belt driven, forward curved, centrifugal type fans equipped with adjustable motor sheave standard. The motor is thermally overload protected. Permanently lubricated fan motor bearings. Motor/fan assembly completely isolated from unit with rubber mounts.
- I. Condenser Fans: Direct drive, statically and dynamically balanced propeller fans. Weather-proof fan motors UL listed for outdoor use. Units have built in thermal overload protection. Permanently lubricated motor.
- J. Heat Exchanger: Use corrosion resistant embossed, formed and seamed 18 gauge aluminum steel. Factory tested for gas leaks. Stress relieved, free floating design. Located upstream of cooling coil.

2.02 Split-System Heat Pump Units: (Open)

2.03 Indoor Section: (Open)

2.04 REFRIGERATION PIPING

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- A. Refrigeration piping shall be seamless copper tubing, dehydrated type "ACR," with wrought copper long radius elbows, made up with sweat type silver solder joints. Vibration eliminator pipes where recommended by the compressor manufacturer or where required to prevent transmission of vibration shall be of the bellows type, with bradied bronze wier protection. Refrigerant pipe design and sizes shall be in strict conformance to the recommendations of the equipment manufacturer, and to the Equipment Standards of the Air Conditioning and Refrigeration Institute, Inc., except that Freon suction risers shall be for a gas velocity not less than 2,000 feet per minute.
- B. Oil lift traps shall be required at the base of all vertical riser pipes or as recommended by the manufacturer.
- C. Refrigeration pipe insulation: The suction piping shall be insulated with 3/4" thick Armstrong Armiflex, foam rubber pipe insulation.

2.05 REFRIGERANT AND OIL

- A. The entire refrigerant charge shall be of the correct amount of pounds, as recommended by the system manufacturer. The Contractor shall be required to perform all pressure test, vacuum test, halide torch test, and operation test. The Contractor shall guarantee the refrigeration piping system free from leaks for one year. Any refrigeration leaks which are detected within the warranty period shall be repaired by the Contractor at no additional charge to the owner. Any refrigerant which leaks out shall be replaced at the time of repair.
- B. Each refrigeration system shall be furnished with a complete charge of lubricating oil for the compressor crankcase. The oil shall be of the type recommended by the compressor manufacturer.

2.06 SUCTION LINE ARMAFLEX INSULATION:

- A. Rubber Pipe Insulation: Shall be Armstrong Armaflex or approved equal condensate drain pipe-1/2" thick.
Refrigeration Suction Pipe: 3/4" thick. As much of the insulation as possible shall be slipped on to the piping as the piping is being connected in order to keep from cutting the insulation. All butt ends and any necessary longitudinal joints shall be sealed with rubber based adhesive.

2.07 ABOVE GROUND DUCT WORK

- A. (A/C Ducts) All duct work supply, return and exhaust except flexible run-outs shall be galvanized steel (cross break on all sides). All duct work shall be new and securely suspended and hung as per SMACNA Manual. All duct work shall be concealed from view above ceiling. Follow good sheet metal practice as outlined Chapter 1 of 1972 ASHRAE System 1970 (Forced Air Systems).

END OF SECTION

**SECTION 23 06 30
HEATING, VENTILATION & AIR CONDITIONING**

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

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SECTION 26 00 00
BASIC MATERIALS AND METHODS

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PART 1 - GENERAL

1.01 This section covers basic electrical materials and wiring, and all items of equipment not otherwise specified under other sections of the Specifications.

1.02 APPLIANCE AND EQUIPMENT CONNECTIONS

- A. Provide PVC insulated flexible cord sets for all cord and plug connected contract building appliances and equipment. Cords shall be sized in accordance with electrical circuits indicated on the drawings. Multiple conductor cords shall be type "SO" cable with PVC jacket and green insulated ground conductor.

1.03 MOTORS

- A. Motors except where specified herein, shall be furnished under other sections of the Specifications. Confirm motor locations.
- B. Motors shall be of the voltage and phase characteristics as shown on the drawings.
- C. The horsepower ratings indicated are for guidance and do not limit the equipment size. When electrically driven equipment furnished under other sections of these Specifications differs from the contemplated design, the Contractor shall be responsible for the necessary adjustments to the wiring, disconnect devices, and branch circuit protection to accommodate the equipment installed.

1.04 MOTOR WIRING

- A. Furnish and install power wiring to motors and mechanical equipment. Wiring into motor or equipment terminals shall be complete with connections through associated disconnect switches, and motor starters, including branch circuit power line controlling devices.
- B. Receive, store, and install individually mounted starters and controllers for motors.

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- C. Wiring shall be in conduit, with a final connection to rotating equipment made through a section of PVC jacketed flexible conduit.
- D. Multi-speed, reversible, and reduced voltage start motors shall be connected as recommended by equipment manufacturer.
- E. Motors shall be grounded as specified under "Grounding System".

1.05 CONTROL WIRING

- A. Control wiring and empty conduits for control wiring to be furnished under this section shall be furnished only to the extent indicated on the electrical drawings.
- B. Control wiring is defined as that wiring which provides connections between control circuit elements and does not provide the power circuit into motor or heating equipment terminals. Where a control device, such as push-button, thermostat, firestat, is to be installed in the branch circuit power lines, these devices shall be received, stored, and installed as indicated the drawings and called for under "Motor Wiring" and "Electric Heaters"
- C. Coordinate the installation of branch circuit power line control devices with requirements in other sections of the Specifications.

1.06 RATED PENETRATIONS

- A. All rated wall and floor penetrations shall be sealed with a UL listed sealant to maintain the rating.

PART 2 - PRODUCTS

2.01 PLYWOOD BACKBOARDS

- A. Provide flame retardant plywood backboards for distribution equipment surface mounted in equipment areas such as mechanical rooms, electrical closets, and equipment rooms.

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- B. Backboards shall be minimum 3/4" thick and sized to accommodate equipment indicated on the drawings.
- C. Secure backboards to the building structure and paint with two coats of fire resistant flat black Duron paint.

2.02 DISCONNECT SWITCHES

- A. Disconnect switches shall be quick-make, quick-break Underwriters' labeled Heavy Duty safety switches. Switch ratings shall be for the applied voltage and current.
- B. Disconnect switch enclosures:
 - 1. For indoor - NEMA 1 general purpose.
 - 2. For outdoor - NEMA 3R raintight.
- C. Manufacturers: General electric, Westinghouse, ITE, Square D.
- D. Designate with permanent labels, the maximum allowable fusing capacity for fusible switches that are applied with conductors rated less than the switch rating.
- E. Disconnects for 120V motors 1/2 HP or less shall be horsepower rated toggle switches in steel outlet boxes.

2.02 FUSES

- A. Install fuses in fusible protective devices.
- B. Provide NEC, dual element time-delay, or current limiting, fuses for specific applications only where indicated on the drawings.
- C. Fuse specification - See Section 16181.

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2.03 LABELS

- A. Provide labels on the outside face of panelboards, switchboards, disconnect switches, motor starters, transfer switch, and contactors.
- B. Labels shall be a micarta nameplate with 1/2" high white letters. Nameplates shall be red on emergency equipment and black on normal equipment. Secure labels with screws or pop-rivets.

PART 3 - EXECUTION

3.01 UTILITY COMPANY COORDINATION

- A. Coordinate with the electrical Utility and verify location and orientation of service equipment and associated metering equipment.
- B. Provide and install all materials designated by the Electrical Utility to be furnished by "Customer". This may include but not be limited to, compression lugs for transformer secondary connection, concrete pad for service transformer, grounding material, meter base and empty conduits for primary lines.

3.02 BRANCH CIRCUITS

- A. Provide dedicated neutral for any branch circuit serving dimmable lighting fixtures and copying machines.

END OF SECTION

SECTION 26 05 33

CONDUIT

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PART 1 - GENERAL

1.01 GENERAL

- 1.01 Where the word "conduit" is used in this specification, it shall mean thick wall rigid metal conduit, rigid non-metal conduit or electrical metallic tubing. Where the words "flexible conduit" are used, it shall mean jacketed liquid-tight or unjacketed flexible metal conduit.
- 1.02 Conduits shall bear the Underwriters Laboratories listing mark.
- 1.03 Conduits for branch circuit wiring shall be 1/2" or larger.

PART 2 -- PRODUCTS

2.01 TUBULAR CONDUIT

- A. Non-metallic conduit shall be Schedule 40, 90-degrees C. Rated polyvinyl chloride, UL listed for underground burial.
- B. Metallic conduit shall be galvanized steel.
- C. Intermediate Metal Conduit (IMC) may be used in lieu of rigid metal conduit. IMC shall be hot-dipped galvanized steel manufactured in accordance with UL Standard #6 or # 1242.
- D. Flexible Conduit:
1. Flexible conduit shall be a minimum length of 8" and at least six times the trade diameter for conduit 1/2" or larger.
 2. Flexible conduit for connections to lighting fixtures shall be 3/8" diameter and minimum 48" and a maximum 72" in length, and shall be non-jacketed with a continuous strip cold rolled galvanized steel core.

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3. Liquidtight flexible conduit shall be a minimum ½" diameter.

4. Liquidtight and non-jacketed flexible conduit shall be manufactured by Electric-Flex, Anaconda or Flexi-guard.

E. Steel conduit shall be manufactured by Republic, Wheatland, Allied, Triangle, or Steel duct.

F. PVC conduit shall be manufactured by Carlon, Sedco, Context, or Certainteed.

2.02 FITTINGS

A. Where electrical metallic tubing is used indoors, connectors and couplings shall be steel thread set screw. Make all joint connections tight for a continuous low impedance ground return.

B. Where electrical metallic tubing is used outdoors, connectors and couplings shall be UL listed rain tight, steel compression type. Connectors shall be complete with insulated throats.

C. Cast or split threadless couplings are not acceptable.

D. Connectors and couplings for rigid steel or intermediate metal conduit shall be steel threaded type.

E. Conduit passing through concrete or masonry walls underground shall be complete with watertight wall seal gland fittings, OZ type WSK. Ground bushings shall be OZ type BLG.

F. Connectors and couplings shall be manufactured by Thomas and Betts, Efcor, Raco, Appleton, Steel City, ETP, or Erickson.

G. Flexible Conduit:

1. Connectors for flexible conduits shall be UL listed with insulated throats.

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2. Connectors for liquidtight conduit shall be compression type, made of steel and provided with O-ring. Connectors metal ferrule shall provide positive ground circuit continuity.
 3. Connectors for non-jacketed flexible conduit shall be squeeze-type and made of malleable iron.
 4. Flexible conduit connectors manufacturers shall be Raco, Appleton, Efcor, Thomas and Betts, or Ideal.
- H. Where a conduit run crosses a structural expansion joint, provide expansion fitting, OZ type DX. The expansions fitting shall be electrically continuous or the contractor shall install a bonding jumper across it.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. Conduit bends and offsets shall be made with conduit hickey or conduit bending machine. Crushed or deformed conduits shall not be installed.
- B. Exposed conduits shall be run parallel or at right angles to adjacent walls.
- C. Prevent lodgement of plaster, dirt or trash in conduits, boxes and fittings.
- D. Store conduit in racks above ground.

3.02 INSTALLATION

- A. Provide unjacketed flexible conduit connections to lighting fixtures in lift-out type ceiling to an outlet box located above the ceiling.
- B. Provide liquidtight flexible conduit for short final connections (3' maximum) to rotating or

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vibrating machinery and equipment including transformers.

- C. Provide non-metallic (PVC) conduits for outdoor lighting branch circuit wiring, secondary service conductors between power company transformer and main switchboard, and at other location where specifically indicated on drawings.
- D. Concealed Conduit:
 - 1. Conduits shall be concealed except as noted or shown otherwise.
 - 2. Concealed conduits shall be above ceiling, in building walls, or in floor construction.
 - 3. Concealed conduits in building walls shall be installed vertically except when:
 - a. The wall is or framing stud and gypsum board construction, and
 - b. Adjacent outlet boxes are within 10' of each other; and
 - c. Outlets are in common wall (do not turn corners; and
 - d. Removing the horizontal conduit will not affect upstream or downstream devices (run shall be a dead end), and
 - e. The total horizontal run does not exceed 20',
 - f. A maximum of four horizontally connected outlet boxes are on each vertical conduit.
- E. Conduit risers in masonry-block walls shall be installed before walls are built and run vertically in walls. Where existing block walls are to have conduit, run in furring space before gypsum board is installed.
- F. Conduits shall be grounded as provided by the National Electrical Code and these specifications. Conduits installed below grade or with non-galvanized male threads shall have threads painted with "LPS Zinc Rich".
- G. Conduits installed underground or in on-grade floor slabs shall be rigid metal conduit with threaded couplings, except where otherwise noted.
- H. Rigid metal conduit shall be used for all runs likely to be subject to physical injury.

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- I. Feeder circuits (panelboards, motor control centers, etc.) shall be rigid metal conduit or intermediate metal conduit.
- J. Conduits run above ceilings shall be supported from the building structure, independent of ceiling system support. Install on bottom of bar joists or structures where practical, otherwise secure conduit above ceilings with threaded rods and hangers. Parallel groups of conduit 5n be supported from a trapeze channel with each conduit secured to the channel with a spring clip device. Supports shall occur on minimum 10 foot centers and within 3 feet of an outlet or junction box.
- K. Feeders and branch circuit conduits installed exposed shall be supported from the bar joist or structure. Suspension below bar joist and structure or channel supports is acceptable up b 12"; greater suspension must be approved by the Architect.
- L. Conduits installed underground outside building foundations shall be a minimum of 24" below finished grade and shall be encased in 3000 psi concrete envelope with 4" coverage; except conduits for outdoor lighting branch circuit wiring, telephone service, and cable television service, which shall be run unencased direct buried at a minimum depth of 30" below finished grade.
- M. Conduit larger than 3/4" installed in ground floor concrete slab shall be covered top and bottom with a minimum of two (2) inches of concrete. Thicken slab by depressing waterproof barrier on gravel to provide minimum cover, or run conduit under the concrete slab and encased in concrete.
- N. Conduit installed in structural concrete slabs shall be in accordance with the requirement of the ACI 318-63 Building Code Requirement for Reinforced Concrete" publications.
- O. Exposed conduits below 8' shall be rigid metal conduit. Support conduits on the ceiling or wall by means of the two screw galvanized clamps or trapeze hangers.
- P. Empty conduits shall have a Polyolefin line (200 lbs. Strength) pulled into conduit.
- Q. Seal unused conduit ends with plastic or metal caps.

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- R. Elevated slab floor penetrations for conduit shall be provided with sleeves. Sleeves shall extend approximately one inch above finished floor slab and sealed tightly with fire safe insulation.
- S. PVC conduit shall not be installed indoors.

END OF SECTION

**SECTION 27 30 00
VOICE AND DATA COMMUNICATION CABLING**

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes furnishing and installing all materials and providing all labor and supervision pertaining to Cat 6 Voice/Data Wiring support systems cabling, devices, devices, plates, equipment racks, active components and associated components.
- B. **QUALITY CRITERIA AND STANDARDS**
 - 1. Voice/Data support equipment shall comply with applicable UL, NEC, and NEMA standards and requirements and shall be UL-listed and labeled.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Station jacks, faceplates, and associated components; furnished and installed by Contractor.
- B. Patch panels and type 110/66 punch-down blocks; furnished and installed by Contractor.
- C. Voice/data workstation cable; furnished and installed by Contractor.
- D. Associated materials and components:
 - 1. Backboard: Telephone and data backboards shall be ¾” thick B_D INT-DEPA plywood. Mount D finish toward wall. The backboard shall be divided so that each zone (voice/data) is clearly separated and marked from one another. The backboard shall be painted with 2 coats of fire-resistant white paint. Unless specifically indicated on the drawings, minimum backboard size shall be 4’ x 8’.
 - 2. Cable support: Provide Cable Treys for all above-ceiling wiring throughout the entire building. Size as required – submit shop drawings for approval.

PART 3 – EXECUTION

3.1 INSTALLATION:

- A. Installation of Voice/Data workstation cable, station jacks, faceplates, and associated components, rack equipment, patch panels, and punchdown blocks is by the Contractor. The Patch Panel only will be supplied by the Owner.

END OF SECTION

SECTION 28 31 00
FIRE ALARM SYSTEM

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PART 1 - GENERAL

1.01 SCOPE

A. The fire alarm system is to be a completely new system that covers the FIRST FLOOR and the SECOND FLOOR and shall conform to all requirements of NFPA 72 and drawings are to be submitted to the State Fire Marshal for review and approval. Provide all equipment, labor, and telephone lines to provide a fully operational Fire Alarm including Emergency forces notification and dialer.

B. The products and installation shall conform to the requirements set forth in the following standards:

1. NFPA 70 (including article 760), current Edition
2. NFPA 72, current Edition
3. NFPA 101, current Edition
4. The IBC International Building Code and IFC International Fire Code as amended and adopted by the local authority.
5. State of Georgia Rules of Safety Fire Commissioner.

1.02 SYSTEM ARCHITECTURE

A. The system shall consist of:

1. A complete microprocessor-based non-coded, closed circuit, completely supervised zone indicating fire alarm system to monitor hardwired inputs from normally open contact devices.

2. Capacity:

- a. Eight to thirty-two initiating device circuits with two spares.
- b. Two to six indicating appliance circuits with two spares.
- c. Five to fifteen amp power output.

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B. Circuit styles shall be NFPA 72 styles as follows:

1. Indicating device circuits: Style B.
2. Indicating appliance circuits: Style Y.

1.03 SYSTEM INITIATION

- A. System initiation shall occur when any initiating device is in alarm and when any fire suppression system is activated.
- B. Supervisory Condition: An alarm condition for any of the following items shall be considered a supervisory condition which is second priority to a fire alarm condition:
- C. Fire Alarm Condition: An alarm condition for any initiation device except those listed in the previous paragraph shall be considered a fire alarm condition.

1.04 AUTOMATIC EMERGENCY CONTROLS

- A. If a duct-mounted smoke detector is in the alarm condition, the air handling unit serving that duct shall be shutdown and all smoke dampers in that air handling unit system shall close. Provide control modules at locations coordinated with the Division 15 Control. The wiring distance from the control module to the AHU control or damper controls shall not exceed three feet.

1.05 OCCUPANT NOTIFICATION

- A. Upon system initiation, all evacuation signals shall activate. Provide Voice Annunciation, PA System and all requirements per NFPA and local authority.

1.06 FIRE DEPARTMENT NOTIFICATION

- A. Upon system initiation, a fire alarm condition shall cause activation of a supervised signal to notify the local fire department. Coordinate with the fire department and provide the proper city connection

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circuit whether reverse polarity, local energy, parallel telephone, shunt, or dry contact connection.

1.07 INTEGRITY MONITORING

- A. The system shall contain independently monitored initiation circuits. A fault in any one circuit shall not affect any other circuit. The alarm activation of any point shall not prevent the subsequent alarm operation of any other point.
- B. There shall be independently fused indicating appliance circuits for alarm notification devices. Disarrangement circuits of any circuit shall not affect the operation of other circuits.
- C. Ground fault detection on all circuits on either the plus or minus side.
- D. All alarm initiating wiring, signal circuit wiring, annunciator wiring and, control wiring to remote relays shall be monitored for integrity.
- E. The incoming power to the system shall be monitored for power failure. A green "power on" LED shall be displayed continuously while incoming power is present.
- F. The Control Panel Modules shall be electrically monitored for module placement and LED burnout.
- G. Any failure in wiring integrity or system disarrangement as described above shall be considered a trouble condition which is third priority.

1.08 CONTROL PANEL OPERATOR'S INTERFACE

- A. A control panel shall include an operator's interface for annunciation and manual controls. The interface shall consist of a LED adjacent to each message.
- B. Under normal condition, the operator's interface shall display a "POWER ON" message.
- C. Should an abnormal condition be detected, the appropriate LED (zone number or trouble) shall flash.

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The panel audible signal shall pulse for fire alarm and sound steadily for trouble conditions.

D. Alarm Silencing: Should the "Alarm Silence" button be pressed, all audible fire alarm notification appliances shall be deactivated. An override of the automatic fire alarm notification shall be annunciated as a trouble condition.

E. System Reset

1. The "System Reset" button shall be used to return the system to its normal state after all abnormal conditions have been remedied.
2. Should an abnormal state continue to exist, then the associated notification and control functions shall not reset.

F. Function Keys, Display of System Detail Information

1. System shall include panel mounted volt meters and ammeters for monitoring battery voltage and battery charge current.
2. The system shall have provisions for disabling and enabling all circuits individually for maintenance or testing purposes. Additionally, when disabled, ground isolation shall be implemented to aid in location and repair of any ground fault conditions.

G. System Trouble Reminder: Should a trouble condition be present within the system and the audible trouble signal silenced, the trouble signal shall resound at preprogrammed time intervals to act as a reminder that the fire alarm system is not 100% operational. Both the time interval and the trouble reminder signal shall be programmable to suit the owner's application.

1.09 WALK TEST

A. The system shall be capable of being tested by one person. The panel shall automatically reset itself after the alarm.

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- B. The momentary disconnection of an initiating or notification appliance circuit shall be a trouble condition.
The panel shall automatically reset itself.
- C. Any momentary opening of an initiating or notification appliances circuit wiring shall cause the alarm notification appliances to sound for 4 seconds to indicate the trouble condition.

1.10 QUALITY ASSURANCE

- A. Acceptable manufacturers shall be regularly engaged in the manufacture of fire alarm systems at least 5 years and have a fully equipped, factory trained and authorized service organization within 100 miles. Acceptable Manufacturers: Simplex, EST, Pyrotronics.
- B. The equipment supplier shall be regularly engaged in the manufacturer or shall be the manufacturer's authorized representative and shall provide personnel factory trained and approved for installation, certification, final connections, programming, testing, training, warranty service, and maintenance.
- C. Service availability: The supplier shall have on hand sufficient spare parts inventory, necessary test and diagnostic equipment, and have a fully equipped service organization capable of guaranteeing response time within 8 hours of emergency service calls, 24 hours a day, 7 days a week to service completed systems. Emergency shall be required for significant loss of coverage.
- D. All materials, installation, and workmanship shall be guaranteed against defects for (1) one year from the start up and beneficial use of the system or installation certification, whichever is later.
- E. The contractor shall guarantee all wiring and raceways to be free from mechanical or electrical defects for one (1) year from the startup and beneficial use of the system or installation certification, whichever is later.
- F. Warranty service for the equipment shall be provided by the manufacture's factory trained representative during normal working hours, Monday through Friday excluding holidays at no cost to the owner.

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1.11 SUBMITTALS

A. In compliance with Division 1 of these specifications, submit for Architect's review, six (6) copies of the following product data, shop drawings, and other submittals:

1. Specification data sheets on each individual system component clearly indicating the equipment to be supplied and its type, size, rating, style, catalog number, and appearance.
2. Complete one-line diagrams showing all equipment and the size, type, and number of all conductors. (Point to Point Diagrams)
3. Installation manuals including roughing in drawings, details, and conductor terminations for each component.
4. Calculations clearly showing the required amount of battery reserve needed and the proposed battery capacity.
5. Copies of certificates from the manufacturer indicating supplier's status as an authorized representative and listing employees factory-trained for the services described in paragraph 1.13B.
6. Voltage drop calculations on worst case notification and signaling line circuits and acceptable limits.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. All equipment shall be new and unused. All components and systems shall be designed for uninterrupted duty. All equipment, materials, devices, and other facilities shall be the best suited for the intended use and shall be the standard product of a single manufacturer.

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- B. Provide electrical products which have been listed by Underwriters' Laboratories, INC., which comply with NEMA Standards, and which are approved by Factory Mutual Research. All control equipment is to be listed under U.L. Category UOJZ as a single control unit. A partial listing shall not be acceptable. The systems controls shall be U.L. listed for Power Limited Applications power NEC 760.

2.02 COMPONENTS

- A. All Control Panels shall have at least the following components/capacities:
1. Twenty-four volt dc power sufficient to operate the control panel and its circuits during alarm and still maintain at least two amps of spare capacity. The control panel shall receive 120VAC power (as noted on the drawings) from two (2) dedicated circuits.
 2. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal supervisory mode for a period of twenty-four (24) hours with five (5) minutes of alarm operation at the end of this period. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. Battery chargers shall be capable of recharging all batteries to one percent capacity in forty-eight hours. Battery, battery charger, ammeter and voltmeter shall be panel mounted.
 3. All circuits requiring system operating power shall be 24VDC, power limited in compliance with NFPA 70 Article 725, and shall be individually fused at the control panel.
 4. Signaling line circuit interface modules (cards).
 5. Indicating appliance circuits as required for the quantity of notification appliances to be served from the panel. The circuits shall be the reversing polarity type.
 6. Operating interface panel.

2.03 MANUAL STATIONS

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- A. The station body shall be so constructed that chips and scratches will not expose metal. All stations shall be mastered keyed with the control equipment. When actuated, the condition shall be visually apparent.

2.04 DETECTORS

- A. Sensor Bases: Sensor bases shall allow interchangeability of sensor heads: photoelectric, ionization, and heat-type sensors. Sensor bases shall supervise proper head installation. Heads shall be secured with an anti-tamper device. Sensor bases shall provide a remote LED output and have an integral LED for power-on, alarm, and trouble indication. Sensor bases shall have a magnetically-operated functional test feature.
- B. Sensor Heads: The sensors shall be sealed against rear air-flow entry.
 - 1. Area smoke sensors shall be photoelectric-type. Have insect screens. The photo chamber shall be field cleanable. Nominal detector sensitivity shall be 1.4% per foot obscuration with a range of 1% to 1.84%. Regardless of sensitivity settings, the detector's stability shall be unaffected by high velocity. No radioactive materials shall be used.
 - 2. Duct-mounted smoke sensors shall have photoelectric-type smoke sensors, sampling tubes as required, and auxiliary alarm relay with two "form C" contacts. The duct-mounted smoke detectors shall be furnished under this section, installed under Division 15, and connected to the fire alarm circuit under this section. The photo chamber shall be field cleanable. Each duct-mounted smoke detector shall be perform properly with the air velocity present at its location.
 - 3. Heat sensors shall be self restoring.
- C. The heat detector in the elevator machine rooms and elevator shafts shall be non-restorable type and shall be the fixed temperature type set to activate at 135-degrees F. The detectors shall include two N.O. 120V contacts. Provide two (2) spare heat detector heads.

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D. Remote Device Alarm Indicator:

1. For each duct-type smoke detector located in concealed spaces, provide and install a remote light emitting diode (LED) indicator, complete with stainless steel faceplate and label, 24V DC operation.
2. For above ceiling devices, remote LED's shall be recessed in wall 12" below ceiling.
3. Labels shall be engraved micarta with white 1" letters on red background, and shall identify the HVAC system associated with the detector, as well as the location.
4. Where a concealed detector is located annunciated by a graphic annunciator, the remote device alarm indicator is not required.

2.05 EVACUATION SIGNALS

- A. Evacuation signals shall mount to a standard four inch square outlet box and shall be mounted in a semi-flush manner on the wall.
- B. Horns shall be nominally provide a minimum 87dB at 10 feet as measured per U.L standard 464.
- C. ADA visual evacuation units shall be Xenon strobe type, minimum 75 candela intensity, with 1-3Hz flash rate and 0.2 sec. flash duration.

2.06 EXTINGUISHING SYSTEM SWITCHES

- A. Sprinkler Flow, Pressure, and Tamper Switches: Flow, pressure and tamper switches are provided under another division. Provide monitor module for each switch and connect thereto.
- B. Tamper switches (N/C contacts) shall not be connected to initiating device circuits with N.O. initiating devices.

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2.07 FIRE SHUTTER CONTROLS

- A. Where shutters are rated in walls are normally held open, provide ceiling mounted smoke detector(s) and control module for shutter controls. Provide 120 volt power supply to each shutter, and connect to shutter release device through the Form-C contacts, per shutter manufacturer's instructions.

2.08 REMOTE ANNUNCIATION

- A. Provide and install a flush or semi-flush wall-mounted remote annunciator to identify device and floor of alarm incident.

2.09 WIRING

- A. All wiring shall be marked in accordance with NEC 760-23, approved by local authorities having jurisdiction for the purpose, and shall be as recommended by the fire alarm system manufacturer.

2.10 CIRCUIT TRANSIENT PROTECTION

- A. Provide circuit transient protection on all wiring including shields which enters or leaves a building. The protector shall use MOV technology and comply with U.L. # 497B requirements. The protector shall fit on a standard 4" square, 2-1/8" deep electrical box.

2.11 MISCELLANEOUS

- A. All other equipment as necessary.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The system shall be installed by a licensed Electrical Contractor.

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- B. Deliver each piece of equipment in durable shipping cartons. Maintain cartons through shipping, storage and handling as required to prevent damage and eliminate dirt and moisture. Store cartons inside and protected from weather. Where necessary to store outside, elevate well above grade and enclose with durable waterproof wrapping.
- C. The entire system shall be installed in a workmanlike manner in accordance with the fire alarm system manufacturer's manuals and wiring diagrams. The contractor shall provide all conduit, wiring, outlet boxes, junction boxes, cabinets and similar equipment necessary for the complete installation. Wiring shall be installed in dedicated conduit throughout.
- D. Connections to water flow, pressure and tamper switches shall be through liquid-tight conduit.
- E. All fire alarm system junction boxes above ceilings shall be painted red.
- F. All penetrations of floor slabs and fire walls, shall be fire stopped in accordance with all local fire codes.
- G. End of Line Resistors shall be provided as directed by the manufacturer.
- H. Conceal wiring except in mechanical rooms and areas where other conduit and piping are exposed. Fasten flexible conductors bridging cabinet doors and protect against abrasion. Tie and support conductors neatly.
- I. Number code or color code conductors, appropriately and permanently, for identification and servicing of the system.
- J. A circuit transient protector shall be installed as close as practical to the point at which wiring enters or leaves a building. Install a maximum 28', No. 12 AWG grounding conductor in 1/2" conduit in as straight a line as possible to an effectively grounded cold water pipe or effectively grounded building steel.

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- K. The contractor shall comply with all requirements for permits and tests, shall provide all certificates and shall pay all costs for the same.
- L. The manufacturer's local authorized representative shall provide supervision of system installation and provide final system panel connections.
- M. Programming and final adjustment shall be performed by the manufacturer's authorized representative, who shall have full responsibility for debugging and proper calibration of each component in the entire system.
- N. Upon completion of the installation of the fire alarm system equipment, the electrical contractor shall provide to the owner, with a copy to the manufacturer's representative, a signed written statement,

substantially as follows:

"The undersigned, having engaged as the contractor on the (NAME OF PROJECT) confirms the fire alarm system equipment installed is in agreement with the wiring diagrams and written instructions and directions provided."

3.02 ACCEPTANCE TESTING

- A. After the system installation is complete, notify the authority having jurisdiction of the acceptance testing to be performed as required in the following paragraphs. Coordinate the scheduling of the acceptance testing with the authority having jurisdiction and the owner. At their discretion, acceptance testing shall be performed in the presence of an owner's representative and the authority jurisdiction. During all acceptance testing, make available the as-built drawings and manufacturer's installation instructions. The manufacturer's authorized shall perform the acceptance testing. Correct all deficiencies found in testing and re-test the corrected wiring or component.
- B. Wiring Installation Testing: Provide testing of the installation wiring as required by NFPA 72H para. 2-2, Installation Testing.

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C. Wiring Installation Certification: After completion of the wiring installation testing, complete parts 1 and 3 through 9 of a certificate conforming to NFPA 72 figure 2-2.2. Submit a preliminary copy of the completed parts to the owner and the authority having jurisdiction.

D. System Operation Testing: Provide testing of system operation as required by NFPA 72H para. 2-3, System Testing. Where application of heat would destroy any detector, it may be manually activated.

E. Certification of System Operation: After completion of the system operation testing, complete part 2 of the certificate conforming to NFPA 72 figure 2-2.3.

3.03 CLOSEOUT SUBMITTALS

A. Deliver the following to the Owner within thirty (30) days after Owner receives installation certificate.

1. Final specification data sheets, calculations, certificates, and installation programming, operation, and maintenance manuals in suitable binders for maintenance use.
2. As-built drawings including final floor plans and point-to-point diagrams showing all device and splice locations.
3. The application program listing for the system as installed at the time of acceptance.
4. Name, address and telephone number of the authorized factory representative.
5. Final copy of system certification conforming to NFPA 72 figure 2-2.2. Mount on the inside of the central station panel door.

3.04 TRAINING

A. After submitting the installation certificate, the manufacturer's authorized representative shall provide the services of the manufacturer's trained representative for a period of eight (8) hours, during normal business hours, to instruct the owner's designated personnel on the operation and routine

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maintenance of the system.

3.05 TESTING AND MAINTENANCE CONTRACT PROPOSAL

- A. Testing and Maintenance Contract Proposal: The supplier shall propose a contract, including costs, for the testing and maintenance service described below for each of the first two years following the installation (The first year is the warranty year). Acceptance of the testing and maintenance contract is optional to the owner.

1. The testing and maintenance contract shall include the following services for the entire building:
 - a. Quarterly tests as required by the Joint Commission. (Operational test for one device per initiating circuit per quarter.)
 - b. Inspection, testing, maintenance, cleaning, and record keeping as required by NFPA Standards 72, 72E, 72G, and 72H as applicable, including annual operating test for each smoke detector per NFPA 72E para. 8-3.41. Provide quarterly operational testing of 25% of all smoke detectors such that by year's end all detectors have been tested.
 - c. Other services recommended by the manufacturer.
 - d. Replacement of all defective parts in the system.
 - e. Testing and maintenance shall be provided by the manufacturer's factory-trained representative during normal working hours, Monday through Friday, excluding holidays.
2. Propose an indexed or fixed percentage increase to renew the testing and maintenance contract each year after the second year up to ten (10) years total. If an indexed percentage increase is chosen, indicate to what index the increase would be tied (For example: "Atlanta Service" index).
3. Propose an additional labor cost for emergency service which is provided at times other than

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stipulated in paragraph 3.05.B.1.f above. Emergency service is required for the loss of coverage.

END OF SECTION