

PROJECT MANUAL

CARTHAGE TOWN HALL

Project No. MGC-25004

Date 02.18.2026

**MICHAEL
GRAVES**

A small red horizontal bar is positioned below the word "GRAVES" in the logo.

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TOWN OF CARTHAGE
CARTHAGE TOWN HALL

PROJECT NO. MGC-25004
02.18.2025

Corporate Seal
Walter Robbs Architects,
a Michael Graves Company



Architectural
Walter Robbs Architects,
a Michael Graves Company



02/18/2026

TABLE OF CONTENTS

BIDDING REQUIREMENTS AND INFORMATION

Advertisement for Bids
Instructions to Bidders
County Sales & Tax Report (NC)
Guidelines for the Recruitment and Selection of Minority Businesses
Minority Business Identification and Participation Forms
Bid Form
Bid Bond (A310)

SAMPLE CONTRACT FORMS:

Performance Bond (A312)
Payment Bond (A312)
General Guarantee
Roofing Warranty
Asbestos and PCB Warranty

CONDITIONS OF THE CONTRACT:

Standard Form of Agreement Between Owner and Contractor (A101)
General Conditions of the Contract for Construction (A201)
Supplementary General Conditions (To A201 General Conditions)

SPECIFICATIONS:

DIVISION1 – GENERAL REQUIREMENTS

01 11 00	Summary of the Work
01 20 00	Alternates & Allowances
01 31 00	Project Meetings
01 32 33	Photographic Documentation
01 33 00	Submittals
01 35 50	Product Requirements
01 35 91	Historic Treatment Procedures
01 42 00	Reference Standards & Layout Work
01 50 00	Temporary Facilities
01 61 00	Materials and Equipment
01 63 00	Product Substitutions
01 73 00	Cutting and Patching
01 74 00	Cleaning Up
01 75 00	Documents at Project Site
01 78 00	Contract/ Project Close-Out
01 83 00	Equipment Maintenance and Operations Program

DIVISION 2 – EXISTING CONDITIONS

02 41 19	Selective Demolition
02 42 96	Historic Removal and Dismantling

DIVISION 3 – CONCRETE (not used)

DIVISION 4 – MASONRY (not used)

DIVISION 5 - METALS

05 03 85	Historic Treatment of Decorative Formed Metal
05 50 00	Miscellaneous Metal Fabrications
05 73 00	Decorative Metal Railings (interior and exterior)

DIVISION 6 - WOOD AND PLASTICS

06 03 12	Historic Wood Repair
06 10 00	Rough Carpentry
06 20 00	Finish Carpentry
06 40 00	Architectural Woodwork

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07 21 16	Flexible Insulation
07 31 13	Asphalt Shingles
07 53 20	Single-Ply Mechanically Attached PVC Roofing
07 62 00	Flashing and Sheet Metal
07 72 10	Roof Hatches
07 90 00	Sealants

DIVISION 8 - DOORS AND WINDOWS

08 03 14	Historic Treatment of Wood Doors
08 03 52	Historic Treatment of Wood Windows
08 71 40	Door Hardware (Allowance)

DIVISION 9 - FINISHES

09 03 20	Historic Treatment of Plaster
09 03 91	Historic Treatment of Plain Painting
09 29 00	Gypsum Drywall
09 65 00	Resilient Flooring
09 91 00	Field Painting

DIVISION 10 - SPECIALTIES

10 52 20	Fire Extinguishers
10 81 00	Toilet Accessories

DIVISION 11 - EQUIPMENT

11 46 50	Kitchen Appliances
----------	--------------------

DIVISION 12 - FURNISHINGS

12 49 30 Venetian Blinds

DIVISION 22 - PLUMBING

See Plumbing Drawings

DIVISION 23 – MECHANICAL (not used)

DIVISION 26 - ELECTRICAL

See Electrical Drawings

DIVISION 31 – EARTHWORK

See Civil Drawings

DIVISION 32 – EXTERIOR IMPROVEMENTS

See Civil Drawings

DIVISION 33 – UTILITIES (not used)

END OF TOC

ADVERTISEMENT FOR BIDS

Sealed Bids will be received by the Town of Carthage at 10:00 am on June 2, 2026 at the McDonald Building, 207 McReynolds Street, Carthage, North Carolina; at which time the Bids will be opened and read publicly for the construction of the following:

Carthage Town Hall

Bids will be received from invited prequalified General Contractors only and their bids will include general construction, electrical, plumbing, civil, and all work indicated by the Bidding Documents.

Digital copies of the Bidding Documents will be available from the Architect's Office to pre-qualified General Contractors only. Contact Wendy Long at Michael Graves, wlong@michaelgraves.com. General Contractors will be required to share the Bidding Documents with their sub-contractors. Digital copies of the Bidding Documents will not be available to sub-contractors from the Architect's Office.

General Contractors may purchase printed, full sets of the Bidding Documents from The Sharpe Company, 800-688-0629.

The project consists of:

Renovation of 208 Monroe Street, Carthage, North Carolina, to serve as new Carthage Town Hall

Bidders must be properly licensed Contractors in accordance with applicable North Carolina state law.

Bids must be on the standard form provided by the Architect and must be marked to identify the type of Prime Contract noted.

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

A Pre-Bid Meeting will be held on-site, at 10:00 am on May 5, 2026, for interested bidders. All questions will be due to Michael Graves by 5:00 pm on May 12, 2026. Submit questions to Wendy Long at Michael Graves, wlong@michaelgraves.com. A pre-bid addendum will be published by Michael Graves on May 19, 2026.

A Bid Bond will be required with each Bid. The Bond shall be in the sum equal to 5% of the gross Base Bid.

A Payment and Performance Bond will be required each in the sum equal to 100% of the Contract Sum.

No Bidder may withdraw his Bid within 30 days after the opening thereof.

The Owner reserves the right to accept or reject any or all Bids, and to waive informalities.

Owner: _____

INSTRUCTIONS TO BIDDERS

1.0 QUALIFICATIONS OF BIDDERS:

- a. Only pre-qualified general contractors may submit a bid.

2.0 BID EVALUATION:

- a. The award of the Contract will be made to the lowest responsible Bidder as soon as practical. The Owner may award based on the Base Bid and any alternates the Owner chooses.
- b. Before awarding a Contract, the Owner may require the apparent three (3) low Bidders to qualify themselves to be responsible Bidders by furnishing any or all the following data:
 - 1. The latest financial statement showing assets and liabilities of the company or other information satisfactory to the Owner.
 - 2. A listing of completed projects of similar size and complexity.
 - 3. Permanent name and address of place of business.
 - 4. The number of regular employees of the organization and length of time the organization has been in business under present name.
 - 5. The name and home office address of the Surety proposed and the name and address of the responsible local claim agent.
 - 6. The names of members of the firms who hold appropriate trade licenses, together with license numbers.
 - 7. A list of references.
 - 8. A detailed inventory of personnel and equipment proposed to be used on the Project.
 - 9. A detailed resume of the resident superintendent responsible for the Project.
 - 10. Banking, insurance and bond company references.
 - 11. A list of any pending claims filed against the bidder.
 - 12. A list of all current projects under contract.
 - 13. Other information requested by the Owner or representative and necessary to determine that the Bidder is a responsible Bidder.
- c. Failure or refusal to furnish any of the above information, if requested, shall constitute a basis for disqualification of any Bidder.
- d. In determining the lowest responsible Bidder, the Owner will take into consideration the past performance of the Bidder with concern given to completion times, quality of work, cooperation with other contractors, and cooperation with the Designer and Owner.
- e. Should the Owner adjudge that the apparent low Bidder is not the lowest responsible Bidder by the above information, said apparent low Bidder will be so notified and the bid security shall be returned.

3.0 SITE VISITATION AND EXISTING BUILDING:

- a. Before submitting a Bid for this work, each Bidder shall examine the premises and understand the effect existing conditions may have on work under the Contract. No allowances will be made subsequently, in this connection, for any error or negligence on Bidder's part.

4.0 OTHER BIDDERS:

- a. It shall be the responsibility of each Bidder to become familiar with the Bidding Documents relevant to the other Bidders so that the relationship between other contractors and Bidder will be clear.

5.0 PREPARATION OF BID:

- a. Each Bid shall be prepared on the clean copy of the Bid Form bound in the Project Manual. The sample Bid Form bound with the Project Manual shall not be used. The Bidder shall indicate the correct name, address, and license number in the space provided at the top of the first page of the Bid Form.
- b. Each Bidder shall indicate again the correct name on the last page of the Bid Form above the signature. Bids by individuals must be signed by the person bidding. Bids by a construction company with sole owner shall be signed in the name of the company by the owner of the company. Bids by partnership shall show the full name of all partners and shall be signed in the name of the partnership by one of the partners.
- c. Bids by corporations shall indicate the legal name of the corporation followed by the name of the State of incorporation; and shall be signed by the president or vice president of the corporation. The signature of a person authorized as agent to bid will be acceptable provided the Bid is accompanied by a proper power-of-attorney. Bids by corporations shall have the corporate seal affixed adjacent to the signature.
- d. All signatures shall be in ink, and the name of the person signing shall be typed also or printed below the signature followed by a title showing the relationship to the bidding organization such as: "Owner" in the case of a sole owner; "Partner" in case of a partnership; "President", "Vice President", "Secretary", or "Treasurer", in the case of a corporation; or "Agent" in the case of someone acting as agent or attorney-in-fact. A Bid by a person who affixes to the signature the word "President", "Secretary" or "Agent", etc., without disclosing the name of the organization may be held as an individual Bidder.

6.0 STATEMENT OF BIDDERS QUALIFICATIONS:

- a. The statement of Bidder's Qualifications which is included as a part of the Bid Form must be completed and submitted with the Bid Form.
- b. Failure to comply with this requirement may result in disqualification of the Bidder.

7.0 BASE BID AND ALTERNATES:

- a. The amount of the Base Bid shall be typed or printed in both words and figures, and shall be the total charge for the Project, including all Cash Allowances but not including any Bid Alternates.
- b. If an alternate called for does not, in the Bidder's judgement, require a change in the Base Bid price, the Bidder shall so indicate by writing the words "No Change" in the space provided on the Bid Form for the amount to be added. Each Bidder shall consider how the various alternates will affect the Alternate Bid Price.

- c. A detailed description of each Cash Allowance and Bid Alternate may be found in Section 01200 - Alternates, Allowances and Unit Prices, of these Specifications.

8.0 UNIT PRICES:

- a. Bidders shall submit unit prices required by the Bid Form.

9.0 TAXES:

- a. Bidders are cautioned that the General Assembly has amended the Sales and Use Tax Law to require that the State of North Carolina and its political subdivisions pay all applicable State sales and use taxes on their purchases of taxable tangible personal property.
- b. Pursuant to carrying out the provisions of G.S. 105-164, each Bidder shall be registered with the Sales and Use Tax Division of the North Carolina Department of Revenue.
- c. All applicable taxes shall be included in the Base Bid submitted by the Bidder.
- d. It shall be the duty of the Contractor to give the Owner the advantage of all exemptions or credits in the matter of Federal taxes to which governmental agencies are entitled.

10.0 TIME OF COMPLETION:

- a. The number of consecutive calendar days allowed for completion of the Project is stated on in the Supplementary Conditions and on the Bid Form.

11.0 ADDENDA:

- a. If any person contemplating submitting a Bid for the proposed Contract is in doubt as to the true meaning of any part of these proposed Contract Documents, he may submit to the Architect a written request for an interpretation thereof in time to be received by the Architect not later than seven (7) days prior to the date established for the opening of Bids. The person submitting the request shall be responsible for its delivery.
- b. Any interpretation of such documents will be made only by Addendum duly issued, and a copy of such Addendum will be mailed or delivered to each Prime Bidder receiving a set of documents.
- c. The Owner will not be responsible for any other explanations or interpretations of such documents which anyone presumes to make on behalf of the Owner before Bid Opening.
- d. It is the responsibility of each Prime Bidder to verify for himself that he has received all Addenda; and that material suppliers and subcontractors are familiar with and include in their price all Addenda issued up to the time for Bid Opening.
- e. The Bidder shall state the number and date of each Addenda received in the appropriate space on the Bid Form.

12.0 SUBSTITUTIONS:

- a. Where any material or equipment is specified by name, or by identification of one or more specific manufacturers, and there are words such as "or approved equal" following the manufacturer(s) listed, then the Bidder may submit equivalent products for consideration for approval for use on the Project. Product must be equivalent in general appearance, construction, quality, and performance to that specified.
- b. Any request for approval shall be submitted in writing only by a Prime Bidder and shall be accompanied by sufficient data for use in consideration by the Architect. Request shall be received by the Architect at least 10 days prior to date set for receipt of Bids.

- c. Include a copy of the project specification section with a detailed comparison of the proposed substitution versus the specified product entered thereon. Annotate any differences between the specified product and the proposed product.
- d. All manufacturer's and other literature submitted must be reviewed and marked-up by the submitter differentiating between applicable and inapplicable information and annotating any differences between the specified product and the proposed product.
- e. Submittal must indicate any changes or modifications needed to other parts of the work that will be necessary to accommodate the proposed substitution.
- f. If the material or equipment submitted for consideration is approved by the Architect for use on the Project, the Architect will include approval of such item of material or equipment in an Addendum.
- g. No substitutes will be allowed without written approval of the Architect. Verbal conversations are unofficial and do not change the requirements of the bidding documents in any way.
- h. No substitution will be considered after Contracts are signed except as permitted by the General and Supplementary General Conditions.
- i. In the event that the Contractor proposes and receives approval to use a substitute product upon which the Drawings and Specifications are not based it will be Contractor's responsibility to provide the required coordination and to take whatever actions necessary to insure that the adjacent construction is properly installed to receive the product; to insure that the product is properly installed including all supplementary and accessory components required for the product to work with the construction shown on the Drawings; to make any modifications necessary in order for the product and contiguous or adjacent construction to fit together and work properly; and to do these at no additional cost to the Owner.
- j. By making a request for substitution, the Contractor:
 - 1. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified.
 - 2. Represents that the Contractor will provide the same warranty for the substitution as for the product specified.
 - 3. Certifies that the cost data presented is complete and includes all related costs under this contract except the Architect's redesign costs and waives all claims for additional costs related to the substitution which subsequently become apparent.
 - 4. Certifies that the Contractor will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.

13.0 BID BOND:

- a. No Bid will be considered or accepted unless accompanied by a Bid Guarantee in the form of a deposit equal to 5% of the gross Base Bid. This deposit may be cash; or a cashier's check issued by, or a certified check drawn on a Bank or Trust Company authorized to do business in North Carolina or on a Bank insured by the Federal Deposit Insurance Corp.; or a U. S. Money Order, each payable to the Owner. The deposit will be retained by the Owner if the Bidder fails to execute the Contract within 10 days after notice of the award is given, or if the Bidder fails to give satisfactory surety as required and called for in the Conditions of the Contract.

- b. In lieu of making the cash deposit as above provided, any Bidder may submit with the Bid a Bid Bond in the sum of 5% of the gross Base Bid executed by a corporate surety licensed under the laws of North Carolina to execute such bonds, conditioned that the surety will (upon demand) forthwith make payment to the obligee upon said bond if the Bidder fails to execute the Contract within 10 days after notice of the award is given or to give satisfactory surety as required and called for in the Conditions of the Contract.
- c. Bid Guarantees will be returned to those Bidders who request it in writing. Bid Guarantees for the 3 lowest Bidders will be held until after Contracts have been signed; all others will be available 3 days or more after time set for receipt of Bids.

14.0 PERFORMANCE AND PAYMENT BONDS:

- a. These bonds will be required as specified in the General and Supplementary General Conditions. Sample forms are included in the "Sample Contract Forms" part of the Project Manual.

15.0 SUBMISSION OF BIDS:

- a. Each Bid shall be submitted in a sealed envelope indicating the Bidder's name, and shall be marked in the lower left-hand corner as follows:

Bid for "(Name of Project) _____" ."
Type of Work " _____ Contract."
Bidder's Name " _____" ."
License No. " _____" ."

- b. Bids shall not be mailed in prior to Bid Opening.
- c. Sealed Bids shall be brought to the place of bidding by the Bidder and shall be handed directly to the Owner or the Architect prior to the opening time. Place of receipt of Bids and Bid Opening date are stated in the Advertisement for Bids.
- d. One representative from each company bidding is required to be present.
- e. Bids received after the time set for opening of Bids will not be considered.

16.0 WITHDRAWAL OF BID:

- a. Negligence or error on the part of the Bidder in preparing the Bid confers no right for withdrawal of the Bid after it has been opened. No Bid may be withdrawn for 30 days after opening time.

17.0 REJECTION OF BIDS:

- a. Bids may be rejected if they show any unexplained erasures, omissions, alterations of form, additions not called for, added restricting or qualifying conditions or other irregularities of any kind.
- b. The Owner reserves the right to reject any and all Bids and/or to waive any and all technical defects in the execution of, and informalities in the submission of any Bid, if he considers it to be in the best interest of the Owner.

18.0 AWARDING OF CONTRACT:

- a. In accordance with North Carolina General Statutes 143-129, the award will be made to the lowest responsible Bidder, taking into consideration quality, performance, and time specified in the proposal for the performance of the Contract. The Owner will determine to whom the Contract is to be awarded in the case of a tie low bid.

- b. The successful Bidder shall sign a Contract with the Owner like the sample copy bound within this Project Manual.
- c. See Paragraph "Bid Evaluation" in these Instructions to Bidders for other information and requirements.

19.0 POST-BID INFORMATION:

- a. Submissions:
 - 1. Unless waived by the Architect, the Bidder shall, within 7 days of notification of selection for the award of a Contract for the work, submit the following information to the Architect:
 - (a) A designation of the work to be performed by the Bidder with own forces.
 - (b) The proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the work.
 - (c) A list of names of the subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the work.
 - (d) The list of subcontractors shall be submitted on AIA Document G805 - List of Subcontractors, copy of which is included under the Contract Forms part of this Project Manual. All information required by the document shall be included.
 - (e) The Bidder will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the proposed subcontractors to furnish and perform the work described in the Sections of the Specifications pertaining to such proposed subcontractors' respective trades.
 - (f) Prior to the award of the Contract, the Architect will notify the Bidder in writing if either the Owner or the Architect, after due investigation, has reasonable and substantial objection to any person or organization on such list. If the Owner or Architect has a reasonable and substantial objection to any person or organization on such list and refuses in writing to accept such person or organization, the Bidder may, choose to (1) withdraw the Bid, or (2) submit an acceptable substitute subcontractor with an increase in the Bid price (if applicable) to cover the difference in cost occasioned by such substitution. The Owner may, accept the increased Bid price or may disqualify the Bidder. In the event of either withdrawal or disqualification under this subparagraph, Bid Security will not be forfeited.
 - (g) Subcontractors and other persons and organizations proposed by the Bidder and accepted by the Owner and the Architect must be used on the work for which they were proposed and accepted and shall not be changed except with the written approval of the Owner and the Architect.
 - (h) Plumbing, HVAC and electrical subcontractors and all other subcontractors required by law shall have current and proper contractor's license for the scope of their work on this Project.

20.0 MAJOR SUBCONTRACTORS:

- a. Each Bidder shall state on the blank spaces provided on the Bid Form, the names of the plumbing, HVAC and electrical subcontractors that he will use if awarded the Contract.

21.0 PREBID CONFERENCE:

- a. Approximately 2 weeks prior to the receipt of Bids, the Owner will schedule a prebid conference for clarifying any questions which the Bidders and/or their subcontractors may have. The exact time and place will be included in the first addendum.
- b. The Architect and Consultants will be present at this meeting, along with the Owner's representative.
- c. An Addendum will be issued, if required, to clarify any items brought out relative to the Contract Documents.

END OF IB

STATE OF NORTH CAROLINA
COUNTY SALES AND USE TAX REPORT
SUMMARY TOTALS AND CERTIFICATION

CONTRACTOR: _____

Page _____ of _____

PROJECT: _____

FOR PERIOD: _____

	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL ALL COUNTIES
CONTRACTOR							
SUBCONTRACTOR(S)*							
COUNTY TOTAL							

* Attach subcontractor(s) report(s)

** Must balance with Detail Sheet(s)

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of _____, 20____

Signed

Notary Public

My Commission Expires: _____

Print or Type Name of Above

Seal

NOTE:

This certified statement may be subject to audit

STATE OF NORTH CAROLINA
SALES AND USE TAX REPORT DETAIL

CONTRACTOR: _____

Page _____ of _____

SUBCONTRACTOR _____

FOR PERIOD: _____

PROJECT: _____

PURCHASE DATE	VENDOR NAME	INVOICE NUMBER	TYPE OF PROPERTY	INVOICE TOTAL	COUNTY TAX PAID	COUNTY OF SALE *
				\$	\$	
				TOTAL:	\$	

* If this is an out-of-state vendor, the County of Sale should be the county to which the merchandise was shipped.

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of \$300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business - means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
4. Public Entity - means State and all public subdivisions and local governmental units.
5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.
6. Designer - Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.
7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested.
- b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
- c. Assist in the determination of technical assistance needed by minority business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
- (5) The HUB Office also oversees the minority business program by:
 - a. Monitoring compliance with the program requirements.
 - b. Assisting in the implementation of training and technical assistance programs.
 - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
 - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office

The State Construction Office will be responsible for the following:

- a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
 - (1) Project description and location;
 - (2) Locations where bidding documents may be reviewed;
 - (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
 - (4) Date, time and location of the bid opening.
 - (5) Date, time and location of prebid conference, if scheduled.
- b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

- c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
- d. Reviewing of minority business requirements at Preconstruction conference.
- e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- f. Provide statistical data and required reports to the HUB Office.
- g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner

Before awarding a contract, owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
- b. Attend the scheduled prebid conference.
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 - 1. A description of the work for which the bid is being solicited.
 - 2. The date, time, and location where bids are to be submitted.
 - 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
 - 4. Where bid documents may be reviewed.
 - 5. Any special requirements that may exist.
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
- e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

4. Designer

Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

- e. During construction phase of the project, review “MBE Documentation for Contract Payment” – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

Under the single-prime bidding, the separate-prime bidding, construction manager at risk and alternative contracting methods, contractor(s) will:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.

- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
- f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
- g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), “MBE Documentation for Contract Payment” – (Appendix E), for designer’s review.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

- k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
- l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities

While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION 4: DISPUTE PROCEDURES

It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: www.nc-sco.com

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____

Name

Title

Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

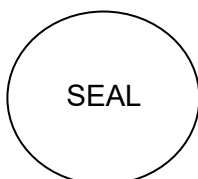
Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ☐ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ☐ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ☐ **3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ☐ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ☐ **5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- ☐ **6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ☐ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ☐ **8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ☐ **9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ☐ **10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____
 Signature: _____
 Title: _____



State of _____, County of _____
 Subscribed and sworn to before me this _____ day of _____ 20____
 Notary Public _____
 My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____
_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

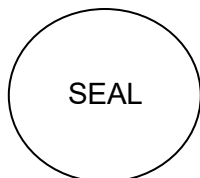
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

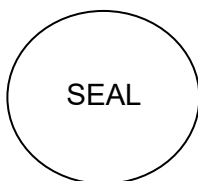
*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the _____
(Name of Bidder)

Project ID# _____ (Project Name) Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- Copies of quotes or responses received from each firm responding to the solicitation.
- A telephone log of follow-up calls to each firm sent a solicitation.
- For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- Copy of pre-bid roster
- Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- Letter detailing reasons for rejection of minority business due to lack of qualification.
- Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

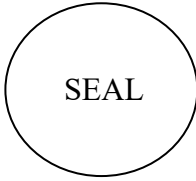
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

BID FORM

Name of Bidder _____

Business Address _____

N.C. License No. _____

Telephone Number _____

Email Address _____

PROJECT: _____

TO: _____

Gentlemen:

The undersigned, having carefully examined the Bidding Documents, Drawings and Specifications, and all subsequent Addenda as prepared by **Michael Graves**, has visited the site and being familiar with all conditions and requirements of the work, hereby agrees to furnish all labor, materials, equipment, services, and other requirements to complete the following construction:

All to be in accordance with the bidding documents for the following amounts:

BASE BID: _____ Dollars (\$) _____

Base Bid does not include state or local sales tax; see Paragraph "Taxes" of Instructions To Bidders. Base Bid does include Allowances described in Section 01200. Base Bid does NOT include Bid Alternates described in Section 01200.

BID ALTERNATES:

The undersigned agrees to perform all alternate work as described in Section 01200 of the Specifications for the following sums. He further agrees to perform said work without change to the required time of completion of the Project.

Enter price for Bid Alternates involving work included under the Contract bid upon on Page 1 of this Bid Form.

Alternate #1: Landscaping as shown on Sheets C4.0, C4.1, and C12.0 _____ Dollars (\$) _____

Addenda have been received as follows:

Addendum No. _____	Date _____
Addendum No. _____	Date _____
Addendum No. _____	Date _____

The undersigned further agrees to sign a Contract for all work in the above amounts, if offered within thirty (30) days after receipt of Bids, and to furnish surety as specified, and upon failure to do so, agrees to forfeit to the Owner, attached cashier's check, certified check or Bid Bond in the amount of:

\$ _____ of Base Bid).

The undersigned further agrees to begin work promptly after a Notice to Proceed with an adequate force, carry the work forward as rapidly as possible and complete the entire Project no later than 270 days (approx. 9 months) consecutive calendar days after the date to begin as specified in the Notice to Proceed.

The undersigned hereby states that he will use the following major subcontractors if awarded the Contract:

Plumbing: _____

HVAC: _____

Electrical: _____

The undersigned agrees that he has executed and submitted with his bid the Statement of Bidder's Qualification which is attached as the last page of this Bid Form.

It is distinctly understood that the Owner reserves the right to reject any and all Bids and to waive informalities and technicalities if considered to be in the best interest of the Owner.

Bidder hereby verifies that he is properly licensed in accordance with North Carolina state laws governing his respective trade and has entered his NC license number on the first page of this Bid Form.

Name of Bidder

By _____
Signature

Title _____

Date Proposal Executed: _____, 202____ .

Note: Execute and include "Statement of Bidder's Qualifications" as the last page of this Bid Form.

STATEMENT OF BIDDER'S QUALIFICATIONS

1. When was firm organized? _____
2. When and where was firm incorporated? _____
3. How many years has firm been engaged in contracting business under its present firm name?

4. Undersigned () is willing () is not willing to furnish a recent Financial Statement if requested to do so by Owner. (Note failure to provide financial information could result in disqualification.)
5. Three projects completed within last five (5) years approximating this project in size and scope.

Owner	Type Building:	Approx. Cost:	Architect
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____

6. Have you ever refused a contract at your original bid? _____
7. Have you ever defaulted on a contract? _____

If answer to either 6 or 7 above is yes, explain circumstances on attached sheet.

(This statement must be subscribed and sworn to before a Notary Public.)

Sworn to and subscribed	Firm Name: _____
before me this ____ day	By: _____
of _____, 202__	Title: _____

Notary Public



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)

BOND AMOUNT:

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

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.

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.

Signed and sealed this _____ day of _____

_____	(Contractor as Principal)	(Seal)
(Witness)	_____	(Title)
_____	(Surety)	(Seal)
(Witness)	_____	(Title)

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

Init.

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ACD43070810

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal: _____
(Contractor)

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, identified as shown above and hereto attached:

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

Contractor: (Trade or
Corporate Name)

(Proprietorship or Partnership)

By:

Attest: (Corporation)

Title:

(Owner, Partner, or Corp. Pres.
or Vice Pres. only)

By:

Title:

(Corp. Sec. or Ass't. Sec. only)

(Corporate Seal)

(Surety Company)

Witness:

By:

Title:

(Attorney in Fact)

Countersigned:

(N. C. Licensed Resident Agent)

(Surety Corporate Seal)

Name and Address - Surety Agency

Surety Company Name and N. C.
Regional or Branch Office Address

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal: _____
(Contractor)

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body, identified as shown above and hereto attached:

NOW THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

Contractor: (Trade or Corporate Name)

(Proprietorship or Partnership)

By:

Attest: (Corporation)

Title:

(Owner, Partner, or Corp.
Pres. or Vice Pres. only)

By: _____

Title: _____
(Corp. Sec. or Ass't. Sec. only)

(Corporate Seal)

(Surety Company)

Witness:

By:

Title:

(Attorney in Fact)

Countersigned:

(N. C. Licensed Resident Agent)

(Surety Corporate Seal)

Name and Address - Surety Agency

Surety Company Name and N. C.
Regional or Branch Office Address

GENERAL GUARANTEE

_____ guarantees all materials and workmanship incorporated
(Name of Contractor)

in the _____
(Name of Job)

_____, against defect due to faulty materials or faulty
(Location)

workmanship or negligence for a period of 12 months from completion of the Project for the General Guarantee and for such longer periods as may be designated by specific Sections of the Project Manual or by manufacturer's warranty on equipment, parts or materials.

This Guarantee is binding where defects occur due to normal usage conditions and does not cover willful or malicious damage, damage caused by acts of God or other casualty.

Sworn to and subscribed before me this _____ day of _____, 202__.

By

Title

(Notary Public)

My Commission expires _____.

ROOFING WARRANTY

Know all men by these presents, that we, (Contractor), having installed insulation, roofing, flashing, and sheet metal work, and having accomplished certain other work on (Project), under a Contract between _____ (Owner) and (Contractor), warrant to the Owner with respect to said work that for a period of 2 years from date of final acceptance of said work by the Owner, the roofing system including insulation, roofing membrane, flashings and sheet metal work related to roofing system shall be absolutely watertight and free from all leaks provided, however, that the following are excluded from this warranty:

1. Defects or failures resulting from abuse by the Owner.
2. Defects in design involving failure of (a) structural frame, (b) loadbearing walls, (c) foundations.
3. Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

We, (Contractor), agree that should any leaks occur in the roofing system, we will promptly remedy said leaks in a manner to restore the roofing system to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice.

We, (Contractor), further agree that for a period of 2 years from date of final acceptance referred to above we will make repairs, at no expense to the Owner, to any defects which may develop in the work, in a manner compatible to the system and acceptable under industry standards and general practice. Damage to the interior of the building resulting from failure of the roofing system described herein shall be repaired and/or replaced by the Contractor at no expense to the Owner.

IN WITNESS WHEREOF, we have caused this instrument to be duly executed, this ____ day of ___, 202__.

(Contractor)

WITNESS:

By: _____
President

_____ (Notary Public)

ASBESTOS AND PCB FREE WARRANTY

Owner: _____

Location of Building: _____

Name of Building: _____

Date of Substantial Completion: _____

Know all men by these presents that we, _____
(Contractor, Subcontractor, Material Supplier, Equipment Manufacturer)

having furnished labor, materials, equipment and/or supplies; from, to and/or on _____

_____ as shown on the plans and specifications
(Buildings, etc.)

below under contract between _____ and
(Owner)

_____ and
(Contractor, Subcontractor, Material Supplier, Equipment Manufacturer)

dated _____:

warrant to Owner with respect to said work that no materials containing asbestos fibers or polychlorinated biphenyls (PCB) were incorporated into the work, and that, to our knowledge and belief, no materials containing asbestos or polychlorinated biphenyls (PCB) remain in or are covered by the work.

Exceptions: _____
(If there are no exceptions, state "No Exceptions" here)

IN WITNESS WHEREOF, we have caused this instrument to be duly executed, this the

_____ day of _____, 20____.

SWORN to and subscribed before me,
On this the ____ day of _____,
20____.

Company

Notary Public

By:

My Commission Expires:

Title:



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)

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

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

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

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.

The Owner and Contractor agree as follows.

TABLE OF ARTICLES

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

EXHIBIT A INSURANCE AND BONDS

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.)

- ☐ Not later than () 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

§ 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.)

§ 4.6 Other:

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

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 day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the 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 () 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.)

§ 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.)

§ 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, or as follows:

§ 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.)

_____ %

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
- ☐ 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)

§ 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 in AIA Document A101®–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

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

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with a building information modeling exhibit, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101®–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101®–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201®–2017, General Conditions of the Contract for Construction
- .4 Building information modeling exhibit, dated as indicated below
(Insert the date of the building information modeling exhibit incorporated into this Agreement)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

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

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

- ☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

☐ The Sustainability Plan:

Title	Date	Pages
-------	------	-------

☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201®–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)



AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

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.

TABLE OF ARTICLES

- | | |
|----|--|
| 1 | GENERAL PROVISIONS |
| 2 | OWNER |
| 3 | CONTRACTOR |
| 4 | ARCHITECT |
| 5 | SUBCONTRACTORS |
| 6 | CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS |
| 7 | CHANGES IN THE WORK |
| 8 | TIME |
| 9 | PAYMENTS AND COMPLETION |
| 10 | PROTECTION OF PERSONS AND PROPERTY |
| 11 | INSURANCE AND BONDS |
| 12 | UNCOVERING AND CORRECTION OF WORK |
| 13 | MISCELLANEOUS PROVISIONS |
| 14 | TERMINATION OR SUSPENSION OF THE CONTRACT |
| 15 | CLAIMS AND DISPUTES |

INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

Access to Work

3.16, 6.2.1, **12.1**

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,
10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1,
4.2.7, 9.3.2, 13.4.1

Arbitration

8.3.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,
9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,
13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3,
4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2,
9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,
7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,
13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,
3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,
9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,
15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

Building Information Models Use and Reliance

1.8

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7,
9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval

13.4.4

Certificates of Insurance
9.10.2

Change Orders

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3,
7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1,
9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of
7.2.1

CHANGES IN THE WORK

2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,
11.5

Claims, Definition of

15.1.1

Claims, Notice of
1.6.2, 15.1.3

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4
Claims and Timely Assertion of Claims
15.4.1

Claims for Additional Cost

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5

Claims for Additional Time

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6

Concealed or Unknown Conditions, Claims for 3.7.4

Claims for Damages

3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3,
11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration
15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5

Commencement of the Work, Definition of
8.1.2

Communications

3.9.1, 4.2.4

Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,
9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND 9

Completion, Substantial

3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1,
9.10.3, 12.2, 15.1.2

Compliance with Laws

2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1,
13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8,
15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2,
15.4.4.2

Consolidation or Joinder

15.4.4

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1.1.4, 6

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3,
9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.4

Contract, Definition of
1.1.2

CONTRACT, TERMINATION OR SUSPENSION OF THE

5.4.1.1, 5.4.2, 11.5, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to
3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3

Contract Documents, Definition of
1.1.1

Contract Sum

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, 9.1,
9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3,
14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5

Contract Sum, Definition of
9.1

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5,
7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1,
8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2,
15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of
8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, 6.1.2

Contractor's Construction and Submittal Schedules

3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees

2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance 11.1

Contractor's Relationship with Separate Contractors
and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents
3.2

Contractor's Right to Stop the Work
2.2.2, 9.7

Contractor's Right to Terminate the Contract
14.1

Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent
3.9, 10.2.6

Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11

Copyrights
1.5, **3.17**

Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents
1.2

Cost, Definition of
7.3.4

Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7

Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of
8.1.2

Date of Substantial Completion, Definition of
8.1.3

Day, Definition of
8.1.4

Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification
9.4.1, **9.5**, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time
3.2, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**, 10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5

Digital Data Use and Transmission
1.7

Disputes
6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site
3.11

Drawings, Definition of
1.1.5

Drawings and Specifications, Use and Ownership of
3.11

Effective Date of Insurance
8.2.2

Emergencies
10.4, 14.1.1.2, **15.1.5**

Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, **15.2.5**

Failure of Payment
9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work
(See Defective or Nonconforming Work)

Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS
1

Governing Law

13.1

Guarantees (See Warranty)

Hazardous Materials and Substances

10.2.4, 10.3

Identification of Subcontractors and Suppliers

5.2.1

Indemnification

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,

9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,

14.1.1.4, 14.1.4, 15.1.4

Initial Decision

15.2

Initial Decision Maker, Definition of

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property

10.2.8, 10.4

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of

1.1.7

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

Insurance, Contractor's Liability

11.1

Insurance, Effective Date of
8.2.2, 14.4.2

Insurance, Owner's Liability

11.2

Insurance, Property

10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

INSURANCE AND BONDS

11

Insurance Companies, Consent to Partial Occupancy

9.9.1

Insured loss, Adjustment and Settlement of

11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest

13.5

Interpretation

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

Labor and Materials, Equipment

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,

10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,

9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6, 4.2.7,

6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3, 11.3,

12.2.5, 13.3.1

Limitations of Time

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,

15.1.2, 15.1.3, 15.1.5

Materials, Hazardous

10.2.4, 10.3

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2,

10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and

Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,
15.4.1.1

Minor Changes in the Work

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,
10.3.2

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of

2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4,

12.2

Notice

1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance
11.1.4, 11.2.3

Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, 15.1.3, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections
13.4.1, 13.4.2

Observations, Contractor's
3.2, 3.7.4

Occupancy
2.3.1, 9.6.6, 9.8

Orders, Written
1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

OWNER

2

Owner, Definition of
2.1.1

Owner, Evidence of Financial Arrangements
2.2, 13.2.2, 14.1.1.4

Owner, Information and Services Required of the
2.1.2, 2.2, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority
1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Insurance
11.2

Owner's Relationship with Subcontractors
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work
2.5, 14.2.2

Owner's Right to Clean Up
6.3

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

6.1

Owner's Right to Stop the Work
2.4

Owner's Right to Suspend the Work
14.3

Owner's Right to Terminate the Contract
14.2, 14.4

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

1.1.1, 1.1.6, 1.1.7, 1.5, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

Partial Occupancy or Use

9.6.6, 9.9

Patching, Cutting and
3.14, 6.2.5

Patents
3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
Payment, Final

4.2.1, 4.2.9, 9.10, 12.3, 14.2.4, 14.4.3

Payment Bond, Performance Bond and
7.3.4.4, 9.6.7, 9.10.3, 11.1.2

Payments, Progress

9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4

PAYMENTS AND COMPLETION

9

Payments to Subcontractors
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, 11.1.2

Permits, Fees, Notices and Compliance with Laws
2.3.1, 3.7, 3.13, 7.3.4.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl
10.3.1

Product Data, Definition of
3.12.2

Product Data and Samples, Shop Drawings
3.11, 3.12, 4.2.7

Progress and Completion

4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.4

Progress Payments

9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4

Project, Definition of
1.1.4

Project Representatives
4.2.10

Property Insurance

10.2.5, 11.2

Proposal Requirements

1.1.1

PROTECTION OF PERSONS AND PROPERTY

10

Regulations and Laws

1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

Rejection of Work

4.2.6, 12.2.1

Releases and Waivers of Liens
 9.3.1, 9.10.2
 Representations
 3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
 Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
 Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
 Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field Conditions by Contractor
 3.2, 3.12.7, 6.1.3
 Review of Contractor's Submittals by Owner and Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
 Review of Shop Drawings, Product Data and Samples by Contractor
 3.12
Rights and Remedies
 1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2, 12.2.4, **13.3**, 14, 15.4
Royalties, Patents and Copyrights
 3.17
 Rules and Notices for Arbitration
 15.4.1
Safety of Persons and Property
 10.2, 10.4
Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4
Samples, Definition of
 3.12.3
Samples, Shop Drawings, Product Data and
 3.11, 3.12, 4.2.7
Samples at the Site, Documents and
 3.11
Schedule of Values
 9.2, 9.3.1
 Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
 Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Separate Contractors, Definition of
 6.1.1
Shop Drawings, Definition of
 3.12.1
Shop Drawings, Product Data and Samples
 3.11, 3.12, 4.2.7
Site, Use of
 3.13, 6.1.1, 6.2.1
 Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
 Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
 Special Inspections and Testing
 4.2.6, 12.2.1, 13.4

Specifications, Definition of
 1.1.6
Specifications
 1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
 Statute of Limitations
 15.1.2, 15.4.1.1
 Stopping the Work
 2.2.2, 2.4, 9.7, 10.3, 14.1
 Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
 5.1.1
SUBCONTRACTORS
 5
 Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7
Subcontractual Relations
 5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
 Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3
 Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
 6.1.1, **11.3**
Substances, Hazardous
 10.3
Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2, 15.1.2
Substantial Completion, Definition of
 9.8.1
 Substitution of Subcontractors
 5.2.3, 5.2.4
 Substitution of Architect
 2.3.3
 Substitutions of Materials
 3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
 5.1.2
 Subsurface Conditions
 3.7.4
Successors and Assigns
 13.2
Superintendent
 3.9, 10.2.6
Supervision and Construction Procedures
 1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
 Suppliers
 1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6, 9.10.5, 14.2.1
 Surety
 5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2, 15.2.7
 Surety, Consent of
 9.8.5, 9.10.2, 9.10.3

Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3

Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14

Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7

Termination by the Owner for Cause
5.4.1.1, **14.2, 15.1.7**

Termination by the Owner for Convenience
14.4

Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT **14**

Tests and Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2,
9.10.1, 10.3.2, 12.2.1, **13.4**

TIME **8**

Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3, 9.5.1, 9.7,**
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5
Time Limits
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 5.2,
5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5,
9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2, 15.1.3,
15.4

Time Limits on Claims
3.7.4, 10.2.8, 15.1.2, 15.1.3
Title to Work
9.3.2, 9.3.3

UNCOVERING AND CORRECTION OF WORK **12**

Uncovering of Work **12.1**

Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3

Unit Prices
7.3.3.2, 9.1.2
Use of Documents
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

Use of Site
3.13, 6.1.1, 6.2.1

Values, Schedule of
9.2, 9.3.1

Waiver of Claims by the Architect
13.3.2

Waiver of Claims by the Contractor
9.10.5, 13.3.2, **15.1.7**

Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**

Waiver of Consequential Damages
14.2.4, 15.1.7

Waiver of Liens
9.3, 9.10.2, 9.10.4

Waivers of Subrogation
6.1.1, 11.3

Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
15.1.2

Weather Delays
8.3, 15.1.6.2

Work, Definition of
1.1.3

Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
13.2, 13.3.2, 15.4.4.2

Written Interpretations
4.2.11, 4.2.12

Written Orders
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

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.

§ 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 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 Owner's Insurance

§ 11.2.1 The Owner 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 Owner 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.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 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.

SUPPLEMENTARY GENERAL CONDITIONS (To 2017 edition of A201 General Conditions)

01. GENERAL CONDITIONS: The "General Conditions of the Contract for Construction", AIA Document A 201, 2017 edition, as published by the American Institute of Architects, is bound herein, and made a part of the Contract Documents.
02. RELATION OF SUPPLEMENTARY GENERAL CONDITIONS TO GENERAL CONDITIONS: The Supplementary General Conditions hereinafter contain changes and additions to AIA Document A 201, "General Conditions of the Contract for Construction". Where any portion of an Article in AIA Document A 201 is modified or voided by the Supplementary General Conditions, the unaltered provisions shall remain in effect.
03. RELATION TO SUPPLEMENTARY CONDITIONS TO GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A 201, 2017 ED.: If there are contradictions between the General Conditions of the Contract for Construction AIA Document A201, 2017 ed." and the "Supplementary General Conditions" the condition most favorable to the Owner shall govern.
04. MODIFICATIONS TO THE GENERAL CONDITIONS: Modify and supplement Articles of AIA Document A 201 as follows:
 - A. Article 1 - General Provisions:
 1. Subparagraph 1.1.1: Add:
 "The Contract Documents shall also include the Performance Bond and Payment Bond."
 2. Subparagraph 1.1.3: Add:
 "1.1.3.1 The word "provide" shall mean furnish and install, complete, in place, and ready for use."
 3. Subparagraph 1.1.5: Add:
 "Electronic Drawings (.dwg) files will not be provided to the Prime Contractors or Subcontractors."
 4. Subparagraph 1.1.6: Add:
 "Electronic Specifications (.doc) files will not be provided to the Prime Contractors or Subcontractors."
 5. Subparagraph 1.2: Add:
 - 1.2.4 New Paragraph.
 "1.2.4 Sections of Division 1 - General Requirements, govern the execution of all sections of the specifications."
 - 1.2.7 New Paragraph.
 "1.2.5 Wherever singular numbers or words are used in the Specifications and the Work requires more than one of the terms described, the plural or the word "each" shall be understood and inferred, and as many units as are necessary for a complete installation shall be provided. Similarly, wherever plural words or numbers are used in the Specifications and the Work requires only one of the terms described, the singular shall be understood and inferred, and the one unit for a complete installation shall be provided."

- B. Article 2 - Owner: Add the following subparagraph under Paragraph 2.1, "Definition":

"2.1.3 The Owner of this Project is THE TOWN OF CARTHAGE."

- C. Article 3 - Contractor:

1. Subparagraph 3.4: Add:

"3.4.1.1 Unless specified otherwise, workmanship shall be of a grade accepted as the best practice of the particular trade involved. Also, except as exceeded or qualified by the Specifications, workmanship shall be as stipulated in written standards of recognized organizations or institutes of the respective trades."

"3.4.4 Contractor shall submit a complete list of materials, equipment, suppliers and Subcontractors, proposed for the Project. Issuance of the second Certificate for Payment may be withheld until substantial portions of these lists have been submitted."

"3.4.5 Any work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to Owner."

"3.4.6 At any time during the construction and completion of the work covered by these Specifications, if the conduct of any employee of the Contractor be adjudged inappropriate and a nuisance to the Owner or Architect, or if any employee of the Contractor be considered incompetent or detrimental to the work, the Contractor shall order such parties removed immediately from the grounds."

2. Subparagraph 3.6: Add:

"3.6.1 See Instructions to Bidders for requirements regarding taxes."

3. Paragraph 3.12.4: Add:

"3.12.4.1 The Contractor shall submit a "Schedule of Shop Drawings and Sample Submittals" to the Architect for approval within 30 calendar days from date of award of the Contract. All shop drawings and sample submittals shall be submitted within 3 months after award of Contract."

"3.12.4.2 The schedule shall list submittals and dates for submittals in the same order that the products will be required in the sequence of construction."

"3.12.4.3 Shop drawings shall be dated and contain: name of Project; description or names of equipment, materials and items; and complete identification of locations at which materials or equipment are to be installed; reference to the Section of Specifications where it is specified, and Drawing Number where shown."

"3.12.4.4 Submission of shop drawings shall be accompanied by transmittal letters, containing Project name, Contractor's name, number of drawings, titles, and other pertinent data."

"3.12.4.5 Shop Drawings shall be reviewed and stamped by the Contractor and dated and signed or initialed by the person reviewing the shop drawings. By forwarding the shop drawing to the Architect for review, the Contractor signifies that the shop drawing is approved by the Contractor, that the item is suitable for installation into the Project, and that the item complies with the Drawings and Specifications."

"3.12.4.6 For standard manufactured items not requiring special shop drawings for manufacture (except where required otherwise elsewhere in the Contract Documents), submit 6 copies of manufacturer's catalog sheets showing illustrated cuts of item to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, wiring diagrams and controls, and all other pertinent information. Submittal shall denote the date pertinent to the specific item. Three copies of approved and/or disapproved submissions will be returned to Contractor."

"3.12.4.7 For shop drawings prepared by the Contractor or his Subcontractors or suppliers, submit legible, unfolded, reproducible Drawings. Each Drawing shall have a clear space for stamps. When phrase "by others" appears on shop drawings, General Contractor shall indicate on Drawing who is to furnish material or operations so marked before submittals. When shop drawings are checked "resubmit", or words of like meaning, Contractor shall correct original tracing and submit a new transparency for approval. After completion of checking of each submission of shop drawing transparencies, Architect will obtain prints of each transparency for their records and will then return checked transparencies to General Contractor. For use of all trades, General Contractor shall provide such number of prints as are required for field distribution."

"3.12.4.8 At completion of construction, furnish Owner with 1 unused corrected copy of all shop drawings, manufacturer's diagrams, literature, etc."

"3.12.4.9 Final decisions regarding numbers of shop drawings and their distribution will be made at the preconstruction conference."

D. Article 4 - Administration of the Contract:

1. Paragraph 4.1: Add:

"4.1.1 The terms "Construction Observer", "Project Representative", or other words of same meaning, shall mean a person authorized to perform the duties of and carry out the responsibilities of the Architect at the site."

E. Article 5 - Subcontractors:

1. Paragraph 5.1: Add:

"5.1.3 The Owner or Architect will not undertake to settle any differences between the Contractor and his Subcontractors, nor between Subcontractors."

F. Article 7 - Changes in the Work:

1. Subparagraph 7.1: Add:

"7.1.4 For any deletion or change which results in a net decrease in cost, the credit to be allowed by the Contractor to the Owner shall include a maximum of 10% of the estimated cost of the work for profit, but no allowance for overhead."

"7.1.5 The Contractor's allowance for overhead and profit shall not exceed 15% of the estimated cost of the work. These charges shall include supervision, overhead, bond, profit, general conditions and duration related expenses, and all other expenses associated with the work."

G. Article 9 - Payments and Completion:1. Subparagraph 9.3.1: Add:

"9.3.1.3 The Contractor's Application for Payment shall be made on AIA Form G 702. The certification included thereon shall be executed and notarized."

2. Subparagraph 9.3.2: Add:

"9.3.2.1 If there is inadequate storage space on the site, and if the Contractor desires to include in his Application for Payment any materials stored in a bonded warehouse or the supplier's warehouse, he shall assign such materials to the Owner. If the Architect determines that they are properly stored and protected against damage or theft, he will approve payment for such materials. All stored materials shall be insured in the name of the Owner in an amount equal to the purchase price of the material with a company licensed to do business in the State of North Carolina."

"9.3.2.2 Material stored off-site and included in the Contractor's Application for Payment shall be stored together in one location and shall be arranged such that the Architect can reasonably conduct an inventory of the material. The Architect will not certify payment for material that is stored such that the Architect cannot conduct a reasonable inventory. Stored materials included in the Contractor's Application for Payment must be stored in a location approved in advance by the Owner."

3. Paragraph 9.3: Add:

"9.3.4 Unless otherwise stated in the Agreement or Contract, Progress Payments will be made monthly on the basis of 95% of the work done, plus 95% of materials stored or stockpiled in an approved manner and location."

4. Add paragraph 9.11

"9.11 FINAL INSPECTION AND ACCEPTANCE: Prior to the final inspection, and at the written request of the Contractor, the Architect will conduct ONE pre-final inspection. The Architect will prepare a list (punch list) of items that are found to be incomplete or not in accordance with the Contract Documents, which shall be completed by the Contractor prior to the final inspection. Upon completion of the punch list items, the Contractor shall make a written request for a final inspection. The Architect will conduct ONE final inspection, including inspection of the punch list items. If the Architect determines that all punch list items have not been corrected by the Contractor or that other work does not conform to the Contract Documents, which causes an additional final inspection to be necessary, the Contractor will be required to pay the Owner for the Architect's expenses for re-inspection and the Owner will reimburse the Architect. For this Project, the Architect's re-inspection fee shall be \$300.00 per re-inspection."

H. Article 11 - Insurance and Bonds:1. Paragraph 11.1.2: Add:

"11.1.2.1 Prior to signing the Contract, the Contractor shall furnish Performance and Payment Bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder. Cost of bonds shall be paid by the Contractor. Such bonds shall be written by a company or companies lawfully authorized to do business in North Carolina having a rating of B+ or above by A.M. Best Company or having been approved by the Owner. The Contractor shall furnish bonds satisfactory to the Owner covering faithful performance of the contract and

payment of obligations arising thereunder as required by law. Bonds may be obtained, through the Contractor's usual source and the cost thereof shall be included in the contract sum. The amount of each bond shall be equal to 100 percent of the contract sum."

"11.1.2.2 The Contractor shall deliver the bonds to the Owner, not later than the date of execution of the Contract; or if the work is commenced prior thereto in response to a Notice to Proceed, or letter of intent, the Contractor shall, prior to commencement of the work, submit evidence satisfactory to the Owner that such bonds will be issued."

"11.1.2.3 Bonds shall be executed on the forms included in the "Contract Forms" part of the Project Manual, Performance Bond and Payment Bond, with amount shown on each part equal to 100% of the total amount payable by terms of the Contract. Surety shall be a company licensed to do business in the State of North Carolina and shall be acceptable to the Owner. Title "Licensed Resident Agent" shall appear after signature."

"11.1.2.4 Bonds shall be dated the same as or subsequent to the Contract and shall be accompanied by a current certified Power-of-Attorney. Bonds shall be furnished in sufficient numbers so that one original can be bound with each original of the Agreement."

"11.1.2.5 Seal of bonding company shall be impressed on each original of bond."

"11.1.2.6 Contractor's signature(s) on Performance Bond and Payment Bond shall correspond to that of the Contract, such person signing the Agreement involved under laws of the State of North Carolina."

"11.1.2.7 In the event of change orders or other contract modifications that increase the Contractor's scope of work or responsibility, the Contractor shall ensure that the increased cost of bonds is included in his change order price such that the bonds are kept valid and in effect without interruption and cover the Contractor's entire scope of work including modifications. The Contractor shall not allow the bonds to expire or otherwise terminate prior to completion of the Project without 30 days written notice to the Owner with copy to the Architect. "

- I. Affirmative Action Policy: If an Affirmative Action Policy for Minority/Women's Business Enterprises are included in the Project Manual, it is included by reference in these Supplementary General Conditions and is an integral part of the Bidding and Contract Documents."

END OF SC

SECTION 01 11 00
SUMMARY OF THE WORK

1.1 LOCATION OF SITE:

208 Monroe Street, Carthage, North Carolina, 28327

1.2 SCOPE OF THE WORK:

- A. The work described in the Contract Documents includes the furnishing of all labor, materials, equipment, and services necessary for the complete construction of the Project titled

Carthage Town Hall

All work of this Project shall comply with the International Building Code with North Carolina Amendments.

- B. Work Done by Owner: The Owner will furnish and install the following work, generally. This itemization is not totally inclusive.

1. Security cameras (GC to install conduit for telecom and electrical for cameras).
2. Furniture.
3. Wall monitors / TVs.
4. Emergency generator.

- C. Work Furnished by Owner and Installed by General Contractor:

1. Signage

- D. Site Work:

1. See notes on the Site Plan sheet of the Drawings for the description of division of responsibility for grading, curb and gutters, site drainage, and paving related to drives and parking areas.
2. The work includes the complete demolition and removal of all existing structures both above and below grade as required to properly install the new construction.
3. The General Contractor shall comply with applicable provisions of State and local requirements for Soil Erosion Control. The Contractor shall secure necessary approval for compliance with necessary ordinances for the construction process.

E. Permits:

1. The Contractor shall obtain and pay for all necessary permits.

F. Testing:

1. The Owner will employ an independent testing laboratory for testing required by these Specifications. The Contractor shall notify the testing laboratory a minimum of 24 hours in advance of performing work requiring specified testing.
2. If proper notice is not given to the testing laboratory prior to beginning work, the Contractor shall cease such work until the laboratory can properly staff the Project.
3. If the testing laboratory, after having been given the proper 24-hour notice, fails to arrive at the site at the scheduled time, the Contractor shall immediately contact the Architect for further instructions. Do not begin work to be tested prior to discussing the absence of the testing lab with the Architect.

1.3 SINGLE PRIME CONTRACT:

- A. The Owner will execute a single agreement with the successful General Contractor Bidder only and his work will include general construction, plumbing, HVAC, electrical, and all other work required by the Contract Documents.

END OF SECTION

SECTION 01 20 00
ALTERNATES & ALLOWANCES

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements governing alternates, allowances, and unit prices.

1.3 BID ALTERNATES:

- A. Definition: A bid alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that will be added to or deducted from the Base Bid amount if the Owner decides to accept the Bid Alternate.
- B. Bidders are required to submit bid alternate prices in the spaces provided on the Bid Form for Bid Alternates listed below. Each proposal shall state in the space provided on the Bid Form the lump sum amount, which includes all necessary material, plus the cost for delivery, installation, insurance, overhead, profit, applicable taxes, and all other expenses associated with the work. This price will be added to or deducted from the Base Bid for each of the items of alternate construction described below if such alternate is accepted by the Owner.
- C. It is intended that each separate Bid Alternate shall be completely independent of each other Bid Alternate.
- D. Bid Alternates: (Note that the word provide shall mean to furnish and install.)
 - 1. **Alternate No. 1: Landscaping (provide and install) as shown on Sheets C4.0, C4.1, and C12.0 of the Drawings.**

1.4 ALLOWANCES:

- A. Definition: An allowance is a sum of money to be included in the Base Bid. It is used to cover specific costs of construction.
- B. The Contractor shall include in the bid the Allowance listed below.
 - 1. **Allowance No. 1: Door hardware (provide, install, and key), \$12,000.00**
- C. If all or a portion of the Allowance is not used during construction of the project, the Owner shall receive the balance of the Allowance(s) at the completion of the project as a credit.

1.5 CONTINGENCY ALLOWANCES:

- D. Definition: A Contingency allowance is a sum of money over the actual cost of construction as shown on the drawings or in the specifications. It is used as a reserve fund to cover unexpected costs that develop during construction.
- E. The Contractor shall include in the bid the Contingency Allowance listed below.
 - 1. **\$50,000.00**

2. If all or a portion of the Contingency Allowance is not used during construction of the project, the Owner shall receive the balance of the Contingency Allowance(s) at the completion of the project as a credit.

END OF SECTION

SECTION 01 31 00
PROJECT MEETINGS

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions on the Contract, including General and Supplementary General 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, the following:
 - Preconstruction Conference
 - Preinstallation Meetings
 - Project Construction Meetings

1.3 PRECONSTRUCTION CONFERENCE:

- A. Shortly after the notification of an award for the construction of this Project, the Owner will schedule a Preconstruction Conference. This conference shall be attended by representatives of the Successful Contractor and major subcontractors.
- B. The Architect and his Consultants will be represented at this meeting along with the Owner's and Architect's field representatives.
- C. The purpose of this meeting will be to introduce the various personnel to be involved in the construction and to review the various scheduling and Project requirements.
- D. The General Contractor shall present a Contractor's Construction Schedule for the entire Project including all major phases of construction for review by the Architect and Owner during this meeting. Refer to Section 01 33 00 - Submittals, for additional requirements for the Contractor's Construction Schedule.
- E. The General Contractor shall submit a list of dates anticipated for the installation of "Owner-Furnished/Contractor-Installed" materials and equipment (see Section 01 11 00), as part of the Contractor's Construction Schedule.

1.4 PREINSTALLATION MEETINGS:

- A. Preinstallation meetings will be required for all major components of the Project, including, but not limited to, concrete, masonry, windows, curtainwall, roofing, and finishes. The Contractor is to schedule meetings. Minutes are to be kept by the Contractor and distributed to all parties concerned. Architect and Engineer will be present. See individual specification sections for additional requirements.
- B. Do not proceed with the installation if the meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to the performance of Work and reconvene the meeting at the earliest feasible date.

1.5 PROJECT CONSTRUCTION MEETINGS:

- A. During the course of construction, the Contractor shall schedule weekly meetings, to be handled by the Contractor, to review the progress of the Project. (These meetings may be waived in the early phases of construction if the Architect agrees that such a meeting is not necessary). Minutes shall be kept by the Contractor and distributed to all parties concerned.

- B. At least monthly, one of these weekly meetings shall be attended by the General Contractor's Project Manager. A representative of the Owner and a representative of the Architect will be present.
- C. The purpose of these meetings will be to review the progress of the project, problems, and decisions required (and by whom).
- D. 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. Update Contractor's Construction Schedule as necessary to keep the current status of the Project available to the Owner and the Architect. Distribute updates to all parties concerned.

END OF SECTION

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Concealed Work photographs.

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 by uploading them to the web-based Project management software site. Include copy of key plan indicating each photograph's location and direction.
 - 2. Identification: Provide the following information with each image description:
 - a. Unique sequential identifier keyed to accompanying key plan.

1.3 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.
- C. File Names: Name media files with sequential numbering suffix.

1.4 CONSTRUCTION PHOTOGRAPHS

- A. 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.
- B. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Take **50 exterior photographs** to show existing conditions of site and exterior of building before starting the Work.

2. Take **100 interior photographs** of existing building to accurately record physical conditions at start of construction.
- C. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:
1. Piping.
 2. Electrical conduit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00
SUBMITTALS

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for submittals required for the performance of the Work, including but not limited to, the following:

- Contractor's construction schedule
- Submittal schedule
- Daily construction reports
- Shop drawings
- Product data
- Samples
- Quality assurance submittals
- Schedule of values
- Request for information (RFI)
- Electronic Submittals

- B. Administrative Submittals: Refer to other Division 1 Section and General and Supplementary General Conditions and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following;

- Permits
- Application for payment
- Performance and payment bonds
- Insurance certificates
- List of subcontractors

1.3 SUBMITTAL PROCEDURES:

- A. Coordination: Coordinate preparation and processing of submittals with the performance of construction activities. Transmit each submittal sufficiently in advance of the performance of related construction activities to avoid delay.

- B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

- C. 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.

1. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

- D. Processing: To avoid the need to delay installation because of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

1. No extension of Contract Time will be authorized because of the failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

- E. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

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 after the date established for "Commencement of Work."
- B. Provide two bars for each significant construction activity. One is the schedule bar and immediately below it is the actual progress bar. The Contractor's Construction Schedule must be signed by the Contractor and submitted no later than the second payment request.
- C. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
- D. Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SCHEDULE OF SUBMITTALS:

- A. The Contractor shall prepare and submit to Architect a schedule of shop drawings, product data, samples, and other submittals as required in the General and Supplementary General Conditions and the Contract Documents. The schedule shall fix dates for submission and the lead-time for each submittal as related to the requirement for return-receipt of submittal to expedite delivery of material to maintain Contractor's Construction Schedule.
- B. It is to be understood that this schedule will be subject to change from time to time in accordance with the progress of the work. Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- C. No work shall be performed on work involving submittals until the Architect's written approval has been received.

1.6 DAILY CONSTRUCTION REPORTS:

- A. Prepare a daily construction report, including but not limited to, the following information concerning events at the site, and submit duplicate copies to the Architect at weekly intervals.
- List of subcontractors at the site
 - An approximate count of personnel at the site
 - High and low temperatures, general weather conditions
 - Meetings and significant decisions
 - Stoppages, delays, shortages, and losses
 - Orders and requests of governing authorities
 - Change orders received, implemented
 - Services connected, disconnected
 - Equipment or systems tests and startups

1.7 SHOP DRAWINGS:

- A. Electronic Drawings (dwg) and Specifications (doc) files will not be provided to the Contractor or subcontractors for purposes of preparing shop drawings.

- B. Submit newly prepared information drawn accurately to 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 a Shop Drawing.
- C. Shop drawing includes fabrication and installation Drawings, setting, diagrams, schedules, patterns, templates and similar Drawings.

1.8 PRODUCT DATA:

- A. Collect product data into a single submittal for each element of construction or system. Mark each copy to show applicable choices and options. Where printed product data includes information on several products that are not required, mark copies to indicate applicable information. Product data should include, but is not limited to, the following information:
 - Manufacturer's printed recommendations
 - Compliance with trade association standards
 - Compliance with recognized testing agency standards
 - Application of testing agency labels and seals
 - Notation of dimensions verified by field measurements (when applicable)

1.9 SAMPLES:

- A. Submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component installed.
- B. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

1.10 QUALITY ASSURANCE SUBMITTALS:

- A. Submit quality -control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, test reports, and other quality-control submittals as required under this Section and as required in other Sections of these Specifications.

1.11 SCHEDULE OF VALUES:

- A. The Schedule of Values required by the General and Supplementary General Conditions shall be divided into the sixteen divisions included in the Specifications and itemized in sufficient detail such that the Architect can fairly evaluate the subsequent payment requests submitted by the Contractor.

1.12 REQUEST FOR INFORMATION (RFI):

- A. In the event that the Contractor discovers what he considers to be a contradiction in the Contract Documents, or feels that he requires more information than is provided by the Contract Documents, or needs clarification or an interpretation of information included in the Contract Documents, he shall submit a Request For Information (RFI) to the Architect clearly describing the information that is required and clearly referencing the specific documents and locations in the documents involved.
- B. Responses from the Architect to RFI's will not change any requirements of the Contract Documents. In the event the Contractor believes that a response to an RFI will cause a change in the requirements of the Contract Documents, the Contractor shall immediately give written notice to the Architect, stating that the Contractor considers the response to be a Change Order. Failure to give such written notice shall waive the Contractor's right to seek additional time or cost related to the RFI.

- C. All RFI's shall be on a printed form approved by the Architect. The form shall state the contractor's name, date, project name, RFI number, brief subject description, specification reference (section & page), drawing reference (sheet & detail number), room number (if applicable), and request narrative. The contractor shall sign and date each request. The form shall have sufficient space for a written reply by the Architect.
- D. All RFI's shall be numbered sequentially from beginning to completion of the Project.

1.13 ELECTRONIC SUBMITTALS:

- A. RFI Submittals: RFI file name must be the RFI number_ job number (i.e. RFI-001_MGC-25004) and must contain the following:

- Project name
- Date.
- Submittal purpose and description.
- Specification paragraph number or drawing designation.

- B. Shop Drawing Submittals: Shop Drawing file name must be named as follows;

Section#-Submittal#-Revision#_FileName_Job#
Ex: 076200-02-00_Samples_MGC-25004.pdf

and must contain the following:

- Project name
- Date
- Specification Section number and title.
- Contractor's stamp and review comments on the shop drawing itself.
- Indication of full or partial submittal.

1.14 NUMBER OF COPIES REQUIRED FOR SUBMITTALS:

- A. The number of copies of submittals shall be generally as described below, except where otherwise noted in these Specifications. However, all final decisions regarding this issue will be made at the Preconstruction Conference.

- B. Type of Submittal:

1. Contractor's Construction Schedule: Submit (1) PDF.
2. Schedule of Submittals: Submit (1) PDF.
3. Daily Construction report: Submit (1) PDF.
4. Shop Drawings: Submit (1) PDF.
5. Product Data: Submit (1) PDF.
6. Samples: Submit samples in duplicate until approval is secured, and then submit 2 additional equivalent samples for Architect's use.
7. Quality Assurance Submittals: as required by other Sections of the Specifications.

8. Schedule of Values:

Submit in duplicate.

9. Electronic Submittal

1 PDF.

1.15 OTHER SUBMITTALS:

- A. Comply with submittal requirements specified in this Section and in other sections and parts of the Project Manual.

1.16 UNSOLICITED SUBMITTALS:

- A. The Architect will return unsolicited submittals to the sender without action.

END OF SECTION

SECTION 01 35 50
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.

PART 2 PRODUCTS

2.1 PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:
 - 1. Made outside the United States, its territories, Canada, or Mexico.
 - 2. Made using or containing CFC's or HCFC's.
 - 3. Made of wood from newly cut old-growth timber.
- C. Where all other criteria are met, Contractor shall give preference to products that:
 - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 2. Have a longer documented life span under normal use.
 - 3. Result in less construction waste.
- D. Regionally Sourced Products:
 - 1. Overall Project Requirement: Provide materials amounting to a minimum of 20 percent of the total value of all materials (excluding plumbing, HVAC, electrical, elevators, and other equipment) that have been extracted, harvested, or recovered, as well as manufactured, within a radius of 500 miles from the project site.
- E. Products with Recycled Content:
 - 1. Overall Project Requirement: Provide products with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial recycled content constitutes at least 20 percent of the total value of all products installed, except mechanical and electrical components.
 - 2. Calculations: Determine percentage of post-consumer and post-industrial content separately.
 - a. Previously used, reused, refurbished, and salvaged products are not considered recycled.
 - b. Wood fabricated from timber abandoned in transit to the original mill is considered reused, not recycled.
 - c. Determine the percentage of recycled content of any item by dividing the weight of recycled content in the item by the total weight of all material in the item.
 - d. Determine the value of recycled content of each item separately, by

multiplying the content percentage by the value of the item.

F. Sustainably Harvested Wood:

1. Definition: Wood-based materials include but are not limited to structural framing, dimension lumber, flooring, wood doors, finishes, and furnishings that are permanently installed in the project. Wood and wood-based products not permanently installed in the project are not included in the definition.
2. Overall Project Requirement: Provide a minimum of 50 percent of all wood-based materials made of sustainably harvested wood.
3. Certification: Provide wood certified or labeled by an organization accredited by The Forest Stewardship Council.

G. Urea-Formaldehyde Prohibition:

1. Overall Project Requirement: Provide composite wood and agrifiber products having no added urea-formaldehyde resins.
 - a. Require each installer to certify compliance and submit product data showing product content.

H. Flooring Systems:

1. Flooring elements installed in the interior of the building must meet the testing and product requirements of CAL (VOC).
 - a. Require each installer to certify compliance and submit product data showing product content.

I. Adhesives and Joint Sealants:

1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers.
2. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
 - a. Require each installer to certify compliance and submit product data showing product content.

J. Aerosol Adhesives:

1. Provide only products having a lower volatile organic compound (VOC) content than required by GreenSeal GS-36.
 - a. Require each installer to certify compliance and submit product data showing product content.

K. Paints and Coatings - Volatile Organic Compound (VOC) Content:

1. Provide paints, coatings, and primers applied to interior walls and ceilings that do not exceed the VOC limitations established in Green Seal Standard GS-11:
 - a. Flats: 50 g/L, maximum.
 - b. Nonflats: 150 g/L, maximum.
2. Provide anti-corrosive and anti-rust paints applied to interior ferrous metal substrates that do not exceed the VOC limitations established by Green Seal Standard GC-03:

- a. Opaque, High Gloss: 150 g/L, maximum.
3. Provide clear wood finishes, floor coatings, stains, and shellacs applied to interior elements that do not exceed the VOC limitations established in South Coast Air Quality Management District (SCAQMD) Rule No. 1113:
 - a. Clear Wood Finishes: Varnish: 350 g/L, maximum, Lacquer: 550 g/L, maximum.
 - b. Floor Coatings: 100 g/L, maximum.
 - c. Shellacs: Clear: 730 g/L, maximum, Pigmented: 550 g/L, maximum.
 - d. Sealers: Waterproofing Sealers: 250 g/L, maximum, Sanding Sealers: 275 g/L, maximum; All Other Sealers: 200 g/L, maximum.
 - e. Stains: 250 g/L, maximum.
4. Comply with architectural coatings VOC limits of the State of North Carolina, if more stringent than requirements specified above.
5. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

L. VOC Limits Throughout:

1. Wood Glues: 30 g/L.
2. Metal to Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
20. Top and Trim Adhesive: 250 g/L.
21. Plastic Cement Welding Compounds: 250 g/L.
22. ABS Welding Compounds: 325 g/L.
23. CPVC Welding Compounds: 490 g/L.
24. PVC Welding Compounds: 510 g/L.
25. Adhesive Primer for Plastic: 550 g/L.
26. Sheet Applied Rubber Lining Adhesive: 850 g/L.
27. Aerosol Adhesive, General Purpose Mist Spray: 65 percent by weight.

28. Aerosol Adhesive, General Purpose Web Spray: 55 percent by weight.
29. Special Purpose Aerosol Adhesive (All Types): 70 percent by weight.
30. Other Adhesives: 250 g/L.
31. Architectural Sealants: 250 g/L.
32. Nonmembrane Roof Sealants: 300 g/L.
33. Single-Ply Roof Membrane Sealants: 450 g/L.
34. Other Sealants: 420 g/L.
35. Sealant Primers for Nonporous Substrates: 250 g/L.
36. Sealant Primers for Porous Substrates: 775 g/L.
37. Modified Bituminous Sealant Primers: 500 g/L.
38. Other Sealant Primers: 750 g/L.

39. Flat Paints, Coatings, and Primers: VOC not more than 50 g/L.
40. Nonflat Paints, Coatings, and Primers: VOC not more than 50 g/L.
41. Anticorrosive and Antirust Paint Applied to Ferrous Metals: VOC not more than 100 g/L.
42. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
43. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
44. Floor Coatings: VOC not more than 50 g/L.
45. Shellacs, Clear: VOC not more than 730 g/L.
46. Shellacs, Pigmented: VOC not more than 550 g/L.
47. Stains: VOC not more than 100 g/L.

2.2 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

PART 3 EXECUTION

3.1 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 11 00 - Summary for identification of Owner-supplied products.
- B. Owner's Responsibilities:
 1. Arrange and pay for product delivery to the site.
 2. Submit claims for transportation damage and replace damaged, defective, or deficient items.
- C. Contractor's Responsibilities:
 1. Receive and unload products at the site; inspect for completeness or damage port any damage to Owner.
 2. Handle, store, install, and finish products.
 3. Provide installation inspections where required by the manufacturer.
 4. Repair or replace items damaged after receipt.

END OF SECTION

SECTION 013591
HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.2 DEFINITIONS

- A. Consolidate: To strengthen loose or deteriorated materials in place.
- B. Design Reference Sample: A sample that represents Architect's pre-bid selection of work to be matched; it may be existing work or work specially produced for Project.
- C. Dismantle: To disassemble or detach a historic item from a surface, or a non-historic item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful restoration and rehabilitation as determined by Architect.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.
- H. Remove: To take down or detach a non-historic item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

- N. Retain: To keep an element or detail secure and intact.
- O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.
- P. Salvage: To protect removed or dismantled items and deliver them to Owner[**ready for reuse**].
- Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.
- R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 COORDINATION

- A. Historic Treatment Sub-schedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.
 - 1. Schedule construction operations in sequence required to obtain best historic treatment results.
 - 2. Coordinate sequence of historic treatment work activities to accommodate the following:
 - a. Other known work in progress.
 - b. Tests and inspections.
 - 3. Detail sequence of historic treatment work, with start and end dates.
 - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
 - 5. Use of stairs.
 - 6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the site can accommodate the imposed loadings without damage.
- B. Pedestrian and Vehicular Circulation: Coordinate historic treatment work with circulation patterns within Project building(s) and site. Some work is near one active sidewalk and two active streets. Circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.4 PROJECT MEETINGS FOR HISTORIC TREATMENT

- A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at Project site.
 - 1. Attendees: In addition to representatives of Owner, Architect, and Contractor, historic treatment specialists, and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.
 - 2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

- a. Historic Treatment Sub-schedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Fire-prevention plan.
 - c. Governing regulations.
 - d. Areas where existing construction is to remain and the required protection.
 - e. Hauling routes.
 - f. Sequence of historic treatment work operations.
 - g. Storage, protection, and accounting for salvaged and specially fabricated items.
 - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
 - i. Qualifications of personnel assigned to historic treatment work and assigned duties.
 - j. Requirements for extent and quality of work, tolerances, and required clearances.
 - k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
 - l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of the public, and condition of other construction that affect the Work or will affect the work.
 3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.
- B. Coordination Meetings: Conduct specifically for historic treatment work at monthly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
 2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.
 - a. Historic Treatment Sub-schedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
 - b. Schedule Updating: Revise Contractor's Historic Treatment Sub-schedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:
 - 1) Interface requirements of historic treatment work with other Project Work.
 - 2) Status of submittals for historic treatment work.
 - 3) Access to historic treatment work.
 - 4) Effectiveness of fire-prevention plan.
 - 5) Quality and work standards of historic treatment work.
 - 6) Change Orders for historic treatment work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.5 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
 1. Dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed.
 2. Coordinate with Architect who will establish special procedures for dismantling and salvaging.

1.6 INFORMATIONAL SUBMITTALS

- A. Historic Treatment Sub-schedule:
 1. Submit historic treatment sub-schedule 30 days prior to the date established for commencement of historic treatment work.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.
- C. Historic Treatment Program: Submit 30 days before work begins.
- D. Fire-Prevention Plan: Submit 30 days before work begins.

1.7 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to the work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.
 1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond control of the specialist firm.
 - a. Construct new mockups of required work whenever a supervisor is replaced.
- B. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.

1. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
- D. Safety and Health Standard: ANSI/ASSP A10.6.

1.8 STORAGE AND HANDLING OF HISTORIC MATERIALS

- A. Identification: Photograph, tag, and catalog historic items to be salvaged or reinstalled.
 1. Identify each item with a nonpermanent location identification tag indicating item name or use, location, and location identification number to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying tag.
 - a. For groups of material, such as brick, provide location identification tag for pallet or container. Do not tag individually.
- B. Salvaged Historic Materials:
 1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
 2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
- C. Historic Materials for Reinstallation:
 1. Repair and clean historic items for reuse as indicated.
 2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.
- D. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.
- E. Storage: Store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.
 1. Secure stored materials to protect from theft.
 2. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F or more above the dew point.

- F. Storage Space:
 - 1. Arrange for off-site locations for storage and protection of historic material that cannot be stored and protected on-site.

1.9 FIELD CONDITIONS

- A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
 - 1. Use only proven protection methods, appropriate to each area and surface being protected.
 - 2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
 - 3. Erect temporary barriers to form and maintain fire-egress routes.
 - 4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
 - 5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.
 - 6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
 - 7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
- B. Temporary Protection of Historic Materials:
 - 1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
 - 2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.
- C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- D. Utility and Communications Services:
 - 1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
 - 2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.

3. Maintain existing services unless otherwise indicated; keep in service and protect against damage during operations. Provide temporary services during interruptions to existing utilities.
- E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
 2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION FROM FIRE

- A. Follow fire-prevention plan and the following:
1. Comply with NFPA 241 requirements unless otherwise indicated.
 2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
 - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
 3. Prohibit smoking by all persons within Project work and staging areas.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
1. Obtain Owner's approval for operations involving use of welding or other high-heat equipment. Use of open-flame equipment is not permitted. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
 2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
 3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that area is safe.
 4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
 5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
 6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
 - a. Train each fire watch in proper operation of fire-control equipment and alarms.
 - b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.

- c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
 - d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
 - e. Maintain fire-watch personnel at each area of Project site until two hours after conclusion of daily work.
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 GENERAL HISTORIC TREATMENT

- A. Have historic treatment work performed only by qualified historic treatment specialists.
- B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.
- C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- D. Perform daily inspections of Project site as the Work progresses to detect hazards resulting from historic treatment procedures.
- E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:
 - 1. Retain as much existing material as possible; repair and consolidate rather than replace.
 - 2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
 - 3. Use reversible processes wherever possible.
 - 4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
 - 5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
 - 1. Do not proceed with the work in question until directed by Architect.
- G. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.
- H. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

END OF SECTION

SECTION 01 42 00
REFERENCE STANDARDS & LAYOUT WORK

1.1 REFERENCE TO INDUSTRY STANDARDS:

- A. Whenever reference is made to codes, standard specifications, or other data published by regulating agencies or accepted organizations, it shall be understood that such reference is made to the latest edition (including addenda) published prior to the date of the Contract Documents, except as noted specifically otherwise by date in the Contract Documents.
- B. Requirements included in referenced standards are included in the Contract Documents by reference thereto and are an integral part of the Contract Documents as much so as if included verbatim.
- C. Among those frequently used in the Contract Documents are the following (with the respective abbreviations used):
 - American Society for Testing and Materials (ASTM)
 - U. S. Department of Commerce
 - Commercial Standards (CS)
 - Product Standards (PS)
 - Federal Specifications (FS)
 - American National Standards Institute (ANSI)
 - National Electric Code (NEC)
 - North Carolina State Building Code (Code)
 - Underwriter's Laboratories Inc. (UL)
 - Architectural Woodwork Institute (AWI)
 - American Architectural Manufacturer's Association (AAMA)
 - American Concrete Institute (ACI)
 - American Iron and Steel Institute (AISI)
 - American Welding Society (AWS)
 - Prestressed Concrete Institute (PCI)
 - Steel Joist Institute (SJI)
 - Steel Deck Institute (SDI)

1.2 LAYOUT WORK:

- A. Lines and Levels: The Owner will establish lot lines, restrictions, and a benchmark. General Contractor shall establish benchmarks in not less than 2 widely separated places. As work progresses, General Contractor shall establish benchmarks at each floor level, giving exact levels of various floors. As work progresses, General Contractor shall lay out exact location of all partitions as a guide to all trades. All other grades, lines, levels, and benchmarks shall be established and maintained by the Contractor requiring them, and they shall be responsible for same.
- B. Construction Tolerances:
 - 1. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises do not exceed 1/4" in 10', or 3/8" in a story height not to exceed 20', nor 1/2" in 40' or more. For external corners, expansion joints, control joints, and other conspicuous lines do not exceed 1/4" in any story or 20' maximum, nor 1/2" in 40' or more.
 - 2. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other horizontal lines, do not exceed 1/4" in any bay of 20' maximum, nor 1/2" in 40' or more. For top surface of bearing walls do not exceed 1/8" between adjacent floor elements in 10' of 1/16" within width of a single unit.

3. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls, and partitions, do not exceed $1/2"$ in any bay of 20' maximum, nor $3/4"$ in 40' or more.
4. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus $1/4"$ nor plus $1/2"$.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This section includes requirements for temporary facilities, including temporary utilities, support facilities, and security and protection.

1.3 DEFINITION:

- A. Where the word "Contractor" is used in this Section, reference is to each Prime Contractor who has a direct contract with the Owner. Where "General Contractor" is used, reference is to the General Contractor only.

1.4 TEMPORARY UTILITIES:

- A. Water Service: The General Contractor shall make the necessary arrangements and provide all water service and distribution piping of sizes and pressures adequate for the entire construction period.
- B. Electric Power Service: The General Contractor shall make the necessary arrangements and provide all temporary electric service and lighting required by all trades during the entire construction period. The metered cost of electricity used shall be borne by the General Contractor.
- C. Weather Protection, Temporary Heat, Ventilation, and Air Conditioning:
 - 1. Extent: The General Contractor shall provide all-weather protection, temporary heat or cooling and fuel as necessary to carry on the work expeditiously during inclement weather, to protect all work and materials against injury from dampness and cold, to dry out the building and to provide suitable working conditions for the installation and curing of materials until final acceptance by the Owner. Unless otherwise required in the various Specification Sections, building interiors shall be maintained between 45° F. and 85° F. during installation of interior finish work.
 - 2. Methods: The methods of heating or cooling and the type of fuel and equipment used shall be subject to approval by the Architect. After the building is completely enclosed, the General Contractor may utilize the permanent mechanical equipment with the qualifications herein stipulated; he shall, however, supply any additional equipment required. Any permanent equipment so used shall be turned over to the Owner in the condition and at the time required by the Specifications. The General Contractor's use of permanent equipment is hereby qualified as follows:
 - a. Permanent Equipment: The permanent equipment shall not be used for temporary heat or cooling unless and until all safety devices specified or required for the safe operation of the equipment are installed and operating properly.
 - b. Cost: The General Contractor shall pay all power and fuel costs required by the use of the permanent heating and cooling equipment. However, the HVAC Contractor shall be responsible for the readiness and maintenance of the equipment during the period that it is used after the building is enclosed.

- c. In using permanent equipment, the HVAC Contractor shall provide filters (in addition to filters required with equipment) at all points where air enters the system. Maintain such filters until the building is occupied. Failure to do so will result in the Owner employing an independent cleaning company to vacuum all supply and return ductwork and to clean all cooling and heating equipment. The cost of such a cleaning operation will be charged to the HVAC Contractor at no cost to the Owner.
- d. In the event that the Contractor does use mechanical equipment provided under the Contract for heating and cooling purposes during the construction period, **the Contractor will still be required to provide the guarantees shown on Mechanical Drawings, for the length of time specified and with the time beginning at substantial completion of the facility.**

E. Temporary Toilet Facilities:

- 1. General Contractor shall provide and maintain an adequate number of temporary toilets with proper enclosures as necessary for use of all trades during construction. The location of the toilets shall be subject to approval of the Architect. Keep toilets clean and comply with all local and state health requirements and sanitary regulations.
- 2. Toilet facilities shall be the prefabricated chemical type. Remove temporary toilets at the completion of the work.
- 3. The toilet facilities in the buildings under construction or other existing buildings of the Owner shall not be used by the Contractor's personnel at any time.

1.5 SUPPORT FACILITIES:

- A. Contractor's Temporary Field Office: General Contractor shall provide and maintain a suitable temporary field office at the Project Site for his own use and available to the Owner and Architect during normal working hours.
 - 1. The office shall be painted, heated during cold weather, and provided with movable windows, doors, locks, and adequate lighting to facilitate reading of the documents and other paperwork and other functions normally required in a field office. Provide layout tables, chairs, drawing racks and other furniture and equipment normally required for this purpose.
 - 2. Other Prime Contractors having a Contract with the Owner shall provide their own office or shall make arrangements with the General Contractor to provide office space for them.
 - 3. The location of the temporary office shall be subject to approval by the Architect.
- B. Temporary Sheds: The Contractor shall provide and maintain additional storage sheds and other temporary buildings, or trailers as required for proper storage of materials on the site. The location of sheds and trailers shall be subject to the approval of the Architect. Remove sheds when work is completed.
- C. Project Sign: General Contractor shall furnish, erect and maintain a Project sign fabricated from preservative-treated lumber and exterior grade, 3/4" thick fir plywood, and as detailed on the Drawings.
 - 1. The sign shall be mounted securely and rigidly on pressure-treated posts and shall be located where directed by the Architect.

2. No other signs will be allowed unless specifically approved by the Architect.

D. Temporary Construction Fence: Contractor is to provide a temporary galvanized chain link fence, minimum of 6'-0" height, with all required gates, locks and other components as necessary to isolate the construction area from the general public and to provide security for construction materials and equipment.

1. Coordinate of fence with the Architect.

1.6 PROTECTION: Protection shall consist (in general) of the following:

A. Plant Material: The Contractor shall protect all trees, shrubs, lawns, and all landscape work from damage, providing guards and covering. Any damaged work shall be repaired or replaced at Contractor's expense.

B. Streets and Walks: The Contractor shall protect all existing streets and walks and shall repair any damage during construction at his own expense.

C. Private Roads and Walks: The Contractor shall protect existing private roads and walks. He shall maintain them during course of work and shall repair all damages to same at his own expense.

D. Safety: The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.

E. Heating Occupied Spaces Prior to Final Acceptance: Should a portion of the building be occupied by the Owner prior to substantial completion, the cost of fuel and operation of the heating system for the occupied portion will be borne by the Owner from time of occupancy until final acceptance.

F. Water Protection: The Contractor shall, at all times, protect excavation and trenches from rainwater, spring water, groundwater, backing-up of drains or sewers, and all other water. He shall provide all pumps and equipment and enclosures to provide this protection.

G. Temporary Drainage: The Contractor shall construct and maintain all necessary temporary drainage and shall do all pumping necessary to keep excavation and low areas free of water.

H. Snow and Ice: The Contractor shall remove all snow and ice as may be required for proper protection and execution of work.

I. Guard Lights: The Contractor shall provide and maintain guard lights at all barricades, obstructions in streets, roads, or sidewalks, and at all trenches or pits adjacent to public walks or roads.

J. Cold Weather: During cold weather, the Contractor shall protect all work against damage. If low temperatures make it impossible to continue operations safely (in spite of cold weather precautions), Contractor shall cease work and shall so notify the Architect. In this event, the Contractor is still responsible for protecting all work in place.

K. Fire: Open fires will not be permitted.

1.7 SITE MAINTENANCE:

A. At the completion of the building pad, the General Contractor will be responsible for maintaining an area fifty (50) feet wide from the outside face of any building. This area is to be maintained so as to provide access to the building by all trades. Maintenance will include but is not limited to, keeping the area graded level, free of rutting and excessive mud accumulation. The General Contractor is responsible for maintaining this area until time for

touch upgrading. At this time, the General Contractor will re-grade the fifty (50) foot perimeter area and all areas disturbed by construction activities. The Contractor will re-spread the topsoil around the building and provide permanent grassing and landscaping.

END OF SECTION

SECTION 01 61 00
MATERIALS AND EQUIPMENT

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section specifies requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and Schedule of Submittals are included under Section 01 33 00 - Submittals.
- C. Standards: Refer to Section 01 42 00 - Reference Standards for applicability of industry standards to products specified.
- D. Procedures for handling requests for substitutions made after the award of the Contract are included under Section "Product Substitutions".

1.3 DEFINITIONS:

- A. Definitions used in this Section 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 the 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.
 - b. "Foreign Products", as distinguished from "domestic products", are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of or living within the United States and its possessions.
- B. "Materials" are products that are substantially shaped, cut, worked, fixed, finished, refined, or otherwise fabricated, processed or installed to form a part of the Work.
- C. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 SUBMITTALS:

- A. Asbestos and PCB Certification: After completion of the installation, but prior to Substantial Completion, the Contractor shall certify in writing that products and materials installed and processes used do not contain asbestos or polychlorinated biphenyls (PCB), using format included in Section 01 78 00 - Project Closeout.

- B. Hazardous Materials Notification: In the event that no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.

1.5 QUALITY ASSURANCE:

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
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.
1. Each prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate Contractors.
 2. If a dispute arises between Contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.
- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the work:
1. No available domestic product complies with the Contract Documents.
 2. Domestic products that comply with the Contract Documents are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.
- D. 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 that 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 that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - Name of product and manufacturer
 - Model and serial number
 - Capacity
 - Speed
 - Ratings
 - Electrical requirements

1.6 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, or other losses.
 3. Deliver products to the site in the manufacturer's original sealed container or other packaging systems, 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, undercover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.7 UNAUTHORIZED MATERIALS:

- A. Materials and products required for work of this Project shall not contain any asbestos, polychlorinated biphenyls (PCB), or other hazardous materials identified by the Owner.

1.8 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. No substitutions will be permitted.
 2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

- a. Where products or manufacturers are specified by name, accompanied by the term "or equal", "or approved equal", or words of similar meaning, comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
- C. Non-Proprietary Specifications: Where the Specifications list products or manufacturers that are available and may be incorporated in the work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
- D. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without the use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
- E. 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. The general overall performance of a product is implied where the product is specified for a specific application.
 - 1. Manufacturer's recommendations may be contained in the published product literature, or by the manufacturer's certification or performance.
- F. 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.
- G. Visual Matching: Where Specifications require matching an established sample, the Architect's decision will be final on whether a proposed product match satisfactorily.
 - 1. Where no product available within the specified category matches satisfactorily and also comply 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.
- H. 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.
- I. 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.

1.9 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for the installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.

1.10 PROTECTION AFTER INSTALLATION:

- A. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Control traffic to prevent damage to materials, equipment, and surfaces.

- C. Cover projections, wall corners, jambs, sills, and soffits of openings in area used for traffic and passage of products in subsequent work.
- D. Floors and Stairs:
 - 1. Protect finished floors and stairs from dirt and damage.
 - 2. In other areas subject to foot traffic, secure heavy paper, sheet goods, or other materials in place without damaging final finished surfaces.
 - 3. For the movement of heavy products, lay planking or similar materials in place.
 - 4. Maintain protection materials in good condition while in use.

END OF SECTION

SECTION 01 63 00
PRODUCT SUBSTITUTIONS

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section specifies requirements for handling requests for substitutions made after the award of the Contract.
- B. The Contractor's Construction Schedule and Schedule of Submittals are included under Section 01 33 00 - Submittals.
- C. Standards: Refer to Section 01 42 00 - Reference Standards for applicability of industry standards to products specified.

1.3 DEFINITIONS:

- A. Definitions used in this Section 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. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
 - 2. Revisions to Contract Documents requested by the Owner or Architect.
 - 3. Specified options of products and construction methods included in Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS:

- A. Substitution Request Submittal: The Architect will consider requests for substitution if received within 60 days after the commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
 - 1. Submit 3 copies of each request for substitution for consideration.
 - a. A reproduction of "Substitution Request Form", included as the last page of this Section, must be used and filled in for each request for substitution.

2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Product data, including drawings and descriptions of products, fabrication, and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance, and visual effect.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any, in the Contract sum.
 - g. Certification by the Contractor that the proposed substitution is equal to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application intended. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

1.5 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 the Contract Documents.
 3. The request is timely, fully documented, and properly submitted.
 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 5. 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 because of the failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. 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 considerations.
 8. 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.
 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 can provide the required warranty.
 10. Where a proposed substitution involves more than one prime Contractor, each Contractor shall cooperate with the other Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.
- 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.
- C. Substitute products shall not be ordered or installed without the written approval of the Architect.
- 1.6 APPROVED SUBSTITUTIONS:
- A. For approved substitutions, submit shop drawings, product data, and samples in accordance with Section 01 33 00 - Submittals.
- 1.7 SUBSTITUTION REQUEST FORM: (See next page)

END OF SECTION

SUBSTITUTION REQUEST FORM:

TO:

Michael Graves
530 N. Trade Street, Ste 301
Winston-Salem, NC 27101

COPY TO:

PROJECT: _____

MG PROJECT NO. _____

SPECIFIED ITEM: _____

Section _____ Paragraph _____ Description _____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

Upon submitting this Request for Substitution, the undersigned certifies that the following paragraphs are correct unless otherwise modified on attachments:

1. The Contractor has investigated the proposed substitution and believes that it is equal to or superior in all respects to the specified item and will conform to design requirements and aesthetic effect.
2. The cost-saving or additional cost to the Owner for accepting substitution:
\$ _____ savings or \$ _____ additional cost.
3. The Contractor will pay the Architect and/or Engineers for additional studies, investigations, submittal reviews, redesign and/or analysis caused by the requested substitution, and at no additional cost to Owner.
4. Substitution requires dimensional changes or redesign of structure or PME Work:
No ☐ Yes ☐ (If yes, attach complete data).
5. The Contractor will waive future claims for added cost to Contract caused by substitution.
6. Changes in Contract Time caused by substitution: No ☐ Yes ☐ Add/Deduct _____ days.
7. Adverse effect on other Trades caused by substitution: None ☐ Yes ☐ (If yes, explain on attachment).
8. The Contractor will modify other parts of the Work as may be required to make all parts of Work complete and functioning properly. Yes ☐ (Explain on attached page if necessary).
9. The same type of warranty for specified product will be furnished of proposed substitution:
Yes ☐ No ☐
10. Maintenance service available? Yes ☐ No ☐ Where? _____
11. The Contractor has complied with requirements of Section 01630 - Substitutions and the Contract Documents as part of request for substitution and has filled in this form. Yes ☐ No ☐

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEM: See attached ☐ Not required ☐

Submitted by: _____

Architect's Response:

Signature _____

_____ Approved

Contractor _____

_____ Approved as Noted

Address _____

_____ Rejected

Signature: _____

Date _____

Firm: _____

Telephone _____

Date: _____

REQUIRED ATTACHMENTS:

1. Product Data for Specified Item: Clearly marked to indicate full compliance with Specification Section and Contract Documents: Attached ☐
2. Product Data for Substitution: Clearly marked for adequate evaluation and comparison with data submitted for specified item: Attached ☐
3. Samples: Attached ☐ Not Required ☐
4. Cost Data and Implications of Substitution Attached ☐ Not Required ☐
5. Contractor's Comments: Attached ☐ Not Required ☐
6. Other: _____

END OF FORM

SECTION 01 73 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching.
- C. Requirements of this Section apply to plumbing and electrical installation. Refer to plumbing and electrical drawings for other requirements and limitations applicable to cutting and patching plumbing and electrical installations.
- D. Contractor shall be responsible for the following, but not limited to, cutting, fitting, and patching requirements:
 - 1. Make parts fit together properly, including interfaces with existing building elements.
 - 2. Uncovering portions of the Work to provide for the installation of ill-timed work including inspections as required.
 - 3. Removing and replacing work not conforming to requirements of Contract Documents.
 - 4. Removing and replacing defective work.
 - 5. Removing samples of installed work as specified for testing.

1.3 SUBMITTALS:

- A. Cutting and patching proposal:
 - 1. Submit a written proposal to the Architect at least ten days in advance of performing any cutting or alterations which affects the following:
 - a. Work of Owner or any separate contract.
 - b. Structural elements of the project.
 - c. Life expectancy, maintenance, efficiency or safety of operational elements.
 - d. Aesthetic qualities of visually exposed elements.
 - 2. Include the following information in proposal:
 - a. Identification of Project.
 - b. Description of affected work.

- c. The extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - d. Anticipated results in terms of changes to construction; including changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - e. Products proposed for use.
 - f. Firms or entities that will perform the Work.
 - g. Utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - h. Alternative methods, if applicable.
 - i. Cost proposal, when applicable.
 - j. The written permission of any separate Contractors whose work will be affected.
 - k. Dates and times when cutting and patching work are to be performed.
3. Should conditions of the work or the schedule indicate a change of products from the original installation, the Contractor shall submit a request.
- B. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Use materials identical to original installed materials. If identical materials cannot be used where exposed surfaces are involved, use materials that match original adjacent surfaces to the fullest extent possible with regard to the visual effect. Use materials whose installed performance will equal or surpass that of original materials installed. Comply with specification sections for type of work to be performed.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine project conditions and surfaces to receive work including elements subject to damage or movement during cutting and patching operations. Take corrective action if unsafe or unsatisfactory conditions are encountered before proceeding with work.
- B. Inspect conditions affecting the installation of products or performance of the work after uncovering or removal of work.
- C. Inspect structural support elements that are concealed and exposed after removal for repairs or patching, for indications of loss of structural integrity, rot, rust, corrosion, or other similar conditions. Notify Architect if additional work or corrective measures are required.

- D. Report unsatisfactory or questionable conditions to Architect in writing. Do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION:

- A. Temporary supports: Provide adequate temporary supports for work to be cut and, as necessary, to ensure the structural integrity of the affected portion of the work. Install temporary supports so as not to damage the work installed or existing construction.
- B. Protection:
 - 1. Protect adjacent construction during cutting and patching work to prevent damage.
 - 2. Provide materials, devices, and methods as required to protect workers and adjacent surfaces.
 - 3. Protect portions of the work exposed to the elements which may be exposed by cutting and patching work.
 - 4. Maintain excavations free from water.
- C. Avoid interference with the use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take precautions necessary to avoid cutting pipes, conduits, or ductwork serving the building including those scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 WORKMANSHIP:

- A. Employ skilled workmen to perform cutting and patching work.
- B. Retain original installers or fabricators to the greatest extent possible to perform cutting and patching work for the following:
 - 1. Waterproofed or moisture-resistant elements.
 - 2. Visually exposed finished surfaces.
- C. Perform demolition and cutting work by methods that will not damage adjacent construction and will provide proper surfaces for patching work.
- D. Perform installation, fitting and adjustment of products to comply with the manufacturer's product data, its intended functions, specified tolerances and finishes.
- E. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- F. Fit work tight around pipes, sleeves, ducts, conduits, and other penetrations through non-rated construction. Firestop penetrations using approved materials to cut-off and conceal draft openings in compliance with governing building codes.
- G. Where cutting and patching is required on work of fire-resistive construction, perform work so as not to alter the fire-resistive integrity of the construction. Penetrations required through fire-resistive construction shall be fire stopped using a Through-Penetration Firestop System, Classified by Underwriters Laboratories or Factory Mutual Approved, tested in accordance with ASTM E814-88 and complying with requirements of the governing building

code. Obtain required inspections and approval of local building officials prior to covering or concealing the work performed.

H. Refinish surfaces to provide an even, uniform finish to match adjacent finishes and as follows:

1. For continuous surfaces: Refinish to the nearest intersection.
2. For an assembly: Refinish the entire unit.

3.4 CUTTING:

- A. Perform cutting using methods least likely to damage elements to be retained on adjoining construction. Where possible review proposed procedures with the original installer; comply with original installer's recommendation.
- B. Use hand or small power tools designed for sawing and grinding, not hammering and chopping, where cutting is required.
- C. Cut holes and slots neat to sizes required with minimum disturbance to adjacent surfaces. Temporarily cover the opening when not in use.
- D. Avoid marring finished surfaces, cut or drill from exposed or finished side into concealed surfaces.
- E. Perform cutting through concrete or masonry using cutting machines designed for this purpose such as carborundum saws or diamond core drills.
- F. Where utility services are required to be removed, relocated or abandoned, by-pass services such as pipes or conduits before cutting.
 1. Cut-off pipes or conduits in walls or partitions to be removed.
 2. Cap, valve, or plug and seal the remaining portion of the pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

3.5 PATCHING:

- A. Patch with durable seams that are as invisible as possible.
- B. Where possible, inspect and test patched areas to demonstrate the integrity of installation.
- C. Restore exposed finishes of patched areas and areas extending into adjoining construction, including damaged surfaces and finishes, in a manner that will be indistinguishable in the finished work.

3.6 CLEANING:

- A. Clean areas and spaces where cutting and patching is performed or used as access.
- B. Remove excess paint mortar, oils, putty, and items of similar nature from patched work.
- C. Clean pipes, conduits, and similar items before painting or other finishing is applied.
- D. Restore damaged pipe covering to its original condition.

END OF SECTION

SECTION 01 74 00
CLEANING UP

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Work Included This Section:

1. This Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.

B. Environmental Requirements:

1. Conduct cleaning and waste disposal operations in compliance with all laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
2. Burning or burying of debris, rubbish, or other waste material on the premises shall not be permitted.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REMOVAL OF DEBRIS:

- A. All debris and waste materials shall become the property of the Contractor and the Contractor shall be responsible for removal of the debris from the Project Site on a periodic basis no less frequently than weekly. The Contractor shall be responsible for cleanup of his own waste materials and debris.

3.2 MUD AND DUST FROM MOVEMENT OF VEHICLES:

- A. The Contractor shall not allow mud, earth-droppings, and dust to accumulate for more than one day before removing such from public streets. At no time shall any accumulation be allowed which will create a hazard to safety or which will create bad public relations.
- B. The measures to be used to prevent littering the pavement shall meet DEHNR requirements and shall include (but does not constitute the only measure to be used, if necessary) the following:
1. Maintain dust control.
 2. Wash and/or sweep paved areas.
 3. Pick up droppings as they occur.
- C. Failure to clean streets promptly (within one day's notice) will result in the Owner having streets cleaned and deducting costs for the same from Contractors' Contract Price.

3.3 FINAL CLEAN-UP:

- A. Before final inspection and acceptance of the Project, the Contractor shall clean work under the Contract, exterior and interior, to such an extent that the Owner can occupy and use the building for its intended purpose with no cleaning required by the Owner.
- B. General:
 - 1. Employ experienced workers or cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a professional building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 2. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion for the entire project or a portion of the Project:
 - a. Clean the Project site, yard, and grounds, in areas disturbed by demolition activities of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
 - b. Remove tools, construction equipment, machinery, and surplus material from the site.

END OF SECTION

SECTION 01 75 00
DOCUMENTS AT PROJECT SITE

1.1 DOCUMENTS AT THE PROJECT SITE:

- A. The Contractor shall maintain at the Project Site one complete set of Drawings and Specifications, including all Addenda, Change Orders, and other official changes thereto, for his work. The Drawings and Specifications shall be maintained in good order and readable condition. The Drawings and Specifications shall be marked in red to show changes in the work required by Addenda, Change Orders, or other change directives, and shall show as-built changes. Changes shall be so noted immediately upon notification of completion of the changed work.
- B. The Contractor shall also maintain at the Project Site approved submittals, shop drawings, and erection drawings. These documents shall be maintained in good order and readable condition.
- C. All of the documents required at the Project Site under this Section shall be available for use by the Owner, or their representative, at all times.
- D. Upon completion of the Project, the documents required under this Section shall be turned over to the Architect for the Owner.

END OF SECTION

SECTION 01 78 00
CONTRACT/ PROJECT CLOSE-OUT

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for Project close-out including, but not limited to, the following:
 - Inspection procedures
 - Project record documents
 - Operation and maintenance manuals
 - Guarantees and warranties
 - Affidavits
 - Quantity allowances and cash allowances

1.3 INSPECTION PROCEDURES FOR SUBSTANTIAL COMPLETION AND FINAL COMPLETION:

- A. Follow procedures as specified in Article 9 of the General Conditions (AIA Document A201) and the Supplementary General Conditions.

1.4 RECORD DOCUMENTS:

- A. Record Contract Drawings: Maintain and submit to Architect a clean, undamaged set of record Contract Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which 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
- B. Record Shop Drawings: Maintain and submit to Architect a clean, undamaged set of record Shop Drawings. Mark the Shop Drawings to show the actual installation where the installation varies substantially from the Work as originally shown. Record a cross-reference at the corresponding location on the Contract Drawings.
- C. Record Specifications: Maintain and submit to Architect one complete copy of the Project Manual, including addenda. Include with the Project Manual 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.
- D. Record Product Data: Maintain and submit to Architect one copy of each Product Data submittal. Note related Change Orders or any other modifications issued during construction. Mark these Documents to show significant variations in actual Work performed in comparison with information submitted.
- E. Record Submittals: Maintain and submit to Architect one copy of all approved submittals.
- F. See Section 01 75 00 - Record Documents for additional information.

1.5 OPERATION AND MAINTENANCE MANUALS:

- A. Each Prime Contractor shall submit to Architect before final acceptance of the Project, 2 copies (except where required specifically otherwise elsewhere in the Contract Documents) of all installation, operating, and maintenance instructions on equipment and materials furnished under his Contract. Each set of copies shall be bound in a 3-ring loose-leaf binder for 8 1/2" x 11" paper, with black vinyl covers. Label binder designating name of Project, name of Owner, which Prime Contract, and name of Prime Contractor.
- B. The following is a list of Operation and Maintenance Manuals required to be delivered to the Architect for the Owner prior to final payment. The Contractor will be required to provide all operation and maintenance manuals specified in Divisions 1 through 33 of these Specifications, even if inadvertently left off of this list.

Operation and Maintenance Manuals:

- 1. Kitchen appliances
- 2. Electrical equipment
- 3. Plumbing equipment

1.6 GUARANTEES AND WARRANTIES:

- A. Each Prime Contractor shall submit to Architect for the Owner before final acceptance 2 copies of all warranties, guarantees, and surety bonds on the work, as required under his contract. All such documents shall show name of Project, location, and name of Owner. All guarantees and warranties will begin at time of substantial completion.
- B. Specific guarantees and warranties (in addition to the general 12-month warranty on the entire Project) include, but are not limited to, those listed below. The Contractor will be required to provide all guarantees and warranties specified in Divisions 1 through 33 of these Specifications, even if inadvertently left off of this list.

Guarantees and Warranties

- 1. Roofing.
 - 2. Sealants.
 - 3. Wood doors.
 - 4. Kitchen appliances
 - 5. Skylights
 - 6. See plumbing and electrical drawings for guarantee requirements for plumbing and electrical work.
- C. Equipment identification: Submit, in duplicate, diagram/ ledger/ code for identifying the following:
 - 1. Electrical switchgear.
 - 2. Electrical panels and circuits.

1.7 AFFIDAVITS:

- A. Submit to the Architect the following affidavits, in duplicate, properly executed:
 - 1. AIA G 706 Contractor's Affidavit of Payment of Debts and Claims.
 - 2. AIA G 706A Contractor's Affidavit of Release of Liens.
 - 3. AIA G 707 Consent of Surety to Final Payment

1.8 QUANTITY ALLOWANCES AND CASH ALLOWANCES:

- A. See Section 01 20 00 for quantity allowances and cash allowances included in the Contract.

- B. Compare actual quantities and amounts versus the specified allowances and verify that the proper adjustments have been made by execution of change orders.

1.9 ASBESTOS AND POLYCHLORINATED BIPHENYLS (PCB) FREE CERTIFICATION:

- A. After completion of the installation, but prior to Substantial Completion of Project, submit asbestos and polychlorinated biphenyls free certification for all materials and equipment as specified in Division 2 through 33.
- B. The certification shall be made only by the Owner, a Partner or a Corporate Officer, or other people duly authorized to sign binding agreements for the Contractor.
- C. The certification shall be accompanied by a notarized letter of authorization from the Contractor naming the person duly authorized to sign for the Contractor.
- D. The certification shall be on Contractor's letterhead and include the following information:

The undersigned hereby certifies that all products and materials installed, and processes used, do not contain any asbestos or polychlorinated biphenyls (PCB).

(Contractor's Name) _____

Signed: _____

(Printed Name) _____

Position: _____

Date: _____

- 1.10 OTHER SUBMITTALS: Comply with submittal requirements specified in other Sections and parts of the Project Manual.

END OF SECTION

SECTION 01 83 00
EQUIPMENT MAINTENANCE AND OPERATIONS PROGRAM

1.1 SCOPE:

- A. The Contractor shall set dates, approved by the Architect and Owner, for all major building systems start-up to be observed by the Owner's maintenance and operating personnel.
- B. The various subcontractors involved in the following areas shall prepare to start-up, shut-down and operating procedures for the following:
 - Electrical systems
 - Plumbing systems
- C. Programs of instruction for the Owner's maintenance and operating personnel shall be prepared for the systems listed above, to be approved by the Architect and Owner, in order to explain the proper maintenance and operation of the building systems.

1.2 SCHEDULING:

- A. The Owner's project representative will be responsible for the coordination of the maintenance and operating personnel. He shall advise the Architect of any problems which may occur in the operating procedures.
- B. The Owner's maintenance and operating personnel will only enter the job site at the request of the Owner's project representative and with the approval of the Architect and Contractor. All comments from the maintenance and operating personnel shall be forwarded to the Contractor through the Architect.
- C. This program shall be implemented prior to the Final Inspection of the Project.

END OF SECTION

SECTION 02 41 19
SELECTIVE DEMOLITION

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 DESCRIPTION OF WORK:

- A. The extent of selective demolition work is indicated on the Drawings.
- B. Types of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:
 - 1. Portions of building structure indicated on the Drawings and as required to accommodate new construction.
 - 2. Removal of interior partitions and other construction as indicated on the Drawings.
 - 3. Removal of paving, fencing, and other items shown on the site plan of the Drawings.
 - 4. Removal of other items shown on the Drawings.
 - 5. Removal of materials and items as required in order to properly install the new construction.
- C. Removal Work Specified Elsewhere:
 - 1. Cutting nonstructural floors and walls for piping, ducts, and conduit is included with the work shown in the plumbing and electrical drawings.
- D. Related Work Specified Elsewhere:
 - 1. Renovation construction work and patching is included within the respective sections of specifications, including removal of materials for reuse and incorporated into renovation or new construction.
 - 2. Relocation of pipes, conduits, ducts, other plumbing and electrical work is specified by respective trades.

1.3 SUBMITTALS:

- A. Progress Schedule: The Contractor's Progress Schedule specified in Paragraph 3.10 of the General Conditions and further in the Supplementary General Conditions is to show clearly the sequence of work as outlined in Section 01 02 00, including dates for the beginning and ending of each sequence of work. As specified in the Supplementary General Conditions, the progress schedule is to be updated monthly and submitted with each payment request. The sequence of demolition work is to be included and shown on the Progress Schedule. Include coordination for shut-off, capping, and continuation of utility services as required.

1.4 JOB CONDITIONS:

- A. Condition of Structures: The Owner assumes no responsibility for actual condition of items or structures to be demolished.

1. Conditions existing at the time of commencement of contract will be maintained by the Owner insofar as practicable. However, variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.
- B. Partial Demolition and Removal: Items indicated to be removed but of salvable value to the Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
 1. Storage or sale of removed items on-site will not be permitted.
- C. Protections: Provide temporary barricades and other forms of protection as required to protect the general public from injury due to selective demolition work.
 1. Provide protective measures as required to provide free and safe passage of the general public on the sidewalk and adjacent roads.
 2. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or work to remain.
 3. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 4. Protect floors with suitable coverings when necessary.
 5. Construct temporary solid dustproof partitions were required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks if required.
 6. Provide temporary weather protection during the interval between demolition and removal of existing construction on exterior surfaces, and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
 7. Remove protections at the completion of work.
- D. Damages: Promptly repair damages caused to adjacent materials or facilities by demolition work at no cost to the Owner.
- E. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 1. Do not close, block or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- F. Explosives: The use of explosives will not be permitted.
- G. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
 1. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

- H. Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in the air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

PART 2: (Not Applicable)

PART 3: EXECUTION

3.1 INSPECTION:

- A. Prior to the commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions to structure, surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Architect prior to starting work.

3.2 PREPARATION:

- A. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.
1. Cease operations and notify the Architect immediately if the safety of the structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
- B. Cover and protect furniture, equipment, and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.
- C. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes.
1. Provide weatherproof closures for exterior openings resulting from demolition work.
- D. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.
1. Provide bypass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shut-down of service is necessary during change-over.

3.3 DEMOLITION:

- A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work specified herein and indicated on Drawings in accordance with the demolition schedule and governing regulations.
1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
2. Locate demolition equipment throughout the structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.
3. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.

- B. If unanticipated mechanical, electrical, or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Architect in written, accurate detail. Pending receipt of directive from Architect rearranges a selective demolition schedule as necessary to continue overall job progress without delay.

3.4 SALVAGE MATERIALS:

- A. The Owner will remove materials and equipment that he desires to retain prior to the beginning of construction relative to each phase of construction.
- B. During construction, all materials and equipment required to be demolished and removed shall become the property of the Contractor and he shall dispose of these off-site.

3.5 DISPOSAL OF DEMOLISHED MATERIALS:

- A. Remove debris, rubbish, and other materials resulting from demolition operations from the building site. Transport and legally dispose of materials off-site.
 - 1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
 - 2. Burning of removed materials is not permitted on the project site.

3.6 CLEAN-UP AND REPAIR:

- A. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed more than that required. Return structures and surfaces to remain to the condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

SECTION 024296
HISTORIC REMOVAL AND DISMANTLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Historic treatment procedures for removal and dismantling work for historic spaces, areas, rooms, and surfaces and the following specific work:
 - a. Removal and dismantling of building or structure and debris hauling.
 - b. Removal and dismantling of site elements and debris hauling.
 - c. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.

1.2 DEFINITIONS

- A. Dismantle: To disassemble or detach a historic item from a surface, or a non-historic item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.
- C. Remove: To take down or detach a non-historic item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- D. Retain: To keep an element or detail secure and intact.
- E. Salvage: To protect removed or dismantled items and deliver them to Owner.

1.3 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to removal and dismantling procedures and protection of historic areas and surfaces.
2. Review list of items indicated to be salvaged.
3. Verify qualifications of personnel assigned to perform removal and dismantling.
4. Inspect and discuss condition of each construction type to be removed or dismantled.
5. Review requirements of other work that depends on condition of substrates exposed by removal and dismantling work.
6. Review methods and procedures related to removal and dismantling work, including, but not limited to, the following:

- a. Historic removal and dismantling specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
- b. Materials, material application, sequencing, tolerances, and required clearances.
- c. Fire prevention.

1.4 INFORMATIONAL SUBMITTALS

- A. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's removal and dismantling operations.
- B. List of Items Indicated to Be Salvaged: Prepare a list of items indicated on Drawings to be salvaged for Owner's use or for reinstallation. Submit 15 days before preconstruction conference.
- C. Inventory of Salvaged Items: After removal or dismantling Work is complete, submit a list of items that have been salvaged.
 - 1. Include item description, item condition, number of items if more than one of a type, and tag number.
 - 2. As work proceeds, include on the inventory items that were indicated to be salvaged and items of historic importance discovered during the work. Document reasons, if any, why an item indicated to be salvaged was not salvaged.

1.5 QUALITY ASSURANCE

- A. Removal and Dismantling Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and Project site.
 - 1. Debris Hauling: Include plans clearly marked to show debris-hauling routes, turning radii, and locations and details of temporary protective barriers.

1.6 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as long as practicable.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Hazardous Materials:
 - 1. It is not expected that hazardous materials will be encountered in the Work.
 - a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.
- D. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

- A. Removal Equipment: Use manual, handheld tools. Handheld power tools may be permitted on a case-by-case basis with approval by Architect.
- B. Dismantling Equipment: Use manual, handheld tools, except as follows or otherwise approved by Architect on a case-by-case basis:
 - 1. Handheld power tools, if permitted, must be adjustable so as to penetrate or cut only the thickness of material being removed.
 - 2. Pry bars more than 18 inches long and hammers weighing more than 2 lb are not permitted for dismantling work.

3.2 EXAMINATION

- A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures are necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
 - 1. Verify that affected utilities are disconnected and capped.
 - 2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage. Enter this information on the inventory of salvaged items.
 - 3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs (video not acceptable).
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
- C. Perform surveys as the Work progresses to detect hazards resulting from historic removal and dismantling procedures.

3.3 HISTORIC REMOVAL AND DISMANTLING

- A. General: Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Comply with requirements in Section 013591 "Historic Treatment Procedures" for identifying and storing historic items.
- C. Perform work according to the historic treatment program.

1. Perform removal and dismantling to the limits indicated.
 2. Provide supports or reinforcement for existing construction that becomes temporarily weakened by removal and dismantling work, until the Project Work is completed unless otherwise indicated.
 3. Perform cutting by hand or with small power tools as permitted by Architect wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
 4. Do not operate air compressors inside building unless approved by Architect in each case.
 5. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
 6. Dispose of removed and dismantled items off-site unless indicated to be salvaged or reinstalled.
- D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- E. Removing and Dismantling Items on or Near Historic Surfaces:
1. Protect historic surface from contact with or damage by tools.
 2. Wherever possible, unfasten items in the opposite order from which they were installed.
 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
 4. Dismantle anchorages.
- F. Loose Plaster:
1. Identify loose, non-historic plaster, and remove by separating it from its substrate by tapping with a rubber mallet and prying with a chisel or screwdriver.
 2. Do not use pry bars.
 3. Leave sound, firmly adhered plaster in place.
 4. Do not damage, remove, or dismantle historic plasterwork, except where indicated or where it is an immediate hazard to personnel and as approved by Architect.
 - a. Clean and dry surfaces for inspection by Architect before beginning installation of new work.
- G. Anchorages:
1. Remove anchorages associated with removed items.
 2. Dismantle anchorages associated with dismantled items.
 3. In non-historic surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
 4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section that is specific to the historic surface being patched.

3.4 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

- A. Existing Construction to Be Removed includes but is not limited to: Existing roofing (asphalt shingles and EPDM), enclosure of original rear porch, existing kitchen cabinets, select sinks, all toilets, all bathtubs.
- B. Existing Items to Be Removed and Salvaged include but is not limited to: Exterior wood roof balustrade.

- C. Existing Items to Be Removed and Reinstalled include but is not limited to: Exterior wood roof balustrade, select window sash, select doors.
- D. Existing Items to Remain includes but is not limited to: Widows walk balustrade, porch flooring and ceiling, porch railing, porch and porte cochere columns, doors, windows, plaster walls and ceilings, wood floors, wood ceiling, wood staircase and balustrade, decorative interior columns, select light fixtures, butler's pantry casework, wood mantles and tile hearths, wood bookcases.

END OF SECTION

SECTION 050385
HISTORIC TREATMENT OF DECORATIVE FORMED METAL

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 historic treatment of decorative formed metal as follows:
 - 1. Stabilizing and protecting metal.
 - 2. Repairing metal and replacing damaged and missing components in place.
 - 3. Removing and dismantling metal for shop repair and replacement of components; reinstalling repaired metal.
 - 4. Painting steel uncovered during the Work.
- B. Related Requirements:
 - 1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
 - 2. Section 090391 "Historic Treatment of Plain Painting"
 - 3. Section 099100 "Field Painting"

1.3 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include recommendations for product application and use.
 - 2. Include test data substantiating that products comply with requirements.
- B. Shop Drawings:
 - 1. Include plans and elevations showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, methods of attachment, accessory items, and finishes.
 - 2. Include field-verified dimensions and the following:
 - a. Full-size patterns with complete dimensions for new, decorative formed metal components and their jointing, showing relation of existing to new components.
 - b. Templates and directions for installing anchor bolts and other anchorages.

- c. Identification of each new metal item and component and its location on the structure in annotated plans and elevations.
 - d. Provisions for expansion, weep holes, and conduits as required.
 - e. Provisions for soldered, welded, and sealant joints if required.
- C. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:
 - 1. Accessories: Each type of fastener, anchor, accessory, and miscellaneous support in required finishes.

1.5 INFORMATIONAL SUBMITTALS

- A. Decorative Formed Metal Historic Treatment Program: For historic decorative formed metalwork.

1.6 QUALITY ASSURANCE

- A. Decorative Formed Metal Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including each process or phase of repairing decorative formed metal, related work, and the protection of surrounding materials and Project site.
 - 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with historic treatment of decorative formed metal only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of manufactured metal component from single source from single manufacturer.
 - a. Color: As selected by Architect from full range of industry colors and color densities.

2.2 METAL MATERIALS

- A. Provide metal materials made of the alloys, forms, and types that match existing metals and have the ability to receive finishes matching existing finishes unless otherwise indicated. Exposed-to-view surfaces exhibiting imperfections inconsistent with existing materials are unacceptable.

- B. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), with G60 or G90 zinc coating or A60 zinc-iron-alloy (galvannealed) coating; restricted flatness.

2.3 ACCESSORIES

- A. Metal-Patching Compound: Two-part, epoxy- or polyester-resin, metal-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of metal repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be produced for filling metal that has deteriorated because of corrosion or deformation. Filler shall be capable of filling deep holes and spreading to feather edge.
- B. Sealant Materials:
 - 1. Provide manufacturer's standard, elastomeric nonstaining, single-component, nonsag silicone, and single-component, nonsag urethane sealant complying with applicable requirements in Section 079200 "Joint Sealants."
 - 2. Colors: Provide colors of exposed sealants to match colors of metals in which sealant is placed unless otherwise indicated.
- C. Antirust Coating: Fast-curing, lead- and chromate-free, self-curing, universal modified-alkyd primer.
 - 1. Surface Preparation: Use coating requiring no better than SSPC-SP 2, "Hand Tool Cleaning," surface preparation according to manufacturer's literature or certified statement.
 - 2. VOC Limit: Use coating with a VOC content of 400 g/L or less.

2.4 PREPARATORY CLEANING MATERIALS

- A. Water: Potable.
- B. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent, and 20 quarts of hot water for every 5 gal. of solution required.
- C. Wash Cloths: Lint-free, absorbent, durable cloth without abrasives that can scratch metal.
- D. Rust Remover: Manufacturer's standard phosphoric acid-based gel formulation, also called "naval jelly," for removing corrosion from iron and steel.

2.5 MISCELLANEOUS MATERIALS

- A. Fasteners: Fasteners shall be of the same basic metal as fastened metal unless otherwise indicated. Use metals that are noncorrosive and compatible with each metal joined.
 - 1. Match existing fasteners in material and in type of fastener unless otherwise indicated.
- B. Anchors to Building: Use metals that are noncorrosive and compatible with each metal anchored.
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

- D. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, glazed masonry, and polished stone surfaces from damaging effects of acidic and alkaline cleaners.
- E. Masking Tape: Nonstaining, nonabsorbent material; compatible with chemical solutions being used and substrate surfaces, and that will easily come off entirely, including adhesive.
- F. 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.
 - 2. Little 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 do the following:
 - a. Remove, alter, or in any way harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in the Contract.
 - b. Leave an unintended residue on surfaces.

2.6 METAL FABRICATION

- A. Fabricate repairs of decorative formed metal items and components in sizes and profiles to match existing decorative formed metal unless otherwise indicated, with accurate curves, lines, and angles. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
- B. Provide uniform, neat seams with minimum exposure of welds, solder, and sealant.
- C. Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for fasteners. Use concealed fasteners where possible; use exposed fasteners to match existing work.
- D. Comply with AWS for recommended practices in welding. Provide welds behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded joints of flux, and dress exposed and contact surfaces.
 - 1. Use materials and methods that match color of base metal, minimize distortion, and develop maximum strength and corrosion resistance.
 - 2. Remove flux immediately.
 - 3. At exposed connections, match contours of adjoining surfaces, and finish exposed surfaces smooth and blended so no roughness shows after finishing.

2.7 FERROUS METAL FINISHES

- A. Repair Primer: Manufacturer's standard, rust-inhibiting, fast-curing, lead- and chromate-free universal primer, compatible with firmly adhered existing paint and applied finish. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

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 chemical 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 proved to resist chemical solutions being used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
 - 2. Do not apply chemical solutions during winds of enough force to spread them to unprotected surfaces.
 - 3. Neutralize alkaline and acid wastes before disposal.
 - 4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.2 HISTORIC DECORATIVE FORMED METAL REPAIR, GENERAL

- A. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 20 feet away by Architect.
- B. Execution of the Work: In repairing historic items, disturb remaining existing work as minimally as possible and as follows:
 - 1. Stabilize decorative formed metal to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
 - 2. Remove deteriorated coatings and corrosion.
 - 3. Sequence work to minimize time before protective coatings are reapplied.
 - 4. Repair items where stabilization is insufficient to stop progress of deterioration.
 - 5. Repair items in place unless otherwise indicated, and retain as much original material as possible.
 - 6. Replace or reproduce historic items where indicated or scheduled.
 - 7. Make historic treatment of materials reversible whenever possible.
 - 8. Install temporary protective measures to stabilize decorative formed metal that shall be repaired later.
- C. Mechanical Coating Removal: Use only the gentlest mechanical methods, such as scraping and wire brushing, that do not abrade metal substrate. Do not use abrasive methods, such as sanding, or power tools except as indicated as part of the historic treatment program and approved by Architect.
- D. Repairing Decorative Formed Metal: Match existing materials and features, retaining as much original material as possible to complete the repair.
 - 1. Unless otherwise indicated, repair decorative formed metals by straightening, patching, piecing-in, splicing, or otherwise reinforcing metals with new metal, matching existing metal, form, and texture.

2. Where indicated, repair decorative formed metal by limited replacement to the extent indicated, matching existing material.
- E. Replacing Decorative Formed Metal Components: Where indicated, duplicate and replace items with new metal, matching existing metal.
1. Replace heavily deteriorated or missing parts or features of decorative formed metal with compatible materials, using surviving prototypes to create patterns or dies for duplicate replacements.
 2. Do not use substitute materials unless otherwise indicated.

3.3 PREPARATORY CLEANING

- A. Perform preparatory cleaning before performing repair work. Use only those methods indicated for each type of decorative formed metal and its location.
1. Brushes: If using wire brushes, use brushes of same base metal composition as metal being treated. Use brushes that are resistant to chemicals 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 spray methods do not damage surfaces.
 - a. Equip units with pressure gages.
 - b. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
 3. Uniformity: Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, contours, and interstices, and that produces an even effect without streaks or damaging surfaces.
 4. Protection: After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.
- B. Water Cleaning: Clean with water applied with sponges, wash cloths, or low-pressure spray. Supplement with natural-fiber or plastic bristle brush and abrasive pads. Use small brushes to remove soil and loose paint from joints and crevices.
- C. Detergent Cleaning:
1. Wet surface with water applied with sponges, wash cloths or low-pressure spray.
 2. Scrub surface with detergent solution and natural-fiber or plastic bristle brush and abrasive pads until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil and loose paint from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
 3. Rinse with water applied with sponges, wash cloths, or low-pressure spray to remove detergent solution, soil, and loose paint.
- D. Chemical Rust Removal:
1. Remove loose rust scale with approved, medium abrasives for ferrous metals.
 2. Apply rust remover with brushes or as recommended in writing by manufacturer.
 3. Allow rust remover to remain on surface for period recommended in writing by manufacturer or as determined by testing. Do not allow extended dwell time.
 4. Wipe off residue with mineral spirits and either steel wool or soft rags, or clean with method recommended in writing by manufacturer to remove residue.

5. Dry immediately with clean wash cloths. Follow direction of grain in metal.
6. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

E. Mechanical Rust Removal:

1. Remove rust with approved, medium abrasives for ferrous metals.
2. Wipe off residue with mineral spirits and either steel wool or soft rags.
3. Dry immediately with clean wash cloths. Follow direction of grain in metal.
4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

3.4 DISMANTLING, REPAIR, AND INSTALLATION

- A. Repair decorative formed metal in place insofar as practicable unless otherwise indicated. Where necessary, dismantle components from their substrate and repair and reinstall them according to approved historic treatment program.

- B. Perform dismantling work as required in Section 024296 "Historic Removal and Dismantling."

- C. Deformed Components: Flatten bent and deformed components, so that embossed pattern along full length of the component's edges will again nest tightly against adjacent work insofar as practicable.

- D. Defects in Painted Metal Surfaces: Repair non-load-bearing defects in existing metal surfaces, including dents and gouges more than 1/8 inch deep or 1 inch across and all holes and tears by filling with metal-patching compound. Remove burrs. Prime iron and steel surfaces immediately after repair to prevent flash rusting.

1. Apply metal-patching compound to fill depressions, nicks, cuts, and other voids created by rusted, removed, or missing metal.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers of maximum 1/8-inch thickness and as recommended in writing by manufacturer until the void is completely filled.
4. Finish patch surface smooth and shaped flush with adjacent contours, without voids in patch material.
5. Clean spilled compound from adjacent materials immediately.

E. Installation:

1. Locate and place decorative formed metal items level and plumb and in alignment with adjacent construction.
 - a. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.
2. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where needed to protect metal surfaces and to make a weathertight connection.
3. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers as indicated.
4. Install concealed joint fillers, sealants, and flashings, as the Work progresses, to make exterior items weatherproof.
5. Corrosion Protection: Apply bituminous paint or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate

materials that are incompatible or could result in corrosion or deterioration of either material or finish.

- F. Sealant: Clean and prepare joint surfaces and apply and cure sealant according to Section 079200 "Joint Sealants."
1. Keep joints to receive sealant dry and free of debris.
 2. Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
 3. Fill sealant joints with specified joint sealant as recommended in writing by sealant manufacturer and the following:
 - a. Install sealant using only proven installation methods that ensure sealant is deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding metal.
 - b. Do not allow sealant to overflow or spill onto adjoining surfaces or to migrate into the voids of adjoining surfaces, particularly rough or sculptural textures. Promptly remove excess and spillage of sealant as the work progresses. Clean adjoining surfaces by means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

3.5 PRIMING AND PAINTING

- A. Repair Primer: Apply immediately after completing a repair.
- B. Finish Painting: See Section 099100 Field Painting.
- C. Touch Up: At completion of installation, touch up and restore damaged or defaced painted surfaces.

3.6 PAINTING STEEL UNCOVERED DURING THE WORK

- A. Notify Architect if steel is exposed during metal repair or removal. Where Architect determines that the steel is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:
1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning," as applicable to comply with paint manufacturer's recommended preparation.
 2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).
- B. If on inspection and rust removal the thickness of a steel member is found to be reduced from rust by more than 1/16 inch, notify Architect before proceeding.

END OF SECTION

SECTION 05 50 00
MISCELLANEOUS METAL FABRICATIONS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Related Work Specified Elsewhere:

1. Anchors, bolts, sleeves and supports required for installation of plumbing, mechanical and electrical equipment.

B. Work Included This Section:

1. Work to be provided herein includes all metal fabrications expressly specified hereinafter. In addition, all miscellaneous framing, bracing, supports, and other items required for the proper conduct of the work are included under this Section even if not specifically shown on the Drawings or specified herein.

1.3 INDUSTRY STANDARDS:

- A. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard reference.
- The American Society for Testing and Materials (ASTM)
 - Aluminum Association (AA)
 - Corps of Engineers (CE)
 - Federal Specifications (FS)
 - American Iron and Steel Institute (AISI)

PART 2: PRODUCTS

- 2.1 MATERIALS: Except as required specifically otherwise elsewhere in the Contract Documents, the following material requirements shall apply to this Section:

A. Ferrous Metals:

1. Metal Surfaces, General: For fabrication of miscellaneous metalwork which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
2. Steel Plates, Shapes, and Bars: ASTM A 36.
3. Brackets, Flanges, and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

B. Fasteners:

1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.

2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.
3. Lag Bolts: Squarehead type, ASME B18.2.1 (ASME B18.2.3.8M).
4. Machine Screws: Cadmium plated steel, ASME B186.6 (ASME B18.6.7M).
5. Wood Screws: Flathead carbon steel, ASME B18.6.1.
6. Plain Washers: Round, carbon steel, ASME B18.22.1 (ASME B18.21.2M).
7. Masonry and Concrete Anchorage Devices: Wedge type expansion anchor such as Hilti-Kwik II, Phillips Wedge, Wej-It, or equal approved in writing by the Architect.
8. Toggle Bolts: Tumble-wing type, class, and style as required.
9. Lock Washers: Helical spring-type carbon steel, ASME B18.21.1 (ASME B18.21.2M).

C. Shop Paint:

1. Non-Galvanized Surfaces: PPG Speedhide Inhibitive Red Primer 6-208, or approved equal.
2. Galvanized Surfaces: PPG Speedhide Galvanized Steel Primer 6-209, or approved equal.

2.2 FABRICATION:

- A. Do not use screws or bolts where they can be avoided; but where used, heads shall be countersunk, screwed uptight and threads nicked to prevent loosening.
- B. Castings shall be sound and free from warp, holes and other defects that impair their strength or appearance. Exposed surfaces shall have a smooth finish and sharp, well-defined lines and arrises. Machined joints, where required, shall be milled to a close fit. Provide necessary rabbets, lugs, and brackets so that work can be assembled in a neat, substantial manner.
- C. Fastenings shall be concealed where possible. The thickness of metal, and details of assembly and supports, shall have ample strength and thickness. Joints exposed to weather shall be formed to exclude water. Provide holes and connections for the work of other trades.

2.3 PAINTING AND GALVANIZING:

- A. Clean metal (to receive paint) with cleaner specified under Section 09910 for use with specific metal.
- B. Except as required specifically otherwise in the Contract Documents, apply primer on ferrous metalwork as specified herein.
- C. Where hot-dipped galvanized or zinc-coated metal is required, it shall not be shop primed unless specifically called for, but all damaged places and weldings shall be touched up with zinc-rich primer where shop priming is not called for. Where hot-dipped galvanizing or hot-zinc coating is specified, it shall be done in accordance with the Standard Specifications of the American Hot Dip Galvanizers Association.
- D. Galvanizing:

1. Hot-dip galvanizing or zinc coatings applied on fabricated steel products shall comply with ASTM A 123.
2. Galvanized surfaces for which a shop coat of paint is specified shall be chemically treated to provide a bond for the paint.
3. Vent and drain holes in items to be hot-dip galvanized shall be drilled and not burned so that holes are precise and neat. Holes that are visible and detract from the attractiveness of the installed item shall be plugged as directed by the Architect.

2.7 MISCELLANEOUS LINTELS:

- A. Provide angle lintels where required in masonry openings not provided for on the Drawings.
- B. In nonload bearing walls, provide one 3 1/2" x 4" x 5/16" for each 4" thickness of masonry for openings up to 6'-0" wide. Pairs of lintels shall be bolted or welded together. Field paint as required.
- C. Lintels are to be galvanized in accordance with ASTM A 123.

PART 3: EXECUTION

3.1 PREPARATION:

- A. Coordinate and furnish anchorages, diagrams, templates, instructions, and directions for installation of anchorages, including anchor bolts and miscellaneous items having integral anchors that are to be embedded in masonry construction. Coordinate the delivery of such items to project site.

3.2 INSTALLATION - GENERAL:

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners were necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance, and quality of welds made, methods used in correcting welding work, and the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

3.8 ADJUSTING AND CLEANING:

- A. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of the shop painted on miscellaneous metal are specified in Division 9 Section PAINTING of these Specifications.
- B. For galvanized surfaces, clean welds bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 057300
DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aluminum guard railing and fencing at second floor porch.
 - 2. Copper-alloy guard railing at monumental stair.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood blocking for anchoring railings.

1.2 COORDINATION AND SCHEDULING

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible.
- B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.

1.3 ACTION SUBMITTALS

- A. Product Data:
 - 1. Manufacturer's product lines of decorative metal railings assembled from standard components.
 - 2. Fasteners.
 - 3. Post-installed anchors.
 - 4. Lacquer for copper alloys.
 - 5. Shop primer.
 - 6. Intermediate coats and topcoats.
 - 7. Metal finishes.
- B. Shop Drawings: Include plans, elevations, sections, and attachment details.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design, including mechanical finishes.
- D. Samples for Verification: For each type of exposed finish required.
 - 1. Sections of each distinctly different railing member, including handrails, spindles, rails, posts, and balusters.
 - 2. Handrail fittings, bases and flanges, end caps, brackets, and other fittings.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- C. Product Test Reports: For tests on railings performed by a qualified testing agency, in accordance with ASTM E894 and ASTM E935.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:
 - 1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect mechanical finishes on exposed surfaces of railings from damage by applying a strippable, temporary protective covering before shipping.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer to design railings, including attachment to building construction.
- B. Structural Performance: Railings, including attachment to building construction, are to withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 2. Infill of Guards:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
 - b. Infill load and other loads need not be assumed to act concurrently.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior railings by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.3 ALUMINUM DECORATIVE RAILINGS

- A. Basis-of-Design Product (free-standing fencing at second floor porch): Two rail aluminum fence and walk gate by American Heritage Fence. Other acceptable manufacturers may include: Seegars Fence Company, Atlantic Fencing, Easter Fencing.
- B. Basis-of-Design Product (guardrail atop existing wood railing at second floor porch): Custom guardrail fabricated from the below elements manufactured by Julius Blum & Company.
 1. Handrail Mouldings: 6930
 2. Handrail Fittings: Square End Pieces, Style N
 3. Channels (for underside of handrail): 1 ½" wide
 4. Bases: 717
 5. Flanges (for attaching to existing wood rail): 776 & 797
 6. Spindels: 739
- C. Source Limitations: Obtain aluminum decorative railing components from single source from single manufacturer.
- D. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.
- E. Extruded Bars and Shapes, Including Extruded Tube: ASTM B221, Alloy 6063-T5/T52.
- F. Extruded Structural Pipe and Round Tube: ASTM B429/B429M, Alloy 6063-T6.
 1. Provide Standard Weight (Schedule 40) pipe unless otherwise indicated.
- G. Drawn Seamless Tube: ASTM B210/B210M, Alloy 6063-T832.
- H. Plate and Sheet: ASTM B209, Alloy 5005-H32 or Alloy 6061-T6.
- I. Die and Hand Forgings: ASTM B247, Alloy 6061-T6.

2.4 COPPER-ALLOY DECORATIVE RAILINGS

- A. Basis-of-Design Product (guardrail atop existing wood railing at monumental stair): Custom guardrail fabricated from the below elements manufactured by Julius Blum & Company.
 1. Handrail Mouldings: 4530
 2. Handrail Fittings: Volute End Pieces, Style V
 3. Channels (for underside of handrail): 1 ½" or 1 ¼" wide
 4. Bases: 257

5. Flanges (for attaching to existing wood rail): 276 & 297
 6. Spindels: 129
- B. Source Limitations: Obtain copper and copper alloy decorative metal railing components from single source from single manufacturer.
 - C. Copper and Copper Alloys, General: Provide alloys indicated and with temper to suit application and forming methods, but with strength and stiffness of not less than Temper H01 (quarter hard) for plate, sheet, strip, and bars, and of not less than Temper H55 (light drawn) for tube and pipe.
 - D. Bronze Extruded Shapes: ASTM B455, Alloy UNS C38500 (architectural bronze).
 - E. Bronze Seamless Pipe: ASTM B43, Alloy UNS C23000 (red brass, 85 percent copper).
 - F. Bronze Seamless Tube: ASTM B135/B135M, Alloy UNS C23000 (red brass, 85 percent copper).
 - G. Bronze Castings: Composition bronze castings complying with ASTM B62, Alloy UNS C83600 (85-5-5-5 or No. 1 composition commercial red brass) or sand castings complying with ASTM B584, Alloy UNS C86500 (No. 1 manganese bronze).
 - H. Bronze Plate, Sheet, Strip, and Bars: ASTM B36/B36M, Alloy UNS C28000 (muntz metal, 60 percent copper).

2.5 FASTENERS

- A. Fastener Materials:
 1. Aluminum Railing Components: Type 304 or Type 316 stainless steel fasteners.
 2. Copper-Alloy (Bronze) Railing Components: Silicon bronze (Alloy 651 or Alloy 655) fasteners where concealed; muntz metal (Alloy 280) fasteners where exposed.
 3. Finish exposed fasteners to match appearance, including color and texture, of railings.
- B. Fasteners for Anchoring to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction and capable of withstanding design loads.
- C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work unless exposed fasteners are unavoidable or exposed fasteners are the standard fastening method for railings indicated.
 1. Provide slotted screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to the design load, in accordance with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.
 1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, unless otherwise indicated.
 2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 or Group 2 stainless steel bolts, ASTM F593 and nuts, ASTM F594.

2.6 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
 - 1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- B. Brazing Rods: For copper-alloy railings, provide type and alloy as recommended by producer of metal to be brazed and as required for color match, strength, and compatibility in fabricated items.
- C. Lacquer for Copper Alloys: Clear acrylic lacquer specially developed for coating copper-alloy products.
- D. Shop Primers: Provide primers that comply with Section 099100 "Field Painting."
- E. Intermediate Coats and Topcoats: Provide products that comply with Section 099100 "Field Painting."
- F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.7 FABRICATION

- A. Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.
 - 1. Clearly mark units for reassembly and coordinated installation.
 - 2. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately.
 - 1. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated.
 - 2. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water.
 - 1. Provide weep holes where water may accumulate.
 - 2. Locate weep holes in inconspicuous locations.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with welded or mechanical connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove flux immediately.
 4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #1 welds; ornamental quality with no evidence of a welded joint.
- I. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- J. Brazed Connections: Connect copper and copper-alloy railings by brazing. Cope components at connections to provide close fit or use fittings designed for this purpose. Braze corners and seams continuously.
1. Use materials and methods that match color of base metal, minimize distortion, and develop maximum strength and corrosion resistance.
 2. Remove flux immediately.
 3. At exposed connections, finish exposed surfaces smooth and blended, so no roughness shows after finishing and brazed surface matches contours of adjoining surfaces.
- K. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings.
1. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
 2. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- L. Close exposed ends of hollow railing members with prefabricated cap and end fittings of same metal and finish as railings.
- M. Brackets, Flanges, Fittings, and Anchors: Provide brackets, flanges, handrail brackets, miscellaneous fittings, and anchors to interconnect railing members to other Work unless otherwise indicated.
- N. Provide inserts and other anchorage devices for connecting railings and fencing to existing construction.
1. Fabricate anchorage devices capable of withstanding loads imposed by railings.
 2. Coordinate anchorage devices with supporting structure.

2.8 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

- D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.9 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

2.10 COPPER-ALLOY FINISHES

- A. Finish designations for copper alloys comply with the system for designating copper-alloy finish systems defined in NAAMM's "Metal Finishes Manual for Architectural and Metal Products."
- B. Lacquered Fine Satin Finish: M31-M34-O6x (Mechanical Finish: Directionally textured, fine satin; Coating: Clear organic, air dried, as specified below).
 - 1. Clear, Organic Coating: Lacquer specified for copper alloys, applied by air spray in two coats in accordance with manufacturer's written instructions, with interim drying, to a total thickness of 1 mil.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Perform cutting, drilling, and fitting required for installing railings.
 - 1. Fit exposed connections together to form tight, hairline joints.
 - 2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
 - 3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
 - 4. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
 - 1. Coat concealed surfaces of aluminum and copper alloys that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- C. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws, using plastic cement filler colored to match finish of railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article, whether welding is performed in the shop or in the field.

3.3 ANCHORING POSTS

- A. Anchor posts with flanges as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For aluminum railings, attach posts as indicated, using fittings designed and engineered for this purpose.
 - 2. For copper-alloy railings, attach posts as indicated, using fittings designed and engineered for this purpose.

3.4 ATTACHING RAILINGS

- A. Secure railing to building construction as follows:
 - 1. For wood, use bolts set into wood backing. Coordinate with carpentry work to locate backing members.

3.5 CLEANING

- A. Clean aluminum by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.
- B. Clean copper alloys in accordance with metal finisher's written instructions in a manner that leaves an undamaged and uniform finish matching approved Sample.

3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 060312
HISTORIC WOOD REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes historic treatment of wood in the form of repairing wood features as follows:
 - 1. Repairing porch ceiling and flooring, porch and porte cochere columns, porch railings, porch and roof trim boards.
 - 2. Replacing porch ceiling and flooring, porch and roof trim boards.
 - 3. Repairing and replacing interior wood flooring, primarily in kitchen and bathrooms.
- B. Related Requirements:
 - 1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
 - 2. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.
 - 3. Section 080314 "Historic Treatment of Wood Doors" for historic wood door repairs, including related trim.
 - 4. Section 080352 "Historic Treatment of Wood Windows" for historic wood window repairs, including related trim.
 - 5. Section 090391 Historic Treatment of Plain Painting
 - 6. Section 099100 Field Painting

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic wood repair.
 - 2. Review methods and procedures related to historic wood repair, including, but not limited to, the following:
 - a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Fire-protection plan.
 - d. Wood historic treatment program.

1.3 SEQUENCING AND SCHEDULING

- A. Perform historic wood repair in the following sequence, which includes work specified in this and other Sections:
 - 1. Before removing wood components for on-site or off-site repair, tag each component with location-identification numbers. Indicate on tags and building plans the locations of each component, such as "Baseboard on North Side of Room 101."

2. In the shop, label each repaired component and whole or partial replacement with permanent location-identification number in inconspicuous location and remove site-applied tags.
3. Sort units by condition, separating those that need extensive repair.
4. Clean surfaces.
5. General Wood-Repair Sequence:
 - a. Remove paint to bare wood.
 - b. Repair wood by replacement or partial replacement.
 - c. Sand, prime, fill, sand again, and prime surfaces again for refinishing.
6. Reinstall components.
7. Apply finish coats.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing or attaching wood members to other surfaces, accessory items, and finishes.
2. Include field-verified dimensions and the following:
 - a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relationship of existing components to new components.
 - b. Templates and directions for installing anchorages.
 - c. Identification of each new unit and its corresponding location in the building on annotated plans and elevations.
 - d. Provisions for flashing and other materials as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.

D. Samples for Verification: Actual sample of finished products for the following products:

1. Replacement Wood: 12-inch-long, full-size molding sections with applied finish.
 - a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.
2. Repaired Wood: Prepare Samples using existing wood removed from site, repaired, and prepared for refinishing.
3. Refinished Wood: Prepare Samples using existing wood removed from site, repaired, and refinished.

1.5 INFORMATIONAL SUBMITTALS

- A. Preconstruction Test Reports: For historic wood repair, identify species of existing wood.
- B. Qualification Statements: For historic treatment specialist, including workers, and wood-repair-material manufacturer.
- C. Wood Historic Treatment Program: Submit before work begins.

1.6 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: A qualified historic wood-repair specialist, experienced in repairing, refinishing, and replacing wood in whole and in part. Experience only in fabricating and installing new woodwork is insufficient experience for wood historic treatment work.
- B. Wood Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.
 - 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

1.7 MOCKUPS

- A. Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation. Prepare mockups so they are inconspicuous.
 - 1. Locate mockups on existing surfaces where directed by Architect.
 - 2. Wood Porch Railing Repair: Prepare an approximately 72-inch long by full height mockup to demonstrate samples of each type of wood repair.
 - 3. Wood Column Base Repair: Prepare one full wood column base repair to demonstrate samples of each type of wood repair.
 - 4. 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.
 - 5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.
- B. Until installed, store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with historic wood repair only when existing and forecasted weather conditions are within environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC WOOD REPAIR QUALITY STANDARD

- A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWMAC/WI's "North American Architectural Woodwork Standards" for construction, finishes, grade rules, and other requirements unless otherwise indicated.
 - 1. Exception: Industry practices cited in Section 12, Paragraph 6, "Industry Practices," under Article 12.1, "Basic Considerations," of AWMAC/WI's "North American Architectural Woodwork Standards" do not apply to the Work of this Section.

2.2 REPLICATED WOOD ITEMS

- A. Replicated Porch Ceiling, Porch Flooring, Column elements, Railing elements, and Porch and Roof Trim Boards: Custom-fabricated replacement wood units and components.
 - 1. Joint Construction: Joints matching existing joints.
 - 2. Wood Species: Match species of existing wood.
 - 3. Wood Cut: Match cut of existing wood.
 - 4. Wood Member and Trim Profiles: Match profiles and detail of existing.
 - 5. Repairing porch ceiling, porch flooring, porch and porte cochere columns, porch railings, porch and roof trim boards.

2.3 WOOD-REPLACEMENT MATERIALS

- A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.
 - 1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

2.4 MISCELLANEOUS MATERIALS

- A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage caused by fungi and wood-boring insects; containing no boric acid.
 - 1. Bora-care, manufactured by Nisus Corp.
- B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
 2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.
- C. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure condition.
- D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.
1. Use concealed fasteners for interconnecting wood components.
 2. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable.
 3. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
 4. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.

2.5 WOOD FINISHES

- A. Unfinished Replacement Units: Provide exposed wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.
1. Finish Coats: Match intermediate coat and topcoat products used for nearby, repaired wood, as specified in Section 090391 "Historic Treatment of Plain Painting."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect adjacent materials from damage by historic wood repair.
- B. Clean wood of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.
- C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC WOOD REPAIR, GENERAL

- A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from 5 ft. away for interior work and from 20 ft. away for exterior work.
- B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
 2. Remove coatings and apply borate preservative treatment before repair. Remove coatings in accordance with Section 090391 "Historic Treatment of Plain Painting" unless otherwise indicated.
 3. Repair items in place where possible.
 4. Install temporary protective measures to protect wood-treatment work that is indicated to be completed later.
 5. Refinish historic wood in accordance with Section 090391 "Historic Treatment of Plain Painting" unless otherwise indicated.
- C. Mechanical Abrasion: Where mechanical abrasion is needed for the Work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods, such as sanding, wire brushing, or power tools, except as indicated as part of the historic treatment program and as approved by Architect.
- D. Repair Wood: Match existing materials and features, retaining as much original material as possible to perform repairs.
1. Unless otherwise indicated, repair wood by splicing or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
- E. Replace Wood: Duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.
1. Do not use substitute materials.
- F. Identify removed items with numbering system corresponding to item locations, to ensure reinstallation in same location. Key items to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD-REPLACEMENT REPAIR

- A. General: Replace parts of or entire wood items where damaged.
1. Remove surface-attached items from wood surface before performing wood-replacement repairs unless otherwise indicated.
 2. Verify that surfaces are sufficiently clean and free of paint residue prior to repair.
 3. Remove broken, rotted, and decayed wood down to sound wood.
 4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
 5. Secure new wood using multiple dowels or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.
- B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.
- C. Reinstall items removed for repair into original locations.

3.4 ADJUSTMENT

- A. Adjust existing and replacement operating items, hardware, and accessories for a tight fit at contact points and for smooth operation and tight closure. Lubricate hardware and moving parts.

3.5 CLEANING AND PROTECTION

- A. Protect wood surfaces from contact with contaminating substances resulting from construction operations. Monitor wood surfaces during construction for presence of dirt, stains, or other contaminants. If contaminating substances contact wood surfaces, remove contaminants immediately.
- B. Clean exposed surfaces immediately after historic wood repair. Avoid damage to coatings and finishes. Remove excess dirt and other substances.

3.6 HISTORIC WOOD-REPAIR SCHEDULE

- A. Porch Ceiling and Flooring:
 - 1. General: Refinish on-site. Replace missing and damaged sections with new sections to match existing.
 - 2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic and new wood.
- B. Porch and Porte Cochere Columns:
 - 1. General: Refinish on-site. Replace missing and damaged sections with new sections to match existing.
 - 2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic and new wood.
- C. Porch Railings:
 - 1. General: Refinish on-site. Replace missing and damaged sections with new sections to match existing.
 - 2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic and new wood.
- D. Porch and Roof Trim Boards:
 - 1. General: Refinish on-site. Replace missing and damaged sections with new sections to match existing.
 - 2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic and new wood.

E. Interior Flooring:

1. General: Refinish on-site. Replace missing and damaged sections with new sections to match existing.
2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic and new wood.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Related Work Specified Elsewhere:

- 1. Finish carpentry (Section 06 20 00).
- 2. Architectural woodwork (Section 06 41 00).
- 3. Membrane roofing (Section 07 53 00).

B. Work Included This Section:

- 1. Rough carpentry work as shown on Drawings and as specified herein. Include wood nailers, blocking, furring, grounds, framing, subflooring, roof board decking, shoring, bracing, scaffolding, barriers, and rough hardware required for installation of the work shown on the Drawings. Include preservative-treated wood curbs, nailers, and roof board decking for roofing work specified in Sections 07 31 13 Asphalt Shingles and 07 53 00 Membrane Roofing.
- 2. Rough carpentry work generally includes carpentry work provided on the job that is concealed from view in the completed work.

1.3 SUBMITTALS:

A. Certificates:

- 1. Submit certificates from applicator of preservative treatment, stating the type of treatment, manufacturer of treating chemical material, degree of treatment of wood members processed for this Project. A certificate shall be signed by an officer of the company.
- 2. Submit certificates certifying that flame spread, fuel contributed and smoke developed rating of the fire retardant treated wood meets or is below limits required by applicable codes and requirements of this Section. Include manufacturer's literature describing the type of treatment, manufacturer, and description of treating chemical material and degree of treatment of wood members processed for this Project.

1.4 PRODUCT HANDLING:

- A. Materials that are delivered to the Project Site in a wet condition shall be rejected, removed from the Project Site, and replaced with new and dry materials without additional cost to the Owner. Stack materials in dry storage that furnish proper ventilation, drainage, and protection from the elements. Stack in such a way that it will prevent warpage.
- B. See moisture content requirements hereinafter.

1.5 INDUSTRY STANDARDS:

- A. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard reference.
- American Lumber Standards Committee (ALSC)
 - American Plywood Association (APA)
 - American Wood Preservative Association (AWPA)
 - Underwriter's Laboratories Inc. (UL)
 - U. S. Department of Commerce
 - Product Standards (PS)

PART 2: PRODUCTS

2.1 MATERIALS:

- A. Moisture Content: Solid wood and plywood preservative-treated and fire retardant treated shall be dried to a maximum moisture content of 19%. Untreated solid wood and plywood shall also be dried to a maximum moisture content of 19%.
- B. Grade and Trademark: Grade and trademark shall be on each piece of lumber (or bundle in bundled stock). Use only the recognized official marks of the Association under whose rules it is graded.
- C. Quality: Lumber shall be sound, thoroughly seasoned, well manufactured, and free from warp that cannot be corrected in process of bridging or nailing.
- D. Grades and Species of Solid Wood: Grades and species of lumber shall be as follows:
1. Wall Framing, Grounds, Blocking, Nailers, Furring, and Miscellaneous Uses: No. 2 Southern Yellow Pine.
 2. Floor Framing and Subflooring, and Roof Board Decking: No. 1 (Structural Joists & Planks) Southern Yellow Pine.
- E. Plywood:
1. Fir or pine plywood conforming to PS 1 of the U. S. Dept. of Commerce, and mfd. by a member of the American Plywood Assn. Provide interior plywood with exterior glue, (except for roofing or exterior wall work and elsewhere as noted on the Drawings, provide exterior grade plywood with exterior glue) of thicknesses shown on the Drawings and grades as follows:
 - a. Provide C-D face veneers where concealed from view. If exposed to view in the finished work, provide A Grade on the exposed face.
- F. Rough Hardware:
1. Except as specifically required otherwise in the Contract Documents, furnish and install all rough carpentry hardware and metal fasteners as shown on the Drawings specified herein or required for proper installation of carpentry. Nails, spikes, screws, bolts, and similar items shall be of sizes and types to rigidly secure members in place.

G. Preservative Treatment:

1. Where lumber or plywood is required to be preservative treated, comply with applicable requirements of AWPAC2 (lumber) and AWPAC9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
2. For exposed items indicated to receive stain finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
3. Pressure treat above ground items with waterborne preservatives to minimum retention of .25 lb/cu ft. (4.0 kg/cu. m)
4. Pressure-treated wood members in contact with ground or freshwater with waterborne preservatives to minimum retention of .40 lb/ cu. ft. (6.4 kg/ cu. m.)
5. Treated material showing delamination, cracking or other structural defects shall be rejected.

H. Fire Retardant Treatment:

1. Where fire-retardant-treated wood is required, comply with applicable requirements of AWPAC20 (lumber), and AWPAC27 (plywood). Identify fire-retardant-treated wood with appropriate classifications marking of UL; US Testing Timber Products Inspection, Inc; or another testing and inspecting agency acceptable to authorities having jurisdiction. The label or stamp shall be such as to further designate that there is no change in the listed classification when the material has been subjected to the standard Underwriter's Laboratories rain test.
2. Treatment shall not in any way adversely affect roofing materials nor products containing gypsum, pitch, petroleum, and petroleum by-products.

PART 3: EXECUTION

3.1 INSTALLATION:

A. Framing:

1. Wood framing shall be cut square on bearing surface, closely fitted, set plumb, true and square to required lines and levels, and rigidly secured in place. Do not use shims for leveling on wood or metal bearings. Slate or tile shims with full bearing may be used for leveling on masonry.
2. Fasten framing with nails, spikes, and bolts to provide the stable, thoroughly braced frame with a minimum of shrinkage for system indicated. Fasten sub-flooring and underlayment at all bearings. Use annular ring nails on underlayment to prevent backing out of nails.
3. Install cross bridging of 1" x 3" (or solid bridging of same lumber as joists) in the center of joists exceeding a span of 8'-0", but less than 12'-0". Install an additional row of bridging for each additional 6'-0" span.
4. Provide framing members of sizes and on spacings shown, and frame openings as shown, or if not shown, comply with recommendations of "Manual for House Framing" of National Forest Products Association (N.F.P.A.) and in compliance with the North Carolina State Building Code, Volume 1. Do not splice structural members between supports.

5. Anchor and nail as shown and specified and to comply with the "Recommended Nailing Schedule" of "Manual for House Framing" and "National Design Specifications for Wood Construction" published by NFPA.
6. Provide stud framing where shown. Unless otherwise indicated, use 2" x 4 wood studs spaced 16" o.c. with 4" face perpendicular to the direction of wall or partition. Provide single bottom plate and double-top plates 2" thick by the width of studs; except single top plate may be used for non-load-bearing partitions. Nail or anchor plates to supporting construction.
7. Construct corners and intersections with not less than 3 studs. Provide miscellaneous blocking and framing as shown and as required for support of facing materials, fixtures, specialty items, and trim.
8. Provide continuous horizontal blocking row at mid-height of single-story partitions over 8' high and at the midpoint of multi-story partitions, using 2" thick members of the same width as wall or partitions.
9. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to the width of studs. Set headers on edge and support on jamb studs.
10. For non-bearing partitions, provide double-jamb studs and headers not less than 4" deep for openings 3' and less in width, and not less than 6" deep for wider openings.
11. For load-bearing partitions, provide; double-jamb studs for openings 6' and less in width, and triple-jamb studs for wider openings. Provide headers of depth shown, or if not shown, provide as recommended by NFPA "Manual for House Framing".

B. Wood Grounds, Blocking, Nailers, Curbs, Furring and Other Miscellaneous Uses:

1. Provide wood grounds, blocking, nailers, curbs, furring, etc. of size and shape required for bringing materials to a true surface, for securing wood trim and were required to secure other work or equipment in place. All work shall be accurately set in place, plumb, true, even, in perfect alignment, and securely fastened. Accurately and carefully fit, cut, finish flush, straight and true. Wood blocking or nailers on steel framing shall be bolted thereto.
2. Install wood furring as shown on Drawings. Secure to substrate with appropriate fasteners to provide rigid, permanent connections. Shim furring out as necessary to bring furring to true planes.
3. Install nailers at roof perimeters and at all penetrations of roofing for securing work and flashing in place. Secure nailers to roofing deck and make flush with insulation or as shown otherwise on the Drawings. Anchor wood nailers to resist a force of 75 lbs/LF in any direction. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the roofing membrane is to be applied as shown on the membrane manufacturer's approved details and approved shop drawings.

C. Locations of Treated Wood:

1. Use preservative-treated wood where noted on the Drawings, where wood is in contact with masonry or concrete, for blocking, nailers, and decking used in roof construction and wherever used in exterior walls. If the wood is in a location requiring fire retardant treatment, then the wood shall be fire retardant treated rather than preservative treated.

2. Use fire retardant treated wood at the following locations:
 - a. Return air plenums.
 - b. Where located in fire-rated walls, ceilings, floors, or other fire-rated construction.
 - c. Where shown on the Drawings.
 - d. Where required by the North Carolina State Building Code or other prevailing codes.

END OF SECTION

SECTION 06 20 00
FINISH CARPENTRY

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Related Work Specified Elsewhere:

1. Rough carpentry (Section 06 10 00).
2. Stile and rail wood doors (08 21 20).
3. Door hardware (Section 08 71 00).
4. Painting and finishing (Section 09 91 00).
5. Sinks and fittings for plumbing (Division 22)

B. Work Included This Section:

1. All work of a finish carpentry nature that is shown on the Drawings or specified herein and not included in Section 06 10 00 - Rough Carpentry.
2. Finish carpentry work generally includes carpentry work fabricated and assembled on the job that is exposed to view in the completed work.
3. Installation of doors and frames and installation of finish hardware thereon.

1.3 INDUSTRY STANDARDS:

- A. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard reference.
 - Architectural Woodwork Institute (AWI)
 - U. S. Department of Commerce
 - Commercial Standards (CS)
 - Product Standards (PS)

1.4 QUALITY STANDARDS:

- A. Materials shall comply with the requirements of AWI Quality Standards, latest edition, for "Custom Grade" work.
- B. Workmanship shall comply with requirements specified herein, shown on the Drawings, and shall be by standards established in the industry for the particular type of work involved.

1.5 QUALIFICATIONS:

- A. Fabricator of finish carpentry work shall have a reputation for doing satisfactory work, on time, and shall have completed comparable work to that specified and indicated for this Project. Fabricator shall be equipped with the basic equipment and machinery required to produce the quality of work specified herein.

1.6 SUBMITTALS:

- A. Shop Drawings: Show kind of materials, colors, finish, size of members, method of securing members together, and to adjacent work. Details shall be shown either full size or a scale of 3" = 1'-0".

1.7 PRODUCT HANDLING:

A. Storage and Protection:

1. Protect work from dampness during and after delivery. Store undercover in a well-ventilated building and were not exposed to extreme changes in temperature or humidity. Do not store or install work in any part of the building until concrete, masonry and other wet work is dry or until the air conditioning system is operating under control to prevent fluctuation of temperature and humidity.

PART 2: PRODUCTS

2.1 MATERIALS:

- A. Solid wood shall be kiln-dried so that moisture content shall not exceed limits required in the referenced woodworking quality standard.

B. Grades and Species of Solid Wood:

1. Grades and species of wood shall be as described hereinafter unless a particular species is indicated or specified for a particular application.
2. Softwood for Painted Finish: AWI Grade II Douglas Fir.
3. Hardwood for Painted Finish: AWI Grade II Poplar, Gum, or Birch.
4. Softwood for Concealed Rough Woodwork: C and Better Grade Southern Yellow Pine or Douglas Fir.
5. Hardwood for Transparent Finish: AWI Grade I (Grade II) Red Oak.

C. Softwood Plywood:

1. Fir plywood conforming to PS 1 and produced by a member of the American Plywood Association, interior type with interior glue.
2. Use Grade A was exposed to view and Grade C was completely concealed. Use Grade B for surfaces to receive plastic laminate.

D. Hardwood Plywood:

1. Conforming to PS 51 (Hardwood and Decorative Plywood) Type II Glue.
2. Painted Finish: Unselected Birch, or Gum, or Maple, Grade 2 (Sound).
3. Transparent Finish: Clear, select, White Oak face veneers.
4. Plywood shall have a veneer core.

5. Plywood shall be manufactured by one of the following, or equal approved in writing by the Architect:

- Georgia-Pacific
- U. S. Plywood Corporation
- Weyerhaeuser Company

6. Particleboard: No particleboard will be allowed.

E. Plastic Laminate:

1. One of the following: "Nevamar" as mfd. by Nevamar Company; "Formica" as mfd. by the Formica Corporation; "Micarta" as mfd. by Westinghouse; "Pionite" as mfd. by Pioneer-Plastics Corp; or "Wilsonart" as mfd. by Wilsonart Brand Decorative Laminate.
2. Colors and patterns will be selected by the Architect. Use 0.50" thickness unless indicated or specified otherwise.
3. Waterproof adhesive as recommended by the manufacturer of plastic laminate for the indicated application.

F. Preservative Treatment:

1. Where wood will be in contact with masonry or concrete, the wood shall be pressure-treated to comply with applicable requirements of AWPA C2 (lumber) and AWPA C27 (plywood).

G. Shelf Standards and Brackets: Shelving standards to be Knape & Vogt Co. #80 A Satin Anochrome with #180A brackets, or equal approved in writing by the Architect by Stanley, Grant or Hafele.

I. Edge Banding: Plywood edges that would be exposed to view in the completed work shall be edge banded with the specified solid wood. Edge banding shall be minimum of 1 1/2" wide and shall be tongue and grooved and glued to the plywood panel.

PART 3: EXECUTION

3.1 COORDINATION:

- A. It shall be the responsibility of the General Contractor to coordinate the work of this Section with the work of other trades.

3.2 QUALITY:

- A. All standing and running trim shall be run as one continuous piece where possible. Where joints are required, they shall be made with mitered joints, fully anchored, and glued in place. Glue shall be of a type that is recommended for finish millwork and can be sanded.
- B. Match grain and color in work to receive transparent finish by carefully selecting members. Avoid light/ dark members at a joint.
- C. No installation shall proceed until all parties agree that the job site is ready to accept finish carpentry. All wet trades must be completed in areas that are to receive finish carpentry items. Humidity levels shall be as close as possible to that of the future finished occupied space. Dirt and any other foreign matter must be at acceptable minimum levels.

3.3 INSTALLATION:

- A. Discard units of material which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate work with the minimum of joints or optimum jointing arrangements, or which are of the defective manufacturer concerning surfaces, sizes or patterns.
- B. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'0" for plumb and level, and with 1/16" maximum offset from the flush.
- C. Scribe and cutwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
- D. Anchor finish carpentry work to anchorage devices or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners, and blind nailing as required for a complete installation. Use fine finishing nails for exposed nailings, countersunk and filled flush with the finished surface with wood putty of the type specified in Section 09910 and matching final finish where transparent is indicated.
- E. Work shall be finished smooth and free from machine or tool marks that will show through the finish. All exposed to view nail heads shall be set to receive putty.
- F. All joints shall be tight and formed to conceal shrinkage. Miters 4" or more from heel to point shall be glued and secured with clamp nails, finish nails, or equal method.
- G. Where possible, trim shall be single lengths without splicing; corners shall be mitered. Running finish shall be in long lengths and jointed only where solid fastenings can be made. Miter exterior corners, and cope with interior angles.
- H. Provide blocking and lookouts as required for securing work in place. Do not install any trim or wood molds until all surfaces have been primed and back-primed. Where required, carefully scribe woodwork to masonry and other adjacent work.
- I. Set work plumb, level, and without wracking.
- J. Plastic Laminate Work:
 - 1. Cutouts in plastic laminate shall have a minimum 1/4" radius at corners to prevent stress cracking at corners.
 - 2. Sharp inside corners without radius will not be acceptable.

3.4 INSTALLATION OF DOORS AND APPLICATION OF FINISH DOOR HARDWARE:

- A. Before the installation of any doors or application of any finish hardware, examine all door frames for their proper installation. Door frames found to be out of plumb and square alignment, not securely fabricated or installed, shall be reinstalled by the frame installer before beginning work performed under this Section.
- B. Doors designated on door shop drawings to be undercut are specified to be factory undercut. Only the minimum amount of job fitting and machining shall be allowed on doors. All doors shall be accurately fitted to their opening and accurately machined for their hardware. Also, pairs of doors shall have a gap at meeting stiles not exceeding 1/8" at the closest point of the bevel. The slope of bevel shall not exceed 1/8" in 2".
- C. All hardware is furnished under Section 08 71 00. The application of hardware to doors and frames is specified under this Section. The requirements of Section 08 71 00 shall apply to the installation of the door hardware.

- D. Receive, store, and be responsible for the door hardware to be installed under this Section. Properly tag, index, and file all keys until turned over to the Owner.
- E. Apply hardware following templates and manufacturer's instructions; mortise and fit accurately, apply securely, and adjust carefully. Exercise care not to injure work when applying hardware. Where butt hinges are applied to wood doors, the door shall be predrilled for a full threaded No. 12 wood screw. Coordinate with shop drawings and Contract Drawings for the proper location.
- F. Doors shall be finished under Section 09 91 00. Remove doors so they may have their bottoms and tops sealed and finished and then rehang. Cover door hardware until the painting is completed. Before completion of the building, examine doors and hardware, adjust as required, and leave the hardware in proper working order, free from defect.

3.5 LOCATIONS OF TREATED WOOD:

- A. Use preservative-treated wood where noted on the Drawings and where wood is in contact with masonry or concrete.

3.6 FINISHING:

- A. All work in this Section shall be finished as specified in Section 09910 except for back priming with one coat of clear sealer, which shall be applied under this Section as specified herein.

3.7 CLEANING AND PROTECTION:

- A. All work under this Section shall be carefully protected during shipment, storage, and installation. After installation, all work shall be protected from damage at all times until the Owner takes possession of the Project. Special care is to be taken at all outside corners to avoid damage.
- B. During installation, all existing work shall be protected from damage.
- C. During installation, the job shall be kept clean and free of excessive debris.
- D. After completion of all work of this Section and at a time specified by the Architect, all exposed surfaces and finished materials shall be thoroughly cleaned and any damaged surfaces shall be repaired to the complete satisfaction of the Architect.
- E. After the work under this Section, all areas shall be left broom clean.

END OF SECTION

SECTION 06 40 00
ARCHITECTURAL WOODWORK

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

A. Work Included this Section:

1. Interior standing and running trim and rails.
2. Wood cabinets.
3. Cabinet tops and counters.
4. Door and window frames.
5. Interior miscellaneous ornamental items.
6. Bookshelves.
7. Utility counter.
8. Other work of a similar nature indicated or specified.

- B. Related Work Specified Elsewhere: The following sections contain requirements that relate to this section.

1. Division 6 Section "Rough Carpentry" for furring, blocking, grounds, nailers, and other carpentry work that is not exposed to view.
2. Division 9 Section "Painting" for field finishing of installed architectural woodwork.

1.3 SUBMITTALS:

- A. General: Submit the following per Conditions of Contract and Division 1 Specification Sections.

1. Product data for each type of product and process specified in this section and incorporated into items of architectural woodwork during fabrication, finishing, and installation.
2. Shop drawings showing the location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
3. Samples for initial selection purposes of the following in form of manufacturer's color charts consisting of actual units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.
 - a. Plastic laminate for back of kitchen cabinets at windows – smooth, dark gray.
4. Samples for verification purposes of the following:
 - a. Lumber for the transparent finish, including butcher block, 50 square inches, for each species and cut, finished on one side and one edge.
 - b. Cabinet hardware, one unit of each type, and finish.

5. Product certificates signed by woodwork manufacturer certifying that products comply with specified requirements.
6. Qualification data for firms and persons specified in the "Quality Assurance" article to demonstrate their capabilities and experience. Include a list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

1.4 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Firm experienced in successfully producing architectural woodwork similar to that indicated for this Project, with sufficient production capacity to produce required units without delay in the Work.
- B. Single-Source Responsibility: Arrange for production by a single firm of architectural woodwork with matched wood veneers.
- C. Installer Qualifications: Arrange for installation of architectural woodwork by a firm that can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this project.
- D. AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI) except as otherwise indicated.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.
- B. Do not deliver woodwork until painting, wet work, grinding and similar operations that could damage, soil, or deteriorate woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas whose environmental conditions meet requirements specified in "Project Conditions."

1.6 PROJECT CONDITIONS:

- A. Environmental Conditions: Obtain and comply with Woodwork Manufacturer's and Installer's coordinated advice for optimum temperature and humidity conditions for woodwork during its storage and installation. Do not install woodwork until these conditions have been attained and stabilized so that woodwork is within plus or minus 1.0% of optimum moisture content from the date of installation through the remainder of the construction period.
- B. Field Measurements: Where woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with construction progress to avoid delay of work.
 1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with the manufacture of construction to ensure that actual dimensions correspond to guaranteed dimensions.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Wood Species and Cut for Transparent Finish: Red oak, plain sawn or sliced.

- B. Wood Species for Opaque Finish: Eastern white pine, sugar pine, or western white pine.
- C. General: Provide materials that comply with requirements of the AWI woodworking standard for each type of woodwork and quality grade indicated and, where the following products are part of the woodwork, with requirements of the referenced product standards, that apply to product characteristics indicated:
 - 1. Laminate: NEMA LD 3.
 - 2. Plywood: PS 1.
 - 3. Formaldehyde Emission Levels: Comply with formaldehyde emission requirements of each voluntary standard referenced below:
 - a. Plywood: HPM FE.

2.2 FABRICATION, GENERAL:

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of wood with relative humidity conditions existing during the time of fabrication and in installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 - 1. Corners of cabinets and edges of solid wood (lumber) members less than 1" in nominal thickness: 1/16".
 - 2. Edges of rails and similar members more than 1" in nominal thickness: 1/8".
- C. Complete fabrication, including assembly, finishing, and hardware application, before shipment to the project site to the maximum extent possible. Disassemble components only as necessary for fitting at the site, provide ample allowance for scribing, trimming, and fitting.
- D. Factory-cut openings, to the maximum extent possible, to receive hardware, 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. Smooth edges of cutouts and, where located in countertops and similar exposures, seal edges of cutouts with a water-resistant coating.

2.3 STANDING AND RUNNING TRIM AND RAILS FOR TRANSPARENT FINISH:

- A. Quality Standard: Comply with AWI Section 300.
- B. Backout or groove backs of flat trim members and kerf backs of other wide flat members, except for members with ends exposed in finished work.
- C. Assemble casings in plants except where limitations of access to a place of installation require field assembly.
- D. Grade: Premium.
- E. Lumber Species: Red oak, plain sawn or sliced.

2.4 STANDING AND RUNNING TRIM AND RAILS FOR OPAQUE FINISH:

- A. Quality Standard: Comply with AWI Section 300.

- B. Grade: Custom.
- C. Backouts or groove backs of flat trim members and kerf backs of other wide flat members, except for members with ends exposed in finished work.
- D. Assemble casings in plants except where limitations of access to a place of installation require field assembly.
- E. Lumber Species: Any species acceptable in the referenced woodworking standard for the subject application and grade of work.

2.5 WOOD CABINETS FOR TRANSPARENT FINISH - UTILITY COUNTER:

- A. Quality Standard: Comply with AWI Section 400 and its Division 400A "Wood Cabinets."
- B. Grade: Premium.
- C. Wood Species for Exposed Surfaces: Red oak, plain sawn or sliced.
- E. Grain matching: Run and match grain vertically for drawer fronts, doors, and fixed panels.
- F. Matching of Veneer Leaves: Book match.
- G. Veneer Matching Within Panel Face: Balance match.
- H. Wood Species for Semi-exposed Surfaces: Any species acceptable in the reference standard for the subject application and grade of work.
- I. Finish: to match existing transparent finishes in adjacent rooms.

2.6 WOOD CABINETS FOR OPAQUE FINISH - KITCHEN:

- A. Quality Standard: Comply with AWI Section 400 and its Division 400A "Wood Cabinets."
- B. Grade: Custom.
- C. Wood Species: Any species acceptable in the reference standard for the subject application and grade of work.
- D. Finish: Gray-green to match Architect's reference image.

2.7 CABINET HARDWARE AND ACCESSORY MATERIALS:

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Samples: See Paragraph "Submittals" in Part 1 of this Section for requirements regarding submittals of samples. Do not purchase or install any hardware before approval by the Architect of samples.
- C. Cabinet Hardware:
 - 1. To describe the type and quality of hardware required, items specified below are manufactured by the company listed. Similar and equal hardware by Stanley, Mepla, Knape and Vogt, Adams Rite, or Blum will be acceptable when the specified submittals are approved in writing by the Architect.
 - a. Hinges to be Mepla (ANSI Tested), or equal:

(1) Function 61 - 170 degrees (institutional)

- b. Magnetic catches to be Stanley #41, or equal.
- c. Pulls to be Stanley #4483, Mepla #3032, aluminum, satin anodized, or equal. Client may want to select more historically-styled pulls. Consult Client prior to ordering.
- d. Drawer slides to be Mepla #MR 1702, or equal.
- e. Cabinet shelving standards to be K&V #80A Satin Anochrome with 346NP clips or cabinets lines bored to include Mepla #7035 shelf supports, or equal.
- f. Other required hardware to comply with ANSI.BHMA A156.9.
- g. Door locks BHMA A156.11, E07121
- h. Drawer locks BHMA A156.11, E07041

2.8 CABINET TOPS AND COUNTERS:

- A. Quality Standard: Comply with AWI Section 400 and its Division 400c.
- B. Type of Top: Butcher block
 - 1. Grade: Custom.

2.9 INTERIOR MISCELLANEOUS ORNAMENTAL ITEMS FOR TRANSPARENT FINISH:

- A. This paragraph includes architectural woodwork items that by their special or unique design do not fall into one of the other specified categories of work, including but not limited to wood columns.
- B. Quality Standard: Comply with AWI Section 700.
- C. Grade: Premium.
- D. Lumber Species: Red oak, plain sawn or sliced.

2.10 INTERIOR MISCELLANEOUS ORNAMENTAL ITEMS FOR OPAQUE FINISH:

- A. Quality Standard: Comply with AWI Section 700.
- B. Grade: Custom.
- C. Lumber Species: Any species acceptable in the referenced woodworking standard for the subject application and grade of work.

2.11 INTERIOR DOOR AND WINDOW FRAMES FOR TRANSPARENT FINISH:

- A. Quality Standard: Comply with AWI Section 900B.
- B. Grade: Premium.
- C. Lumber Species: Red oak, plain sawn or sliced.

2.12 INTERIOR DOOR AND WINDOW FRAMES FOR OPAQUE FINISH:

- A. Quality Standard: Comply with AWI Section 900B.
- B. Grade: Custom.
- C. Lumber Species: Any species acceptable in the referenced woodworking standard for the subject application and grade of work.

2.13 FASTENERS AND ANCHORS:

- A. Screws: Select material, type, size, and finish required for each use. comply with FS FF-S-111 for applicable requirements.
- B. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
- C. Anchors: Select material, type, size, and finish required by each substrate for secure anchorage. Provide nonferrous metal or hot-dip galvanized anchors and inserts on inside of exterior walls and elsewhere as required for corrosion resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent woodwork anchorage.

PART 3 - EXECUTION

3.1 PREPARATION:

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installing.
- B. Deliver concrete inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.
- C. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including back priming and removal of packing.

3.2 INSTALLATION:

- A. Quality Standard: Install woodwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this section for the type of woodwork involved.
- B. Install woodwork plumb, level, true and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops) and with no variations in flushness of adjoining surfaces.
- C. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners, and blind nailing as required for a complete installation. Where face nailing is allowed by the Specifications and the referenced AWI quality standard, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork and matching final finish where the transparent finish is indicated.
- E. Standing and Running Trim and Rails: Install with a minimum number of joints possible, using full-length pieces (from the maximum length of lumber available) to the greatest extent

possible. Stagger joints in adjacent and related members. Cope at returns and miter at corners.

- F. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Maintain veneer matching as specified of cabinets with a transparent finish.
- G. Tops: Anchor securely to base units and other support systems as indicated and specified.
- H. Refer to Section 09 91 00 - Painting for field finishing of installed architectural woodwork.

3.3 ADJUSTMENT AND CLEANING:

- A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; where not possible to repair, replace woodwork. Adjust joinery for a uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.4 PROTECTION:

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensures that woodwork is being without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 07 21 16
FLEXIBLE INSULATION

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Related Work Specified Elsewhere:

1. Roofing insulation (Section 07 54 00)
2. GWB work (Section 09 29 00).

B. Work Included This Section:

1. Thermal fiberglass batt insulation and mineral wool insulation.
2. All supplementary materials and accessories required for a complete and proper installation.

1.3 SUBMITTALS:

- A. Manufacturer's Literature and Installation Instructions: Submit manufacturer's literature completely describing each type of insulation and including thermal resistances and acoustical ratings for the various thicknesses indicated to be installed in this Project. Also, submit the manufacturer's written installation instructions for each type of installation required on this Project.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Flexible Batt Insulation:

1. Insulation shall be fiberglass type as manufactured by Owens Corning, Certainteed/St.Gobain, Johns Manville, or equal approved in writing by the Architect. Insulation shall have a vapor-barrier on one side of aluminum foil at all exterior walls and ceilings.
2. Foil-faced insulation shall comply with ASTM C 665, Type II, Class B.
3. Provide thickness as shown on Drawings. Insulation shall provide the following minimum thermal resistance ratings (R-values) for the various thicknesses listed.
 - 3 1/2" thick R-11
 - 3 5/8" thick R-13
 - 6" thick R-19
 - 9" thick R-30
4. Insulation to be installed in stud wall construction shall be "full width" of stud cavity.

- B. Mineral Wool: High-density, noncombustible fibers.

- C. Installation Accessories: Impaling clips, adhesives, tape, and other required accessories shall either be furnished by or a type recommended in writing by the insulation manufacturer.

PART 3: EXECUTION

3.1 LOCATIONS: Install insulation at locations shown on Drawings.

3.2 INSTALLATION:

- A. Install faced insulation with a vapor barrier facing toward the interior of the building.
- B. Follow written recommendations of the manufacturer of insulation and of fasteners for a method of attaching insulation... In addition to the manufacturer's recommendations, comply with the following procedure to prevent insulation in walls from sagging and leaving an uninsulated space at top of the wall: Lap edges of insulation over studs. Tape the first lap to the stud and tape the second lap to the first lap.
- C. Butt ends and edges of insulation batts together and tape for continuous sealed installation. Split and cut the insulation to fit around the pipe, boxes, etc. Where possible, make continuous behind such objects by overlapping insulation.
- D. Provide impaling clips, wire lattice or UL approved plastic netting to support insulation in a vertical or horizontal position if necessary to prevent tearing or sagging. Also, comply with the requirement specified in Paragraph 3.2 b. above to prevent insulation in walls from sagging and leaving an uninsulated space at top of the wall.

END OF SECTION

SECTION 073113
ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Glass-fiber-reinforced asphalt shingles.
 - 2. Underlayment materials.
 - 3. Metal flashing and trim.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D1079 for definitions of terms related to roofing Work in this Section.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Asphalt shingles.
 - 2. Underlayment materials.
 - 3. Asphalt roofing cement.
 - 4. Elastomeric flashing sealant.
- B. Shop Drawings: For metal flashing and trim.
- C. Samples: For each exposed product and for each color and blend specified, in sizes indicated.
 - 1. Asphalt Shingles: Full size.
 - 2. Ridge and Hip Cap Shingles: Full size.
- D. Samples for Initial Selection:
 - 1. For each type of asphalt shingle indicated.
 - 2. For each type of accessory involving color selection.
- E. Samples for Verification: For the following products, in sizes indicated:
 - 1. Asphalt Shingles: Full size.
 - 2. Ridge and Hip Cap Shingles: Full size.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each type of asphalt shingle and underlayment product indicated, for tests performed by a qualified testing agency.
- C. Research Reports: For synthetic underlayment, from ICC-ES, indicating that product is suitable for intended use under applicable building codes.
- D. Sample Warranty: For manufacturer's materials warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For asphalt shingles to include in maintenance manuals.
- B. Materials warranties.
- C. Roofing Installer's warranty.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Asphalt Shingles: 100 sq. ft. of each type and in each color and blend, in unbroken bundles.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated location protected from weather, sunlight, and moisture in accordance with manufacturer's written instructions.
- B. Store underlayment rolls on end, on pallets or other raised surfaces. Do not double-stack rolls.
- C. Protect unused roofing materials from weather, sunlight, and moisture when left overnight or when roofing Work is not in progress.
- D. Handle, store, and place roofing materials in a manner to prevent damage to roof deck or structural supporting members.

1.10 FIELD CONDITIONS

- A. Environmental Limitations: Proceed with installation only when existing and forecasted weather conditions permit product installation and related Work to be performed in accordance with manufacturer's written instructions and warranty requirements.

1. Install self-adhering, polymer-modified bitumen sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

1.11 WARRANTY

- A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Manufacturing defects.
 2. Materials Warranty Period: 30 years from date of Substantial Completion.
 3. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 130 mph for 15 years from date of Substantial Completion.
 4. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 25 years from date of Substantial Completion.
 5. Workmanship Warranty Period: 5 years from date of Substantial Completion.
- B. Roofing Installer's Warranty: On warranty form at end of this Section, signed by Installer, in which Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of product from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
- B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D3161/D3161M, Class F, and with ASTM D7158/D7158M, Class H.

2.3 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Impact-Resistant, Asphalt Shingles: ASTM D3462/D3462M, glass-fiber reinforced, mineral-granule surfaced, and self-sealing; with impact resistance complying with UL 2218, Class 4.
 1. Basis of Design: Camelot II by GAF. Other acceptable manufacturer and models: Gran Manor by Certainteed, Belmont by Certainteed
 2. Butt Edge: Notched cut. To resemble original metal shingle edge profile.
 3. Strip Size: Manufacturer's standard.
 4. Algae Resistance: Granules resist algae discoloration.

5. Color and Blends: Medium to dark gray. Antique Slate for GAF product, and Colonial Slate, Gatehouse Slate, or Stonegate Slate for Certaineed products. Final selection will be made during submittals.

- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles. Trim each side of lapped portion of unit to taper approximately 1 inch.

2.4 UNDERLAYMENT MATERIALS

- A. Glass-Reinforced Felt: ASTM D6757/D6757M, asphalt-saturated, glass-reinforced organic felt or inorganic fiber-based felt.

2.5 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.
- B. Elastomeric Flashing Sealant: ASTM C920, Type S, Grade NS, one-part, non-sag, elastomeric polymer sealant; of class and use classifications required to seal joints and remain watertight; recommended in writing by manufacturer for installation of flashing systems.
- C. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch-diameter, sharp-pointed, with a 3/8- to 7/16-inch-diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking.
 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- D. Underlayment Nails: Aluminum, stainless steel, or hot-dip galvanized-steel wire nails with low-profile metal or plastic caps, 1-inch-minimum diameter.

2.6 METAL FLASHING AND TRIM

- A. Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 1. Sheet Metal: Anodized aluminum.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item unless otherwise specified in this Section or indicated on Drawings.
 1. Apron Flashings: Fabricate with lower flange a minimum of 5 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
 2. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 5 inches over the underlying asphalt shingle and up the vertical surface.
 3. Cricket and Backer Flashings: Fabricate with concealed flange extending a minimum of 24 inches beneath upslope asphalt shingles and 6 inches beyond each side of chimney and 6 inches above the roof plane.
 4. Counterflashings: Fabricate to cover 4 inches of base flashing measured vertically; and in lengths required so that no step exceeds 8 inches and overall length is no more than 10 feet.
 - a. Provide metal reglets or receivers for installation.

5. Drip Edges: Fabricate in lengths not exceeding 10 feet with minimum 2-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.
6. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches from pipe onto roof.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored and that provisions have been made for flashings and penetrations through asphalt shingles.
 3. Verify that vent stacks and other penetrations through roofing are installed and securely fastened.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT MATERIALS

- A. Comply with asphalt shingle and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.
- B. Asphalt-Saturated Felt: Install on roof deck parallel with and starting at eaves and fasten with nails.
 1. Single-Layer Installation:
 - a. Lap sides a minimum of 4 inches over underlying course.
 - b. Lap ends a minimum of 4 inches.
 - c. Stagger end laps between succeeding courses at least.
 2. Install fasteners in a grid pattern of 12 inches between side laps with 6-inch spacing at side and end laps.

3.3 INSTALLATION OF METAL FLASHING AND TRIM

- A. Install metal flashings and trim to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Install metal flashings in accordance with recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
 2. Bed flanges of metal flashings using asphalt roofing cement or elastomeric flashing sealant.
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches and extend over underlying shingle and up the vertical face.
1. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying shingle.
 2. Fasten to roof deck only.
- D. Cricket and Backer Flashings: Install against roof-penetrating elements extending concealed flange beneath upslope asphalt shingles and beyond each side.
- E. Counterflashings: Coordinate with installation of base flashing and fit tightly to base flashing. Lap joints a minimum of 4 inches secured in a waterproof manner.
1. Install in reglets or receivers.
- F. Rake Drip Edges: Install over underlayment materials and fasten to roof deck.
- G. Eave Drip Edges: Install below underlayment materials and fasten to roof deck.
- H. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 INSTALLATION OF ASPHALT SHINGLES

- A. Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed, at least 7 inches wide, with self-sealing strip face up at roof edge.
1. Extend asphalt shingles 3/4 inch over fasciae at eaves and rakes.
 2. Install starter strip along rake edge.
- C. Laminated-strip shingles: Install first and remaining courses of laminated asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install first and remaining courses of three-tab-strip asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Fasten asphalt shingle strips with a minimum of six roofing nails, but not less than the number indicated in manufacturer's written instructions for roof slope and design wind speed indicated on Drawings and for warranty requirements specified in this Section.

1. Locate fasteners in accordance with manufacturer's written instructions.
 2. Where roof slope is less than 4:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
 3. When ambient temperature during installation is below 50 deg F, hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
- F. Woven Valleys: Extend succeeding asphalt shingle courses from both sides of valley 12 inches beyond center of valley, weaving intersecting shingle-strip courses over each other. Use one-piece shingle strips without joints in valley.
1. Do not nail asphalt shingles within 6 inches of valley center.
- G. Closed-Cut Valleys: Extend asphalt shingle strips from one side of valley 12 inches beyond center of valley.
1. Use one-piece shingle strips without joints in valley.
 2. Fasten with extra nail in upper end of shingle. Install asphalt shingle courses from other side of valley and cut back to a straight line 2 inches short of valley centerline.
 3. Trim upper concealed corners of cut-back shingle strips.
 4. Do not nail asphalt shingles within 6 inches of valley center.
 5. Set trimmed, concealed-corner asphalt shingles in a 3-inch-wide bed of asphalt roofing cement.
- H. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing-shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds.
1. Fasten with roofing nails of sufficient length to penetrate sheathing.

END OF SECTION

SECTION 07 53 20
SINGLE-PLY MECHANICALLY ATTACHED PVC ROOFING

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Flashing and trim (Section 07 62 00).
- 2. Treated wood nailers and curbs (Section 06 10 00).

b. Work Included This Section:

- 1. Furnish and install mechanically attached PVC membrane roofing system in strict accordance with Drawings and Specifications as approved by the roofing system manufacturer.
- 2. Furnish and install insulation under mechanically attached membrane, including tapered insulation and insulation formed crickets where shown on the Drawings.
- 3. Roof system will be required to be approved for use in an Underwriter's Laboratory Inc., Class A roof covering system.
- 4. Materials and installation shall be provided as required in order to meet Factory Mutual I- 60 wind uplift rating.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)
Federal Specifications (FS)

1.4 SUBMITTALS:

- a. Certificate of Compliance: Furnish duplicate copies of the Certificate of Compliance from each manufacturer of materials for work of this Section. Certificates shall state requirements of the Contract Documents. Itemize products and refer to product standards used in these Specifications.
- b. Guarantee-Warranty:
 - 1. Contractor shall warrant roofing system to conform to requirements of the Contract Documents. He shall further guarantee to repair the roofing system in the event of failure of any part of the roofing system and to repair or replace material and finishes on the interior of the building resulting from failure of the roofing system for a period of 2 years from date of final acceptance.

2. Upon completion of the installation, an inspection will be made by a representative of the membrane manufacturer to verify that the roof system has been installed in accordance with the company's published specifications and details. Upon approval, the roofing system manufacturer shall issue a single source warranty. This warranty shall cover the watertight condition of all roofing materials and products of the membrane manufacturer for a period of not less than 15 years from date of completion.
 3. Warranty of conformance with requirements of the Contract Documents shall be in the form of a Certificate of Compliance written on company letterhead and signed by an officer of the company. It shall be countersigned by the roofing subcontractor.
 4. The guarantee shall be an executed "Roofing Warranty" submitted in the form of the Sample Document included in the Project Manual.
- c. Manufacturer's Data:
1. Furnish manufacturer's data of all roofing materials specified for approval by the Architect. Include calculations of the "U" factor for the roof system and the "R" factor for the insulation.
 2. Furnish manufacturer's printed installation instructions and diagrams.
- d. Shop Drawings: Shop Drawings shall be made by membrane manufacturer or his representative. Approved shop drawings shall be used in conjunction with the final inspection of the warranted roof.
1. Shop drawings shall include outline of roof and roof size, location and type of penetrations, perimeter and penetration details, special details, termination details and relation to existing construction, and bill of material. Shop drawings shall show layout of tapered insulation and the resulting percentage of slope to the roof drain in each roof area.
 2. Include layout drawings showing locations of all seams in the membrane for the Architect's approval.
 3. Shop drawings must show details conforming to UL and FM requirements.
- e. Letter From Membrane Manufacturer's Warranty Department:
1. Submit a letter from the roofing membrane manufacturer's Warranty Department that states:
 - (a) All Contract Documents relating to the roof system have been reviewed.
 - (b) All materials are physically and chemically compatible with each other and the system, as designed, is suitable for the specified warranty.
 - (c) The Roofing Contractor is an applicator approved by the roof membrane manufacturer.
 - (d) Statement verifying that all materials, from the roof deck up (including metal flashings but including the roof materials to seal the flashings), are covered in the warranty.
 - (e) Name of Owner and name and location of Project.

- f. Punchlist Report: Copy of roofing system's manufacturer's punchlist at the time of pre-final inspection of roofing system.
- g. Inspection Report: Copy of roofing system manufacturer's inspection report at the time of inspection of completed roofing installation.

1.5 PRODUCT HANDLING:

- a. Deliver materials in original unopened containers.
- b. Containers shall be labeled with manufacturer's name, brand name, installation instructions, and identification of various items.
- c. Store materials, except membrane, between 60° F. and 80° F. If exposed to lower temperatures, restore to proper temperature before using.
- d. Store materials, except membrane, in a dry area and protect them. Damaged materials shall be replaced at Contractor's expense.

1.6 JOB CONDITIONS (Cautions and Warnings):

- a. Do not use oil base or plastic roof cement.
- b. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat) or direct steam venting to come in contact with the finished roofing system.
- c. Do not expose membrane or accessories to a constant temperature in excess of 180° F.
- d. Cements and bonding adhesives can contain petroleum distillates and are extremely flammable. Do not breathe vapors or use near fire.
- e. Heptane, unleaded or white gasoline used in splicing procedures are extremely flammable; do not use near fire or flame or in a confined or unventilated area. Dispense only from a UL tested or approved safety can.
- f. Splicing and bonding surfaces shall be clean and dry.
- g. Cold temperatures will not restrict installation of the roofing system. Follow specified precautions for storage of materials and expose only enough cement and adhesive to be used within a 4 hour period.
- h. Roof surface shall be free of ponded water, ice, or snow to eliminate future condensation problems.

1.7 PROTECTION:

- a. Building walls shall be protected adequately from soil or spillage at all hoisting points. Contractor shall be responsible to prevent damage of building from his operations. Any such damage shall be repaired at his expense to Owner's satisfaction, or restored to the original condition. Coordinate the installation of roof accessories, roof drains, and roof-mounted equipment. Provide necessary protection to roof system during installation of roof-mounted equipment.

1.8 PRE-INSTALLATION ROOFING MEETING:

- a. Approximately one week prior to commencement of work, Contractor is to schedule a pre-installation meeting.

- b. Meet at the site with roofing installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing that must precede or follow roofing work (including mechanical work if any), Architect, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the work, including (where applicable) Owner's insurers, test agencies, and governing authorities.
- c. Contractor is to conduct the meeting with input from Architect and Consultants.
- d. During the course of the meeting review the following:
 - 1. Foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:
 - 2. Structural loading limitations of steel deck and inspect deck for loss of flatness and for required mechanical fastening.
 - 3. Roofing system requirements (drawings, specifications, and other contract documents).
 - 4. Required submittals, both completed and yet to be completed.
 - 5. Finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 6. Required inspection, testing, certifying, and material usage accounting procedures.
 - 7. Weather and forecasted weather conditions and procedures for coping with unfavorable conditions.
- e. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
- f. Contractor to record discussions of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
- g. Contractor to distribute minutes to all parties concerned.

PART 2: PRODUCTS

2.1 MANUFACTURERS:

- a. Products of the following manufacturers, equivalent to or better than work specified herein, will be acceptable for use on this Project when approved (in writing) by the Architect:

Carlisle SynTec Systems
Holcim Elevate (formerly Firestone Building Products)
GenFlex Roofing Systems
Versico Inc.
Johns Manville
GAF

- b. Roofing Subcontractor: Before starting any part of the work, present to the Architect a letter from the roofing manufacturer stating that the roofing subcontractor is an approved applicator. The letter shall be on company letterhead and shall be signed by a local representative of the company.
- c. Material: All materials used in the roofing work for this project shall be approved by the National Board of Fire Underwriters.

2.2 MEMBRANE:

- a. Membrane:
 - 1. PVC Membrane: Polyvinyl chloride sheet complying with ASTM D4434/D4434M, Type III, with internally reinforced scrim.
 - a. Smooth Membrane: 60 mil, 0.060 inch minimum PVC thickness.
 - 2. Impact Resistance: Membrane to resist impact damage when tested in accordance with the "Resistance to Foot Traffic Test" in FM 4470.
 - 3. Accelerated Weathering: Roof to withstand 5000 hours of exposure when tested in accordance with ASTM G154.
 - 4. Color: White
- b. Membrane Fasteners: Membrane manufacturer's recommended type.
- c. Flexible Flashing: Manufacturer's standard PVC sheet flashing matching primary membrane in type and color, minimum 55 mil, 0.055 inch (1.4 mm) thickness.
- d. Protection Sheet: Loose-laid PVC membrane, minimum 60 mil, 0.060 inch.

2.3 RELATED MATERIALS:

- a. Molded Pipe Flashing: Compatible with materials with which it is to be used. Furnished by membrane manufacturer.
- b. Flat and Tapered Roofing Insulation:
 - 1. Shall be polyisocyanurate as provided by roof membrane manufacturer and covered by Total System Warranty. Roof insulation board shall be polyisocyanurate foam core, permanently bonded to glass fiber mat facers on both sides. The insulation shall provide the following minimum physical properties. Thickness as shown on drawings.
 - (a) Contractor is to verify that the insulation facers are suitable for adhering the roofing membrane to the insulation such that the specified UL and FM criteria are provided, before purchasing and using the insulation.

<u>Property</u>	<u>Test Method</u>	<u>Specification</u>
Compressive Strength	ASTM D 1621	Greater than 16 psi
Moisture Vapor Transmission	ASTM E 96	2.0 perms max.
Foam Core Density	ASTM D 1622	2.0 lbs./cu. ft. nominal
Flame Spread, Foam Core	ASTM E 84	25 or less

Service Temperature		40 deg. to +250 deg.F.
Dimensional Stability	ASTM D 2126	Less than 2% Linear Change
Thermal Resistance	ASTM 44C 518,	1 1/2" board = aged at 75% F.R of 10.0 RIC/TIMA 28-1-1

- c. Walkway Pads: Factory-molded, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway rolls, approximately 3/16 inch thick, provided by the membrane roofing system manufacture.

PART 3: EXECUTION

- 3.1 GENERAL: Installation shall be in strict accordance with the manufacturer's printed instructions. Prior to beginning work, an inspection of the roof substrate shall be made by the Owner, Architect, General Contractor, and roofing subcontractor. Beginning of roofing work shall constitute acceptance of existing conditions by the Contractor. Roofing subcontractor shall notify Contractor in writing of defects in the substrate, and work shall not proceed until defects have been corrected.
- a. Substrate shall be covered with an accepted roof insulation specified hereinbefore, approved by membrane manufacturer.
 - b. Substrates shall be clean, smooth, free of fins, sharp edges, loose and foreign materials, oil, grease, and fresh roof cement.
 - c. Surface joints (including walls and substrates) shall be 1/4" or less in width. Repair all joints wider than 1/4" with an approved sealer before proceeding with installation.
- 3.2 INSULATION INSTALLATION:
- a. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
 - b. Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.
 - c. Install tapered insulation under area of roofing to conform to slopes indicated.
 - d. Install one or more layers of insulation under area of roofing to achieve required thickness. Install 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - e. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
 - f. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
 - h. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.

1. Fasten insulation according to requirements in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.2 INSTALLATION OF MEMBRANE:

- a. Install roofing membrane over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
- b. Accurately align roofing membranes and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- c. Mechanically or adhesively fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
- d. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
- e. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 3. Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.
- f. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.
- g. In-Splice Attachment: Secure one edge of roofing membrane using fastening plates or metal battens centered within membrane splice and mechanically fasten roofing membrane to roof deck. Field-splice seam.
- f. Perimeter Nailing: Membrane shall be secured at the perimeter of each roof level, curb flashing, skylights, expansion joints, and similar penetrations, according to manufacturer's standard details.
 1. All pipes or conduits require Sure-Seal Fastening Bar around their perimeter.
 2. Flashing: Perimeter flashing and flashing around vents, etc., shall be done with Sure-Weld membrane flashing approved by the membrane manufacturer using the longest pieces practicable. All flashings and terminations shall be done in accordance with the membrane manufacturer's standard details.
 - (a) Flash all penetrations (pipes, conduits, etc.) passing through the membrane.
 - (1) Flash pipe with premolded pipe flashings where installation is possible.

- (2) Where premolded pipe flashings cannot be installed, use field fabricated pipe seals.
 - (3) Remove all existing pipe flashing.
 - (4) Install fastening bar around perimeter of all penetrations.
- 3. Expansion Joints: Expansion joints shall be flashed in accordance with the membrane manufacturer's standard details.
- 4. Roof Drains: Field verify locations of roof drains.
 - (a) Taper installation around drain to provide a smooth transition from roof surface to drain clamping ring.
 - (b) Seal between membrane and drain base shall be water cutoff mastic as shown in the membrane manufacturer's standard details.
- g. Night Seal: Care should be exercised to insure that the water does not flow beneath any completed sections of roof. Temporarily seal any loose edge of membrane with an approved night seal when weather is threatening.
 - 1. Apply night seal as recommended by membrane manufacturer.
 - 2. When work is resumed, pull sheet free before continuing installation.

3.3 CLEAN-UP:

- a. Upon completion of installation of roofing system, remove all debris from the job site.

END OF SECTION

SECTION 07 62 00
FLASHING AND SHEET METAL

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Membrane roofing and insulation (Section 07 53 10).

b. Work Included This Section:

- 1. Furnish and install general sheet metal flashing, gravel stop and fascia, counterflashing and other types of flashing as shown on Drawings, as specified herein and as required for watertight construction.
- 2. Furnish and install gutters and downspouts.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)
Federal Specifications (FS)
Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

1.4 SUBMITTALS:

- a. Shop Drawings: Shall be submitted describing materials, details and installation of the roofing system. Shop drawings shall be reviewed and approved by the General Contractor and the manufacturer prior to submittal to the Designer.

PART 2: PRODUCTS

EDIT NOTE: IF THERE IS NO LEAD ON THE PROJECT REMOVE FROM SPEC.

2.1 MATERIALS:

- a. Sheet Metal For General Sheet Metal Work: Use the thicknesses or gauges listed below unless shown otherwise on the Drawings. Unless a particular type of metal is noted on the Drawings or specified, the Contractor will have the option to select from the types listed below.
 - 1. Aluminum: ASTM B 209, alloy 3003, tempered, .032" thick unless specified or indicated to be thicker.
 - 2. Stainless Steel: AISI Type 302/304, ASTM A 167, 2D annealed finish, soft except where harder temper required for forming or performance; 0.015" thick (28 gauge) except as otherwise indicated.

3. Treated Sheet Metal: Bonderized, galvanized sheet steel, minimum 22 gauge.
- b. Solder: Containing at least 50% tin.
- c. Nails: Flat head, bronze, brass or copper with copper sheet, zinc coated with galvanized sheet.
- d. Flux for Soldering: As recommended by manufacturer of sheet metal.
- e. Powder-Actuated Fasteners: Corrosion-resistant fasteners, sized as recommended by manufacturer for specific function and substrate.
- f. Caulking Compound: Urethane or silicone sealant approved for use in Section 07900 for the particular application.
- g. Mastic: Shall be waterproof, non-sagging type as recommended by the manufacturer for the use intended.
- h. Rubber Sheet: Shall be 1/16" thick neoprene or butyl sheet.

2.2 FASCIA:

- a. Fascia shall be a two-part system consisting of a continuous galvanized spring clip part that attaches to the roof edge nailer and provides the support for the snap-on aluminum fascia. The fascia piece shall be of minimum .040" thick aluminum with factory applied fluoropolymer 2-coat thermocured system (Kynar type) composed of specially formulated unhibitive primer and fluoropolymer color topcoat containing not less than 70% polyvinylidene fluoride resin by weight, complying with AAMA 2605. Color to be selected by Architect. The fascia shall snap onto the spring clip at top and bottom. Overall height of the fascia shall be nominal as shown on the Drawings and as required to cover substrate behind the fascia not intended to be exposed to view.
- b. Provide one of the following, or equal approved in writing by the Architect:
 - EconoCrimp Fascia by Hickman Edge Systems.
 - Perma-Tite System 200 by Metal-Era Inc.
- c. All corners are to be factory mitered and welded prior to finishing.

2.3 COUNTERFLASHING:

- a. Two-piece aluminum type consisting of reglet part and snap-in counterflashing part, such as Springlok by Fry Reglet Corporation.

2.4 SPECIALTY ITEMS:

- a. Gravel Stop: Gravel stop shall be by Architectural Products Company, or equal. Face dimension shall be 3 1/2", projection above roof shall be 5/8" and minimum thickness of the extruded gravel stop shall be .078". Provide relief scuppers as shown in the Drawings by reducing the gravel stop lip to 1/4". Provide factory applied baked enamel finish to match roofing shingle color. If necessary, provide a custom color in order to match the roofing shingle color. Metal flashing used in conjunction with the gravel stop and exposed to view shall be of ZGPG treated sheet metal specified hereinbefore and shall be field painted in color to match the gravel stop.
- b. Gutters and Downspouts:
 1. Gutter and downspout assembly shall consist of the following parts.

- (a) 5 inch O.G. gutter standard profile with end caps.
 - (b) Roof apron with combination/strap hanger.
 - (c) 3" x 4" downspout.
 - (d) Sealing material.
 - (e) Aluminum-neoprene expansion joint.
 - (f) Downspout anchor - aluminum die casting.
- 2. The gutter shall be .032" minimum thickness and the downspout shall be .027" minimum thickness, white finish.
 - 3. Provide continuous 1/2" x 1/2" mesh aluminum wire leaf screen the entire length of all gutters.

2.5 REGLET:

- a. Where roofing membrane or elastomeric flashing turns up vertical surface of masonry or concrete, terminate the membrane in a factory manufactured stainless steel reglet and counterflashing of 0.015" minimum thickness. Provide size and profile shown and if not shown as required by construction conditions. Reglet and counterflashing shall be manufactured by Fry Reglet Corp., Cheney Flashing Co. Keystone Flashing Co., or equal approved in writing by the Architect.

2.6 PRE-FINISHED FASCIA, GUTTERS, TRIM & FLASHING:

- a. All materials shall aluminum alloy, commercial quality, primed and finished with fluoropolymer 2-coat thermocured system (Kynar type) composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70% polyvinylidene fluoride resin by weight, complying with AAMA 2605.
- c. A wash coat of .3 to .4 mil dry film thickness shall be applied to the reverse side.
- d. The pre-painted finished side shall be coated with a factory installed strippable film for protection of the finished surface during shipping, fabrication and installation.
- e. The material shall be protected from heat and direct sunlight to prevent deterioration of the strippable film and possibly the finished coating.
- f. Color will be selected by the Architect from manufacturer's standard colors.
- g. Materials shall be cut, formed or riveted using hand or power tools. Fabricate and install in accordance with the Drawings and Specifications using recognized sheet metal practices.
- h. Keep cutting edges sharp, clean, properly dressed and closely aligned. Exercise care during fabrication and erection to avoid damage.
- i. Use color matched touch-up paint and rivets where exposed to view.
- j. Coating must be mechanically removed if soldering is necessary.
- k. All fabrication and installation shall be accomplished with strippable film in place.
- l. After fabrication is complete, immediately remove strippable film. Extended exposure of strippable film to ultraviolet light may damage the paint coating underneath.

- m. Provide butt joints with splice plates behind of same material and finish.
- n. Provide hemmed edges. Raw cut edges will not be acceptable.
- o. Warranty:
 - 1. Provide a 10-year non-prorated paint coating warranty covering fade, chalking and film integrity. The warranty shall include labor and materials through the 10th year.
 - 2. The paint coating shall not show a color change greater than 5 NBS color units per ASTM D2244 and shall not show chalking in excess of 8 per ASTM D659.

PART 3: EXECUTION

3.1 GENERAL REQUIREMENTS FOR METAL FLASHING AND TRIM:

- a. Sheet metal shall be watertight with provisions for expansion and contraction.
- b. Paint all sheet metal surfaces which will be in contact with roofing, concrete or mortar with bituminous paint. Similarly paint dissimilar metal in contact with one another to prevent galvanic action.
- c. Sheet metal work shall conform to requirements of Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) Architectural Sheet Metal Manual, Washington, DC, latest edition. Copper flashing shall conform to the design principle and techniques of sheet copper construction set forth in the latest edition of "Copper and Common Sense" by Revere Copper and Brass Inc.
- d. Corners of copings gravel stop/ fascia shall be factory mitered and welded prior to finishing. Form and fabricate in shop.
- e. Fabricate flashing and trim to the profile shown in 8'-0" lengths or longer except where shorter lengths are required by construction or sheet size. All exposed edges shall be turned under for stiffness; no exposed sheared or raw edges shall be permitted.
- f. Seams shall be neatly finished with true sharp lines free of oil can buckles. Flat seams shall not be less than 1/2" wide single locked and solder sweated or double locked and malleted flat or as shown on the Drawings.
- g. Expansion joints shall be made with splice plates single locked.
- h. All work shall be of the highest quality performed by workmen skilled in this trade. The work involved shall be completely waterproof and shall not invalidate any required bonds and guarantees.
- i. After completion, all exposed work shall be thoroughly cleaned of all scraps, stains and dirt. After cleaning, the metal shall be washed with clean water and wiped dry. Flux shall be removed and excess neutralized to prevent staining.

3.2 REGLETS:

- a. Install flush with embedded construction in continuous level horizontal lines. Install in maximum lengths available. Paint reglets surfaces in contact with concrete or mortar with bituminous paint. Set securely in concrete and masonry construction.
- b. Install cap flashing piece by lapping adjacent piece 3" minimum and applying concealed sealant bead at each lap. Lock in place against bituminous material under full tension.

- 3.3 SPECIALTY ITEMS: Install dormer roofing, gravel stops, gutters and downspouts and aluminum soffits in accordance with general requirements hereinbefore and in accordance with requirements below.
- a. Specialty items shall be installed in strict accordance with the Contract Specifications and Drawings, manufacturer's written instructions and shop drawings approved by the Architect.
 - b. Sheet metal shall not be installed in contact with dissimilar metals. Where dissimilar metals would be in contact, separate by painting with bitumastic paint or equal alternate method as approved by the Architect.
 - c. Gutters shall be installed by using hangers so that movement is not restricted. Neoprene expansion joint shall be provided on all corners (due to hip roof design) and at locations exceeding 40' in length of gutter.
 - d. Upon completion, factory finished aluminum surfaces shall be cleaned in accordance with the Aluminum Association publication, Care of Aluminum, latest edition.

END OF SECTION

SECTION 07 72 10
ROOF HATCH

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Field painting (Section 09 91 00).
- 2. Single ply roofing (Section 07 53 10).
- 3. Miscellaneous metals (Section 05 50 00).
- 4. Wood blocking and nailers (Section 06 10 00).

b. Work Included This Section:

- 1. Roof hatch as shown on Drawings and as specified herein. Include all installation accessories required for a complete and proper installation.

1.3 SUBMITTALS:

- a. Installation Instructions: Submit manufacturer's printed literature completely describing each type of roof hatch to be provided and including installation instructions.

1.4 GUARANTEE:

- a. Submit manufacturer's guarantee against defects in material and workmanship for a period of 5 years.

PART 2: PRODUCTS

2.1 MANUFACTURERS:

- a. Subject to compliance with the Drawings and Specifications, provide roof hatch by one of the following, or equal approved in writing by the Architect:

Bilco Company
Milcor Inc.
Babcock-Davis Hatchways Inc.
Nystrom Inc.

2.2 MATERIALS:

- a. For purposes of describing type and quality of products required, the Drawings and Specifications are based upon roof hatches by the Bilco Company. See paragraph "Manufacturers" hereinbefore for other acceptable manufacturers.
- b. The following sizes and types of roof hatches are required:
 - 1. Provide 2'-6" x 4'-6" clear inside size, similar and equal to N-40 roof hatch by Bilco, with a steel curb and aluminum cover.

c. Roof Hatch:

1. Fabricate curb from not less than 14 gauge steel sheet and lid from not less than 11 gauge aluminum. Fabricate cover liner from not less than 18 gauge aluminum. Steel sheet shall be galvanized and phosphatized.
2. Curb shall be 1'-0" high and with 3 1/2" flange punched with holes for securing to roof deck. Equip curb with integral cap-flashing of same material, gauge and finish as curb; and fully welded.
3. Provide with heavy pintle hinges; compression spring operators in telescoping tubes or torsion-bar spring in lid; positive snap-latch with turn handles and padlock hasps inside and outside; and neoprene draft seal. Hardware shall be zinc-plated. Equip cover with automatic hold-open arm.
4. Insulation for curb shall be 1" thick. Insulation shall be 6.0 lbs. per cu. ft. density fiberglass, cane-fiber board (fungus treated), or equal standard with the hatch manufacturer.
5. Insulation for lid shall be 1" thick. Insulation shall be 6.0 lbs. per cu. ft. density fiberglass, rigid foamed polystyrene, or equal standard with the hatch manufacturer.
6. Hatch shall be guaranteed watertight and for proper operation and against defects in materials or workmanship for a period of 5 years.
7. Hatch shall have factory-applied baked primer after phosphatizing.

PART 3: EXECUTION

3.1 INSTALLATION OF ROOF HATCH:

- a. Install in accordance with the Drawings and Specifications, approved shop drawings and printed instructions of roof hatch manufacturer.
- b. Field painting of roof hatch is specified in Section 09 91 00.

END OF SECTION

SECTION 07 90 00
SEALANTS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Flashing and sheet metal (Section 07 62 00).

- b. Work Included This Section: Caulking and sealant work as shown on Drawings, as specified and as required for a watertight facility. Include all supplementary materials and installation accessories required for a complete and proper installation.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

American Society for Testing and Materials (ASTM)
American National Standards Institute (ANSI)

1.4 SUBMITTALS:

- a. Installation Instructions: Submit duplicate copies of manufacturer's written instructions for installation of sealants specified.
- b. Manufacturer's Data: Submit manufacturers printed data for the sealants specified. Data shall show test results of the physical properties of the materials. Submit all data regarding joint design bringing to the Architect's attention any conditions shown on the Drawings under which the specified material cannot be satisfactorily installed.
- c. Samples: Submit samples of the full range of manufacturer's colors for selection of project colors by the Architect. As specified in Part 2 of this Section, custom colors may be required at no additional cost to the Owner.
- d. Schedule of Colors: Submit schedule showing where selected colors of sealant are to be installed for approval by the Architect.
- e. Guarantee-Warranty:
 - 1. Submit guarantee-warranty on products and execution of sealant work required by this Section. Guarantee-warranty shall be submitted on applicator's company letterhead and shall be signed by an officer of the company. Guarantee-warranty shall be countersigned by the General Contractor.
 - 2. Warranty shall state that work complies with requirements of the Contract Documents.
 - 3. Guarantee shall state that work of this Section shall be repaired or replaced in case of failure and that any materials or finishes of the building damaged by failure of

work of the Section will be repaired or replaced. The guarantee period shall be 24 months following date of final acceptance. Repair or replacement shall be performed at no additional cost to the Owner.

- f. Compatibility and Adhesion Test Reports: From sealant manufacturer indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.5 QUALIFICATIONS:

- a. Source: Products for use on this Project shall be of one manufacturer unless noted specifically otherwise herein.
- b. Applicators: Submit letter from manufacturer of sealant materials stating that applicator is approved by the manufacturer for application of the materials specified for the Project. Letter shall certify that the applicator has satisfactorily applied the types of materials specified on projects which have been completed for at least 5 years. Letter shall be on manufacturer's letterhead and shall be signed by an officer of the company.

1.6 PRODUCT HANDLING:

- a. Delivery of Materials: Materials shall be delivered to the project site in manufacturer's original, unopened containers with manufacturer's brand name clearly marked thereon.
- b. Storage: Store containers in dry conditioned space.

1.7 ENVIRONMENTAL CONDITIONS:

- a. Do not apply sealant to materials whose surfaces are damp, wet or exceed the temperature requirements stated herein or recommended by the sealant manufacturer.
- b. Weather: No sealant materials shall be applied in wet weather nor when the threat of rain exists within 12 hours.
- c. Temperature: Shall be 40 degrees F. and rising or above with no chance of freezing until the sealant materials have had a chance to properly set up and dry. No sealant materials shall be applied when the air temperature is below 40 degrees F. unless surfaces are heated and dried by approved means.

PART 2: PRODUCTS

2.1 MATERIALS: Note that the words "Sealant" and "Caulking" are used interchangeably. Comply with locations specified for the various types of materials.

- a. Use the following sealants for general sealing and caulking work at locations other than specific locations itemized in Paragraph b. hereinafter. See Part 3 of this Section for required locations for the various types of sealants.
 - 1. Urethane Sealant:
 - (a) Compound shall be a multi-component non-sag urethane sealant. Compound shall meet ASTM C 920. Color will be selected by the Architect

to match adjacent materials and shall be a custom color at no additional cost to the Owner.

- (c) Compound shall be one of the following, or equal approved in writing by the Architect:

"Dynatrol II" as mfd. by Pecora Corp.

"Sikaflex-2C NS EZ Mix+" by Sika Corporation

2. Silicone Based Sealant:

- (a) Compound shall be a one-part, silicon-based sealant compound which meets the requirements of ASTM C 920. Color will be selected by the Architect to match adjacent materials and shall be a custom color at no additional cost to the Owner.

- (c) Compound shall be one of the following, or equal approved in writing by the Architect:

"790 Building Sealant" as mfd. by DOWSIL

"795 Building Sealant" as mfd. by DOWSIL

"864 Silicone" as mfd. by Pecora

"890 Silicone" as mfd. by Pecora

"Spectrum 2" as mfd. by Tremco

"Sikasil WS-305 AM" as mfd. by Sika

"Sikasil WS-395" as mfd. by Sika

3. Self-Leveling Type Sealant:

- (a) Compound shall be a two-part polyurethane based compound which meets the requirements of ASTM C 920. Color will be selected by the Architect.

- (b) Compound shall be one of the following, or equal approved in writing by the Architect:

"Urexpan NR-200" as mfd. by Pecora Corporation

"DynaTrol II-SG" as mfd. by Pecora Corporation

"Sikaflex-2C SL" by Sika Corporation

"Vulkem 445 SSL" by Tremco.

4. Latex Caulking Compound:

- (a) Caulking shall be an acrylic-latex compound and shall be one of the following, or equal approved in writing by the Architect. Color will be selected by the Architect to match adjacent materials and shall be a custom color at no additional cost to the Owner.

"AC-20 + Silicone" as mfd. by Pecora Corp.

"Tremflex 834" as mfd. by Tremco.

- b. Primer: Provide primer recommended by sealant manufacturer.
- c. Joint Sealant Backing:
 - 1. General: Provide sealant backings of material and type which are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 2. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonwaxing, nonextruding strips of flexible, nongassing plastic material described below, non-absorbant to water or gas, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
 - (a) Either open-cell polyurethane foam or closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer, for cold-applied sealants only.
 - 3. Elastomeric Tubing Joint Fillers: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, capable of remaining resilient at temperatures down to -26 deg F (-15 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.
 - 4. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

PART 3: EXECUTION

3.1 PROJECT INSPECTION:

- a. Prior to the application of any sealant compound, a manufacturer's representative shall visit the project site with the Contractor and the Architect and shall instruct the Contractor's applicator in the proper procedures of handling and applying their product to the materials involved. After application, the manufacturer's representative shall inspect the sealant work and shall notify the Architect in writing of his findings.
- b. Prime all surfaces prior to applying sealant.

3.2 LOCATIONS OF SEALANTS:

- a. Seal all joints of materials on the exterior of the building and where otherwise shown or required to provide a watertight installation. Seal interior joints as shown and specified. Install interior sealant and caulking work as shown and specified and in accordance with established standards of the trade.
- b. Unless otherwise specifically shown on the Drawings, the following types of caulking and sealant compounds shall be used in the following locations:
 - 1. Interior General Use - Latex Caulking Compound.
 - 2. Exterior General Use Not Specified Otherwise - Urethane Sealant.

3. Exterior Horizontal Pavement Expansion Joints - Self-Leveling Type Urethane Sealant.
4. Roof Flashing and Trim - Silicone or Urethane Sealant.
5. Metal, Glass and Other Nonporous Surfaces - Silicon Sealant.
6. Masonry, Concrete and Other Porous Surfaces - Urethane Sealant.

3.3 JOINTS:

- a. Joint tolerances and design shall be as recommended by the sealant manufacturer. Where joint dimensions and tolerances recommended by the sealant manufacturer are more restrictive than those specified herein, the manufacturer's requirements shall govern.
- b. Joints to receive silicone based sealants shall not be less than 1/4" in width nor greater than 5/8" in width. Sealant shall be installed to a thickness of 1/8" minimum and 1/8" maximum. Sealant shall be installed so that it adheres and bonds only to the sides of the joint and not to joint backing.
- c. Joints to receive urethane based sealants shall not be less than 1/4" nor more than 1/4" in width. Joint depth for joint widths up to 1/2" shall be the same as the joint width. For joints over 1/2" wide, joint depth shall be approximately 1/2 the width but not more than 1/2".
- d. Joints to receive self-leveling sealant shall not be less than 1/4" wide nor greater than 2". Joints depth shall not be less than 1/4" deep nor greater than 1" deep with full-joint depth filled with sealant.
- e. Interior caulking shall be installed only where shown on the Drawings or specified under the various Sections of these Specifications. Caulking of material joints to close construction errors or joints not shown on the Drawings shall be permitted only upon written approval by the Architect.
- f. Where shown on the Drawings or called for in the Specifications, latex caulking joints shall not be less than 1/4" nor greater than 1/2" with a depth of 1/2 the face width and with caulking material installed the full depth of the joint.
- g. Where joint depth exceeds that specified herein, fill with filler rod specified for specific sealant to provide proper depth.

3.4 PREPARATORY WORK:

- a. Clean all joints of all contaminants and impurities. Concrete form release agents, water repellents, concrete laitance, and other surface treatments and protective coatings are examples of materials which must be removed from the joint surfaces to obtain proper sealant adhesion.
- b. Porous substrates shall be cleaned where necessary by grinding, saw cutting, blast cleaning (sand or water), mechanical abrading or a combination of these methods as required to provide a sound clean surface for sealant application. Dust, loose particles, etc. shall be blown out of joints with oil-free compressed air or vacuum cleaned.
- c. Metal and glass surfaces shall be cleaned by wiping a solvent saturated clean cloth over only those surfaces to which sealant will be applied. A dry, clean cloth shall be used to remove the cleaning solvent from the surface.
- d. For plastic, painted and other coated surfaces, the manufacturer shall be consulted to determine the proper cleaning solvent.

- e. Greases, protective films and coatings, dust, oil, water, surface dirt and rust are examples of contaminants which must be removed.
- f. Cleaning of all surfaces shall be done on the same day in which the sealant is installed.

3.5 PRIMING:

- a. In addition to the recommended surface preparation steps, it may be necessary to prime concrete, masonry or other porous surfaces due to the extreme surface variability encountered on a job-to-job basis. If, in the opinion of the sealant manufacturer, joint surfaces are weak or contaminated, he shall recommend a primer for use with his sealant product to be applied on this Project.
- b. Apply primer only in accordance with each sealant manufacturer's printed recommendations.

3.6 APPLICATION OF JOINT FILLER:

- a. Joints where a backstop has not been provided shall be packed with a joint filler rod to within 1/2" of the surface.
- b. Install a breaker-strip of polyethylene film at back of joint where filler rod cannot be used to prevent bond of caulking or sealant compound to back of joint.

3.7 APPLICATION OF SEALANT:

- a. Install in strict accordance with manufacturer's printed instructions.
- b. Apply sealant compound with gun having proper size nozzle or with knife as required.
- c. See requirements of other Sections of these Specifications.
- d. Use sufficient pressure to fill all voids and joints solid and to engage compound to sides of joint. A superficial skin or fillet bead will not be acceptable.
- e. Remove excess compound and leave surfaces neat, smooth and clean. Joints shall be even and uniform in appearance and shall be watertight. Tool surface to produce good contact, to increase density and to improve appearance. Use masking tape to insure a neat appearance where required; mask only the protected area and remove before sealant begins to cure.
- f. Apply sealant compound in a continuous operation, horizontally in one direction and vertically from the bottom to the top. At framed openings, apply continuously around turns and corners to completely fill corners.
- g. At completion, all sealed or caulked surfaces shall present a neat appearance and all surrounding surfaces shall be left in a clean condition.
- h. All control joints shall be sealed. Seal control joints with traffic bearing sealant with a shore hardness of d40 and a minimum movement capacity of 20%. Sealant must be compatible with floor finishes. Where self-leveling sealant compound is used, the edges of the joint shall be protected by a non-staining, easily removed tape. After joint is filled with sealant compound, the tape shall be removed.

3.8 CLEAN-UP:

- a. Upon completion of work, remove all boxes, cartridges and other debris. Clean sealant spillage from all adjacent surfaces.

END OF SECTION

SECTION 080314
HISTORIC TREATMENT OF WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Historic treatment of wood doors in the form of the following:
 - a. Repairing wood doors and trim.
 - b. Replacing wood door units and trim with custom-fabricated replicated units.
 - c. Repairing, refinishing, and replacing hardware.

B. Related Requirements:

1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
2. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.
3. Section 090391 Historic Treatment of Plain Painting
4. Section 099100 Field Painting

1.2 UNIT PRICES

A. See Section 012200 "Unit Prices" for description of unit prices affecting Work of this Section.

1. Unit prices apply to authorized additions to and deletions from Work as authorized by Change Orders.

1.3 DEFINITIONS

- A. Door: Generally, this term includes door frame, leaves, hardware, side panels or lights, fan light, transom, storm and screen doors, and storm vestibule unless otherwise indicated by context.
- B. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.
- C. Wood Door Component Terminology: Wood door components for historic treatment work include the following classifications:
 1. Frame Components: Head, jambs, stop, and threshold or sill.
 2. Leaf Components: Stiles, rails, and muntins.
 3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
 4. Interior Trim: Casing.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood doors.
2. Review methods and procedures related to historic treatment of wood doors including, but not limited to, the following:
 - a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Fire-protection plan.
 - d. Wood door historic treatment program.

1.5 SEQUENCING AND SCHEDULING

- A. Perform historic treatment of wood doors in the following sequence, which includes Work specified in this and other Sections:
 1. Label each door frame with permanent opening-identification number in inconspicuous location.
 2. Tag existing door leaves, with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations of each component, such as "left-hand door leaf" and "right-hand reverse door leaf".
 3. Remove door, dismantle hardware, and tag hardware with door opening-identification numbers.
 4. In the shop, label each leaf with permanent opening-identification number in inconspicuous location and remove site-applied tags.
 5. Install temporary protection and security at door openings.
 6. Sort units by condition, separating those that need extensive repair.
 7. Clean surfaces.
 8. General Wood-Repair Sequence:
 - a. Remove paint to bare wood.
 - b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
 - c. Repair wood by consolidation, member replacement, partial member replacement, and patching.
 - d. Sand, prime, fill, sand again, and prime surfaces again for refinishing.
 9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
 10. Install glazing.
 11. Remove temporary protection and security at door openings.
 12. Reinstall units.
 13. Apply finish coats.
 14. Install remaining hardware and weather stripping.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.
- B. Shop Drawings: For locations and extent of wood-door repair and replacement work.

1. Include plans, elevations, sections, and details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood door, accessory items, and finishes.
2. Include field-verified dimensions and the following:
 - a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
 - b. Templates and directions for installing hardware and anchorages.
 - c. Identification of each new unit and its corresponding door locations in the building on annotated plans and elevations.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: Actual sample of finished products for the following, in manufacturer's standard sizes unless otherwise indicated:

1. Replacement Units: 12-inch-long, full-size frame, leaf, exterior trim, interior trim sections with applied finish.
2. Replacement Members: 12 inches long for each replacement member, including parts of frame, leaf, exterior trim, and interior trim.
 - a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.
3. Repaired Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Weather Stripping: 12-inch-long sections.

1.7 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Preconstruction Test Reports: For historic treatment of wood doors, identify species of wood used for existing doors.

B. Qualification Statements: For historic treatment specialist including workers.

C. Wood Door Historic Treatment Program: Submit before work begins.

1.8 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: A qualified historic wood door specialist, experienced in repairing, refinishing, and replacing wood doors in whole and in part. Experience only in fabricating and installing new wood doors is insufficient experience for wood-door historic treatment work.

- B. Wood Door Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.
 - 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

1.9 MOCKUPS

- A. Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation. Prepare mockups so they are inconspicuous.
 - 1. Locate mockups on existing wood materials where directed by Architect.
 - 2. Wood Door Repair: Prepare one entire door unit to serve as mockup to demonstrate Samples of each type of repair of wood door members including frame, leaves, trim, glazing, and hardware.
 - 3. 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.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.
- B. Store products inside a well-ventilated area, protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with historic treatment of wood doors only when existing and forecasted weather conditions are within environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD DOORS QUALITY STANDARD

- A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWMAC/WI's "North American Architectural Woodwork Standards" for construction, finishes, grades of wood doors, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in Section 12, Paragraph 6, "Industry Practices," under Article 12.1, "Basic Considerations," of AWMAC/WI's "North American Architectural Woodwork Standards" do not apply to the Work of this Section.

2.2 REPLACEMENT WOOD DOOR UNITS

- A. Replacement Wood Door Units: Custom-fabricated, replicated wood door units and trim with operating and latching hardware.
 1. Joint Construction: Joints matching existing.
 2. Wood Species: Match wood species of existing doors.
 3. Wood Cut: Match cut of existing wood door components.
 4. Wood Member and Trim Profiles: Match profiles and detail of existing door members and trim.
 5. Hardware: As selected by Client (covered by Allowance).
 6. Weather Stripping: Full-perimeter weather stripping for each exterior door leaf.

2.3 WOOD-REPLACEMENT MATERIALS

- A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.
 1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

2.4 GLAZING MATERIALS

- A. Glass:
 1. Uncoated, clear float glass, thickness to match existing door glazing.
- B. Glazing Systems:
 1. Traditional Glazing Products: Glazing points and oil-based glazing putty.
 - a. MultiGlaze and DualGlaze by Sarco Putty
 2. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.5 HARDWARE

- A. Primary Door Hardware, General: Provide complete sets of door hardware consisting of hinges, pulls, locks, latches, and accessories indicated for each door or required for proper operation. Sets to include replacement hardware to complement repaired and refinished, existing hardware. Door hardware to smoothly operate, tightly close, and securely lock wood doors and be sized to accommodate frequency of use, glazing weight, and dimensions.
- B. Replacement Hardware: Replace existing damaged or missing hardware with new hardware manufactured by one of the following:

1. Schlage, Baldwin, Corbin Russwin.

C. Material and Design:

1. Material: Solid bronze.
2. Design: Match style and appearance of existing hardware. Exact hardware to be selected by Client.
3. Replacement Door Hardware: Regardless of mechanisms within, replace existing, exposed door hardware of the following types:
 - a. Door knobs, levers, and escutcheons.
 - b. Door latches.
 - c. Surface-mounted flush bolts.
 - d. Handles.
 - e. Deadbolts and other locking mechanism required by Client.

D. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated by the following:

1. BHMA 605: Bright brass, clear coated; brass base metal.
2. BHMA 611: Bright bronze, clear coated; bronze base metal.

2.6 WEATHER STRIPPING

- A. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal door at head and jambs by door sliding against it or as two pieces that interlock; and completely concealed when door is closed.
- B. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage by decay fungi and wood-boring insects; containing no boric acid.
- C. Cleaning Materials:
1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate, 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
 2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.
- D. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure conditions.
- E. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.
1. Match fasteners in existing doors in material and type of fastener unless otherwise indicated.
 2. Use concealed fasteners for interconnecting wood components.
 3. Use concealed fasteners for attaching items to other work unless exposed fasteners are the existing fastening method.
 4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.

5. For exposed fasteners, use flat-head-type screws of head profile flush with metal surface unless otherwise indicated.
 6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.
- F. Anchors, Clips, and Accessories: Fabricate anchors, clips, and door accessories of nonmagnetic stainless steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.7 WOOD DOOR FINISHES

- A. Unfinished Replacement Units: Provide exposed exterior and interior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect adjacent materials from damage by historic treatment of wood doors.
- B. Clean wood doors and trim of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.
- C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

- A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the door interior at 5 ft. away and from the door exterior at 5 ft. away.
- B. General: In treating historic items, disturb them as minimally as possible and as follows:
1. Repair items in place where possible.
 2. Refinish repaired areas of historic wood doors.
- C. Repair and Refinish Existing Hardware (for doors as selected by Client): Dismantle door hardware; strip paint, repair, and refinish it to match finish Samples; and lubricate moving parts just enough to function smoothly.
- D. Repair Wood Doors as required to install new hardware (as selected by Client): Match existing materials and features, retaining as much original material as possible to perform repairs.
1. Repair wood doors with new wood matching existing wood.
 2. Repair wood doors by limited replacement matching existing material.
- E. Replace Wood Units: Where indicated, duplicate and replace units with units made with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials.

- F. Protection of Openings: Where doors are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.
- G. Identify removed doors, frames, leaves, trim, and members with numbering system corresponding to door locations to ensure reinstallation in same location. Key doors, frames, leaves, trim, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD DOOR MEMBER-REPLACEMENT REPAIR

- A. General: Replace parts of wood door members as required for installation of new hardware.
 - 1. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
 - 2. Secure new wood using multiple dowels or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners.
- B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.
- C. Glazing: Reglaze units before reinstallation.
- D. Reinstall units removed for repair into original openings.
- E. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter weather stripping for each exterior leaf.

3.4 GLAZING

- A. Comply with combined written instructions of glass and glazing material manufacturers, unless more stringent requirements are indicated.
- B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.
- C. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.
- D. Apply primers to joint surfaces where required for adhesion of glazing.
- E. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.
- F. Install glazing points.

3.5 WOOD DOOR UNIT REPLACEMENT

- A. General: Install new custom-fabricated replicated units at locations indicated on Drawings.
- B. Apply borate preservative treatment to accessible surfaces before finishing. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

- C. Mill glazed members to accommodate glass thickness. Glaze units before installation.
- D. Install units, hardware, weather stripping, accessories, and other components.
- E. Install units level, plumb, square, true to line, without distortion or impeding movement, anchored securely in place to structural support, and in proper relation to wall flashing, trim, and other adjacent construction.
- F. Set threshold or sill members in bed of sealant for weathertight construction unless otherwise indicated.
- G. Install door units with new anchors into existing openings.
- H. Install full-perimeter weather stripping for each operable exterior leaf.

3.6 INSTALLATION OF WEATHER STRIPPING

- A. Install weather stripping for tight seal of joints as demonstrated in mockup.

3.7 ADJUSTING

- A. Adjust existing and replacement operating leaves, screens, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.8 CLEANING AND PROTECTION

- A. Protect door surfaces from contact with contaminating substances resulting from construction operations. Monitor door surfaces for presence of dirt, stains, or other contaminants. If contaminating substances contact door surfaces, remove contaminants immediately.
- B. Clean exposed surfaces immediately after historic treatment of wood doors. Avoid damage to coatings and finishes. Remove excess sealants, glazing, dirt, and other substances.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

3.9 HISTORIC WOOD DOOR SCHEDULE

- A. Historic Wood Door 101/105: Salvaged from opening 109/111 and reinstalled in opening 101/105.
- B. New Wood Door 109/111: New half-glazed, exterior wood door. Design and materials to match existing doors. Hardware to be selected by Client.
- C. New Wood Door 101/107: New interior wood door. Design and materials to match existing doors. Hardware to be selected by Client.
- D. Historic Wood Doors, all existing: All hardware to be made easily operable. New hardware to be selected by Client. Doors shall be repaired as needed to accommodate new hardware -

plugging holes with matching wood and/or replacing entire stile of door with matching wood and profile.

END OF SECTION

SECTION 080352
HISTORIC TREATMENT OF WOOD WINDOWS

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 historic treatment of wood windows in the form of the following:
 - 1. Repairing wood windows and trim.
 - 2. Replacing wood window frames and sash units.
 - 3. Reglazing.
 - 4. Repairing, refinishing, and replacing hardware.
- B. Related Requirements:
 - 1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
 - 2. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.
 - 3. 090391 Historic Treatment of Plain Painting
 - 4. 099100 Field Painting

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."
 - 1. Unit prices apply to authorized additions to and deletions from Work as authorized by Change Orders.

1.4 DEFINITIONS

- A. Glazing: Includes glass, glazing points, and glazing putty.
- B. Window: Includes window frame, sash, and hardware.
- C. Wood Window Component Terminology: Wood window components for historic treatment work include the following classifications:
 - 1. Frame Components: Head, jambs, and sill.
 - 2. Sash Components: Stiles and rails, parting bead, stop, and muntins.
 - 3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
 - 4. Interior Trim: Casing, stool, and apron.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood windows.
 - 2. Review methods and procedures related to historic treatment of wood windows including, but not limited to, the following:
 - a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Fire-protection plan.
 - d. Wood window historic treatment program.

1.6 SEQUENCING AND SCHEDULING

- A. Perform historic treatment of wood windows in the following sequence, which includes work specified in this and other Sections:
 - 1. Label each window frame with permanent opening-identification number in inconspicuous location.
 - 2. Tag existing window sash with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations on window of each component, such as "top sash," "bottom sash."
 - 3. Remove window, dismantle hardware, and tag hardware with opening-identification numbers.
 - 4. Install temporary protection and security at window openings.
 - 5. In the shop, label each sash with permanent opening-identification number in inconspicuous location and remove site-applied tags.
 - 6. Sort units by condition, separating those that need extensive repair.
 - 7. Clean surfaces.
 - 8. General Wood-Repair Sequence:
 - a. Remove paint to bare wood.
 - b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
 - c. If thicker than original glass is required, rout existing muntins to required rebate size.
 - d. Repair wood by member replacement and partial member replacement.
 - e. Sand, prime, sand again, and prime surfaces again for refinishing.
 - 9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
 - 10. Install glazing.
 - 11. Remove temporary protection and security at window openings.
 - 12. Reinstall units.
 - 13. Apply finish coats.
 - 14. Install remaining hardware and weather stripping.

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood window, accessory items, and finishes.
2. Include field-verified dimensions and the following:
 - a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
 - b. Templates and directions for installing hardware and anchorages.
 - c. Identification of each new unit and its corresponding window locations in the building on annotated plans and elevations.
 - d. Provisions for flashing as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Units: 12-inch-long, full-size frame and sash sections with applied finish.
2. Replacement Members: 12 inches long for each replacement member, including parts of frame, sash, exterior trim, and interior trim.
 - a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.
3. Repaired Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Weather Stripping: 12-inch-long sections.
7. Glass: Full-size units of each type and appearance.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist, including workers.
- B. Wood Window Historic Treatment Program: Submit before work begins.
- C. Preconstruction Test Reports: For wood species of existing wood windows.

1.9 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: A qualified historic wood window specialist, experienced in repairing, refinishing, and replacing wood windows in whole and in part. Experience only in fabricating and installing new wood windows is insufficient experience for wood-window historic treatment work.
- B. Wood Window Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.
 - 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- C. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.
 - 1. Locate mockups on existing windows where directed by Architect.
 - 2. Wood Window Repair: Prepare one entire window unit to serve as mockup to demonstrate samples of each type of repair of wood window members including frame, sash, glazing, and hardware.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood windows.
 - 1. Identify wood species of existing windows.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products are not deformed, broken, or otherwise damaged.
- B. Store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.12 FIELD CONDITIONS

- A. Weather Limitations: Proceed with historic treatment of wood windows only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

- A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grades of wood windows, and other requirements unless otherwise indicated.
 - 1. Exception: Industry practices cited in Section 12, Article 1.5, Industry Practices, of the Architectural Woodwork Standards do not apply to the work of this Section.

2.2 REPLICATED WOOD WINDOW UNITS

- A. Replicated Wood Window Frames and Sash: Custom-fabricated replacement wood units and trim, with operating and latching hardware.
 - 1. Joint Construction: Joints matching existing.
 - 2. Wood Species: Match wood species of exterior window trim and sash parts.
 - 3. Wood Cut: Match cut of existing exterior wood window trim and sash parts.
 - 4. Wood Window Members and Trim: Match profiles and detail of existing window members and trim.
 - 5. Glazing Stops: Provide replacement glazing stops coordinated with glazing system indicated.
 - 6. Exposed Hardware: Reuse or match existing exposed window hardware.
 - 7. Weather Stripping: Full-perimeter and meeting rail weather stripping for each operable sash.

2.3 WOOD-REPLACEMENT MATERIALS

- A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.
 - 1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.
- B. Frame Heads and Jambs and Exterior Trim: Match existing species.
- C. Exterior Trim: Match existing species.
- D. Sills: Match existing species.
- E. Sash Components: Match existing species.

- F. Interior Trim: Match existing species.

2.4 GLAZING MATERIALS

- A. Glass:
 - 1. Uncoated, clear float glass, thickness to match existing window glazing.
- B. Glazing Systems:
 - 1. Traditional Glazing Products: Glazing points and oil-based glazing putty.
 - a. MultiGlaze and DualGlaze by Sarco Putty
 - 2. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.5 HARDWARE

- A. Window Hardware: Provide complete sets of window hardware consisting of sash balances, hinges, pulls, latches, and accessories indicated for each window or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished, existing hardware. Window hardware shall smoothly operate, tightly close, and securely lock wood windows and be sized to accommodate sash or ventilator weight and dimensions.
- B. Other Hardware: Provide complete sets of hardware for each type of consisting of hinges, pulls, latches, and accessories indicated or required for proper operation. Hardware shall smoothly operate, tightly close, and secure units appropriately for unit weight and dimensions.
- C. Replacement Hardware: Replace existing damaged or missing hardware with new hardware to match existing.
- D. Material and Design:
 - 1. Material: Cast bronze.
 - 2. Design: Match type and appearance of existing hardware.
 - 3. Weight and Pulley Sash-Balance: Concealed weight and pulley balance system including steel or cast iron weights, cast-bronze pulleys, and sash cord/chain to match existing; size and capacity to hold sash stationary at any open position.

2.6 WEATHER STRIPPING

- A. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal by sliding into a groove in the sash or as two pieces that interlock; and completely concealed when window is closed.

2.7 MISCELLANEOUS MATERIALS

- A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed

wood from further damage by decay fungi and wood-boring insects; complying with AWWA P5; containing no boric acid.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

C. Adhesives: Wood adhesives for exterior exposure, with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use flat-head screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of nonmagnetic stainless steel, complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.8 WOOD WINDOW FINISHES

A. Unfinished Replacement Units: Provide exposed wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect adjacent materials from damage by historic treatment of wood windows.
- B. Clean wood windows of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.
- C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

- A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the window interior at 5 feet away and from the window exterior at 20 feet away.
- B. General: In treating historic items, disturb them as minimally as possible and as follows:
 - 1. Stabilize and repair wood windows to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
 - 2. Remove coatings and apply borate preservative treatment before repair. Remove coatings according to Section 099100 "Field Painting" unless otherwise indicated.
 - 3. Repair items in place where possible.
 - 4. Install temporary protective measures to protect wood window work that is indicated to be completed later.
 - 5. Refinish historic wood windows according to Section 099100 "Field Painting" unless otherwise indicated.
- C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods such as sanding, wire brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.
- D. Repair and Refinish Existing Hardware: Dismantle window hardware; strip paint, repair, and refinish it to match finish samples; and lubricate moving parts just enough to function smoothly.
- E. Repair Wood Windows: Match existing materials and features, retaining as much original material as possible to perform repairs.
 - 1. Unless otherwise indicated, repair wood windows by splicing or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
 - 2. Where indicated, repair wood windows by limited replacement matching existing material.
 - 3. Sash Weights: Repair sash weights to function according to type as specified in "Hardware" Article" above. Provide missing sash weights.
- F. Replace Wood Units: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.
- G. Protection of Openings: Where sash or windows are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.
- H. Identify removed windows, frames, sash, and members with numbering system corresponding to window locations to ensure reinstallation in same location. Key windows, sash, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD WINDOW MEMBER-REPLACEMENT REPAIR

- A. General: Replace parts of or entire wood window members at as required.

1. Remove sash from windows before performing member-replacement repairs unless otherwise indicated.
 2. Verify that surfaces are sufficiently clean and free of paint residue before repair.
 3. Remove broken, rotted, and decayed wood down to sound wood.
 4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
 5. Secure new wood using multiple dowels or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners.
- B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.
- C. Clean spilled materials from adjacent surfaces immediately.
- D. Glazing: Reglaze units before reinstallation.
- E. Reinstall units removed for repair into original openings.
- F. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter and meeting rail weather stripping for each operable sash.

3.4 GLAZING

- A. Comply with combined written instructions of manufacturers of glass, glazing systems, and glazing materials, unless more stringent requirements are indicated.
- B. Remove glass and glazing from openings and prepare surfaces for reglazing.
- C. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.
- D. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.
- E. Install back bead against stop in glazing rabbets before setting glass.
- F. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.
- G. Install glazing points.
- H. Glaze with traditional oil-based putty. Let putty fully set (approximately two weeks) before moving or painting.
- I. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.5 WOOD WINDOW UNIT REPLACEMENT

- A. General: Replace existing wood window frame and sash units with new custom-fabricated units to match existing at locations where damage is too extensive to repair.

- B. Apply borate preservative treatment to accessible surfaces before finishing. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.
- C. Mill glazed members to accommodate glass thickness. Glaze units before installation.
- D. Install units, hardware, weather stripping, accessories, and other components.
- E. Install units level, plumb, square, true to line, without distortion or impeding movement; anchored securely in place to structural support; and in proper relation to wall flashing, trim, and other adjacent construction.
- F. Set sill members in bed of sealant for weathertight construction unless otherwise indicated.
- G. Install window units with new anchors into existing openings.
- H. Weather Stripping: Install full-perimeter and meeting rail weather stripping for each operable sash.
- I. Disposal of Removed Units: Remove from Owner's property and legally dispose of them.

3.6 WEATHER STRIPPING INSTALLATION

- A. Install weather stripping for tight seal of joints as determined by preconstruction testing and demonstrated in mockup.

3.7 ADJUSTING

- A. Adjust existing and replacement operating sash, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.8 CLEANING AND PROTECTION

- A. Protect window surfaces from contact with contaminating substances resulting from construction operations. Monitor window surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact window surfaces, remove contaminants immediately.
- B. Clean exposed surfaces immediately after historic treatment of wood windows. Avoid damage to coatings and finishes. Remove excess glazing materials, dirt, and other substances.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction.

3.9 HISTORIC WOOD WINDOW SCHEDULE

- A. Historic Double-Hung Wood Windows:

1. General: Repair existing wood windows using indicated treatments. Repair sash off-site and frame on-site.
2. Removal of Existing Paint and Refinishing: See Sections 090391 Historic Treatment of Plain Painting and 099100 Field Painting, for paint removal, surface preparation for refinishing, and refinishing historic wood windows.
3. Window Frame Repair: Whole or partial member-replacement repairs and re-anchor frame.
4. Window Frame Member Repair: Repair head, jambs, and sill with whole or partial member-replacement repairs. Re-anchor and realign the head, jambs, and sill.
5. Window Sash Repair: Whole or partial member-replacement repairs.
6. Window Sash Member Repair: Repair stile, rails, parting bead, stop, and muntins with whole or partial member-replacement repairs. Realign stiles, rails, parting bead, and stops.
7. Window Sash Replacement: Remove existing units for replacement with custom-fabricated, replicated units.
8. Hardware: Sash balance, window lock/latch, window lift/handle.

END OF SECTION

SECTION 08 71 40
DOOR HARDWARE (ALLOWANCE)

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Rough hardware required for attaching work specified in other Sections is specified under that specific Section.
2. Hardware for cabinetwork (Section 06 41 00).
3. Historic treatment of wood doors (Section 08 03 14).
4. Installation of hardware (Section 06 20 00).

b. Work Included This Section:

1. Furnish and install finish hardware as specified herein.

1.3 SUBMITTALS:

a. Hardware Schedule:

1. Submit to Client a Schedule of Hardware. Submit 4 copies for Client's approval until approval is obtained. Furnish necessary copies (after approval) for construction.
2. Schedule shall indicate type of hardware, abbreviation of manufacturer's name at each item; manufacturer's catalog number, size, finish, and location of each item; size, and hand of doors.
4. Receive written approval from Client on submitted schedule prior to ordering or fabricating hardware.
5. Sample Schedule Format:

Set HW-1. Door No. 101

<u>Key Set</u>		<u>Hand</u>			
AA1		RHR			
		<u>Screws</u>	<u>Fin.</u>	<u>Mfr.</u>	
1	1 1/2 pr. Butts	BB1279-4 1/2 x 4 1/2	MS	P	HA
1	Lock	770508 x WBS	MS	32D	SA
1	Door Closer	54-R-0	TB	EN	SA
1	Kick Plate	8 x 34	WS	32D	BR
1	Wall Stop	408S	TB	32D	IV
3	Door Silencers	GJ64			GJ

b. Manufacturer's Data:

1. Submit (in duplicate) manufacturer's printed descriptive data (legible Xerox copies of catalog pages are acceptable) of all hardware proposed.

c. Samples:

1. Submit samples as requested by the Designer.

1.4 PRODUCT HANDLING:

a. Receiving and Storage:

1. Provide adequate locked storage space for assembling and grouping hardware before distribution and installation.
2. Properly tag, index and file all keys. Turn them over to Owner in the same orderly condition and at a time to be established by the Designer.

PART 2: PRODUCTS

2.1 MATERIALS:

a. Cash Allowances:

1. Door hardware is to be furnished under the following cash allowances:
 - (a) Wood Doors: \$500.00 per leaf
2. If the actual cost is more than or less than the allowance, the Contract Price will be adjusted up or down accordingly when the actual cost is determined. Adjustments in the Contract Price will be made by Change Order in accordance with the General and Supplementary General Conditions of the Contract.
3. Allowance figures include costs of materials delivered to the site and all applicable taxes. The allowance figures do not include Contractor's overhead and profit, on-site handling costs and installation labor costs; which shall be included in the General Contractor's Contract Price in addition to the allowance amount.
4. The Designer and Owner will make the selection of hardware covered by the Allowances.

PART 3: EXECUTION

3.1 LOCATION:

- a. The location of hardware in connection with doors and frames shall be as follows, unless shown otherwise on Drawings or specified otherwise herein.
 1. Door Knobs: Centerline of knob 3'-2" above finished floor.
 2. Door Pulls: Centerline of grip 3'-6" above finished floor.
 3. Push Plate: Centerline of plate 3'-9" above finished floor.
 4. Push Bars: Centerline of bar 3'-6" above finished floor.
 5. Exit Device: Centerline of push bar 3'-0" above finished floor.
 6. Flush Bolts: Centerline of bolt-operating mechanism at 1'-0" above finish floor for bottom bolt and 1'-0" below top of door for top bolt.
 7. Deadlocks: Centerline of cylinder 5'-0" above finished floor.

8. Hinges: Lower edge of bottom hinge 10" above finished floor. Upper edge of top hinge 5" below head of frame. Center hinges spaced equal distance between top and bottom hinge.

3.2 INSTALLATION:

- a. Install hardware accurately fitted, securely applied and carefully adjusted. Install in accordance with manufacturer's printed instructions. Use care not to injure other work when installing.
- b. Secure thresholds in place with 1/4" diameter countersunk screws and lead expansion shields. Provide screws and lead expansion shields. Provide screws at each end and at intermediate points 12" apart. Bed thresholds in caulking compound. Cut or countersink thresholds at double doors to receive door bolts.
- c. When required, remove and replace doors so that door bottoms and tops may be painted.
- d. Remove all visible hardware before painting is begun where such hardware cannot be taped and/or masked off until painting is completed.
- e. Prior to completion of building, examine all doors and other movable parts. Adjust as required. Leave hardware in good working order.
- f. See Section 06200 - Finish Carpentry for other requirements regarding installation of hardware.

3.3 SERVICE:

- a. Hardware supplier shall hold a pre-installation conference with the hardware installer to explain hardware types and installation procedure.
- b. Hardware supplier shall visit the Project Site after hardware installation and before final inspection to adjust all hardware and to determine that hardware is in good working condition.

END OF SECTION

SECTION 090320
HISTORIC TREATMENT OF PLASTER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Repair and replacement of interior lime-gypsum plaster, to match existing.
- B. Related Requirements:
 - 1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
 - 2. Section 061000 "Rough Carpentry" for wood framing, grounds, and furring that support lath and plaster.
 - 3. Section 090391 "Historic Treatment of Plain Painting"
 - 4. Section 099100 "Field Painting"

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of plaster.
 - 2. Review methods and procedures related to historic treatment of plaster including, but not limited to, the following:
 - a. Verify historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, and sequencing.
 - c. Fire-protection plan.
 - d. Plasterwork historic treatment program.

1.4 SEQUENCING AND SCHEDULING

- A. Perform historic treatment of plaster in the following sequence, which includes work specified in this and other Sections:
 - 1. Dismantle existing surface-mounted objects and hardware that overlie plaster surfaces except items indicated to remain in place. Tag items with location identification and protect.
 - 2. Verify that temporary protections have been installed.
 - 3. Examine condition of plaster surfaces.
 - 4. Clean plaster surface and remove paint and other finishes to the extent required.

5. Repair and replace existing plaster and supports to the degree required for a uniform, tightly adhered surface on which to paint or apply other finishes.
6. Cure repaired surfaces and allow them to dry for proper finishing.
7. Paint and apply other finishes.
8. Reinstall dismantled surface-mounted objects and hardware unless otherwise indicated.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include recommendations for product application and use.
- B. Samples for Verification: For the following products:
 1. Linear Moldings: 24-inch-long section of each configuration wet-applied molding with finished joint. Show complete pattern and applied nonlinear cast-plaster shapes, if any.
 2. Wood Lath: 18-inch-long section.
 3. Accessories: Each type in manufacturer's standard size.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified historic treatment specialist.
- B. Plasterwork Historic Treatment Program: Submit 30 days prior to scheduled start date for plasterwork. No work shall begin until program is approved by Architect.

1.7 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: A qualified historic plastering specialist with expertise in matching and performing the types of historic plasterwork repairs required. Experience only in installing and repairing new plasterwork, veneer plaster, or gypsum board is insufficient experience for historic treatment work.
- B. Plasterwork Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work and protection of surrounding materials and Project site.
 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- C. Mockups: Prepare mockups of historic treatment processes for each type of plaster repair and reconstruction work to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
 1. Locate mockups on existing surfaces where directed by Architect.
 2. Number and Size: Two ceiling surfaces of at least 50 sq. ft. or approximately 48 inches in least dimension to represent surfaces and conditions for application of each type of plaster repair and reconstruction under same conditions as the completed Work. Include at least the following:
 - a. Patch 10-sq. ft. area of wet-applied plaster replacement.
 - b. Install 3 linear ft. of wet-applied plaster molding.

- c. Repair 3 linear ft. of plaster cracks.
- d. Reattach 4-sq. ft. area of delaminated plaster that has not fallen.
- 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
- 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store materials on elevated platforms, under cover, and in a dry location with ambient temperatures continuously maintained at not less than 45 deg F.
- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store materials not in use in tightly covered containers.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.9 FIELD CONDITIONS

- A. Comply with plaster-material manufacturers' written instructions.
- B. Temperatures: Maintain temperatures in work areas at not less than 55 deg F or greater than 80 deg F for at least seven days before application of plaster, continuously during application, and for seven days after plaster has set or until plaster has dried.
- C. Conditioning: Acclimatize cast-plaster fabrications to ambient temperature and humidity of spaces in which they are installed. Remove packaging and move units into installation spaces not less than 48 hours before installing them.
- D. Avoid conditions that result in plaster drying out too quickly.
 - 1. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
 - 2. Maintain relative humidity levels for prevailing ambient temperature that produce normal drying conditions.
 - 3. Ventilate work areas in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.

PART 2 - PRODUCTS

2.1 GYPSUM PLASTER MATERIALS

- A. Gypsum Materials:
 - 1. Gypsum Neat Plaster: ASTM C28/C28M for use with job-mixed aggregates.
 - 2. Gypsum Gaging Plaster: ASTM C28/C28M.

- 3. Gypsum Keene's Cement: ASTM C61/C61M.
- B. Hydrated Lime: ASTM C206, Type S or Type N.
- C. Aggregates:
 - 1. Aggregate for Base-Coat Plasters: ASTM C35, sand.
 - 2. Aggregate for Float Finishes: ASTM C35, sand; graded per ASTM C842.

2.2 LATH

- A. Wood Lath: 1/4 inch by 1-1/4 inch sound, straight-grained, wood strips

2.3 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fasteners for Attaching Lath to Substrates:
 - 1. For Wood Lath: ASTM C841 requirements for wood-floor-runner or wood-furring fasteners.
- C. Plaster-Stabilization Materials: Acrylic emulsion(s) and related installation products shall have proven effectiveness in reattaching delaminated plaster and shall have been used previously by historic treatment specialist with successful results.
 - 1. Acrylic Emulsion(s), General: Aqueous emulsion(s) of acrylic polymer, adhesive to plaster and plaster substrates, nontoxic, and non-reemulsifiable after curing.
 - 2. Prewet Solution: Low-viscosity acrylic emulsion.
 - 3. Adhesive: Thickened acrylic emulsion; thickener as recommended in writing by resin manufacturer and historic treatment specialist.
- D. 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. Little 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 do the following:
 - a. Remove, alter, or in any way harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
 - b. Leave an unintended residue on surfaces.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT OF PLASTER, GENERAL

- A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from building interior at 5 feet away from surface.

- B. General: In treating historic plaster, disturb it as minimally as possible and as follows:
 - 1. Dismantle loose, damaged, or deteriorated plaster, lath, and support systems that cannot be repaired.
 - 2. Verify extent of plaster deterioration against that indicated on Drawings. Consult Architect on types and extent of required work.
 - 3. Verify that substrate surface conditions are suitable for repairs.
 - 4. Provide lath, furring, and support systems for plaster included in the work of this Section.
 - 5. Replace lost details in new, wet-applied plaster that replicate existing or indicated plaster configurations.
 - 6. Leave repaired plasterwork in proper condition for painting or applying other finishes as indicated.
 - 7. Install temporary protective measures to protect historic surfaces that shall be treated later.
- C. Illumination: Perform plastering work with adequate, uniform illumination that does not distort the flatness or curvature of surfaces.

3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate and environmental conditions, installation tolerances, and other conditions affecting performance of the Work.
 - 1. If existing substrates cannot be prepared to an acceptable condition for plastering work, notify Architect in writing.
 - 2. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
- B. Begin historic plastering work only after unsatisfactory conditions have been corrected.

3.3 PREPARATION FOR PLASTERING

- A. Substrates: Prepare according to plaster manufacturer's written instructions and as follows:
 - 1. Clean surfaces to remove dust, loose particles, grease, oil, incompatible curing compounds, form-release agents, and other foreign matter and deposits that could impair bond with plaster.

3.4 PLASTER REMOVAL AND REPLACEMENT, GENERAL

- A. Dismantle plaster that is damaged or deteriorated. Carefully dismantle areas along straight edges that lie over supports, without damaging surrounding plasterwork.
- B. Maintain lath and supporting members in an undamaged condition so far as practicable. Dismantle damaged lath and supports that cannot be repaired or resecured and replace with new work of same type.
- C. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.

- D. Do not deviate more than plus or minus 1/8 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
- E. Clean substrate surfaces to remove grease, waxes, oils, waterborne staining, debris, and other foreign matter and deposits that could impair bond with repair material.
- F. Wet wood lath before plaster application. Keep substrate damp to the touch but without visible water droplets.
- G. Wet remaining plaster abutting the replacement plaster before installing new plasterwork.
- H. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

3.5 FLAT GYPSUM-PLASTER REMOVAL AND REPLACEMENT

- A. General: Dismantle deteriorated plaster to existing sound plaster. Use replacement plaster mixes of gypsum, lime, and aggregate; and application according to ASTM C842 unless otherwise indicated.
 - 1. Inspect for lath deterioration. If any, replace lath.
 - 2. Sand bonding surfaces of repair area, and clean the surface with a nonmetallic bristle brush.
 - 3. Wet substrate to damp condition, but without visible water droplets, then install new plaster to original profiles.
- B. Gypsum-Plaster Base Coats:
 - 1. Base Coats over Wood Lath: Gypsum neat plaster, lime, and job-mixed sand, to match strength and consistency of existing plaster base coats.
- C. Gypsum-Plaster Finish Coats:
 - 1. Finish-Coat Mix for Float Finishes: Gypsum gaging plaster or Gypsum Keene's cement and lime, to match strength and consistency of existing plaster finish coat.
- D. Gypsum-Plaster Finishes:
 - 1. Provide float finish. Apply in three layers totaling thickness of existing plaster being repaired.

3.6 REMOVING AND INSTALLING LATH AND ACCESSORIES

- A. General: Dismantle existing plaster as necessary to expose deteriorated lath, back to firm substrates and supports. Repair with new materials, well secured to existing lath in good condition and to building structure.
 - 1. Cutting: Cut lath so it can be taken out completely from one support to the next. Cut to avoid cracking surrounding plaster.
 - 2. Cut out existing base-coat plaster beyond the edges of the new lath to permit new plaster to extend onto the old lath. Then step subsequent plaster coats to permit new plaster to extend over the old material.
 - 3. Fasten new lath to support system and to good existing lath.
 - 4. Install new lath.

- B. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, and other deteriorated items.
- C. Wood Lath: Install wood lath in same orientation and spacing as remaining wood lath and with lath ends supported by furring or framing. Stagger ends of adjacent laths over different supports, not aligned, and secure with fasteners at each end and spaced a maximum of 24 inches o.c. into supports.

3.7 PATCH-TYPE REPAIR

- A. General: Patch voids, fractured surfaces, and crushed areas in otherwise sound plaster that are larger than cracks.
 - 1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
 - 2. Inspect for deterioration of supporting plaster and lath, and repair or replace deteriorated material as required for a sound substrate.
 - 3. Rake perimeter of hole to sound plaster, and slightly undercut existing plaster to enable replacement plaster to tuck behind existing plaster.
 - 4. Replace missing lath in kind.
 - 5. Clean hole to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the plaster, enlarge the hole to remove these deposits.
 - 6. Wet substrate to damp condition, but without visible water droplets, then install patch material to original profiles.
 - 7. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Gypsum-Plaster Mix: Gypsum neat plaster, lime, and job-mixed sand, applied in two coats.
- C. Finishing: Finish flat surfaces flush and with same texture as adjacent existing plaster. For molded plaster shapes, tool surface to restore the sharp edges and the shape of the molded shape to original contours.
- D. Hairline cracking within the plaster or plaster separation at edge of a patch is unacceptable. Completely dismantle such work and reinstall or repair.

3.8 LARGE CRACK REPAIR

- A. General: Repair cracks over 1/32 inch in width in otherwise sound plaster.
 - 1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
 - 2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Open crack to at least 1/8 inch in width and full depth with V-groove tool, and check for bond separation or lath deterioration.
- C. Abrade side surfaces of crack and remove inner crack debris by gouging (keying) the inside area of the crack.
- D. Clean out crack to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other

foreign matter and deposits that could impair bond with repair material have penetrated into the plaster, widen the crack to remove these deposits.

- E. Wet substrate to damp condition, but without visible water droplets.
- F. Install finish-coat plaster to fill crack to original plaster profile.
- G. Finishing: Finish flat surfaces flush and with same texture as adjacent existing plaster. For molded plaster shapes, tool surface to restore the sharp edges and the shape of the molded shape to original contours.
- H. Offset Cracks: If the crack is offset in surface plane by more than 1/8 inch, dismantle the plaster on each side of the crack, a minimum width of 6 inches and down to the lath or other substrate. Then, repair as specified for flat-plaster removal and replacement.

3.9 REATTACHMENT OF DELAMINATED PLASTER

- A. General: Reattach plaster that has detached from its wooden lath.
 - 1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
 - 2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Verify extent of detachment of plaster that has not yet fallen by tapping on plaster surface and evaluating the hollow or solid resonance.
- C. Protect floors from spillage and debris in the vicinity of work. Use materials resistant to the passage of fluids used in work.
- D. Drill 1/4-inch injection ports (holes) through the plaster spaced 3 to 6 inches apart over surface of detached plaster. Dislodge loose plaster particles, and vacuum debris from holes.
- E. Prewet injection ports, gaps at edges of lost plaster, back of plaster, and wooden lath with prewet solution.
- F. Inject adhesive into ports, enough to fill gaps between detached plaster and lath, and inject into gaps at edges of lost plaster.
- G. Clean off excess and smeared adhesive while wet.
- H. Apply temporary battens over surface of treated plaster to prevent further separation during repair work. Secure battens in place against plaster with braces supported from floor.
- I. Maintain temporary battens in place for a week or more, allowing adhesive to coalesce and dry.
- J. Remove battens, patch holes and missing plaster, and repair cracks.

3.10 CLEANING AND PROTECTION

- A. Protect work of other trades against damage. Promptly remove plaster from surfaces not indicated to be repaired or plastered. Do not scratch or damage finished surfaces.

- B. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.
- C. Correct damage to other historic surfaces and to new work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. Remove temporary protection and enclosure of other work.

END OF SECTION

SECTION 090391
HISTORIC TREATMENT OF PLAIN PAINTING

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 historic treatment of plain painting as follows:
 - 1. Removing existing paint.
 - 2. Preparation for field painting of historic surfaces, including staining and varnishing of historic wood.
- B. Related Requirements:
 - 1. Section 013591 Historic Treatment Procedures
 - 2. Section 050385 Historic Treatment of Decorative Formed Metal
 - 3. Section 060312 Historic Wood Repair
 - 4. Section 080314 Historic Treatment of Wood Doors
 - 5. Section 080352 Historic Treatment of Wood Windows
 - 6. Section 090320 Historic Treatment of Plaster
 - 7. Section 099100 Field Painting

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of painting.
 - 2. Review methods and procedures related to historic treatment of painting including, but not limited to, the following:
 - a. Verify historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, colors, patterns, and sequencing.
 - c. Fire-protection plan.
 - d. Plain painting historic treatment program.

1.4 SEQUENCING AND SCHEDULING

- A. Perform historic treatment of painting in the following sequence, which includes work specified in this and other Sections:
 - 1. Dismantle existing surface-mounted objects and hardware except items indicated to remain in place. Tag items with location identification and protect.
 - 2. Verify that temporary protections have been installed.
 - 3. Examine condition of surfaces to be painted.
 - 4. Remove existing paint to the degree required for each substrate and surface condition of existing paint.
 - 5. Apply paint system.
 - 6. Reinstall dismantled surface-mounted objects and hardware unless otherwise indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist.
- B. Plain Painting Historic Treatment Program: Submit before work begins.

1.6 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: A qualified historic painting specialist with expertise in matching and touching up existing painting. Experience only in new painting work is insufficient experience for historic treatment work.
- B. Plain Painting Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site and control of runoff during cleaning, paint removal, repainting, and other processes.
 - 1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- C. Mockups: Prepare mockups of historic treatment processes for each type of coating system and substrate indicated and each color and finish required to demonstrate aesthetic effects and to set quality standards for materials and execution. Duplicate appearance of approved Sample submittals.
 - 1. Locate mockups on existing surfaces where directed by Architect.
 - 2. Surface-Preparation Mockups: On existing surfaces using applicable specified methods of cleaning and other surface preparation, provide mockup sample of at least 100 sq. ft.
 - 3. Coating Mockups: Two mock-ups to represent surfaces and conditions for application of each type of coating system under same conditions as the completed Work.
 - a. Plain painted surfaces.
 - b. Stained or natural wood.
 - 4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 FIELD CONDITIONS

- A. Concealed and undocumented historic items, murals, and similar objects encountered during historic treatment remain Owner's property. Carefully protect each item or object.
 1. Coordinate with Architect, who will establish special procedures for protection.

PART 2 - PRODUCTS

2.1 PREPARATORY CLEANING MATERIALS

- A. Water: Potable.
- B. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for every 5 gal. of solution required.
- C. Mildewcide: Commercial proprietary mildewcide or a job-mixed solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

2.2 PAINT, GENERAL

- A. Material Compatibility:
 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. Colors: As selected by Client from full range of industry colors.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT OF PAINTING, GENERAL

- A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from building interior at 5 feet away from painted surface and from building exterior at 5 feet away from painted surface.
- B. Execution of the Work: In treating historic items, disturb them as minimally as possible and as follows:
 1. Remove failed coatings and repaint.
 2. Verify that substrate surface conditions are suitable for painting.

3. Allow other trades to repair items in place and retain as much original material as possible before repainting.
- C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and lightly hand sanding, that will not abrade softer substrates, reducing clarity of detail. Do not use abrasive methods such as rotary sanding, rotary wire brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.
- D. Heat Processes: Do not use torches, heat guns, or heat plates.

3.2 EXAMINATION

- A. Examine substrates and conditions, with historic treatment specialist present, for compliance with requirements for maximum moisture content and other conditions affecting performance of painting work. Comply with paint manufacturer's written instructions for inspection.
- B. Maximum Moisture Content of Substrates: Do not begin application of coatings unless moisture content of exposed surface is below the maximum value recommended in writing by paint manufacturer and not greater than the following maximum values when measured with an electronic moisture meter appropriate to the substrate material:
 1. Plaster: 12 percent.
 2. Wood: 15 percent.

3.3 PREPARATORY CLEANING

- A. General: Use only the gentlest, appropriate method necessary to clean surfaces in preparation for painting. Clean all surfaces, corners, contours, and interstices.
- B. Detergent Cleaning: Wash surfaces by hand using clean rags, sponges, and bristle brushes. Scrub surface with detergent solution and bristle brush until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet. Rinse with water applied by clean rags or sponges.
- C. Mildew: Clean off existing mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. Rinse with water applied by clean rags or sponges.

3.4 PAINT REMOVAL

- A. General: Remove paint where indicated. Where cleaning methods have been attempted and further removal of the paint is required because of incompatible or unsatisfactory surfaces for repainting, remove paint to extent required by conditions.
- B. Paint Removal with Hand Tools: Remove paint manually using hand-held scrapers, wire brushes, sandpaper, and metallic wool as appropriate for the substrate material. Do not use other methods except as indicated as part of the historic treatment program and as approved by Architect.

3.5 PAINTING:

- A. See Section 099100 Field Painting.

END OF SECTION

SECTION 09 29 00
GYPSUM DRYWALL

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Wood framing, furring, and blocking (Section 06 10 00).
- 2. Painting (Section 09 91 00).

b. Work Included This Section:

- 1. Gypsum wallboard partitions, ceilings and elsewhere as indicated or specified.
- 2. All trim work and other accessories required for a complete and finished installation.

1.3 SUBMITTALS:

a. Manufacturer's Data: Submit in duplicate.

- 1. Manufacturer's technical data on materials and instructions for installing gypsum wallboard partitions and ceilings including light gauge metal framing.

1.4 PRODUCT HANDLING:

a. Delivery and Storage:

- 1. Deliver products in original wrapping and containers with labels intact.
- 2. Store gypsum products as recommended by manufacturer to prevent damage and wetting.

PART 2: PRODUCTS

- 2.1 MANUFACTURERS: To identify type and quality of materials and workmanship intended, specifications are based on the products of manufacturers listed. Products and systems as manufactured by the listed companies will be acceptable when submittals specified hereinafter are approved by Architect in writing.

a. Gypsum Board and Related Products:

Gypsum Division of Georgia-Pacific
National Gypsum Company
United States Gypsum Company (USG)
American Gypsum
Pabco Gypsum
CertainTeed

2.2 MATERIALS:

- a. Gypsum Wallboard: Provide thicknesses shown on the Drawings. For locations of the various types, see paragraph titled "Locations" in Part 3 of this Section.
 - 1. Standard Wallboard: USG Sheetrock SW, with tapered edges.
 - 2. Water Resistant Wallboard: USG Sheetrock W/R Gypsum Panels.
 - 3. Gypsum Wallboard with Vapor Barrier: Aluminum Foil-Back USG Sheetrock with vapor permeability not to exceed 0.06 perm per ASTM C 355.
- b. Screws:
 - 1. Wallboard: As recommended by manufacturer for specific application.
- c. Metal Trim: No. 200A or 200B as shown.
- d. Corner Bead: Dur-A-Bead No. 103.
- e. Joint Compound:
 - 1. For Cementing Tape: Durabond 90.
 - 2. For Fill Coats: Ready Mixed Joint-Compound All-Purpose.
- f. Joint Tape: Perf-A-Tape.
- g. Wallboard Adhesive: Durabond 90 for double layer wallboard application.
- h. Caulking Compound/ Acoustical Sealant: USG Acoustical Sealant.

PART 3: EXECUTION

3.1 PRE-INSTALLATION MEETING:

- a. Approximately one week prior to commencement of work, Contractor is to schedule a pre-installation meeting.
- b. Meet at the site with drywall installer, Architect, Owner and other representatives directly concerned with performance of the work.
- c. Contractor is to conduct the meeting with input from Architect and Consultants.
- d. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
- e. Contractor to record discussions of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
- f. Contractor to distribute minutes to all parties concerned.

3.2 INSTALLATION GENERAL:

- a. Follow manufacturer's printed instructions and recommendations of the USG's Gypsum Construction Handbook (latest edition).

3.3 GENERAL REQUIREMENTS FOR INSTALLATION OF GYPSUM WALLBOARD:

- a. Minimum temperature in space shall be 50 deg. F. and building shall be enclosed with all exterior doors and windows in place before beginning GWB work.
- b. All ends and edges of all gypsum wallboard shall occur over supporting members. To minimize end joints, use wallboard of maximum practical lengths. Boards shall be brought into contact but shall not be forced into place. Where ends or edges abut they shall be neatly fitted.
- c. End joints on vertical surfaces shall be staggered. Joints on opposite sides of partitions shall be arranged so as to occur on different studs. Joint layout at openings shall be made so that no end joints will align with edges of opening. Joints in multi-layer work shall be staggered so that joints in one layer will not occur over joints in second layer.
- d. For acoustical walls containing sound absorbing insulation between studs, install caulking at floor, ceiling, partition perimeters and where partitions abut different material. Install caulking around openings cut in wallboard partitions for doors, windows, ducts, electrical boxes or others. Install caulking as recommended by manufacturer of wallboard.
- e. Apply metal trim at exposed edges of wallboard, at exposed external corners and edges abutting dissimilar materials.
- f. Openings cut in wallboard to fit electrical outlets, plumbing, piping, etc., shall fit snugly and shall be small enough to be covered by standard size plates and escutcheons. Both face and back paper shall be cut for all cutouts which are not made by use of a saw.
- g. Where wallboard is shown on the Drawings to be extended to building structure above, it shall follow the profile of the structure and the joints shall be bedded and taped.

3.4 APPLICATION OF WALLBOARD ON WOOD FRAMING:

- a. Provide vertical installation of gypsum panels. Secure wallboard to framing with screws at 8" on centers at perimeters and 12" in the field of the panels.
- b. All screws shall be power-driven with an electric screw driver. Screw heads shall provide a slight depression below surface of board without cutting paper.

3.5 METAL TRIM AND CORNER BEADS: Installation of trim and corner beads shall be straight, plumb and uniformly spaced along adjacent work. Fasten securely as recommended by manufacturer of trim.

- a. At outside corners, embed one layer of joint tape in joint compound at each leg of the corner bead, in addition to the normal application of joint compound, to prevent a concave area on each side of the corner bead when the joint compound dries and cures.

3.6 FINISHING:

- a. Joint Treatment: Embed tape in cementing compound. Cover with 3 applications of fill coat in accordance with the Gypsum Association Level 4 Gypsum Board Finish Requirements. (use Level 5 under critical lighting conditions or when glossy paint is used) Install materials in accordance with manufacturer's printed instructions to produce smooth, inconspicuous joints and well filled to prevent ridging. Avoid raising nap on wallboard when sanding down fill coats.
- b. Metal Trim and Corner Beads: Extend embedded tape to face of edge or corner ground and terminate. Finish like wallboard joints.

- c. Wallboard Face Repair: Repair and finish all attachment heads, depressions and minor wallboard face imperfections with material and as recommended by the manufacturer.

3.7 LOCATIONS: Unless shown otherwise on the Drawings, use the specified materials in the following general locations:

- a. Standard Wallboard: At locations not specified otherwise.
- b. Water Resistant Wallboard: Bathroom walls.
- c. Gypsum Wallboard with Vapor Barrier: All exterior walls and GWB ceilings with unheated space above.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Gypsum drywall walls (Section 09 29 00).

b. Work Included This Section:

- 1. Primer and adhesive.
- 2. Sheet vinyl flooring.
- 3. Resilient wall base.
- 4. Edge strips and all required accessories.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

American National Standards Institute Inc. (ANSI)
The American Society for Testing and Materials (ASTM)
Federal Specifications (FS)

1.4 SUBMITTALS:

- a. Shop Drawings: Submit manufacturer's technical literature and installation instructions for each type of flooring specified hereinafter.

b. Samples:

- 1. Submit the following samples of each type, color, and pattern of resilient flooring selected by the Architect, showing full range of color and pattern variations.

6" long sample of wall base.
12" by 12" sample of vinyl sheet flooring.

1.5 PRODUCT HANDLING:

- a. Store resilient flooring materials as packaged by the manufacturer in an undamaged condition and with manufacturer's seals and labels intact. Care shall be taken to prevent damage and freezing during delivery, handling and storage. Store materials at the Project Site at least 24 hours prior to their installation. Stack tile boxes in accordance with manufacturer's written instructions.

1.6 ENVIRONMENTAL CONDITIONS:

- a. Temperature: Materials and the area in which materials are to be installed shall be maintained at the following temperatures:

1. Store tile in rooms in which they are to be installed for 24 hours prior to laying tile at the specified temperature.
2. For at least 24 hours before installation of material and continuing for at least 48 hours after installation, maintain temperature at not less than 70° F. to not more than 90° F.
3. Maintain a minimum temperature of 55° F. after flooring is installed.

1.7 PROTECTION:

- a. Close spaces to traffic in which resilient flooring is being set and to other work until flooring is firmly set. Where solvent-based adhesives are used, provide safety spark-proof fans and operate when natural ventilation is inadequate. Smoking shall be prohibited.

1.8 MAINTENANCE MANUALS: Provide 2 copies of maintenance manuals for resilient flooring describing maintenance procedures.

1.9 EXTRA STOCK:

- a. Sheet Flooring: Furnish not less than 5 linear yards for each type, color and pattern installed.
- c. Wall Base: Furnish 5% of quantity installed of each color selected.

PART 2: PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS: Products of the following manufacturers equivalent to those specified herein will be acceptable for use on the Project when the specified submittals are approved (in writing) by the Architect:

- a. Standard: For purposes of designating type and quality for the work under this Section, Drawings and Specifications are based on products by the manufacturers hereinafter specified.

1. Vinyl Sheet:

Armstrong Flooring
Mannington Commercial/Burke
Tarkett/Johnsonite

- - b. Source: Products for use on this Project shall be of one manufacturer for each function unless noted specifically otherwise herein.

2.2 LEVELER: As recommended by the flooring manufacturer.

2.3 ADHESIVES:

- a. Adhesive for cementing resilient flooring materials to subfloors shall be water-resistant type recommended by the flooring manufacturer.
- b. Adhesive for wall base shall be as recommended by the base manufacturer.

2.4 RESILIENT FLOORING:

- a. General Requirements for Resilient Flooring:

1. Resilient flooring of each color and pattern selected in any one area shall be from the same lot.
 2. Colors will be selected from the manufacturer's standard colors and patterns of the series specified.
 3. Pattern shall extend through thickness of flooring and shall not be at surface only.
- b. Vinyl Sheet:
1. Vinyl sheet shall be Medintone Brand by Armstrong, or equal, composed of .080" thick homogeneous, non-layered and non-backed, solid vinyl.
 2. Flooring shall be sufficiently dense to withstand a static load of 125 psi.
 3. Flooring shall meet following fire test requirements:
 - (a) ASTM E 648: Critical Radiant Flux of 0.45 watts per square centimeter, minimum.
 - (b) ASTM E 84: Flame spread of 75, maximum.
 - (c) ASTM E 662: Smoke developed of 450, maximum.

2.5 RESILIENT BASE:

- a. Provide Armstrong .125" thick, solid vinyl base, 4" height, or equal approved in writing by the Architect.
 - b. Provide set-on cove type.
 - c. Provide corners from standard base sections as specified hereinafter in Part 3 of this Section.
 - d. See Drawings for type and location.
- 2.6 EDGE STRIP: Vinyl, thickness to match resilient flooring, not less than 1" wide, with beveled edge, color as selected by Architect, and furnished by the flooring manufacturer.
- 2.7 ACCESSORIES: Furnished by or type recommended by the resilient flooring manufacturer.
- 2.8 ASBESTOS: All flooring, wall base, adhesive, leveler and primer products, and other materials used shall be asbestos free.

PART 3: EXECUTION

3.1 CONDITION OF SURFACES:

- a. Manufacturer's Requirements: Surfaces to receive resilient flooring shall meet the minimum requirements established by the manufacturer of the flooring and adhesive. Work shall not be started until defects have been corrected.
- b. Tolerances: Subfloor surface shall not vary more than $\pm 1/8"$ in any 10' dimension. Neither shall they vary at a rate greater than 1/16" per running foot. No abrupt deviations from a smooth surface will be permitted. Defective areas shall be corrected by the trades involved.

3.2 PREPARATION OF SURFACES:

- a. Remove debris, dirt, grease and all other foreign matter from surfaces to receive flooring and base.
- b. Inspect surfaces for holes, cracks and smoothness. Do not proceed with flooring installation until surfaces are level and smooth with holes and cracks filled with an approved filler. Depressions shall be filled, and high spots ground down to the specified tolerance.

3.3 APPLICATION OF PRIMER: Apply primer to cover substrate completely. Apply at rate recommended by manufacturer of resilient flooring.

3.4 INSTALLATION OF LEVELER: Install in accordance with printed instructions of the manufacturer of the floor leveler. Top surface of finished underlayment shall be level and smooth within the tolerances specified.

3.5 APPLICATION OF ADHESIVE:

- a. Bond and Moisture Test: Perform bond and moisture test per manufacturer's written recommendations.
- b. Mix and apply adhesive in accordance with the adhesive manufacturer's directions. Cover surface evenly with adhesive. Area covered by one application of adhesive shall not exceed the maximum working area recommended by the manufacturer. Install resilient flooring within the time limits recommended by the manufacturer. If adhesive films over or dries, it shall be removed, and the area shall be cleaned and recoated.

3.6 INSTALLATION OF RESILIENT FLOORING:

- a. Lay resilient flooring true, level and with tight, flush aligned joints. Joint treatment shall be in accordance with published instructions of the flooring manufacturer. Roll flooring in accordance with the manufacturer's installation instructions to assure intimate contact and proper adhesion. Accurately cut resilient flooring to and around fixtures to provide a close fit; seal joint with sealant recommended by the flooring manufacturer.
- b. Install edge strip where resilient flooring terminates at exposed edge.

3.7 INSTALLATION OF RESILIENT BASE:

- a. Install base level, true and tight against supporting surface. No joints in base shall occur within 12" of a corner.
- b. Corners shall be made by scoring, mitering and heating standard base sections prior to bending around corner and adhering.
- c. Cement base firmly to wall. Joints shall be tight. Base (throughout its entire length) shall have top and bottom edges in firm contact with walls and finish floors. Scribe base accurately to trim.

3.8 CLEANING AND WAXING:

- a. Immediately upon completion of resilient flooring in a room or area, dry-clean floors and adjacent surfaces with a cleaner approved by manufacturer of resilient flooring. Remove surplus adhesive and other soiling.
- b. Floors shall not be washed for at least 5 days after installation. Wash floors with non-alkaline cleaning solution approved by manufacturer of resilient flooring. Rinse thoroughly with clean, cold water.

- c. Wax flooring with 2 coats of water-emulsion wax as recommended by manufacturer of resilient flooring. Buff floor after each coat of wax to an even luster. Buff floors with an electric polishing machine.
 - d. Do not wax base; clean and rub to high gloss.
- 3.9 PROTECTION: Allow no traffic on finished floors unless they are protected with heavy paper.

END OF SECTION

SECTION 09 91 00
FIELD PAINTING

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Section 050385 Historic Treatment of Decorative Formed Metal
2. Section 060312 Historic Wood Repair
3. Section 080314 Historic Treatment of Wood Doors
4. Section 080352 Historic Treatment of Wood Windows
5. Section 090320 Historic Treatment of Plaster
6. Section 093191 Historic Treatment of Plain Painting
7. Shop priming and factory finishing of certain materials and equipment are specified in other sections of the Specifications.

b. Work Included This Section:

1. All field painting on the entire Project, including new and existing materials and equipment specified in other Sections and plumbing and electrical materials and equipment is specified as work of this Section 09 91 00, with the following exception:
 - (a) Painting of plumbing, mechanical and electrical materials and equipment located inside Equipment Rooms is to be provided by the plumbing, mechanical and electrical trades.
2. **Paint all surfaces exposed to view in the completed work, both exterior and interior, unless specifically enumerated not to be painted.**
3. Work includes field painting of exposed bare and covered pipes, conduit and ducts (including color coding), and of hangers, exposed steel conduit and iron work, miscellaneous metal items and primed metal surfaces of materials and equipment installed under plumbing and electrical work.
4. Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not designated in finish schedules. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.
6. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
7. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

c. Surfaces Not to Be Painted:

1. Unless otherwise indicated, painting is not required for surfaces for which the natural finish of the material is obviously the final finish, such as (for example only) glass, face brick, plastic laminate, ceramic tile and other such items that traditionally and obviously are not painted.
2. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (for example only) pre-finished electrical equipment, including light fixtures, switchgear and distribution cabinets.
3. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as (for example only) walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, and furred areas.
4. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of (for example only) anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting. Note that galvanized steel does not fall into this category and is required to be painted.
5. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.
6. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates. An exception to this is that embossed or etched fire rating labels on hollow metal frames may be painted over provided that they are cleaned and properly prepared so that paint will adhere tightly to the label.

1.3 QUALITY CONTROL:

- a. Color Samples: Submit samples of colors selected by the Architect in duplicate for final approval. Samples shall be approximately 8" x 10" size and on wood when finish is to be on wood; on gypsum wallboard when finish is to be on gypsum wallboard, masonry, concrete, or plaster; and on sheet steel when finish is to be on metal. Sample shall be finished as specified in "Schedule of Paint Systems."
1. Stain and Varnish Samples: The field mock-up specified shall be within the color range of the approved stain and varnish samples.
- b. Field Mock-Up Samples: Provide the following:
 1. Stain and varnish field mock-up sample shall include a flush wood door and the surrounding wood casing and trim, completely installed in its final location. Architect will select the specific door. Mock-up shall be provided in accordance with the following conditions and requirements.
 - (a) Surface preparation, including sanding, putty work, filling, solvent wash and other surface preparation requirements; and application of the stain and varnish finish shall be in accordance with the Contract Specifications, approved shop drawings and manufacturer's published installation instructions for each product.
 - (b) Color of the mock-up shall be within the color range of the approved samples specified.
 - (c) Approval of the mock-up by the Architect and Owner will be based upon acceptable stain color and acceptable quality of workmanship for surface preparation and application of finish.

- (d) After approval, the mock-up will become a standard for subsequent work to match. Do not begin any production work prior to approval of the mock-up.
 - (e) The mock-up shall be protected from damage and shall remain in place until completion of all stain and varnish work. If the mock-up is damaged or removed, the Contractor will be required to provide another mock-up for approval by the Architect and Owner.
 - (f) The purpose of the mock-up is to provide an objective standard for judging the acceptability of subsequent production work. If the work matches the mock-up, it will be accepted. If the work does not match the mock-up, it will not be accepted and will require removal or reworking until it does match the mock-up.
- c. Shop Drawings: Submit manufacturer's literature completely describing each type of paint, including each product in the stain and varnish system, and including manufacturer's published installation instructions for each product. See Paragraph "Materials" for other submittal requirements.
 - d. Manufacturer's Approval: Submit letter from manufacturer's representative that substrates have been tested and moisture content in substrate is acceptable to receive paint system.

1.4 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)

1.5 PRODUCT HANDLING:

- a. Delivery and Storage:
 - 1. All materials shall be delivered to the site in the manufacturer's sealed packages with labels intact and seals unbroken.
 - 2. A space will be designated for the storage of paint materials and tools. Whenever it may be necessary to change the location of this storage space, promptly move to the newly designated place. Protect the storage space floor from damage.
 - 3. Cover all paints at all times. Take all safeguards to prevent fire.

PART 2: PRODUCTS

2.1 MATERIALS:

- a. Painting Materials:
 - 1. In order to describe type and quality of materials intended, painting materials specified are products of Sherwin Williams. Paint products of Benjamin Moore, PPG, Pratt and Lambert, or others may be used when the following is approved in writing by the Architect.
 - (a) Submit to the Architect a schedule of painting based on the format hereinafter used to specify paint systems for the various surfaces, stating

the brand name, trade name and manufacturer's number of each of the materials proposed.

- (b) Include manufacturer's data sheet for each type of paint proposed.
 - (c) Include complete installation instructions for each paint product including for stain and varnish work wood filler, solvent wash, stain, sanding sealer, varnish and all other products of the stain and varnish system.
 - (d) Receive from the Architect written approval of these submittals before beginning work.
2. Tinting of colorants shall be as recommended by manufacturer of finishing materials and shall be those supplied by the finish manufacturer. All colors shall be non-fading under exposure to which they will be normally subjected.
3. Additives to Finishing Materials: Add only those ingredients required or recommended by the manufacturer of the finishing material. Source of such additives shall be as recommended by the manufacturer of finishing material.
4. Thinner: Shall be type and product recommended by manufacturer of finishing material.
- (a) Turpentine: Pure gum spirits of turpentine, conforming to ASTM D 13.
5. Oils:
- (a) Raw Linseed: Conforming to ASTM D 234.
 - (b) Boiled Linseed: Conforming to ASTM D 260.
6. Shellac: Pure Whitegum cut in pure denatured alcohol.
7. Wood Fillers: Select paste type fillers tinted to match color of the stain to be used.
8. Stains: Preferably as manufactured or furnished by manufacturer of the paint materials. Stains shall be compatible with surface receiving it and with other finishing materials being applied. Color of stain shall match submitted sample and field mock-up approved by the Architect and Owner.
- b. Putty: For surfaces to receive transparent finish, putty shall be colored to match final color of the finished wood as represented by submitted sample and field mock-up approved by the Architect and Owner.
- c. Metal Cleaners: As recommended by the paint manufacturer.

2.2 SCHEDULE OF PAINT SYSTEMS:

- a. Except as required otherwise in the Contract Documents for specific areas or surfaces, the following materials, or approved equal, shall be used on the surfaces scheduled:
- b. Review the entire Drawings and Specifications including Divisions 15 and 16 Mechanical and Electrical Specifications for description of materials and equipment therein to be painted under this Section. See Paragraph "1.2 Scope" for additional information and requirements regarding work included in this Section.

1. EXTERIOR PAINT SYSTEMS:

Provide the following paint systems for various substrates, as indicated:

(a) EXTERIOR FERROUS METAL:

SYSTEM	Latex Gloss
PRIMER	1 coat All Surface Enamel latex Primer A41W210
FINISH	2 coats A100 Exterior Latex Gloss House Paint

(b) EXTERIOR ALUMINUM:

SYSTEM	Gloss
FINISH	2 coats DTM Gloss (B66-100)

(c) EXTERIOR GALVANIZED METAL:

SYSTEM	Latex Gloss
PREP	SW Prepaint Cleaner (no rinse)
PRIMER	1 coat All Surface Enamel Latex
FINISH	2 coats A100 Latex Gloss House Paint

(d) EXTERIOR CMU:

SYSTEM	Latex Satin
PRIMER	1 coat Preprite Block Filler
FINISH	2 coats A100 Exterior Latex Satin

(e) EXTERIOR CONCRETE:

SYSTEM	Latex Satin
PRIMER	1 coat Loxon Block Surfacers
FINISH	2 coats A100 Exterior Latex Satin House Paint

(f) EXTERIOR WOOD:

SYSTEM	Latex Gloss
PRIMER	1 coat A100 Exterior Latex Primer
FINISH	2 coats A100 Exterior Latex Gloss House Paint

(g) EXTERIOR WOOD - STAIN AND VARNISH:

SYSTEM	Oil Base Stain
PRIMER	1 coat Wood Classics Oil Stain (optional) 1 coat Classics Sanding Sealer (optional)
FINISH	2 coats Classic Oil Base Varnish, for exterior use

2. INTERIOR PAINT SYSTEMS: Provide the following paint systems for various substrates, as indicated:

(a) INTERIOR GYPSUM WALLBOARD: (Eggshell)

SYSTEM	Latex, Eggshell
PRIMER	1 coat Preprite Classic Primer
FINISH	2 coats Pro Mar Latex Eg-shel

(b) INTERIOR GYPSUM PLASTER

SYSTEM	Alkyd Eggshell
PRIMER	1 coat Preprite Classic Primer
FINISH	2 coats Pro Mar 200 Alkyd Eg-shel

(c) INTERIOR WOOD - PAINTED:

SYSTEM	Latex Semi Gloss
PRIMER	1 coat Wall & Wood Primer
FINISH	2 coats Pro Mar Latex Semi-Gloss

(e) INTERIOR WOOD - STAIN AND VARNISH:

SYSTEM	Oil Base Stain
PRIMER	1 coat Wood Classics Oil Stain (optional) 1 coat Classics Sanding Sealer (optional)
FINISH	2 coats Classic Oil Base Varnish

(f) PIPE AND EQUIPMENT INSULATED COVERING:

SYSTEM	Enamel, Semi Gloss
PRIMER	1 coat All Surface Enamel Primer A41W210
FINISH	2 coats Pro Mar 400 Latex Semi-Gloss

(g) PLASTIC SURFACES:

SYSTEM	Latex, Semi Gloss
PREPARATION	Scuff-sand all plastic surfaces prior to application of primer
PRIMER	1 coat Preprite Bonding Primer (test for adhesion)
FINISH	2 coats Pro Mar Latex Semi-Gloss

PART 3: EXECUTION

3.1 COLORS:

- a. Before any work is done, the Architect will furnish the Contractor with a color schedule showing where the various colors shall go. The Contractor shall then submit samples and prepare samples at the job as specified in Paragraph "Submittals".

3.2 GENERAL REQUIREMENTS:

- a. A pre-installation meeting is required for all painting. Meeting shall be attended by Owner, Architect, Contractor, and other representatives directly concerned with performance of the work. The Contractor will conduct the meeting.
- b. All painting procedures, including surface preparation and application of materials shall be in strict accordance with the manufacturer's published instructions and recommendations.
- c. The commencing of work, or the absence of notification in writing to the contrary, shall be construed as acceptance of the surfaces to be finished as satisfactory to receive the finishes and to produce the results required.
- d. All spaces shall be broom clean before painting is started.
- e. Surfaces to be finished shall be clean, dry, smooth and adequately protected from dampness.
- f. Provide ample protection for, and take particular care to protect adjoining surfaces, fixtures and materials of all kinds. Repair any damage caused by the work of this Section. If necessary to accomplish this, remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work and similar items. Upon completion of each space,

carefully replace all removed items. Use only skilled mechanics for removal, replacement and protection.

- g. Remove doors to finish top and bottom after doors have been fitted.
- h. Remove electrical panel box cover and door before painting wall. Paint separately and reinstall after all paint is dry.
- i. No work shall be done under conditions which are unsuitable for the production of good results. Do not apply paint when temperature is below 50° F. Do not apply exterior paint in damp, rainy weather. Do not apply finishes on surfaces so hot as to prevent proper application and drying. Do not apply finishes in spaces where dust is being generated that would speck the finish.
- j. Before painting plaster or concrete, (including CMU and masonry) test surfaces with a moisture testing device. No paint or sealer shall be applied on plaster or concrete when moisture is tested to be over 5.5%. Provide manufacturer's approval letter as specified in Part 1 of this Section.

3.3 PREPARATION OF SURFACES:

- a. Existing Surfaces: All existing surfaces shall be prepped, as necessary, to receive the 3 coat paint system specified, including, but not limited to, removal of existing paint systems, patching, and sanding.
- b. CMU: Properly clean and prep to produce a satisfactory surface for painting.
- c. Gypsum Drywall: Follow the USG Handbook (latest edition) for cleaning and prepping surface.
- d. Plaster:
 - 1. Fill holes and cracks. Seal before painting.
 - 2. Do not use sandpaper on plaster surfaces.
- e. Wood: Sandpaper to smooth and even surface and then dust off. Knots, sap and pitch streaks in lumber to be painted shall be given a brush coat of thin shellac before priming coat is applied. Thoroughly fill nail and other holes and cracks with putty; for natural or transparent stain finish, color putty to match final color of the stained wood. Putty shall be applied as many times as is necessary in order to ensure that after curing the putty surface will be flush with the wood surface (neither concave below nor convex above the surface of the wood).
- f. Steel and Iron:
 - 1. Remove grease, rust, scale and dust. Except as noted otherwise, sandpaper as required to produce a satisfactory surface for painting.
- g. Galvanized Metal: Thoroughly clean with metal cleaner according to cleaner manufacturer's directions; rinse and wipe dry. Galvanized steel manufacturer and paint manufacturer must approve the use of the cleaner prior to use.

3.4 PRIMING:

- a. See the other Sections of these Specifications for shop priming requirements specifically related to materials and items therein specified.

- b. The shop coat is not to be considered this Contractor's prime coat. Apply primer as specified.
- c. All coats required in the schedule of painting shall be applied, including all scheduled prime coats and finish coats. Surfaces of factory primed items shall be sanded if necessary and otherwise properly prepared and all scheduled prime coats and finish coats shall be applied.

3.5 APPLICATION:

- a. All paint materials shall be stirred or agitated thoroughly until the ingredients are completely mixed.
- b. Surface to be stained or painted shall be adequately protected from dampness.
- c. Each coat of paint shall be well applied, worked out evenly and allowed to dry (at least 24 hours) before subsequent coat is applied.
- d. Sand between coats to produce an even, smooth finish.
- e. Suction or hot spots in plaster or concrete which are noticeable through the first coat shall be touched up before applying the second coat to produce an even result in the finish coat.
- f. Where only one coat of the finish material is required by the schedule of painting, the undercoat shall be tinted to match the finish coat.
- g. Finished work shall be uniform, of approved color, and free from runs, sags, defective brushing, clogging or excessive flooding. Make edges of paint adjoining other materials or colors sharp, straight, clean and without overlapping.
- h. Use fillers, sealers, primers and other materials as recommended by the stain manufacturer such that the applied stain work will result in a uniform color and will match samples and mock-up work approved by the Architect and Owner.
- i. At completion, touch up and restore finish where damaged and leave in good condition.
- j. Should any coat of paint be adjudged unsatisfactory by the Architect, it shall be sandpapered or removed and additional coats applied as necessary until satisfactory finish is achieved.

3.6 CLEANING:

- a. All cloths and cotton waste that might constitute a fire hazard shall be placed in metal containers or destroyed at end of each working day.
- b. At the completion of this work, all staging, scaffolding, containers, debris, etc., shall be removed from the premises.
- c. Painted surfaces shall be left in a clean condition. Remove paint spots, oil or stains from adjacent surfaces.
- d. Unstick all doors and repair any damaged areas of paint.

END OF SECTION

SECTION 10 52 20
FIRE EXTINGUISHERS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Work Included in this Section:

- 1. Fire extinguishers and cabinets as specified including all supplementary materials and installation accessories required for a complete and proper installation.
- 2. Provide two (2) multi-purpose fire extinguishers and one (1) wet chemical fire extinguisher and required wall brackets. Install as directed by Client and local Fire Marshall.

1.3 SUBMITTALS:

- a. Shop Drawings: Indicate location, arrangement, dimensions, mounting heights, anchorage, materials, finishes, hardware, and relation to adjacent work.
- b. Manufacturer's Data: Submit manufacturer's technical data giving materials, thickness of parts, function, dimensions and installation instructions.

1.4 PROTECTION:

- a. Protect materials and equipment from physical damage until final acceptance.

PART 2: PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS: Subject to compliance with the Drawings and Specifications, provide product by one of the following, or equal approved in writing by the Architect:

J. L. Industries Inc.
Larsen's Mfg. Co.
Potter-Roemer Inc.

2.2 MATERIALS:

a. Fire Extinguishers:

- 1. Larsen's MP10 Series Multi-Purpose Dry Chemical, or equal approved in writing by the Architect, 10 lb. capacity, 5"-cylinder diameter, 20" height, 7-3/4" overall width, UL Rating 4A-60B:C, Factory Mutual approved.
- 2. Larsen's WC-6L, Wet Chemical (for class K fires), or equal approved in writing by the Architect, 6-liter capacity 7" cylinder diameter, 25" height, 9" overall width, UL Rating 2A:1B:C:K, Factory Mutual approved.

b. Fire Extinguisher Wall Brackets:

- 1. Larsen's 846 Bracket, or equal approved in writing by the Architect, constructed of heavy gauge steel with white baked enamel finish.

2. Bracket shall be sized to accommodate the specified fire extinguishers.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. If possible, mount bracket on wood. If bracket must be installed on a historic plaster wall, install at wall stud location to minimize damage to historic plaster.
- b. Install in accordance with manufacturer's written instructions.
- c. Provide all accessory materials required for a complete and proper installation.
- d. Center of unit to be mounted 48" above floor.

END OF SECTION

SECTION 10 81 00
TOILET ACCESSORIES

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Work Included in This Section:

- 1. Toilet room accessories as shown on Drawings and as specified herein, including all installation accessories required for a complete and proper installation, ready for use.
- 2. See Drawings for toilet accessory mounting heights.
- 3. Installation locations for toilet accessories for new ADA restroom are shown in the Drawings.

1.3 INDUSTRY STANDARDS:

- a. References: Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used):

The American Society for Testing and Materials (ASTM)
American Iron and Steel Institute (AISI)
Aluminum Association (AA)

1.4 SUBMITTALS:

- a. Shop Drawings: Indicate location, arrangement, dimensions, mounting heights, anchorage, materials, finishes, hardware and relation to adjacent work.
- b. Manufacturer's Data: Submit (in duplicate) manufacturer's illustrations and technical data giving materials, dimensions, thickness of parts, function, installation instructions and operating and maintenance instructions.
- c. Guarantee: Submit (in duplicate) manufacturer's ten (10) year mirror guarantee against silver spoilage. Guarantee shall show name of Project, name of Owner, location and date of final acceptance.
- d. Samples: Furnish samples of each item in finish specified for Architect's review. Samples will be returned and may be installed in the Project and will be used as a basis for comparing other like material items.
- e. Cut-out Templates: Furnish templates to other trades for items recessed into finish materials.

1.5 PROTECTION:

- a. Protect toilet accessories from physical damage until final acceptance of the Project.

PART 2: PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS: Subject to compliance with the Drawings and Specifications, provide product by one of the following, or equal approved in writing by the Architect:

American Specialties Inc.
Bobrick Washroom Equipment Inc.
Bradley

2.2 MATERIALS:

- a. Stainless Steel: AISI Alloy Type 304 with #4 satin finish.
- b. Aluminum Extrusions: AA Alloy 6063-T6, except as specified otherwise.
- c. Exposed faces shall not have any embossed or applied names.
- d. All coin operated Sanitary Napkin Dispensers shall be keyed alike but different from other accessories. All other accessories shall be keyed alike.

2.3 ACCESSORIES:

- a. The following accessories are selected from Bobrick Equipment Company only to clearly describe type and quality intended. Products of other manufacturers listed hereinbefore may also be provided when the specified submittals are approved in writing by the Architect.
- b. See the Drawings for the Schedule of Toilet Accessories required.

<u>Quantity</u>	<u>Description</u>	<u>Model No.</u>
3	Grab Bar (horizontal)	B-5806 (*)
1	Toilet Tissue Dispenser (Wall Mounted)	B-2888
1	Napkin Disposal (Wall Mounted)	B-254
1	Stainless Steel Framed Mirror	B-165-2448
1	Soap Dispenser (Wall Mounted)	B-2111
1	Paper Towel Dispenser	B-262
1	Waste Receptacle	B-277

(*) Include 256, 257 or 258 concealed anchor kits as required by wall construction.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. Install toilet accessories after the completion of tile, plaster, painting, partitions and plumbing work.
- b. Protect room and material finishes from damage. Damaged finishes and materials shall be replaced at no additional cost to the Owner.
- c. Install toilet accessories in accordance with manufacturer's printed instructions. Mount securely, plumb and level. Mount symmetrically to plumbing fixtures, unless shown otherwise elsewhere in the Contract Documents or on approved Shop Drawings. Mount multiple units in a true, level line and uniformly spaced. Flanges of recessed units shall be snug to adjacent surfaces.

3.2 CLEAN-UP:

- a. Upon completion of installation, remove all debris and broom clean floors.
- b. Clean and polish all toilet accessories.

END OF SECTION

SECTION 11 46 50
KITCHEN APPLIANCES

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Plumbing supply lines (Sections of Division 22).
- 2. Electrical supply lines (Sections of Division 26).

b. Furnish and Install:

- 1. Kitchen appliances as shown on Drawings and as specified herein. Include all installation accessories required for complete and operable units and such that only plumbing and electrical supply lines to the unit are required by others. Connections are specified as work of this Section.

1.3 SUBMITTALS:

a. Manufacturer's Data:

- 1. Product Data: Submit (in duplicate) manufacturer's printed data sheets showing sizes, arrangement, equipment, roughing-in data, electrical and plumbing requirements, accessories, materials, finishes, colors and relation to adjacent materials.
- 2. Submit (in duplicate) manufacturer's printed installation instructions.
- 3. Submit (in duplicate) manufacturer's printed maintenance instructions.

b. Guarantee-Warranty:

- 1. Submit manufacturer's one year guarantee on all appliances. In addition, guarantee shall be for not less than five (5) years on refrigerator compressor and shall guarantee to replace the compressor at no expense to the Owner.
- 2. Guarantee shall show name of Owner, name of Project, location of Project, date of final acceptance and name of supplier.

PART 2: PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS:

- a. For purposes of describing type and quality of appliances required, the Drawings and Specifications are based upon the manufacturers listed hereinafter.
- b. Similar and equal products by other manufacturers will be acceptable for this Project when the specified submittals are approved in writing by the Architect.

c. Appliances:

1. Cabinet-depth, Full Refrigerator: 32" wide, double door with bottom freezer, stainless-steel front.

- a. GE Energy Star, 18.6 Cu. Ft., Counter-Depth French-Door Refrigerator, or equal approved in writing by Architect.

2. Dishwasher, 24" wide, stainless-steel front

- a. GE Energy Star, Top Control with Plastic Interior Dishwasher with Sanitized Cycle & Dry Boost, or equal approved in writing by Architect.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. Install in accordance with the Drawings, these Specifications, approved Submittals and the manufacturer's printed instructions.
- b. Work shall be plumb, level, rigid and secure and with all moving parts operating freely.
- c. Surfaces shall be free of scratches, dents and other defacing marks and shall be clean.
- d. Hookup to water and electrical is included as work of this Section such that all appliances are ready for use.

END OF SECTION

SECTION 12 49 30
VENETIAN BLINDS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Historic Treatment of Wood Windows (Section 08 03 52).

b. Furnish and Install:

- 1. Venetian blinds for all exterior windows.

1.3 PRODUCT HANDLING:

- a. Venetian blinds shall be delivered to the Site in unopened containers, labeled plainly with the manufacturer's name and installation mark.
- b. Blinds shall be stored in safe, dry locations and shall not be unpacked until needed for installation. Handling and installation of materials shall be in a manner that will protect them from damage.

1.4 SUBMITTALS:

- a. Shop Drawings: Show location, arrangement, dimension, finishes, hardware, anchorage and relation to adjacent work.
- b. Manufacturer's Data: Submit (in duplicate) manufacturer's printed installation instructions.

PART 2: PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS: Products of the following manufacturers equivalent to or better than those specified herein for the specific function will be acceptable for use on the Project when the specified submittals are approved (in writing) by the Architect:

Hunter Douglas Inc.
Levolor Lorentzen, Inc.
Springs Window Fashion Division (Bali)

- a. Source: Products for use on this Project shall be one manufacturer for the same function unless noted specifically otherwise herein.

2.2 QUALITY STANDARD:

- a. In order to describe the type and quality of blind required, the Drawings and Specifications are based on Parkland Classics Real Wood Blinds by Hunter Douglas Inc. See Paragraph "Manufacturers" hereinbefore for other acceptable manufacturers.

2.3 GENERAL:

- a. The blind shall have nominally 2 ½" wide horizontal slats, supported by braided ladders.
- b. All operating hardware shall be machine clinched to an enclosed metal head.
- c. A plastic wand shall tilt the slates to any horizontal angle.
- d. Lift cord shall raise and lower blind and hold in any position between fully "up" or fully "down".
- e. Pigments and coatings shall be anti-fading.
- f. Blinds shall be free of sharp edges, burrs or other defects.

2.4 MATERIALS:

- a. Slats:
 1. Material: Real wood
 2. Type: Standard slat (not privacy slat)
 3. Mounting: Inside mount.
 4. Finish: To be selected by Architect from full range of manufacturer's available colors.
- b. Braided Ladders:
 1. Material: Braided polyester yarn. Vertical cables shall have minimum tensile strength of 50 lbs per cable. Provide horizontal rungs at 20mm apart vertically and interbraided with the verticals.
 2. Fabrication: Attach ends of braided ladders securely to fit ladder into braided ladder roll and bottom rail. Space braided ladders not over 24" o.c. and not more than 6" from end of slats.
- c. Valance:
 1. Profile: Flat
 2. Height: Max. 4"

2.5 FABRICATION:

- a. Fabricate blinds to have 1/4" to 1/2" clearance between ends of the blind and window jambs.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. Install in strict accordance with the Drawings and specifications, approved shop drawings and published recommendations of the manufacturer.
- b. Install blinds level and in true alignment.
- c. Following installation, test each blind for proper operation, clear blind of all dirt and dust; raise to full "up position" and lock in place.

END OF SECTION