Colcock Hall Windows
Charleston, South Carolina
Construction Documents
Prepared For
The Medical University of South Carolina
325 Calhoun Street MSC 109
Charleston, SC 29425
Owner Project Number:  50059
ADC Project Number:  15235
August 1, 2017
Colcock Hall Windows
Charleston, South Carolina
Construction Documents

Prepared For

The Medical University of South Carolina
325 Calhoun Street MSC 109
Charleston, SC 29425

Owner Project Number: 50059
ADC Project Number: 15235

Mr. Richard L. Cook, Jr., FRCI, RRC, RWC, REWC, RBEC, RRO, CCS, CSRP, & LEED® AP
ADC Engineering, Inc.

August 1, 2017
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**PROJECT NUMBER:** 50059  

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INVITATION FOR CONSTRUCTION SERVICES

PROJECT NAME: Colcock Hall Windows
PROJECT NUMBER: 50059
PROJECT LOCATION: Charleston, South Carolina

BID SECURITY REQUIRED? Yes ☒ No ☐ NOTE: Contractor may be subject to a performance appraisal at the close of the project.
PERFORMANCE BOND REQUIRED? Yes ☒ No ☐ CONSTRUCTION COST RANGE: $205,000 - $275,000
PAYMENT BOND REQUIRED? Yes ☒ No ☐

DESCRIPTION OF PROJECT: Base Bid work includes removal and replacement of all the decorative perimeter trim at all windows as well as glazing/caulking at windows. Removal of all brick casings at all windows, provide sealant joint and reset brick casing. Provide a backer rod and sealant joint between the wood window frame and the masonry wall at all window locations. Remove and replace all exterior sealant joints, clean, prepare, prime and paint all exterior windows. Work also includes repairs and modifications to roofing, gutters and downspouts and associated sheet metal, components and accessories. Alternate Number 1 work includes all work of the Base Bid to be done after hours (5 PM to 7 AM and/or on weekends).

BIDDING DOCUMENTS/ PLANS MAY BE OBTAINED FROM:
http://academicdepartments.musc.edu/vfha/eadm/construction_projects/index.html

PLAN DEPOSIT AMOUNT: $50.00 IS DEPOSIT REFUNDABLE Yes ☐ No ☐ N/A ☒

All questions & correspondence concerning this Invitation shall be addressed to the A/E:
A/E NAME: ADC Engineering, Inc.
A/E CONTACT: Mr. Rick Cook
A/E ADDRESS: Street/PO Box: 1220 Yeamans Hall Road
City: Hanahan State: SC ZIP: 29410-
EMAIL: amandam@adcengineering.com
TELEPHONE: 843-566-0161 FAX: 843-566-0162

AGENCY: The Medical University of South Carolina
AGENCY PROJECT COORDINATOR: Mr. Phil Mauney
ADDRESS: Street/PO Box: 325 Calhoun Street MSC 109
City: Charleston State: SC ZIP: 29425-
EMAIL: mauneym@musc.edu
TELEPHONE: 843-792-2490 FAX: 843-792-2351

PRE-BID CONFERENCE: Yes ☒ No ☐ MANDATORY ATTENDANCE: Yes ☐ No ☒
PRE-BID DATE: 8/24/2017 TIME: 2PM PLACE: Conference Room RR-23, 325 Calhoun Street
BID CLOSING DATE: 9/6/2017 TIME: 2PM PLACE: Conference Room RR-23, 325 Calhoun Street

BID DELIVERY ADDRESSES:
HAND-DELIVERY:
Attn: Phil Mauney
325 Calhoun Street
Charleston, SC 29425
MAIL SERVICE:
Attn: Phil Mauney
MSC 109
Charleston, SC 29425

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? (Agency MUST check one) Yes ☒ No ☐

APPROVED BY: [Signature] DATE: 8/9/2017
The Instructions to Bidders shall be the SCOSE Version of the AIA Document A701-1997, Instruction to Bidders which is incorporated herein by reference. Samples of these documents may be viewed at http://procurement.sc.gov/construction/ose-news.
Bid Bond

CONTRACTOR:
(Names, legal status and address)

SURETY:
(Names, legal status and principal place of business)

OWNER:
(Names, legal status and address)
The Medical University of South Carolina
325 Calhoun Street MSC 109
Charleston, SC 29425

PROJECT:
(Names, location or address, and Project number, if any)
Colcock Hall Windows
Owner Project Number: 50059

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

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

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

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

(Principal) (Seal)

(Witness)

(Title)

(Surety) (Seal)

(Witness)

(Title)
BID SUBMITTED BY:  
(Bidder's Name)

BID SUBMITTED TO:  The Medical University of South Carolina  
(Owner's Name)

FOR:  PROJECT NAME:  Colcock Hall Windows

PROJECT NUMBER:  50059

OFFER

§ 1. In response to the Invitation for Construction Services and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to Section 11-35-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

[ ] Bid Bond with Power of Attorney  [ ] Electronic Bid Bond  [ ] Cashier's Check

(Bidder check one)

§ 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:

[Bidder, check all that apply. Note, there may be more boxes than actual addenda. Do not check boxes that do not apply]

ADDENDA:

[ ] #1  [ ] #2  [ ] #3  [ ] #4  [ ] #5

§ 4. Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of 60 Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

§ 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:

§ 6.1 BASE BID WORK (as indicated in the Bidding Documents and generally described as follows): Base Bid work includes removal and replacement of all the decorative perimeter trim at all windows as well as glazing/caulking at windows, removal of all brick casings at all windows, provide sealant joint and reset brick casing, provide a backer rod and sealant joint between the wood window frame and the masonry wall at all window locations, Remove and replace all exterior sealant joints, clean, prepare, prime and paint all exterior windows. Work also includes repairs and modifications to roofing, gutters and downspouts and associated sheet metal, components and accessories.

$ , which sum is hereafter called the Base Bid.

(Bidder to insert Base Bid Amount on line above)
LUMP SUM BID FORM

§ 6.2 BID ALTERNATES as indicated in the Bidding Documents and generally described as follows:

ALTERNATE # 1 (Brief Description): Alternate Number 1 work includes all work of the Base Bid to be done after hours (5 PM to 7 AM and/or on weekends).

ADD 0 Calendar Days

☐ ADD TO or ☐ DEDUCT FROM BASE BID: $__________

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 2 (Brief Description): N/A

☐ ADD TO or ☐ DEDUCT FROM BASE BID: $__________

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 3 (Brief Description): N/A

☐ ADD TO or ☐ DEDUCT FROM BASE BID: $__________

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

§ 6.3 UNIT PRICES:

BIDDER offers for the Agency’s consideration and use, the following UNIT PRICES. The UNIT PRICES offered by BIDDER indicate the amount to be added to or deducted from the CONTRACT SUM for each item-unit combination. UNIT PRICES include all costs to the Agency, including those for materials, labor, equipment, tools of trades and labor, fees, taxes, insurance, bonding, overhead, profit, etc. The Agency reserves the right to include or not to include any of the following UNIT PRICES in the Contract and to negotiate the UNIT PRICES with BIDDER.

<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>UNIT OF MEASURE</th>
<th>ADD</th>
<th>DEDUCT</th>
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<tbody>
<tr>
<td>1.</td>
<td>Repointing</td>
<td>SF</td>
<td>$</td>
<td>$</td>
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<td>2.</td>
<td>Brick Casing Replacement</td>
<td>LF</td>
<td>$</td>
<td>$</td>
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<td>3.</td>
<td>Window Framing</td>
<td>LF</td>
<td>$</td>
<td>$</td>
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<td>4.</td>
<td>Wood Epoxy (1&quot; Deep)</td>
<td>SF</td>
<td>$</td>
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<td>5.</td>
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§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED
(See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Classification work listed:

<table>
<thead>
<tr>
<th>SUBCONTRACTOR CLASSIFICATION</th>
<th>SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME</th>
<th>SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER</th>
</tr>
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<tbody>
<tr>
<td>By License Classification and/or Subclassification (Completed by Owner)</td>
<td>(Must be completed by Bidder)</td>
<td>(Requested, but not Required)</td>
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<tr>
<td>BASE BID</td>
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<tr>
<td>ALTERNATE #1</td>
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<td>ALTERNATE #3</td>
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If a Bid Alternate is accepted, Subcontractors listed for the Bid Alternate shall be used for the work of both the Alternate and the Base Bid work.
INSTRUCTIONS FOR SUBCONTRACTOR LISTING

1. Section 7 of the Bid Form sets forth an Owner developed list of contractor/subcontractor specialties by contractor license category and/or subcategory for which bidder is required to identify the entity (subcontractor(s) and/or himself) Bidder will use to perform the work of each listed specialty.
   a. **Column A:** The Owner fills out this column, which identifies the contractor/subcontractor specialties for which the bidder must list either a subcontractor or himself as the entity that will perform this work. Subcontractor specialties are identified by contractor license categories or subcategories listed in Title 40 of the South Carolina Code of laws. Abbreviations of classifications to be listed after the specialty can be found at: [http://www.llr.state.sc.us/POL/Contractors/PDFFiles/CLBClassificationAbbreviations.pdf](http://www.llr.state.sc.us/POL/Contractors/PDFFiles/CLBClassificationAbbreviations.pdf). If the owner has not identified a specialty, the bidder does not list a subcontractor.
   b. **Columns B and C:** In these columns, the Bidder identifies the subcontractors it will use for the work of each specialty listed by the Owner in Column A. Bidder must identify only the subcontractor(s) who will perform the work and no others. Bidders should make sure that their identification of each subcontractor is clear and unambiguous. A listing that could be any number of different entities may be cause for rejection of the bid as non-responsive. For example, a listing of M&M without more may be problematic if there are multiple different licensed contractors in South Carolina whose names start with M&M.

2. **Subcontractor Defined:** For purposes of subcontractor listing, a subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site pursuant to a contract with the prime contractor. Bidder should not identify sub-subcontractors in the spaces provided on the bid form but only those entities with which bidder will contract directly. Likewise, do not identify material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the bidder or proposed subcontractor(s).

3. **Subcontractor Qualifications:** Bidder must only list subcontractors who possess a South Carolina Contractor’s license with the license classification and/or subclassification identified by the Owner in the first column on the left. The subcontractor license must also be within the appropriate license group for the work of the specialty. If Bidder lists a subcontractor who is not qualified to perform the work, the Bidder will be rejected as non-responsive.

4. **Use of Own forces:** If under the terms of the Bidding Documents, Bidder is qualified to perform the work of a listed specialty and Bidder does not intend to subcontrat such work but to use Bidder’s own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.

5. **Use of Multiple Subcontractors:**
   a. If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word “and”. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word “and”. Bidder must use each entity listed for the work of a single specialty listing in the performance of that work.
   b. **Optional Listing Prohibited:** Bidder may not list multiple subcontractors for a specialty listing, in a form that provides the Bidder the option, after bid opening or award, to choose to use one or more but not all the listed subcontractors to perform the work for which they are listed. A listing, which on its face requires subsequent explanation to determine whether it is an optional listing, is non-responsive. If bidder intends to use multiple entities to perform the work for a single specialty listing, bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word “and” between the names of each entity listed for that specialty. Agency will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word “or”, a virgule (that is a /), or any separator that the Agency may reasonably interpret as an optional listing.

6. If Bidder is awarded the contract, bidder must, except with the approval of the Agency for good cause shown, use the listed entities to perform the work for which they are listed.

7. If bidder is awarded the contract, bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.

8. Bidder’s failure to identify an entity (subcontractor or himself) to perform the work of a subcontractor specialty listed in the first column on the left will render the Bid non-responsive.
§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (FOR INFORMATION ONLY):

Pursuant to instructions in the Invitation for Construction Services, if any, Bidder will provide to Owner upon the Owner’s request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a) CONTRACT TIME

Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within 125 Calendar Days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b) LIQUIDATED DAMAGES

Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the amount of $200.00 for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

a) Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.

b) Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.

c) Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

ELECTRONIC BID BOND NUMBER: 

SIGNATURE AND TITLE: 
CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATION

SC Contractor's License Number(s): ________________________________

Classification(s) & Limits: ________________________________

Subclassification(s) & Limits: ________________________________

By signing this Bid, the person signing reaffirms all representation and certification made by both the person signing and the Bidder, including without limitation, those appearing in Article 2 of the Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: ________________________________

ADDRESS: _____________________________________________

______________________________________________________

TELEPHONE: ___________________________________________

EMAIL: _________________________________________________

SIGNATURE: ___________________________________________ DATE: __________

PRINT NAME: ___________________________________________

TITLE: _________________________________________________
The Form of the Contract shall be the SCOSE Version of the AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, which is incorporated herein by reference. Samples of these documents may be viewed at http://procurement.sc.gov/construction/ose-news.
The General Conditions of the Contract for Construction shall be the SCOSE Version of the AIA Document A201-2007, General Conditions of the Contract for Construction which is incorporated herein by reference. Samples of these documents may be viewed at http://procurement.sc.gov/construction/ose-news.
A CONTRACTOR PERFORMING WORK ON THE MUSC / MUHA CAMPUS IS RESPONSIBLE FOR:
1) Completing the following information for all employees of the contractor and/or subcontractors that will be on
the MUSC / MUHA campus for project related work. A separate Contractor Badge Request must be filled out
for each individual project on which a contractor/subcontractor employee is working as each project can have a
different MUSC/MUHA sponsor for these badges.
2) Submitting these forms to the MUSC/MUHA Project Manager via email or at the MUHA Construction &
Design Office (325 Calhoun Street, MSC 109, Charleston, SC 29425). Contractor Badge Requests should be
submitted at least 5 working days before construction start date.
3) Informing the MUSC/MUHA Project Manager if any employee who has received a badge is no longer working
on the MUSC/MUHA campus and returning the badge to the Public Safety Building (101 Doughty Street,
Charleston, SC 29425).

COMPANY NAME: __________________________________________

FIRST NAME: __________________________________________

MIDDLE NAME: __________________________________________

LAST NAME: __________________________________________

JOB TITLE: __________________________________________

DATE OF BIRTH: __________________________________________

SS# __________________________________________

MUHA PROJ. MANAGER: __________________________________________

START DATE: __________________________________________

EXPECTED FINISH DATE: __________________________________________

Badges will not be issued unless ALL the above information is complete and accurate.

After the Contractor Badge Request Information has been received, it will be entered into the Registration
Authority’s database. The Contractor Badges will be issued at Public Safety and can be picked up at the Public
Safety Building (101 Doughty Street, Charleston, SC 29425) on the 3rd Business Day after it is entered into the
database.

MUHA CONTRACTOR BADGE REQUEST
Colcock Hall Windows
Owner Project Number: 50059

August 1, 2017
NOTE: THE LANGUAGE USED IN THIS DOCUMENT DOES NOT CREATE AN EMPLOYMENT CONTRACT BETWEEN THE EMPLOYEE AND THE MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC). MUSC RESERVES THE RIGHT TO REVISE THE CONTENT OF THIS DOCUMENT, IN WHOLE OR IN PART. NO PROMISES OR ASSURANCES, WHETHER WRITTEN OR ORAL, WHICH ARE CONTRARY TO OR INCONSISTENT WITH THE TERMS OF THIS PARAGRAPH CREATE ANY CONTRACT OF EMPLOYMENT.

I. PURPOSE

MUSC is committed to promoting a healthy, tobacco-free environment for its employees, faculty, students, visitors and patients. The purpose of this policy is to provide a healthy environment, minimize the negative effects of passive smoke and tobacco use, maximize fire safety and promote wellness and good health habits within all MUSC facilities, including MUSC affiliates, and the surrounding campus.

II. POLICY

A. Covered Individuals

The provisions of this policy shall apply to all employees (including faculty and staff), patients, visitors, students, volunteers, contractors and vendors unless otherwise noted.

B. Use of Tobacco Products

1. The use of any tobacco product is prohibited in all buildings, grounds and spaces either leased or owned by the Medical University. The Human Resources Management Policy No. 49, Tobacco-Free Campus, includes, but is not limited to, offices, classrooms, laboratories, elevators, stairwells,
restrooms, shuttle buses, shuttle bus stops, sidewalks, parking areas, meeting rooms, hallways, lobbies, and other common areas.
2. The use of tobacco products in University owned, operated or leased vehicles is prohibited.
3. Use of tobacco products is also prohibited in personal vehicles parked on MUSC property.
4. The use of tobacco products is prohibited on all streets and sidewalks within the Medical District as defined by the City of Charleston ordinance (see Medical District map).
5. MUSC also prohibits the use of tobacco products by staff on private properties adjacent to the Medical District without explicit approval from the property owner. Individuals should refrain from smoking in areas where smoke is likely to enter private property through entrances, windows, ventilation systems or other means and are expected to respect requests to refrain from smoking in particular areas if asked to do so by agents or employees of the University. Tobacco use on public property neighboring MUSC is highly discouraged.
6. Use of tobacco products while representing MUSC, wearing MUSC scrubs or uniforms, wearing an MUSC badge, or on paid break is prohibited.

C. List of Tobacco Products

Tobacco products include, but are not limited to, cigarettes, cigars, pipes, chewing tobacco, e-cigarettes and other smokeless tobacco products.

III. INFORMATION AND PROCEDURE

A. Faculty/Staff/Volunteers

1. Faculty, staff and volunteers are expected to comply with the Tobacco-Free Campus Policy and assist with sharing information about the policy.

2. New employees and volunteers will be informed of the Tobacco-Free Campus Policy during orientation.

3. Enforcement of the policy rests with the appropriate supervisory staff, deans, department heads and administrative officials.

4. When employees or volunteers observe violations of the policy, they should politely remind the offender of the policy and request that they dispose of tobacco materials.

5. If the employee or volunteer continues to violate the policy, the location and time of the violation should be reported to the appropriate supervisory staff, dean, department head or administrative official. Human Resources Employee Relations may also be contacted to report violations.
6. Violation patterns will be assessed and appropriate action initiated. Employees who are found to be in violation will be disciplined in accordance with the Human Resources Policy No. 45, Disciplinary Action. Action may range from written reprimand to termination. Refer to specific guidelines as outlined by MUSC, MUHA and UMA.

B. Patients

1. Faculty, staff and clinical staff with patient care responsibilities are responsible for communicating and ensuring compliance with the Tobacco-Free Campus Policy.

2. Upon admission/check-in, patients will be verbally informed of the policy and a copy will be provided upon request.

3. Patients violating MUSC’s policy will be asked to dispose of tobacco materials.

4. Tobacco replacement therapies, i.e. nicotine patch, nicotine gum, etc., may be prescribed by the patient’s physician.

C. Visitors

1. Visitors will be informed of the policy and asked to comply while they are on campus.

2. Signage will be posted throughout MUSC’s buildings and grounds; stating this facility is a tobacco-free campus.

3. All employees and volunteers are encouraged to assist with the education of visitors regarding the policy, using policy information cards, which will be made available.

4. Employees are expected to help enforce the policy with visitors by requesting that they dispose of tobacco materials and respect MUSC’s healthcare mission and tobacco-free campus.

5. If a visitor is observed repeatedly violating the policy after being advised of the policy, staff should note the location and time of the violation and contact their respective manager, Department of Public Safety or Medical Center Safety and Security, or Human Resources.

D. Students

1. New students will be informed of the Tobacco-Free Campus Policy during orientation.

2. Enforcement of the policy rests with the respective Dean’s office.
3. When students observe violations of the policy, they should remind their fellow students of the policy and ask them to dispose of the tobacco materials.

4. If the student continues to violate the policy, the location and time of the violation should be reported to the appropriate Dean’s office.

5. Violation patterns will be assessed and appropriate action initiated.

6. Affiliation agreements will include the Tobacco-Free Campus Policy so that students from other schools will be advised of the policy.

E. Contractors/Vendors

1. A provision will be inserted in all contracts, e.g. construction and/or maintenance, to prohibit the employees of contractors/vendors from using tobacco materials on property owned or leased by MUSC. Contractors and vendors are expected to ensure full compliance at all times with this policy by any employees and/or subcontractors providing services on MUSC property.

2. Failure by the contractor/vendor or their employees to comply with the provisions of this policy could result in contractors/vendors (or their employee(s) violating this policy) being asked to leave campus and/or the termination of the service contract with the contractor or vendor.

IV. ENFORCEMENT

A. The monitoring and enforcement of this policy is the responsibility of ALL MUSC/MUHA/UMA employees, students and volunteers. Each individual should consistently and politely bring any infraction of this policy to the attention of the person or persons observed violating the policy.

B. The MUSC Department of Public Safety and Medical Center Safety and Security will assist in the enforcement of this policy by reporting violations to the appropriate manager or supervisor. Employees are also expected to assume leadership roles by adhering to the policy provisions and by reminding others who aren’t in compliance of the policy provisions.

C. MUSC will provide Tobacco-Free Campus Policy information cards to facilitate the education and enforcement of the policy.

V. RESOURCES

MUSC will offer resources and support to tobacco users in abstaining from tobacco use on campus and in supporting users who desire to quit using tobacco. Smoking cessation
classes and other tobacco education related resources or programs will be offered periodically for MUSC employees. Many of these programs are offered at little to no cost. Additional resources are outlined on the Tobacco-Free Campus website.

VI. EXCEPTIONS

Individuals enrolled in smoking research and/or treatment programs are permitted to smoke in designated smoking areas that are physically separated from care, treatment and service areas upon approval. If the Medical Center decides that patients may smoke in specific circumstances, it will designate smoking areas that are physically separated from care, treatment and service areas.

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<th>Approved by:</th>
<th>Information Contact</th>
<th>Approved</th>
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</table>
| Lisa P. Montgomery  
Vice President for  
Finance & Administration | Director of  
Human Resources  
Management | Effective  
March 1, 2012  
Revised  
June 2013 |
KEY:

MUSC Tobacco-Free Campus
MUSC Tobacco-Free streets and sidewalks
City of Charleston Smoke-Free Medical District streets and sidewalks
Roper Hospital Tobacco-Free Campus
PROGRAM OBJECTIVES

1. MUSC/MUHA has adopted the following objectives:

   A. To provide maximum practical opportunities for Minority and Women's Business Enterprises (MWBES) to participate as suppliers and contractors for our organization.

   B. To support the economic development of both small business enterprises and the minority community.

   C. To provide Minorities and Women equal opportunities for participation in Capital Projects construction (additions, renovations and new construction), procurement, professional services, and system-wide purchasing contracts.

   D. To provide procedures that will enable MUSC/MUHA to fulfill the goals of the State that are related to equal employment opportunities and affirmative actions in its construction contracts.

   E. To provide procedures for determining and monitoring MWBE participation and compliance with MWBE requirements stated in the contract documents. Also, to provide procedures for the solution of complaints concerning discrimination against any businesses holding contracts with the MUSC/MUHA.

   F. To evaluate and report to the MWBE Small and Minority Business Advocate and to MUSC/MUHA the results of contract activity, subject to the provisions of the MWBE Program.

2. In order to accomplish the objectives of the MWBE Program, the following specific goals have been established:

   A. To increase buying activities with Minority and Women's Enterprises that have the capability of providing construction services necessary for MUSC/MUHA operations.

   B. To actively and diligently seek out Minority and Women's Enterprises who have the potential of becoming a source of construction services.

   C. To promote awareness of the MWBE Program throughout MUSC/MUHA and the Community.

   D. To assist in the development of Minority and Women's Business Enterprise to insure that maximum opportunities are given to actively compete for construction opportunities with MUSC/MUHA.
SECTION I

GUIDELINES FOR MWBE PARTICIPATION IN CONSTRUCTION SERVICES

CONSTRUCTION

These guidelines are established to accomplish the goal of providing for minority participation in Single and Multi-Prime capital construction contracts. The Medical University of South Carolina shall have a verifiable percentage goal of participation by Minority and Women's businesses in the total value of work for each project for which a contract is awarded. These guidelines are published to accomplish that end.

ITEM 1:

INTENT

It is the intent of these guidelines that the Medical University of South Carolina and the contractors and subcontractors performing construction contracts for the Medical University of South Carolina shall cooperate, and in good faith, do all things legal, proper and reasonable to achieve the verifiable goal of 12% for participation by Minority and Women's businesses in each construction project. Nothing contained in these guidelines shall be considered to require awarding authorities to award contracts or to make purchases of materials or equipment from MWBE contractors who do not submit the lowest responsive responsible bid or bids.

ITEM 2:

DEFINITIONS

1. **Affirmative Action** - A plan, or specific measurable steps, taken by an agency, business or individuals to fully involve Minority Business Enterprises and Women's Business Enterprises in contracts and programs and to assure non-discrimination and equal opportunities in the performance of work, contracts, or any elements of a project administered by MUSC/MUHA Minority/Women's Business Enterprise Program.

2. **Bidder/Participant/Offeror** - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

3. **Contract** - A mutually-binding legal document which defines a business relationship or any modification at the level of performance which obligates the seller to furnish supplies, equipment, materials or services, knowledge in performing construction and procurements, and obligating the buyer to pay for services.

4. **Contractor** - Any person, firm, partnership, corporation, association, or joint venture that has been awarded a contract purchase or service agreement at any level with MUSC/MUHA or that has contracted with the Owner to perform construction work or repair.

5. **Discrimination** - Any action that distinguishes, differentiates, separates, or segregates one person or group from another, solely on the basis of age, race, religion, color, sex, national origin, handicap or veteran's status.

6. **Goal** - An objective, expressed numerically to evaluate the type and amount of contract awards and performance of Minority- and Women-owned business enterprises.

7. **Good-Faith Effort** - All activity performed by bidders to encourage the participation of minority and women's enterprises (MWBE) in contracts covered under this plan.

8. **Joint Venture** - A legal merger of two or more businesses (separately-owned firms) for the purpose of submitting a single bid, to carry out a single business enterprise for profit, for which purpose they combine their property, capital, efforts, skills or knowledge.

9. **MUSC** - Medical University of South Carolina
10. **MUHA** – Medical University Hospital Authority

11. **Minority (MBE)** - a person who is a citizen or lawful permanent resident of the United States and who is:
   (a) **African-American**, that is, a person having origins in any of the original 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) **Native-American**, that is, a person having origins in any of the original peoples of North America; or
   (d) **Asian-American**, that is, persons having origin in any of the countries of the Far East, Southeast Asia, or the Indian areas.

12. **Minority or Women's Business Enterprises-M/WBE** - a business enterprise owned and controlled at a minimum of 51% by one or more members of a group defined as a minority or as women. A business certified as a minority- or woman-owned enterprise will show evidence of ownership and management interests and the daily business operations are real and continuing, not created solely to meet the M/WBE requirements.

13. **Owner** – Medical University of South Carolina/Medical University Hospital Authority

14. **Owned and Controlled** - A business which is (1) a sole proprietorship legitimately owned by an individual who is a member of a minority and/or female, (2) a partnership or joint venture controlled by minorities and/or females, and in which at least 51% of the beneficial ownership interests legitimately are held by minorities and/or females, or (3) a corporation or other entity controlled by minorities and/or females, and in which at least 51% of the voting interests are legitimately held by minorities and/or females. In addition, these persons must control the management and operation of the business on a day-to-day basis.

15. **Subcontractor** - A firm under contract with the prime contractor for supplying materials or labor and materials and/or installations. The subcontractor may or may not provide materials in his subcontract. Work subcontracted in an emergency and which could not have been anticipated is excluded as a part of this program.

16. **Verifiable goal** – For purposes of the Single-Prime contracts, the advertising authority has adopted written guidelines specifying the actions that the prime contractor should consider taking to ensure a good-faith effort in the recruitment and selection of minority and women’s businesses for participation in contracts awarded; the required actions must be documented in writing by the contractor to the appropriate awarding authority.

**PART 3:**

**RESPONSIBILITIES**

1. **Medical University of South Carolina/Medical University Hospital Authority - Owner**

   MUSC/MUHA under the Single and Multi Prime contract system will be responsible for the following:

   (a) For contracts in excess of $500,000 estimated cost, notify Minority and Women’s Business firms within twenty-one (21) days prior to the bid opening through means of advertising in the South Carolina Business Opportunities of the opportunities. Advertisements will include:
       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 pre-bid conference, if scheduled. The twenty-one day advance time period may be reduced to ten days for contracts in the range of $100,000 to $500,000 in the estimated cost.

   (b) The pre-bid conference, if scheduled, is conducted by the representative of the Owner, and will be open to all known and anticipated prime contractors, subcontractors, material suppliers, and other bidders.
2. **Prime Contractor, Bidder or Offeror**

Prime Contractors under the Single and Multi-Prime contract system will be responsible for the following:

(a) Attend the scheduled mandatory pre-bid conference.
(b) Identify or determine those work areas of a subcontract where M/WBEs may have an interest in performing subcontract work.
(c) Submit, with the first application for payment, a description of the portion of the work to be executed by M/WBEs expressed as a percentage of the total contract price.
(d) If the Contractor elects to use a M/WBE firm that is not certified by the Governor's Office of Small and Minority Business Assistance (OSMBA) the Contractor shall encourage the subcontractor to submit an application for certification within thirty (30) days of signing the Letter of Intent (Appendix II). If the firm does not submit an application within the specified time frame or fails to meet the certification criteria, the contract amount with that M/WBE firm will not be considered as M/WBE participation.
(e) Upon being named the apparent low bidder, the Bidder shall submit to the Project Manager their good faith backup documentation if they have not met their M/WBE goal.
(f) If, during the construction of a project, additional subcontracting opportunities become available, the prime or general contractors must make good-faith efforts to solicit sub-bids from M/WBEs.

3. **M/WBE Responsibilities**

M/WBE firms do not have to be certified to be listed on the bid documents; however, M/WBE firms that have been awarded contracts will not be credited towards MUSC/MUHA's M/WBE Program unless they are certified with the Governor's Office of Small and Minority Business Assistance (OSMBA).

(a) M/WBEs should make every effort to establish contacts and relationships with contractors for potential future business, including attending pre-bid conferences and subscribing to industry and trade journals.

(b) In addition, M/WBEs who are contacted by Owners or Bidders should respond promptly whether or not they wish to submit a bid. If an M/WBE firm is listed as a subcontractor or supplier, they will be responsible for completing a Letter of Intent (Appendix II) in a timely manner and returning it to the Prime Contractor.

(c) M/WBE who are not certified at the time the firm commits to provide services, should apply for certification with the Governor's Office of Small and Minority Business Assistance (OSMBA) within thirty (30) days. If the M/WBE firm fails to submit an application within the specified time frame or if the M/WBE firm is not granted certification by the Certification Committee, that M/WBE firm's contract dollars will not be counted as M/WBE participation.
SECTION II

MWBE CONTRACT PROVISIONS

ITEM 1: PROVISIONS FOR CONSTRUCTION

A. APPLICATION:

The requirements of the MUSC/MUHA Minority and Women's Business Enterprise (MWBE) Provisions and Guidelines are hereby made a part of these contract documents. The requirements shall apply to all contractors regardless of ownership. Copies of the MWBE Program may be obtained from the MWBE Administrator, Engineering and Facilities, 97 Jonathan Lucas Street, P.O. Box 250190, Charleston, SC 29425.

B. MWBE SUBCONTRACT GOALS:

The goals for participation by MWBE as subcontractors on this project have been set at 12%.

The Bidder shall provide documented proof, with the first application for payment, in the form of Appendix I, MWBE Utilization Commitment Form the percentage of MWBE participation. Submit signed copies of Appendix II - Letters Of Intent to Perform as a Subcontractor, to the Project Manager.

C. COMPLIANCE DOCUMENTATION:

If the MWBE subcontract goals are not achieved, the Bidder shall provide the following documentation to the Project Manager with the first application for payment:

1. MWBE Utilization Commitment (Appendix I)

2. With the first pay application, the Bidder shall provide to the Project Manager signed Letters of Intent to Perform as a Subcontractor (Appendix II) for the MWBE subcontractors listed on Appendix I.

3. After review of the Bidder’s Good Faith Efforts, the Bidder may request and be granted a Waiver of the MWBE goals that have not been met for that particular project. A Waiver may be granted upon review of the Bidder’s documentation and determination that, in fact, a Good Faith Effort has been put forth.

NOTE: If the Bidder provides sufficient evidence on the MWBE Utilization Commitment (Appendix I) that the goals have been met, or awards all subcontracts to MWBEs, the Good Faith Efforts Documentation as listed above in #3 may not be required.
APPENDIX I
M/WBE UTILIZATION COMMITMENT FORM
FOR
CONSTRUCTION

We, ______________________________________________, do certify that on the ________________________________
(Bidder)      (Project Name) _____________________________________, ____________________________________ we will expend a minimum of ____%
(Project Number)    (Dollar Amount of Bid) we will expend a minimum of ____% of the total dollar amount of the contract with Minority/Woment Business Enterprises. M/WBEs will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

If the bidder intends to subcontract, this form must be completed irregardless of the amount of M/WBE participation attained.

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<tr>
<th>NAME OF FIRM</th>
<th>PHONE NUMBER</th>
<th>MBE OR WBE</th>
<th>Description of Work</th>
<th>Dollar Value</th>
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The undersigned will enter into a formal agreement with Minority/Women's Firms for work listed in this schedule conditional upon execution of a contract with the MUSC/MUHA.

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 & Phone No. of Authorized Officer)

Signature: ________________________________  
Title: ________________________________

APPENDIX I OR APPENDIX II MUST BE SUBMITTED WITH THE FIRST APPLICATION FOR PAYMENT
APPENDIX II
LETTER OF INTENT
TO
PERFORM AS A
SUBCONTRACTOR OR SUBCONSULTANT
(PROVIDE MATERIALS OR/ & SERVICES)

PROJECT: __________________________________________________________________________
(Project Name)

TO: ________________________________________________________________________________
(Name of Prime Bidder)

The undersigned intends to perform work in connection with the above project as

_____ Minority Business Enterprise  _____ Women’s Business Enterprise

_____ The M/WBE status of the undersigned is certified by the Governor’s Office of Small and Minority Business Assistance. Our M/WBE certification number is ____________________________.

_____ The M/WBE status of the undersigned is not certified by the Governor’s Office of Small and Minority Business Assistance. Our application was submitted on ____________________________.

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project (specify in detail particular work items, materials or services to be performed or provided) at the following price:

______________________________________________________.

You have projected the following commencement date for such work, and the undersigned is projecting completion of such work as follows:

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<th>Items</th>
<th>Projected Commencement Date</th>
<th>Projected Completion Date</th>
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Subcontracting at any tier must be reported and is subject to all M/WBE compliance requirements. This form shall be used for M/WBE subcontracting at any level.

Date: ____________________________
(Name & Phone No. of M/WBE Company)

________________________________________
(Name & Title of Authorized Office)

(Signature)

THE PRIME CONTRACTOR MUST GET THIS FORM COMPLETED BY THE M/WBE SUBCONTRACTORS
## APPENDIX III
### M/WBE DOCUMENTATION OF CONTRACT PAYMENTS FORM

Prime Contractor: ___________________________________________
Address & Phone: ___________________________________________
Project Name: _____________________________________________
Pay Application #: ___________________   Period: ___________________

The following is a list of payments made to Minority and Women Business Enterprises certified by the Governor’s Office of Small and Minority Business Assistance on this project for the above mentioned period.

<table>
<thead>
<tr>
<th>M/WBE FIRM NAME</th>
<th>INDICATE MBE OR WBE</th>
<th>OSMBA CERTIFICATION</th>
<th>AMOUNT TO BE PAID THIS PERIOD</th>
<th>TOTAL PAYMENTS TO DATE</th>
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Date: ___________________
Name of Authorized Officer
_______________________________________________________

Signature
_______________________________________________________

Title
_______________________________________________________

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that (Insert full name or legal title and address of Contractor)

Name: 
Address: 

hereinafter referred to as “Contractor”, and (Insert full name and address of principal place of business of Surety)

Name: 
Address: 

hereinafter called the “surety”, are jointly and severally held and firmly bound unto (Insert full name and address of Agency)

Name: The Medical University of South Carolina
Address: 325 Calhoun Street MSC 109
Charleston, SC 29425

hereinafter referred to as “Agency”, or its successors or assigns, the sum of ($     ), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated ___________ entered into a contract with Agency to construct

State Project Name: Colcock Hall Windows
State Project Number: 50059

Brief Description of Awarded Work, as found on the SE-330 or SE-332, Bid Form: See SE-330, Bid Form and Section 01 21 10, Unit Prices and Allowances.

in accordance with Drawings and Specifications prepared by (Insert full name and address of A/E)

Name: ADC Engineering, Inc.
Address: 1226 Yeamans Hall Road
Hanahan, SC 29410

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _______ day of __________, 20__, BOND NUMBER ______________________ (shall be no earlier than Date of Contract)

CONTRACTOR

By: ______________________________ (Seal)
Print Name: __________________________
Print Title: __________________________
Witness: ______________________________

SURETY

By: ______________________________ (Seal)
Print Name: __________________________
Print Title: __________________________ (Attach Power of Attorney)
Witness: ______________________________

(Additional Signatures, if any, appear on attached page)
NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency for the full and faithful performance of the contract, which is incorporated herein by reference.
2. If the Contractor performs the contract, the Surety and the Contractor have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
3. The Surety's obligation under this Bond shall arise after:
   3.1 The Agency has notified the Contractor and the Surety at the address described in paragraph 10 below, that the Agency is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If the Agency, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Agency's right, if any, subsequently to declare a Contractor Default; or
   3.2 The Agency has declared a Contractor Default and formally terminated the Contractor's right to complete the Contract.
4. The Surety shall, within 15 days after receipt of notice of the Agency's declaration of a Contractor Default, and at the Surety's sole expense, take one of the following actions:
   4.1 Arrange for the Contractor, with consent of the Agency, to perform and complete the Contract; or
   4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
   4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Agency for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Agency and the contractor selected with the Agency's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the Agency the amount of damages as described in paragraph 7 in excess of the Balance of the Contract Sum incurred by the Agency resulting from the Contractor Default; or
4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and:
   4.4.1 After investigation, determine the amount for which it may be liable to the Agency and, within 60 days of waiving its rights under this paragraph, tender payment thereof to the Agency; or
   4.4.2 Deny liability in whole or in part and notify the Agency, citing the reasons therefore.
5. Provided Surety has proceeded as provided in paragraph 4.4 and the Agency refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Agency shall be entitled to enforce any remedy available to the Agency.
6.1 If the Surety proceeds as provided in paragraph 4.4 and the Agency refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Agency shall be entitled to enforce any remedy available to the Agency.
6.2 Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the Dispute Resolution process defined in the Contract Documents and the laws of the State of South Carolina.
7. After the Agency has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Agency shall be those of the Contractor under the Contract, and the responsibilities of the Agency to the Surety shall those of the Agency under the Contract. To a limit of the amount of this Bond, but subject to commitment by the Agency of the Balance of the Contract Sum to mitigation of costs and damages on the Contract, the Surety is obligated to the Agency without duplication for:
   7.1 The responsibilities of the Contractor for correction of defective Work and completion of the Contract; and
   7.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and
   7.3 Damages awarded pursuant to the Dispute Resolution Provisions of the Contract. Surety may join in any Dispute Resolution proceeding brought under the Contract and shall be bound by the results thereof; and
   7.4 Liquidated Damages, or if no Liquidated Damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. The Surety shall not be liable to the Agency or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Sum shall not be reduced or set-off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Agency or its heirs, executors, administrators, or successors.
9. The Surety hereby waives notice of any change, including changes of time, to the contract or to related subcontracts, purchase orders and other obligations.
10. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. Definitions
   11.1 Balance of the Contract Sum: The total amount payable by the Agency to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of amounts to be received by the Agency in settlement of insurance or other Claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.
   11.2 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform the Contract or otherwise to comply with the terms of the Contract.
KNOW ALL MEN BY THESE PRESENTS, that (Insert full name or legal title and address of Contractor)

Name:  
Address:  

hereinafter referred to as “Contractor”, and (Insert full name and address of principal place of business of Surety)

Name:  
Address:  

hereinafter called the “surety”, are jointly and severally held and firmly bound unto (Insert full name and address of Agency)

Name:  
Address:  

hereinafter referred to as “Agency”, or its successors or assigns, the sum of $( $ ), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated entered into a contract with Agency to construct

State Project Name: Colcock Hall Windows
State Project Number: 50059
Brief Description of Awarded Work, as found on the SE-330 or SE-332, Bid Form: See SE-330, Bid Form and Section 01 21 10, Unit Prices and Allowances.

in accordance with Drawings and Specifications prepared by (Insert full name and address of A/E)

Name:  
Address:  

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Labor & Material Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _______ day of _________, 2 _______  
BOND NUMBER ________________________________  
(shall be no earlier than Date of Contract)

CONTRACTOR

By: ________________________________  
(Seal)
Print Name: ________________________________
Print Title: ________________________________
Witness: ________________________________

SURETY

By: ________________________________  
(Seal)
Print Name: ________________________________
Print Title: ________________________________  
(Attach Power of Attorney)
Witness: ________________________________

(Additional Signatures, if any, appear on attached page)
SE-357
LABOR & MATERIAL PAYMENT BOND

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the Agency, this obligation shall be null and void if the Contractor:
   2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
   2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety’s obligation under this Bond shall arise as follows:
   4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.
   4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.
   4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of one year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.
   5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety’s expense take the following actions:
      5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
      5.2 Pay or arrange for payment of any undisputed amounts.
      5.3 The Surety’s failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney’s fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.

6. Amounts owed by the Agency to the Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the Contractor furnishing and the Agency accepting this Bond, they agree that all funds earned by the contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Agency’s prior right to use the funds for the completion of the Work.

7. The Surety shall not be liable to the Agency, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Agency shall not be liable for payment of any costs or expenses of any claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

9. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the Agency or the contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

10. By the Contractor furnishing and the Agency accepting this Bond, they agree that this Bond has been furnished to comply with the statutory requirements of the South Carolina Code of Laws, as amended, and further, that any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

11. Upon request of any person or entity appearing to be a potential beneficiary of this bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

12. Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the laws of the State of South Carolina.

13. DEFINITIONS

13.1 Claimant: An individual or entity having a direct contract with the Contractor or with a Subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms “labor, materials or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and the Contractor’s Subcontractors, and all other items for which a mechanic’s lien might otherwise be asserted.

13.2 Remote Claimant: A person having a direct contractual relationship with a subcontractor of the Contractor or subcontractor, but no contractual relationship expressed or implied with the Contractor.

13.3 Contract: The agreement between the Agency and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
CHANGE ORDER TO CONSTRUCTION CONTRACT

AGENCY: The Medical University of South Carolina
PROJECT NAME: Colcock Hall Windows
PROJECT NUMBER: 50059

CONTRACTOR: ___________________________ CONTRACT DATE: __________

This Contract is changed as follows: (Insert description of change in space provided below)

**ADJUSTMENTS IN THE CONTRACT SUM:**

1. Original Contract Sum: $________
2. Change in Contract Sum by previously approved Change Orders: $________
3. Contract Sum prior to this Change Order: $0.00
4. Amount of this Change Order: $0.00
5. New Contract Sum, including this Change Order: $0.00

**ADJUSTMENTS IN THE CONTRACT TIME:**

1. Original Substantial Completion Date: __________
2. Sum of previously approved increases and decreases in Days: Days
3. Change in Days for this Change Order: Days
4. New Substantial Completion Date: __________

**CONTRACTOR ACCEPTANCE:**

BY: ___________________________ Date: __________
(Signature of Representative)
Print Name: ___________________________

**A/E RECOMMENDATION FOR ACCEPTANCE:**

BY: ___________________________ Date: __________
(Signature of Representative)
Print Name: ___________________________

**AGENCY ACCEPTANCE AND CERTIFICATION:**

BY: ___________________________ Date: __________
(Signature of Representative)
Print Name: ___________________________

Change is within Agency Construction Contract Change Order Certification of: $__________ Yes □ No □

Office of the State Engineer Authorization for change exceeding Agency Construction Contract Change Order Certification:

AUTHORIZED BY: ___________________________ DATE: __________
(OSE Project Manager)

**SUBMIT THE FOLLOWING TO OSE**

1. SE-380, fully completed and signed by the Contractor, A/E and Agency;
2. Detailed back-up information from the Contractor/Subcontractor(s) that justifies the costs and schedule changes shown.
3. If any item exceeds Agency certification, OSE will authorize the SE-380 and return to Agency.
# SECTION 01 00 05
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09 90 02  Painting for Exterior Wood Surfaces
SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

A. The building will remain completely functional and fully protected at all times during the construction work.

B. No work can occur on these dates:
   1. Oct 11, 12 & 13, 2017
   2. Dec 6, 7 & 8, 2017
   3. Feb 7, 8 & 9, 2018
   4. Additional dates may be added at a later time.

C. Base Bid work includes removal and replacement of all the decorative perimeter trim at all windows as well as glazing/caulking at windows, removal of all brick casings at all windows, provide sealant joint and reset brick casing, provide a backer rod and sealant joint between the wood window frame and the masonry wall at all window locations, Remove and replace all exterior sealant joints, clean, prepare, prime and paint all exterior windows. Work also includes repairs and modifications to roofing, gutters and downspouts and associated sheet metal, components and accessories.
   1. Demolition of the existing system(s) down to the deck in accordance with Section 02 04 00, Cutting and Patching and Section 02 05 00, Demolition and Removal.
   2. Brick masonry restoration and repairs in accordance with Section 04 50 05, Minor Masonry, Restoration and Cleaning.
   3. Finish carpentry in accordance with Section 06 20 00, Finish Carpentry.
   4. Wood repairs and modifications in accordance with Section 06 20 08, Epoxy Wood Repairs/Modifications.
   5. Roof repairs in accordance with Section 07 50 00, General Roof Repairs/Maintenance.
   6. Replacement of sealant systems from the building envelope in accordance with Section 07 92 10, Sealants for Building Envelope.
7. In addition to repairs/modifications shown on Sheet R405, replacement of all exterior sealants on the existing sloped glazing units and all damaged glazing, gaskets, settings and edge blocking on the exterior of the windows shall be repaired / replaced in accordance with Section, 08 61 00 Wood Windows.

8. Painting of all exposed wood in accordance with Section 09 90 02, Painting for Exterior Wood Surfaces.

D. Alternate Number 1 work includes all work of the Base Bid to be done after hours (5 PM to 7 AM and/or on weekends).

E. Unit Prices and Allowances are included in accordance with Section 01 21 10, Unit Prices and Allowances and are to be included in the Base Bid.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the contractor of this Section is directed to the INSTRUCTIONS TO BIDDERS concerning substitution of materials and equipment.

1. Submit proposed substitution of products or systems on the form provided in Section 01 60 01, Substitution Request Form.

1.03 CONTRACT METHOD

A. Construct the Work under a single lump sum contract.

B. Alternates may be accepted in any order or combination and must determine the low Bidder based on the sum of the Base Bid and Alternates accepted.

C. All unit price items listed on the Bid Form and quantities noted in Section 01 21 10, Unit Prices and Allowances are to be included in the Base Bid.

1.04 WORK BY OTHERS

A. Work of the Project executed prior to start of Work of this Contract, and which is specifically excluded from this Contract:

1. Not applicable.

1.05 CONTRACTOR USE OF PREMISES

A. Limit use of premises to specific work, storage, and access.

1. All temporary protection, covered walkways, signage and monitoring safety is the Contractor’s responsibility.
B. Access to site/roof shall be from the exterior using Contractor’s means and methods. No interior access is permitted unless directly related to the work.

C. Contractor Layout Space:
   1. Limited and only at locations directed and approved by Owner.
   2. Only areas adjacent to the building may be used.
   3. Do not allow traffic or equipment storage outside of the approved areas.
   4. No access to inside of building is permitted without prior approval.

D. SDS sheets are required for all products/materials used for this project. Any products with strong or distinct odors must be identified prior to use and submitted to Consultant/Engineer for review and approval.

E. Maintain safe access to, from and around building for occupants, visitors and pedestrians.

F. Coordinate use of premises under direction of Owner.

G. Assume full responsibility for protection and safekeeping of materials, equipment and products under this Contract.

H. Obtain and pay for use of additional storage of work areas needed for operations under this Contract.
   1. All materials and equipment on site will be stored in a trailer, and secured each night.
   2. Secure access to ladders and scaffolding at the end of each day.

I. Daily clean-up and general safety are critical to building function and shall be primary contractor’s priority.

J. Secure motorized equipment and render inoperable during non-working hours.

K. Adhere to Owner's security, badging and access requirements.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 11 00
PART 1 - GENERAL

1.01 SUMMARY

A. Unit Prices

1. The unit price item, unit of measure and add/deduct price are included on the Bid Form. Provide unit prices for the specific items listed on the Bid Form. A lump sum cost for the quantity amount is to be included within the Base Bid for each item.

<table>
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<th>No.</th>
<th>Item</th>
<th>Base Bid QTY.</th>
<th>Unit of Measure</th>
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<td>1.</td>
<td>Repointing</td>
<td>200</td>
<td>SF</td>
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<td>2.</td>
<td>Brick Casing Replacement</td>
<td>400</td>
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<td>3.</td>
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<td>200</td>
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<td>4.</td>
<td>Wood Epoxy (1” Deep)</td>
<td>50</td>
<td>SF</td>
</tr>
</tbody>
</table>

2. The exact locations of these repairs are not defined in the Construction Documents. These areas will be identified during the demolition/construction process.

3. Maintain a daily log of all unit price quantities used based on contract requirements.

4. Notify Owner in writing when 80% of contract quantity is used for each unit price item.

5. Owner is not responsible for quantities which exceed 80% unless Owner is notified in writing, prior to exceeding these quantities, and contractor receives written approval to proceed.

6. Provide photographs or videotape documentation of actual quantities used.

7. Locate quantities, and show their locations on elevations or plan view drawings. Provide corresponding photographic or videotape documentation. This is required with each Application for Payment requesting payment for quantities unused.
8. Provide actual used quantities on each Application for Payment request.

9. Provide summary of unit prices “required” vs. “used” and above documentation when requested, and as part of Project Close-Out Requirements of Section 01 77 00, Contract Close-Out.

B. Allowances

1. In addition to the unit prices, an allowance of $5,000 is to be included within the Base Bid for undetermined or unforeseen items which may be discovered that are not currently included in the Contract Requirements.

2. Allowance shall cover the cost of prescribed items not specified in detail with the provision that variations between such amount and the finally determined cost of the prescribed items will be reflected in change orders appropriately adjusting the contract sum.

C. The cost for a Unit Price or Allowance item shall include all equipment, material and labor, manufacturing, transportation, deliver, handling and installation including fees, taxes, insurance, bonding, overhead and profit.

D. Base change order for unit prices and allowances solely on difference between actual quantity of work required and quantity of documented and approved work.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Section 01 33 00: Submittals: Submission of Manufacturers' Instructions, Shop Drawings, Product Data, and Certificates.

D. Section 01 77 00: Contract Close-Out.

E. All technical specification sections.

1.03 COORDINATION

A. Provide line item for each of these items on the Schedule of Values in accordance with Section 01 33 00, Submittals.

B. Provide documentation of these items in accordance with Section 01 77 00, Contract Close-Out.

C. Provide actual quantities used on each Application for Payment Request.
PART 2 - PRODUCTS

2.01 General Contract Unit Price Quantities
   A. As listed in the summary of each specification section and as indicated on the drawings, provide the Unit Prices as listed on the Bid Form.

2.02 General Contract Allowances
   A. As listed in this specification section, provide the Allowances within the Bid.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 21 10
PART 1 - GENERAL

1.01 SUMMARY

A. Alternate Number 1 work includes all work of the Base Bid to be done after hours (5 PM to 7 AM and/or on weekends).

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. All sections of specifications and drawings required to accomplish the general work defined above.

1.03 PROCEDURES

A. Alternates may be accepted in any order or combination and must determine the low Bidder based on the sum of the Base Bid and Alternates accepted.

B. Coordinate related work and modify surrounding work as required to complete the Work, including changes under each Alternate, when acceptance is designated in Owner-Contractor Agreement.

1.04 ACCEPTANCE

A. Alternates may be selected in any combination to be incorporated into the contract, as determined by the Owner. Agency can select any or all alternates, or reject any or all alternates solely at the decision of the agency.

B. Alternate bids accepted by Owner will be written into Contract or incorporated by change order.

1.05 SUBCONTRACTORS

A. Bid Form requires naming of various subcontractors whose proposals have been used under the Base Bid. If acceptance of an alternate will cause names of any subcontractor to be changed due to variances in Alternate Sub-Bids, prime bidder shall state such changes at bottom of Bid Form. These changes to Base Bid shall give substituted subcontractor's name, section of work involved, and Alternate Number, which make change necessary.
PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 23 00
SECTION 01 31 13
COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

A. No work can occur on these dates:
   1. Oct 11, 12 & 13, 2017
   2. Dec 6, 7 & 8, 2017
   3. Feb 7, 8 & 9, 2018
   4. Additional dates may be added at a later time.

B. Each week, provide an email summary of the progress schedule work for the previous seven days and the next 7 days no later than Friday by 8 AM.
   1. See Base Bid and Alternate Number 1.

C. Provide coordination and notification with Owner and Third Party Inspection Services.

D. Maintain safe, protected ingress/egress of all entrances at all times.

E. Seven (7) days notice is required to Owner and Consultant/Engineer for any element or phase of work where Contractor’s access equipment will be removed/relocated to ensure Owner and Consultant/Engineer have access to review and/or observe if requested.
   1. To be noted in Progress Schedule Summary.

F. Seven (7) days notice to Owner and Consultant/Engineer and written approval is required for all items affecting function/use of building, including any shutdowns, interruptions in services, or disconnection of services.
   1. This includes any work at or around air intakes, louvers, vents or other mechanical equipment that can allow the odors/fumes/smells of work materials and/or equipment to enter the building.
   2. To be noted in Progress Schedule Summary.

G. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
H. Use only approved laydown and storage areas discussed in Pre-Construction Conference, unless otherwise discussed and specifically approved by Owner.

I. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.

J. Coordinate space requirements and installation of mechanical and electrical work, which are indicated on Drawings. Coordinate routing for pipes and conduit as closely as possible with Owner. Place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

K. Coordinate Owner furnished equipment, materials and labor. Provide written notice to Owner, seven (7) days prior to work needed in schedule.

L. In finished areas contractor should anticipate and verify if concealed pipes, ducts, and wiring within the construction exist except as indicated otherwise. Coordinate locations of fixtures and outlets with finish elements.

M. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.

N. Coordinate access to site for correction of defective Work, and Work not in accordance with Construction Documents to minimize disruption of Owner's activities.

O. Coordinate each manufacturer’s site visit/inspection with Owner personnel at least three (3) days prior to the visit. Provide a complete copy of the field report from the manufacturer within three (3) days.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Technical Specifications and Drawings.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.
PART 1 - GENERAL

1.01 SUMMARY

A. Owner and Consultant/Engineer shall establish and schedule Pre-Construction Conference and all other meetings. The contractor shall coordinate and administer Pre-Construction Conference meeting, weekly progress schedule meetings, and specially called meetings throughout progress of the work. Weekly progress schedule meeting will include contractors, project manager, superintendent and applicable subcontractors.

1. Prepare agenda for meetings.

2. Distribute written notice of each meeting four (4) days in advance of meeting date.

3. Make physical arrangements for meetings.

4. Preside at meetings.

5. Record minutes: Include all significant proceedings and decisions.

6. Reproduce and distribute copies of minutes within three (3) days after each meeting.

B. Each week, provide an email summary of the progress schedule work for the previous seven days and the next 7 days no later than Friday by 8 AM.

1. See Base Bid and Alternate Number 1.

C. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

D. Consultant/Engineer may attend meetings to ascertain that work is expedited consistent with Construction Documents and construction schedules.

E. Consultant/Engineer shall be notified of all such meetings, and be provided written summary of each.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
B. The attention of the contractor and the subcontractor of this section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Section 01 31 13: Coordination

D. Section 01 32 03: Project Schedule

E. Section 01 33 00: Submittals, Construction Schedules and Submittals.

F. Section 01 77 00: Contract Close-Out, Project Record Documents.

G. Technical Specifications and Drawings.

1.03 PRE-CONSTRUCTION CONFERENCE MEETING

A. Schedule after submittals have been provided and approved, before any construction begins.

B. Location: At Project Site.

C. Consultant/Engineer will administer Pre-Construction Conference for execution of Owner-Contractor Agreement and exchange of preliminary submittals.

D. Attendance:
   1. Owner's Representative.
   2. Consultant/Engineer.
   3. OSE Project Manager (if applicable).
   4. Resident Project Representative.
   5. Contractor's Superintendent
   7. Major Suppliers
   8. Others as Appropriate.

E. Suggested Agenda:
   1. Distribution and discussion of:
      a. List of major subcontractors and suppliers
      b. Projected Construction Schedules.
   2. Review of project documentation of existing conditions submittal.
3. Critical work sequencing and weekly progress schedule.

4. Major deliveries and priorities

5. Project Coordination
   a. Designation of responsible personnel.

6. Procedures and processing of:
   a. Field decisions.
   b. Proposal requests.
   c. Submittals.
   d. Change Orders.
   e. Applications for Payment.
   f. Adequacy of distribution of Construction Documents.
   g. Procedures for maintaining Record Documents.
   h. Use of premises:
      1) Office work and storage lay down areas.
      2) Owner's requirements.
      3) Interior access.
   i. Construction facilities, controls and construction aids.
   j. Temporary utilities.
   k. Safety and first-aid procedures.
   l. Security procedures.
   m. Schedule.

1.04 PROGRESS MEETINGS

A. Schedule and administer Project meetings throughout progress of the work at weekly intervals, called meetings, and pre-installation conferences.

B. Location of Meetings: At Project Site.
C. Attendance:
   1. Consultant/Engineer as needed.
   2. Subcontractors as appropriate to agenda.
   3. Suppliers as appropriate to agenda.
   4. Others.

D. Suggested Agenda:
   1. Email no later than 8 AM on Friday of each week.
   2. Review, approval of minutes of previous meeting.
   3. Review of work progress since previous meeting.
   4. Field observation, problems, conflicts.
   5. Problems, which impede Construction Progress Schedule.
   6. Review of off-site fabrication, delivery schedules.
   7. Corrective measures and procedures to regain projected schedule.
   8. Revisions to Construction Schedule.
  10. Coordination of schedules.
  11. Review submittal schedules; expedite as required.
  13. Review proposed changes for:
      a. Effect on construction schedule and on completion date.
      b. Effect on other contracts of project.
  14. Pending changes and substitutions.
  15. Other business.

1.05 INSTALLATION MEETINGS

A. When required in individual specification section, convene a pre-installation conference at work site prior to commencing work of the section.
B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Consultant/Engineer seven (7) days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes, and distribute copies within three (3) days after the conference to participants, with two copies to Consultant/Engineer.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

F. Required mock-up submittals shall be received at least 7 days prior to meeting and shall be completed for the pre-installation meeting.

1.06 MANUFACTURERS SITE VISITS

A. Owner and Consultant/Engineer shall be notified at least three (3) days in advance of any manufacturers site visit.

B. Owner and Consultant/Engineer shall be provided a complete copy of report/notes within three (3) days of visit.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 31 19
SECTION 01 32 03
PROJECT SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

A. Prepare a critical path method (CPM) schedule that includes submittal review, any required engineering, procurement of materials, construction and agency required third party inspection testing activities or manufacturer milestone or other inspections. The CPM schedule shall cover the time from Contract Award/Date of Commencement Proceed to the Contract completion date. The CPM schedule shall incorporate labor, equipment and quantity resource data. The principles and definitions of the terms used herein shall be as set forth in Associated General Contractors of America Construction Planning and Scheduling Manual, Second Edition.

1. Provide an updated overall project schedule every 2 weeks at the weekly progress meeting.

2. Ensure schedule indicates shutdowns, obstructions or other events that affect Owner or requires Owner’s approval.

B. Each week, provide a written progress schedule of the previous 7 days and the planned work for the next 7 days no later than 8 AM on Friday. This is noted within the requirements of Section 01 31 19, Progress Schedule Meetings and Section 01 31 13, Coordination. Attach plan view of facility to email for clarification of work areas.

1. See Base Bid and Alternate Number 1.

C. Provide schedules in accordance with Section 01 33 00, Submittals.

D. Contractor shall request, from the Owner, a calendar of all scheduled events which will/may affect the overall project schedule, weekly progress schedule and sequence of work.

E. Inclement weather days will not be provided for days when no work was scheduled for that day.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 01 31 13: Coordination

C. Section 01 31 19: Progress Schedule Meetings

D. Section 01 33 00: Submittals

E. Technical Specifications and Drawings
1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. ASSOCIATED GENERAL CONTRACTORS OF AMERICA (AGCA)

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. Project schedule and format for weekly progress schedule

C. Weekly progress schedule

1.05 NETWORK SYSTEM FORMAT

A. The system shall adhere to Section 01 33 00, Submittals with time scaled diagrams and accompanying reports. Facilities with varying completion dates shall be identified by separate sub networks interconnected with the basic diagram and/or specifically coded.

B. Schedule Diagrams

1. Show activity number, description, early dates, float, and all relationships, i.e. logic ties, resources and cost. Show the sequence, order, and interdependence of activities in which the work is to be accomplished. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the physical completion of preceding activities and how its physical completion restricts or restrains the start of following activities. A minimum of 30 calendar days (22 work days) duration, or more if so specified, shall be allowed for Owner processing, approval and return of submittals, samples and shop drawings where Owner approval is required.

2. In addition to construction activities, detailed network activities shall include the submittals, procurement, and Owner activities impacting progress.

3. Submittal activities shall include review and approval of all submittals.

4. Procurement activities shall include all materials and equipment, receipt of materials with estimated procurement costs of major items for which payment of materials will be requested in advance of installation, fabrication of special material and equipment, and their installation and testing.
5. Show activities of the Owner that affect progress and contract-required dates for completion of all or parts of the work. Show activities indicating Owner furnished materials and equipment utilizing delivery dates indicated in the clause titled "Owner Furnished Property" of the Contract Clauses.

1.06 SCHEDULE DIAGRAMS

A. The schedule data shall conform to the following criteria:

1. All activities shall use a standard calendar of 5 workdays per week, Monday through Friday. Show Contractor defined holidays and Federal holidays as non-workdays. Activities using any other calendar shall be highlighted for the Consultant/Engineer's approval.

2. Each schedule activity shall be cost and resource loaded to include each type of trade or labor, e.g., carpenters, plumbers, electricians, etc. Activity duration shall be in workdays. All activities shall indicate the average number of workers per day planned during execution of the activity.

3. At a minimum, each schedule activity shall contain codes by:
   a. Responsibility; include but not be limited to Owner Furnished Materials, Contractor/Subcontractor, Supplier/Vendor, Consultant, etc.
   b. Location; such as, building specific, phases of construction and/or areas within a building.
   c. Mock-up and approval shall be included within schedule.
   d. Request of the Consultant/Engineer; additional codes may be required such as phases, buildings, areas within a building.
   e. Key milestones as identified by contract or furnished by the Consultant/Engineer; Proposed Change (PC) Numbers, Modification Numbers, Requests for Information (RFI's), and/or Bid Items as requested by the Consultant/Engineer.
   f. All activities must be less than or equal to 7 work days and $10,000, unless approved to be greater by the Consultant/Engineer.
   g. Detailed description of each activity (i.e. asbestos removal, mobilization, roof demolition and installation sheet metal, sealants, etc.). In each activity, give quantity and unit of measure so that the amount of work the activity involves is clearly communicated.
   h. Only two (2) open-ended activities are allowed; the first and last activities.
i. Three phases of control (Preparatory, Initial, and Follow-up) must be included in the schedule for each activity identified as a Definable Feature of Work by the Consultant/Engineer (See Quality Control Plan).

j. Out of sequence progress if applicable shall be handled through Retained Logic, not the Default Option of Progress Override.

k. Progress shall be calculated based on remaining duration (RD), not percent complete.

l. All changes to activities except jointly coordinated progress updates (i.e., duration changes, logic revisions, imposition of constraints, etc.) shall be recorded with a note in the activity log field. The log shall include, as a minimum, the date and reason for the change, as well as the Owner representative granting approval for the change.

m. The use of resource leveling, either manual or automatic, is discouraged. Any resource leveling must be specifically highlighted for the Consultant/Engineer's approval.

n. The use or start-to-start or finish-to-finish and lags is discouraged. Any relationships other than finish-to-start must be specifically highlighted for Consultant/Engineer approval and recorded with an explanatory note in the activity log field.

1.07 SUBMISSION AND APPROVAL

A. Preliminary Meeting

   1. If requested by the Consultant/Engineer, participate in a preliminary meeting to discuss the proposed schedule and requirements of this section prior to submission of the network.

1.08 REVIEW AND EVALUATION

A. The Contractor shall participate in a meeting to discuss review and evaluation of the proposed project schedule by the Consultant/Engineer. Revisions necessary as a result of this review shall be resubmitted for approval of the Consultant/Engineer within 15 calendar days after the conference. The approved schedule shall then be the schedule to be used by the Contractor for planning, organizing, and directing the work, reporting progress, and requesting payment for work accomplished. Approval of the project schedule is required prior to the start of construction.

1.09 CHANGES

A. If changes in the Contractor’s means and methods are necessary, apart from contract modifications (sequencing/logic, duration, further refining of schedule activities and logic, etc.), the Consultant/Engineer shall be notified in writing stating the reasons for the change.
1.10  APPROVED SCHEDULE

A. Once the Consultant/Engineer has approved the completed schedule, the Contractor shall within 15 calendar days furnish the approved schedule.

1.11  PROGRESS SCHEDULE MEETINGS

A. Progress schedule meeting to discuss progress and payment shall include a weekly onsite meeting or other regular intervals as required by the Owner. During the meeting the Contractor shall describe proposed revisions and adjustments required to reflect the current status of the project for the Consultant/Engineer's approval.

1.12  CONTRACT MODIFICATION

A. When a contract modification to the work is required, submit the proposed revisions to the schedule.

1.13  TIME EXTENSIONS

A. Time extensions will not be considered for contract modification proposals that do not include full documentation for the schedule change. Once the Consultant/Engineer has approved a change, the specific activities and the overall schedule must be updated.

   B. Inclement weather days will not be provided for days when no work was scheduled for that day.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 32 03
PART 1 - GENERAL

1.01 SUMMARY

A. Procedures
B. Construction Project Schedule and Weekly Progress Schedules
C. Schedule of Values
D. Project Documentation of Existing Conditions
E. Shop Drawings
F. Product Data
   1. Including sample warranties for all required warranties
G. Manufacturer's Instructions/Certificates
H. Samples
I. Mock-Ups
J. SDS Sheets

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and Subcontractors of this project is directed to the Instruction to Bidders concerning substitution of materials and equipment.

C. Section 01 11 00: Summary of Work

D. Section 01 33 02: Required Submittal List

E. Section 01 77 00: Contract Close-Out: Close-Out Submittals

F. Technical Specifications and Drawings

1.03 PROCEDURES

A. Deliver submittals to Consultant/Engineer at address listed on cover of Project Manual. Use the Required Submittal List in Section 01 33 02, Required Submittal List as a Table of Contents for the Submittal Package.
B. Provide all required submittals bound together as a single package in sequential order in accordance with the Required Submittal List. Any submittal packages not adhering to this requirement will be returned to the Contractor.

C. Submit the number of copies, which Contractor requires, plus two copies, which will be retained by Consultant/Engineer.

D. Transmit each item required under the attached submittal list. The Required Submittal List shall be used as the Table of Contents for the submission package. Identify Project, Contractor, subcontractor, major supplier and manufacturer; identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate.

1. Clearly identify in writing any variations or deviations from Construction Documents. Submit required product or system simultaneously with request, to ensure no time is lost if deviation/variation is not approved.

2. Indicate if submittal is a re-submittal.

3. Submit initial progress schedules and schedule of values in duplicate within ten (10) days after date established in Notice to Proceed. Consultant/Engineer will review and return schedules to Contractor within ten (10) days. If required, revise and resubmit within seven (7) days.

E. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.

F. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified: all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto, all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and all information relative to CONTRACTOR’s sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

G. SUBMIT ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITHIN FOURTEEN (14) DAYS OF THE DATE OF COMMENCEMENT. Consultant/Engineer will review and return submittals to Contractor within ten (10) days. Revise and resubmit as required, within seven (7) days, identifying changes made since previous submittal.

1. Notify Consultant/Engineer in writing, at time of submission, of any deviations in submittals from requirements of the Construction Documents.

2. Begin no fabrication or work, which requires submittals until return of submittals stamped "No Exceptions Taken" by Consultant/Engineer.
H. Distribute copies of reviewed submittals stamped "No Exceptions Taken" by Consultant/Engineer to the Owner, job site file, subcontractors, and other concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.04 CONSTRUCTION PROJECT SCHEDULE AND WEEKLY PROGRESS SCHEDULES

A. Submit a schedule of intended construction sequence.

1. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of Work as of time of each Application for Progress Payment.

2. Show submittal dates required for shop drawings, product data, and samples, and product delivery dates, including those furnished by Owner and those under Allowances.

3. Show submittal dates required for shop drawings, product data, and samples, and product delivery dates, including those furnished by Owner.

4. Incorporate any selected alternates by Owner as line items.

5. Provide updated schedule for review on a weekly basis.

6. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal and include any inclement weather or lost days.

B. Provide a format for email of progress schedule to be provided each week by 8 AM on Friday. Schedule to include summary of the previous 7 days and the planned work for the next 7 days.

C. Adhere to Section 01 32 03, Project Schedule.

1.05 SCHEDULE OF VALUES

A. Submit typed schedule on 8 ½ x 11-inch paper; Contractor’s standard form, AIA G703 or media-driven printout will be considered on request.

1. Identify schedule with:

   a. Title of Project and Location.

   b. Owner and Project Number.

   c. Name and Address of Contractor.

   d. Contract Designation.

   e. Date of Submittal.
2. Format:
   a. Table of Contents of this Project Manual.
   b. Identify each line item with number and title of the major Specification Sections.
   c. Include in each line item a directly proportional amount of Contractor's overhead and profit.
   d. Revise schedule to list change orders, for each application for payment.
   e. Include all alternates, allowances and unit price items as individual line items on the schedule of values.
   f. Value of “Close-Out Documents” (to be no less than $500.00).

1.06 PROJECT DOCUMENTATION OF EXISTING CONDITIONS
   A. Submit a CD or flash drive of photographs/videos documenting all existing conditions to this property and the adjoining/adjacent properties.
      1. Interior (leaks, stains, damaged ceiling tiles, paint, carpet, etc.).
      2. Exterior (landscaping, asphalt pavements, concrete surfaces, exterior wall conditions, lightning, security cameras, etc.).
   B. It is the Contractor’s responsibility to document existing conditions prior to commencing work. The burden of proof on prior conditions shall be the Contractor’s.

1.07 SHOP DRAWINGS
   A. All details will be in accordance with contract drawings.
   B. Submit any clarifications or requested deviations in triplicate.

1.08 PROJECT DATA
   A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturer's standard data to provide information unique to the Work.
   B. Ensure that the product data is current information from the manufacturer.
   C. Provide sample warranties for all required warranties.

1.09 MANUFACTURER'S INSTRUCTIONS/CERTIFICATES
   A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing in quantities specified for product data.
   B. Manufacturer’s instructions and requirements shall not take precedence of contract specifications and drawings unless specific approval is requested and approved prior to actual construction.
1.10 SAMPLES

A. Submit full range of manufacturer's standard colors, textures, and patterns for Consultant/Engineer's selection and approval by the Owner.

B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices.

C. Coordinate submittal of different categories for interfacing work.

D. Include identification on each sample, giving full information.

E. Submit the number of samples specified in each respective Specification section; Consultant/Engineer will retain one.

F. Reviewed samples, which may be used in the Work, are indicated in the Specification Section.

1.11 MOCK-UPS

A. Contractor shall complete a mock-up and/or an initial repair area for each major scope item for review and approval of Consultant/Engineer and Owner.

B. Location shall be pre-selected and approved by Consultant/Engineer and Owner.

C. Mock-up shall be of an actual condition(s) on the facility and shall indicate and show materials, methods and quality of application.

D. Mock-up shall also be reviewed for acceptability of the aesthetic conditions of the work.

1.12 Safety Data Sheets (SDS):

A. Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

B. Provide Safety Data Sheets for all materials being installed or used.

C. Keep SDS sheets at site at all times during project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 33 00
Application and Certificate for Payment

TO OWNER: PROJECT:

FROM CONTRACTOR: VIA ARCHITECT: ADC Engineering, Inc.
1226 Yamans Hall Road Hanahan, SC 29410

APPLICATION NO: PERIOD TO: CONTRACT FOR:

CONTRACT DATE: PROJECT NOS: / /

Distribution to:
OWNER: ARCHITECT:
CONTRACTOR: FIELD:
OTHER:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM ........................................... $
2. NET CHANGE BY CHANGE ORDERS ................................ $ 0.00
3. CONTRACT SUM TO DATE (Line 1 + 2) .......................... $ 0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) .... $

5. RETAINAGE:
   a. 0 ___% of Completed Work
      (Column D + E on G703) ........................................ $ 0.00
   b. 0 ___% of Stored Material
      (Column F on G703) ........................................... $ 0.00

   Total Retainage (Lines 5a + 5b or Total in Column I of G703) ........ $ 0.00

6. TOTAL EARNED LESS RETAINAGE ................................... $ 0.00
   (Line 4 Less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ...................... $
   (Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE ................................................ $ 0.00

9. BALANCE TO FINISH, INCLUDING RETAINAGE ..................... $ 0.00
   (Line 3 less Line 6)

CHANGE ORDER SUMMARY

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<th>ADDITIONS</th>
<th>DEDUCTIONS</th>
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<td>Total changes approved in previous months by Owner $</td>
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<tr>
<td>Total approved this Month $</td>
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<tr>
<td>TOTALS $</td>
<td>0.00 $</td>
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NET CHANGES by Change Order $ 0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:
By: _______________________________ Date: __________
State of:
County of:
Subscribed and sworn to before me this day of

Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED .................................................. $
(Assign explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:
By: _______________________________ Date: __________

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

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User Notes: (1800958909)
Continuation Sheet


In tabulations below, amounts are in US dollars.

Use Column I on Contracts where variable retainage for line items may apply.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF WORK</th>
<th>SCHEDULED VALUE</th>
<th>WORK COMPLETED FROM PREVIOUS APPLICATION (D+E)</th>
<th>THIS PERIOD</th>
<th>MATERIALS PRESENTLY STORED (NOT IN D OR E)</th>
<th>TOTAL COMPLETED AND STORED TO DATE (D+E+F)</th>
<th>% (G ÷ C)</th>
<th>BALANCE TO FINISH (C - G)</th>
<th>RETAINAGE (IF VARIABLE RATE)</th>
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GRAND TOTAL: $0.00 $0.00 $0.00 $0.00 $0.00 $0.00 $0.00 $0.00 $0.00

APPLICATION NO: 
APPLICATION DATE: 
PERIOD TO: 
ARCHITECT'S PROJECT NO: 

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User Notes: (1464872805)
required submittals list

Project Title: Colcock Hall Windows
Owner Project No.: 50059
ADC Project No.: 15235
Reviewer(s): ___________________ Date: ___________________

ADC Engineering, Inc.

Submittals are to be forwarded as a single package submission and in accordance with Section 01 33 00, Submittals, including:

☐ 01 32 03 Project Schedules
   1.04 B.  Project Schedule
   C.  Weekly Progress Schedule

☐ 01 33 00 Submittals
   1.04 A.  Construction Project Schedule and Weekly Progress Schedules
   1.05 A.  Schedule of Values
   1.06 A.  Project Documentation of Existing Conditions
   1.12 A.  SDS

☐ 01 52 05 Safety Requirements
   1.05 B.  Plans
      B1.  Accident Prevention Plan
      B2  Health and Safety Plans
      B2a.  Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.
   C.  Reports

☐ 02 04 00 Cutting and Patching
   1.05 C.  Proposals for Cutting and Patching

☐ 02 05 00 Demolition and Removal
   1.05 C.  Demolition Plan
04 50 05  Minor Masonry Restoration and Cleaning
1.04  C.  Shop Drawings
       D.  Product Data
       E.  Samples
       F.  Manufacturer’s Installation Instructions
       G.  SDS

06 20 00  Finish Carpentry
1.04  C.  Certificate of Treatment and Grade
       D.  Samples
       E.  SDS

06 20 08  Epoxy Wood Repairs/Modifications
1.04  C.  Mock-Ups
       D.  Manufacturer Installation Instructions
       E.  Shop Drawings
       F.  Product Data
       G.  SDS

07 50 00  General Roof Repairs and Maintenance
1.04  C.  Manufacturer’s Catalog Data and Instructions
       D  Administrative Close-Outs
       E.  SDS

07 92 10  Sealants for Building Envelope
1.04  C.  Manufacturer's Catalog Data
       D.  Manufacturer's Standard Color Chart
       E.  Manufacturer's Instructions
       F.  Samples
       G.  Sample Installations – Mock-Ups
       H.  Certificates of Compliance or SWRI Validation Program
       I.  SDS

08 61 00  Wood Windows
1.03  C.  Accessories

09 90 02  Painting for Exterior Wood Surfaces
1.05  C.  Product Data
       D.  Samples
       E.  Applicator Qualifications
       F.  Single-Source Responsibility
       G.  Field Samples

End of Required Submittal List
SECTION 01 45 00
QUALITY CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. Contractor has full and complete responsibility for the quality control of this project. Contractor shall coordinate and control their subcontractors, their work and the materials and equipment they use.

B. Quality assurance services are provided by the Owner, his representatives and the Third Party Firms for the Owner’s exclusive benefit. Within this Contract, the Contractor shall provide scheduling, coordination and written responses to all quality assurance and third party inspection services.

C. The Contractor is required to provide complete and full access for the Owner and the Owner’s Representative to complete Quality Assurance Services.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Section 01 33 00 - Submittals: Submission of Manufacturers’ Instructions, Shop Drawings, Product Data, and Certificates.

D. Technical Specifications and Drawings.

1.03 QUALITY CONTROL OF INSTALLATION

A. Contractor to maintain daily log of ongoing punch list items based on daily quality control inspections.

B. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

C. Comply fully with manufacturers' instructions, including each step in sequence.

D. Should manufacturers' instructions conflict with Construction Documents, request clarification from Consultant/Engineer before proceeding.

E. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

Quality Control
01 45 00-1

15235
F. Perform work by persons qualified to produce workmanship of specified quality.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 REFERENCES

A. The publications listed in each specification section form a part of this specification to the extent referenced, and to provide clarifications for any issues not covered within this specification or for contractor’s benefit or clarification.

B. Conform to reference standard by date of issue current on date of Construction Documents.

C. Obtain copies of standards when required by Construction Documents.

D. Should specified reference standards conflict with Construction Documents, request clarification for Consultant/Engineer before proceeding.

E. The contractual relationship of the parties to the Contract shall not be altered from the Construction Documents by mention or inference otherwise in any reference document.

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications sections for review.

B. Acceptable samples represent a quality level for the work.

C. Where field sample is specified in individual sections to be removed, clear area after Consultant/Engineer has accepted field sample.

1.06 MOCK-UP

A. Any required or specified tests will be performed under provisions identified in this section.

B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Where mock-up is specified in individual sections to be removed, clear area after Consultant/Engineer has accepted mock-up.

1.07 INSPECTION AND TESTING LABORATORY SERVICES

A. Owner may appoint, employ, and pay for services of an independent firm to perform inspection and testing, unless otherwise required in Construction Documents.

B. Reports will be submitted by the firm to the Consultant/Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Construction Documents.

Quality Control
01 45 00-2

15235
C. Contractor shall provide access and coordination with firm.

D. Cooperate with Consultant/Engineer and/or independent firm; furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.

1. Notify Consultant/Engineer seven (7) days prior to expected time for operations requiring their coordination or review.

2. Make arrangements with the firm and pay for additional samples and tests required for Contractor's use.

3. Re-testing, re-inspections or additional inspections required because of non-conformance to specified requirements shall be performed by the Consultant/Engineer. Payment for these services will be charged to the Contractor by deducting inspection or testing charges from the Contract Sum/Price.

1.08 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Submit qualifications of observer to Owner and Consultant/Engineer five (5) days in advance of required observations.

B. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, warranty inspection as applicable, and to initiate instructions when necessary.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Schedule site visit a minimum of three (3) days in advance, and submit report in duplicate within three (3) days of visit to Owner and Consultant/Engineer for review.

1.09 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. The Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the drawings.

E. Provide actual used quantities on each Application for Payment request.
PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 45 00
SECTION 01 50 00  
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Charcoal Filters at Air Intakes
B. Landscape/Paving Protection of Adjacent Surfaces
C. Building Envelope
D. Coordination of Space
E. Electricity and Lighting
F. Telephone Service
G. Water
H. Sanitary Facilities
I. Barriers
J. Protection of Installed Work
K. Cleaning During Construction
L. Field Offices, Sheds and Trailers
M. Demobilization
N. General Safety
O. Security
P. Identification of Contractor Personnel

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this section.

B. The attention of the contractor and the subcontractor of this section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Section 01 11 00: Summary of Work: Contractor use of premises.
D. Section 01 77 00: Contract Close-Out: Final Cleaning

E. Technical Specifications and Drawings

1.03 CHARCOAL FILTERS AT AIR INTAKES

A. When working with solvents, cleaners or adhesives, provide a filter medium with activated charcoal at all air intakes and other roof and wall openings.

1. Place 2 layers of charcoal filter over all air intakes and other roof and wall openings and secure in place.

2. Monitor, remove and replace as needed to maintain performance and ensure mechanical systems are unaffected.

B. “Sniff” Test

1. Prior to beginning of the roof application, contact Owner/Occupants to ensure odors are not entering the building (first day start-up).

C. Keep all adhesives away from intakes. When adhesives are being used at intakes, shield with ‘boxes’ and use fans. At VTRs/pipe penetrations, temporarily extend heights using PVC pipes or similar material.

1.04 LANDSCAPE/PAVING PROTECTION OF ADJACENT SURFACES

A. Carefully protect trees, shrubbery, grass, concrete, walkways and asphalt surfaces during the course of the project.

B. Damaged trees and shrubbery will require replacement with new, of equal size/age at no cost to the Owner.

C. Return grass to its original condition.

D. Ensure construction sequence protects the facility, grass, grounds, concrete, walkways and asphalt pavement surfaces.

E. Provide protection for concrete, asphalt and other finished surfaces adjacent to work areas.

1.05 BUILDING ENVELOPE

A. Provide protection to all building envelope surfaces (roofs, walls, fenestrations, landscaping, etc.).

B. Cover roof with plywood, or other approved material, in area of work (i.e. path of traffic, scaffolding, etc.).

C. Clean work area and keep all horizontal surfaces (roof and grade) free of construction debris daily.
D. Report damages immediately. Contractor is required to have proper repairs made within 7 days of occurrence. However, temporary repairs shall be immediate and maintained until proper, long-term repairs are made. Owner and Consultant/Engineer must approve of repair technique to be used.

E. Minimize traffic over roof and completed work.

1.06 COORDINATION OF SPACE

A. Owner and Consultant/Engineer shall determine actual laydown areas, storage areas, and extent of work site.

B. No personally owned vehicles allowed at site.

1.07 ELECTRICITY AND LIGHTING

A. Provide service required for construction operations through existing building service. Owner will provide electricity at the source. Contractor must provide access to that source. The method of access must be approved by Owner and conform to all applicable electrical and building codes. All temporary electrical wiring must be provided with proper conduit protection. The Owner must approve the path of the access.

B. Permanent lighting may be used during construction. Maintain lighting and make routine repairs.

C. Return all services to their original condition.

1.08 TELEPHONE SERVICE

A. Emergency telephone numbers must be made available for the Owner, for the Project Manager, Superintendent and Foreman for the Contractor.

1.09 WATER

A. Provide service required for construction operations from existing building systems. Extend branch piping with outlets located so that water is available by use of hoses.

B. Return all services to their original condition.

1.10 SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Do not use existing building facilities.

1.11 BARRIERS

A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
B. Provide six (6) foot high fence around construction laydown area with locks, or provide secure trailer at site. (Construction: Commercial grade chain link fence.)

C. Provide barriers around trees and plants designated to remain. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

1.12 PROTECTION OF INSTALLED WORK

A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished surface from traffic, movement of heavy objects, and storage.

C. Prohibit traffic and storage on newly installed work surfaces, on sidewalks, roads and landscaped areas.

1.13 CLEANING DURING CONSTRUCTION

A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.

B. Clean site daily.

1.14 FIELD OFFICES, SHEDS AND TRAILERS

A. Office: Not required.

B. Storage Sheds for Tools, Materials, and Equipment: Weather-tight, with adequate space for organized storage and access, and lighting for inspection of stored materials.

1.15 DEMOBILIZATION

A. Remove temporary protection, materials, equipment, services, and construction prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary facilities. As a minimum, remove spills to a depth of 2 feet beyond the contaminant. Restore existing facilities used during construction to specify, or to original, condition.

1.16 GENERAL SAFETY

A. Protection and safety of occupants, visitors, workmen, and building and grounds is of vital importance. Take precautions to ensure a safe work area.

B. Conduct work in accordance with applicable federal, state, and local regulations governing safety and safe work practices.
C. Ingress/Egress: Provide necessary protection for pedestrians, occupants and visitors related to this project.

D. If a hurricane is projected for project site location, properly protect and secure all elements of the facility.

1.17 SECURITY

A. Establish and maintain security program to ensure site is cleaned up of all materials and equipment at the end of each work day to ensure pedestrians, occupants and visitors related to this project have safe secure environment specific to the construction project.

1.18 IDENTIFICATION OF CONTRACTOR PERSONNEL

A. While on site, wear uniforms with company name, or picture identification badges with name of person and company name.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 50 00
SECTION 01 52 05
SAFETY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Noise, vibration, impact, fumes, heat and moisture related to the scope of this work must be coordinated and scheduled as to not affect the operation and function of these facilities.

1. See Section 01 50 00, Construction Facilities and Temporary Controls for fumes/odor requirements.

B. This facility will remain functional during construction. All necessary safety measures shall be provided to protect occupants, pedestrians and individuals in the surrounding areas potentially affected by this work.

1. This includes access to entrances, thoroughfare locations and adjacent facilities.

C. This section includes all necessary procedures to accomplish the work within these Construction Documents to the extent applicable to accomplish the scope of this project.

D. Ensure means and methods ensure the facilities components are stabilized, shored and protected during demolition and construction.

E. Establish and maintain security program to ensure site is cleaned up of all materials and equipment at the end of each work day to ensure occupants, pedestrians and individuals have safe secure environment specific to the construction project.

F. Any applicable requirements for this section may be submitted with the “Demolition Plan” of Section 02 05 00, Demolition and Removal.

G. Contractor shall adhere to local, state and federal requirements including SCDHEC and OSHA.

H. Basis for several requirements in this section is COE EM-385-1-1.

I. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.

1. SDS sheets are required for all products/materials used for this project. Any products with strong or distinct odors must be identified prior to use and submitted to Consultant/Engineer for review and approval.

Safety Requirements
01 52 05-1
1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions and Supplementary Conditions of these specifications shall govern work under this Section.

B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.

C. Technical Specifications and Drawings

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
   2. ANSI Z359.1 (Latest Edition) Safety Requirements for Personal Fall Arrest Systems

C. ASME INTERNATIONAL (ASME):
   1. ASME B30.5 (Latest Edition) Mobile Cranes
   2. ASME B30.22 (Latest Edition) Articulating Boom Cranes

D. INTERNATIONAL CODE COUNCIL (ICC):

E. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
   1. NFPA 10 (Latest Edition) Portable Fire Extinguishers
F. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION:
   1. 29 CFR 1926 – Safety and Health Regulations for Construction

G. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
   1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills

H. U.S. ARMY CORPS OF ENGINEERS (USACE):

1.04 DEFINITIONS

A. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

B. Confined Space. A space which, by design, has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.

C. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.

D. Health and Safety Plan (HASP). The HASP is the equivalent term of SHP or SSHP used in COE EM-385-1-1.

E. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.

F. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.

G. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Owner
considers the general contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

H. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

I. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.

J. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:

1. Fatalities, regardless of the time between the injury and death, or the length of the illness; or

2. Lost Workday Cases, other than fatalities, that result in lost workdays, or

3. Non-Fatal Cases without lost workdays, which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses, which are reported to the employer but are not classified as facilities or lost workday cases.

K. Safety Specialist. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of $200,000.

L. Significant Accident. Any contractor accident which involves falls of (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of $10,000 or more, but less than $200,000; or when fire department or emergency medical treatment (EMT) assistance is required.

M. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).
1.05 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. Plans

1. Accident Prevention Plan (APP) ; G
2. Health and Safety Plan (HASP) ; G
   a. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.

C. Reports

1. Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."
2. Crane Reports, if used.
3. Crane Critical Lift Plan, if used.

1.06 QUALITY ASSURANCE

A. Safety Specialist

1. Qualifications
   a. Qualifications of Safety Specialist:
      1) Ability to manage the on-site contractor safety program through appropriate management controls.
      2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
      3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
      4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.
   b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety.
   c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.

Safety Requirements 01 52 05-5
B. Meetings

1. Preconstruction Conference
   a. The Safety Specialist shall attend the preconstruction conference.

C. Meeting on Work Procedures

1. Meet with Owner to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and the Safety Specialist.

2. Meet with Owner to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control, and the Safety Specialist.

D. Weekly Safety Meetings

1. Hold weekly meeting at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

E. Work Phase Meetings

1. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

F. New Employee Indoctrination

1. New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

G. Plans

1. Accident Prevention Plan (APP)
   a. Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific.

H. Health and Safety Plan (HASP)

1. Submit the HASP for projects involving the handling of hazardous materials with technical submittals in accordance with Section 01 33 00, Submittals.
I.  Reports

1.  Crane Reports, if used.
   a.  Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

2.  Crane Critical Lift Plan, if used.
   a.  Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads meet or exceed 75 percent of the crane load capacity in any configuration.

J.  Certificate of Compliance

1.  The Contractor shall provide a Certificate of Compliance for each crane under this contract. Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. These certifications shall be posted on the crane.

1.07  ACCIDENT PREVENTION PLAN (APP)

A.  Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

B.  Contents of the Accident Prevention Plan

1.  Name and safety related qualifications of safety specialist (including training and any certifications).

2.  Qualifications of competent and of qualified persons.

3.  Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.

4.  Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.
5. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

6. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract shall include the following as applicable:
   a. Inventory of hazardous materials to be introduced to the site with estimated quantities.
   b. Plan for protecting personnel and property during the transport, storage and use of the materials.
   c. Emergency procedures for spill response and disposal, including a site map with approximate quantities on site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.
   d. Safety Data Sheets for inventoried materials not required in other section of this specification.
   e. Labeling system to identify contents on all containers on-site.
   f. Plan for communicating high health hazards to employees and adjacent occupants.

7. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with COE EM-385-1-1, paragraph 16.H.02.

8. Alcohol and Drug Abuse Plan

9. Describe plan for random checks and testing with pre-employment screening in accordance with state requirements.

10. Description of the on-site prevention program
   a. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and
monitoring methods. FP&P Plan shall be revised once every six months for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.

b. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.

c. Section 02 04 00, Cutting and Patching.

d. Section 02 05 00, Demolition and Removal.

e. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

f. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.

g. Barricades, signage and protective walkways.

1.08 ACTIVITY HAZARD ANALYSIS (AHA)

A. Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1.09 HEALTH AND SAFETY PLAN (HASP)

A. Prepare as required by 29 CFR 1910.120 and COE EM-385-1-1.

B. Qualified Personnel

1. Use a person with sufficient training and experience to prepare the HASP, conduct activity hazard analyses, and prepare detailed plan for demolition, removal, and disposal of materials.
C. Contents

1. In addition to the requirements of COE EM-385-1-1, Table 28-1, the HASP must include:

2. Location, size, and details of control areas.

3. Location and details of decontamination systems.

4. Interface of trades involved in the construction.

5. Sequencing of work.

6. Disposal plan.

7. Sampling protocols.

8. Testing labs.

9. Protective equipment.

10. Pollution control.


12. Training and certifications of CIH, CSP or other competent persons.

1.10 DRUG PREVENTION PROGRAM

A. Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Owner upon request.

1.11 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

A. Scaffolds

1. Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

B. Training

1. Institute a fall protection-training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.
1.12 DUTIES OF THE SAFETY SPECIALIST
A. Ensure construction hazards are identified and corrected.
B. Maintain applicable safety reference material on the job site.
C. Maintain a log of safety inspections performed.
D. Attend the pre-construction conference as required.
E. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.13 DISPLAY OF SAFETY INFORMATION
A. Display the following information in clear view of the on-site construction personnel:
   1. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
   2. AHA
   3. Confined space entry permit.
   4. A sign indicating the number of hours worked since last lost workday accident.

1.14 SITE SAFETY REFERENCE MATERIALS
A. Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

1.15 EMERGENCY MEDICAL TREATMENT
A. Contractors will arrange for their own emergency medical treatment. Owner has no responsibility to provide emergency medical treatment.

1.16 REPORTS
A. Accident Reports
   1. For recordable occupational injuries and illnesses, the general contractor shall conduct an accident investigation to establish the root cause(s) of the accident and notify the owner.
   2. For a weight handling equipment accident the General contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete an Accident Report and provide to the Owner within 30 calendar days of the accident.
B. Notification

1. Notify the Owner as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

C. OSHA Citations and Violations

1. Provide the Owner with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Owner.

D. Crane Notification

1. Notify Owner at least 15 days prior to bringing any crane equipment on-site so that the owner may arrange for any additional quality assurance spot checks necessary by the owner.

PART 2 - PRODUCTS

2.01 FALL PROTECTION ANCHORAGE

A. Fall protection anchorage used during construction shall be completely removed.

B. Any existing forms of fall protection shall be reviewed by the Contractor for compliance to authorities noted herein and shall become the responsibility of the Contractor.

2.02 CONFINED SPACE SIGNAGE

A. Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 5 feet.

PART 3 - EXECUTION

3.01 CONSTRUCTION

A. Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.
3.02 PERSONNEL PROTECTION

A. Fall Protection

1. Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

B. Personal Fall Arrest Device

1. Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

C. Fall Protection for Roofing Work

1. Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

   a. Low Sloped Roofs:

   1) For work within six (6) feet of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, safety nets or other OSHA approved methods.

   2) For work greater than six (6) feet from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).

   3) Steep Roofs: Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.
D. Safety Nets

1. If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

E. Existing Anchorage

1. Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

3.03 SCAFFOLDING

A. Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 20 feet in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.04 BARRICADES, SIGNAGE AND PROTECTIVE WALKWAYS

A. Upon completion of Contractor's staging, sequencing and means/methods decisions, Contractor shall outline proposed plan to Consultant/Owner for approval. Required barricades, signage and protective walkway shall be provided by the Contractor.

3.05 EQUIPMENT

A. Material Handling Equipment

1. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

2. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.
B. Weight Handling Equipment

1. Cranes must be equipped with:
   a. Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,
   b. or Load-Moment Indicating Devices (LMIs).
   c. Anti-two-block prevention devices.
   d. Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
   e. Boom Length Indicator (for telescoping booms).
   f. Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
   g. Device to prevent uncontrolled retraction of a telescoping hydraulic boom.

2. The Contractor shall notify the Owner, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.

3. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.
   a. The Contractor shall comply with ASME B30.5 for mobile cranes and ASME B30.22 for articulating boom cranes.

4. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

5. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.

6. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.
7. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

8. All employees shall be kept clear of loads about to be lifted and of suspended loads.

9. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

10. A Contractor Crane Operation Checklist shall be used by the contractor’s representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H.


12. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.

13. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

14. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.

15. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.

16. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by owner personnel.

17. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the owner personnel.

18. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.
3.06 ELECTRICAL

A. Conduct of Electrical Work

1. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Owner and Station Utilities for identification. The Owner will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

B. Portable Extension Cords

1. Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.07 WORK IN CONFINED SPACES

A. Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

1. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

2. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
3. Ensure the use of rescue and retrieval devices in confined spaces greater than 5 feet in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.

4. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.

3.08 HOUSEKEEPING

A. Clean-up

1. All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

B. Dust Control

1. In addition to the dust control measures required elsewhere in the Construction Documents, dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.09 ACCIDENT SCENE PRESERVATION

A. For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Owner.

3.10 FIELD QUALITY CONTROL

A. Inspections

1. Include safety inspection as a part of the daily Quality Control inspections required in Section 01 45 00, Quality Control.

3.11 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

A. Safety Gas Containers

1. Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

3.12 ASPHALT KETTLES

A. Transporting

1. Asphalt (tar) kettles shall not be transported over any highway, road or street when the heat source for the kettle is operating. Exception: Asphalt (tar) kettles in the process of patching road surfaces.
B. Location

1. Asphalt (tar) kettles shall not be located within 20 feet of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other approved means. Asphalt (tar) kettles and pots shall not be utilized inside or on the roof of a building or structure. Roofing kettles and operating asphalt (tar) kettles shall not block means of egress, gates, roadways or entrances.

C. Location of fuel containers

1. Fuel containers shall be located at least 10 feet from the burner. Exception: Containers properly insulated from heat or flame are allowed to be within 2 feet of the burner.

D. Attendant

1. An operating kettle shall be attended by a minimum of one employee knowledgeable of the operations and hazards. The employee shall be within 100 feet of the kettle and have the kettle within sight. Ladders or similar obstacles shall not form a part of the route between the attendant and the kettle.

E. Fire extinguishers

1. There shall be a portable fire extinguisher complying with Section 906 and with a minimum 40-B:C rating within 25 feet of each asphalt (tar) kettle during the period such kettle is being utilized. Additionally, there shall be one portable fire extinguisher with a minimum 3-A:40-B:C rating on the roof being covered.

F. Lids

1. Asphalt (tar) kettles shall be equipped with tight-fitting lids.

G. Hi-boys

1. Hi-boys shall be constructed of noncombustible materials. Hi-boys shall be limited to a capacity of 55 gallons. Fuel sources or heating elements shall not be allowed as part of a hi-boy.

H. Roofing kettles.

1. Roofing kettles shall be constructed of noncombustible materials.

I. Fuel containers under air pressure

1. Fuel containers that operate under air pressure shall not exceed 20 gallons in capacity and shall be approved.

END OF SECTION 01 52 05
SECTION 01 60 00
MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Products
B. Transportation and Handling
C. Storage and Protection
D. Product Options (Prior to Bid)
E. Variations (After Contract Award)
F. Systems Demonstration

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
B. The attention of the Contractor and the subcontractor of this section is directed to the Instructions to Bidders concerning substitution of materials and equipment.
C. Section 01 11 00: Summary of Work
D. Section 01 33 00: Submittals
E. Section 01 60 01: Substitution Request Form
F. Section 01 77 00: Contract Close-Out
G. Technical Specifications and Drawings

1.03 PRODUCTS

A. Products include material, equipment, and systems.
B. Comply with specifications and referenced standards as minimum requirements.
C. Components required to be supplied in quantity within a specification section, shall be the same, and shall be interchangeable.

1.04 TRANSPORTATION AND HANDLING

A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

C. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

1.05 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions. See applicable technical specification sections.

B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

C. Arrange storage to provide access for inspection. Periodically inspect to ensure products are undamaged, and are maintained under required conditions.

D. Store all equipment and materials on site in a trailer and secure at end of each day's construction.

1.06 PRODUCT OPTIONS (PRIOR TO BID)

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.

B. Products Specified by Naming One or More Manufacturers: Submit a request for substitution for any manufacturer not specifically named.

C. Products Specified by Naming Only One Manufacturer: No options, no substitutions allowed.

1.07 VARIATIONS (AFTER CONTRACT AWARD)

A. Variation Consideration: After Contract has been executed, Owner will consider a formal request for variation (or deviation) of minor products, systems or criteria as field conditions justify, only for the benefit of the owner under the following conditions:

1. Extended delivery time would seriously delay completion of project, or specified item is no longer available, or for unforeseen reasons beyond control of Contractor.

2. Request is accompanied by complete data on proposed variation substantiating compliance with Construction Documents including product identification and description, performance and test data, references and samples where applicable, and an itemized comparison of proposed variation with products
specified or named by Addenda, with data relating to Contract time schedule, design and artistic effect where applicable and its relationship to separate contracts.

3. Request is accompanied by accurate cost data on proposed variation in comparison with product specified, whether or not modification of Contract Sum is to be a consideration.

B. Contractor Representations: Request for substitutions based on above, when forwarded by Contractor to Consultant/Engineer, are understood to mean that Contractor:

1. Represents that he has personally investigated proposed substitute product and determined that it is equal or superior in all respects to that specified.

2. Will provide the same guarantee for substitution that he would for that specified.

3. Certifies that cost date presented is complete and includes all related costs under this Contract, but excludes costs under separate contracts and Consultant/Engineer's re-design costs, and that he waives all claims for additional costs related to substitution which subsequently become apparent.

4. Will coordinate installation of accepted substitute, making such changes as may be required for work to be complete in all respects.

C. Non-Consideration of Requests: Substitutions will not be considered if:

1. They are indicated or implied on shop drawing submissions without formal request required above.

2. For their implementation they require a substantial revision of Construction Documents in order to accommodate their use.

D. Approval, by Consultant/Engineer, of substitute materials and equipment shall not relieve Contractor from his responsibility to supply and install any additional materials, equipment or labor required to make substitution properly function within intent of Construction Documents, as issued for Bid, whether or not such additional materials, equipment or labor are shown on data submitted with request for approval and whether or not recognized by Consultant/Engineer or Contractor. Contractor shall supply and install such required additional material, equipment or labor solely at his own expense and at no additional cost to Owner.

1.08 SYSTEMS DEMONSTRATION

A. Prior to final inspection, demonstrate operation of each system to Consultant/Engineer and Owner.

B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.
PART 2 - PRODUCTS
Not Used.

PART 3 - EXECUTION
Not Used.

END OF SECTION 01 60 00
substitution request form

Project Title: Colcock Hall Windows
Owner Project No.: 50059
ADC Project No.: 15235
Project Manager: Mr. Richard L. Cook, Jr. Email: rickc@adcengineering.com

ADC Engineering, Inc.

Complete and submit a copy of this form for approval of each proposed substitute item.

We submit for your consideration the following product instead of the specified item for this project:

<table>
<thead>
<tr>
<th>Specified Item</th>
<th>Proposed Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section:</td>
<td></td>
</tr>
<tr>
<td>Paragraph:</td>
<td></td>
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<tr>
<td>Manufacturer:</td>
<td></td>
</tr>
<tr>
<td>Product:</td>
<td></td>
</tr>
</tbody>
</table>

Attached are complete technical data for proper installation of proposed substitution. Laboratory tests and complete information on changes to drawings and/or specifications are included if applicable.

A. What is the total cost difference considering the overall project requirements?

B. What effect does substitution have on the overall project and schedule?

C. Differences between proposed substitution. Substantiate that the product/system proposed is equal or better than the specified item/system and meets all other contract requirements.

D. Manufacturer's warranties/guarantees of proposed and specified items:

E. What is the advantage/benefit for the owner to select/approve the proposed substitution?

The undersigned states that the function, appearance and quality are equivalent to or superior to the specified item.

SUBMITTED BY:_________________________  __________________________  __________
Signature                          Firm                              Date

Notification of Accepted Substitutions prior to bid will be by Addendum

Substitution Request Form
01 60 01-1

15235
THIS PAGE IS FOR USE BY CONSULTANT/ENGINEER

SUBSTITUTION REQUEST FORM REVIEW

Project Title: Colcock Hall Windows
Owner Project No.: 50059
ADC Project No.: 15235
Project Manager: Mr. Richard L. Cook, Jr. Email: rickc@adcengineering.com

_____ Prior approval is not required.
_____ Accepted.
_____ Accepted as noted.
_____ Not accepted. Your request is being returned for the following reason(s). Resubmit if appropriate:
   _____ Received after deadline.
   _____ Not submitted by general contractor as required.
   _____ Form incomplete.
   _____ Insufficient information to review.
   _____ Improperly submitted. (See Instructions to Bidders).
   _____ Questions to be answered before approval as noted below.

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

REVIEWED BY: _______________________________          ____________________
Signature                      Date
PART 1 - GENERAL

1.01 SUMMARY

A. Close-Out Procedures
B. Unit Price Quantities and Allowances
C. Re-inspection Fees
D. Final Cleaning
E. Project Record Documents
F. Operation and Maintenance Data
G. Warranties
H. Contract Close-Out Binder

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this section.
B. The attention of the Contractor and the subcontractor of this section is directed to the Instructions to Bidders concerning substitution of materials and equipment.
C. Section 01 11 00: Summary of Work.
D. Section 01 50 00: Construction Facilities and Temporary Controls: Cleaning during construction.
E. Section 01 77 05: Three-Year Contractor Warranty
F. Section 01 77 06: Supplemental Attachment for ACORD – AIA G715
G. Section 01 77 07: Contractor’s Affidavit of Payment of Debts and Claims – AIA G706
H. Section 01 77 08: Contractor’s Affidavit of Release of Liens – AIA G706A
I. Section 01 77 09: Consent of Surety to Final Payment – AIA G707
J. Section 01 77 15: Certification of Asbestos-Free Materials
K. Section 01 77 20: Certificate of Final Completion – SE-560

L. Section 01 77 25: Contract Close-Out Check List

M. Technical Specifications and Drawings

1.03 CLOSE-OUT PROCEDURES

A. Provide all required Close-Out Documents, bound together as a single package and submit to ADC Engineering, Inc. in triplicate. Any Close-Out Document packages not adhering to this requirement will be returned to the Contractor.

B. All work and punchlist items must be complete to provide all required Close-Out Documents.

C. In accordance with Section 01 33 00, Submittals, the value for Close-Out Documents will be no less than $500.00.

D. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.

E. Owner will occupy project for the purpose of conduct of business, under provision stated in Certificate of Substantial Completion.

F. When Contractor considers work has reached final completion, submit required written certification that Construction Documents have been reviewed, work has been inspected, and that work is complete in accordance with Construction Documents and ready for Consultant/Engineer's inspection.

G. In addition to submittals required by the Conditions of the Contract, provide submittals required by governing authorities. Submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.

H. Consultant/Engineer will issue final change order reflecting approved adjustments to Contract Sum not previously made by change order.

1.04 UNIT PRICED QUANTITIES AND ALLOWANCES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.
1.05 REINSPECTION FEES

A. Should status of completion of work require re-inspection by Consultant/Engineer due to failure of work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Consultant/Engineer's compensation for re-inspection services from final payment to Contractor.

B. Should the work exceed the contract substantial completion date, the Contractor will be responsible for Consultant/Engineer site visits/support for the Owner. Owner will deduct the amount of the Consultant/Engineer's services from the final payment.

1.06 FINAL CLEANING

A. Execute prior to final inspection.

B. Clean surfaces exposed to view, remove temporary labels, stains and foreign substances and polish transparent and glossy surfaces. Clean roofs, scuppers, roof drains, and drainage systems.

C. Clean site; sweep paved areas, rake clean other surfaces.

D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site. Contractor will provide final cleaning after final acceptance.

E. Site shall be in original or new condition upon completion.

1.07 PROJECT RECORD DOCUMENTS

A. Record information on a set of drawings provided by Owner. Legibly mark each item to record actual construction, including:

1. Field changes of dimension and detail.

2. Changes made by modifications.

3. Details not on original Contract Drawings.

4. References to related shop drawings and modifications.

B. Store documents separate from those used for construction.

C. Keep documents current; do not permanently conceal any work until required information has been recorded.

D. At Contract Close-Out, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list documents, and signature of Contractor.
1.08 OPERATION AND MAINTENANCE DATA

A. Prepare instructions and data in the form of an instruction manual by personnel experienced in maintenance and operation of described products.

B. Submit the following:

1. Part 1: Directory, listing names, addresses, email addresses and telephone numbers of Consultant/Engineer and Contractor.

2. Part 2: Operation and maintenance instructions, arranged by specification division. For each specification division, give names, addresses, and telephone numbers of subcontractors and supplies. List:
   a. Appropriate design criteria.
   b. List of Materials.
   c. Maintenance instructions.
   d. Shop drawings and product data.

C. If applicable, provide roof information card as required within roof system sections.

1.09 WARRANTIES

A. Provide triplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.

B. All warranties will be dated based on the established Substantial Completion date.

C. Manufacturer’s Warranties

1. Provide manufacturer’s warranties for each individual specification section meeting specification requirements.
   a. Attach copy of manufacturer’s inspection punch list, any required letters of clarification, and flashing endorsement.

D. Contractor Warranties

1. Provide the Three-Year Contractor Warranty as required in the Contract Documents.

1.10 CONTRACT CLOSE-OUT BINDER

A. The Contract Close-Out Checklist included in the Contract Documents shall be provided as the “Table of Contents” for the required Contract Close-Out Binder.
B. Provide, a minimum, three (3) sets of all listed documents bound in sturdy, three ring binders.

C. Each binder shall include a copy of the Final Change Order and the Final Application for Payment.

1. The original Request for Substantial Completion, Request for Final Completion, Final Change Order and Final Application for Payment should not be included in the Close-Out Binder.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 77 00
THREE-YEAR CONTRACTOR WARRANTY
FOR COLCOCK HALL WINDOWS

WHEREAS, ____________________________________________ of
(Address) ____________________________________________
Telephone: ________________ herein called the "Prime Contractor", has performed the work for the

Colcock Hall Windows project.

Owner: The Medical University of South Carolina
325 Calhoun Street
Charleston, SC 29425

Type of Building: ______________________________________
Address: ______________________________________________
Area of Work: __________________________________________
Date of Acceptance: _____________________________________
Warranty Period: Three Years Date of Expiration: ________________

AND WHEREAS, the Prime Contractor has contracted to warrant said work against leaks and faulty or
defective materials and workmanship for the designated Warranty Period; NOW, THEREFORE, the Prime
Contractor hereby warrants, subject to the terms and conditions herein set forth, that during the Warranty
Period Prime Contractor will at its own cost and expense, make or cause to be made such repairs to or
replacements of said work thereof as are necessary to correct faulty and defective work to the satisfaction of
the Owner, and as are necessary to maintain said work in a watertight condition. Prime Contractor warrants
the said work as required, related and applicable to all Specification Sections and the drawings of the Contract
Documents for the Colcock Hall Windows project (ADC Project Number: 15235).

This Warranty is made subject to the following terms and conditions:

1. Warranty covers the work by the Contractor to said building envelope (roofing, waterproofing and
   exterior walls) components of the systems within the scope of work under this contract and does not
cover work by others under other contracts or future defects not directly attributable to work performed.

2. Specifically excluded from this Warranty are damages to the work caused by: a) lightning, hurricane
   force winds, hailstorm, and other unusual phenomena of the elements; b) fire c) failure of the building
   envelope (roofing, waterproofing and exterior walls) system resulting from structural settlement,
excessive deflection, deterioration, and decomposition not caused by this project; d) faulty construction
   of walls not included in Contract Work, other conditions such as terminations and penetrations not
   included in the project; and e) activity related damages of the building envelope (roofing, waterproofing
   and exterior walls) by others including construction contractors, maintenance personnel, other persons
   (including vandalism by non-building envelope (roofing, waterproofing and exterior walls), animals and
   change in building function which subjects said building envelope (roofing, waterproofing and exterior
   walls) elements to hazardous chemicals not present during or before Contractor's work whether
   authorized or unauthorized by Owner. When the work has been damaged by any of the foregoing
   causes, the Warranty may be null and void for the specific locations affected until such damage has been
   repaired by the Owner or by another responsible party as so authorized and designated.

3. Other portions or parts of this building not within the scope of this work are not covered under this
   Warranty.

4. The Prime Contractor is responsible for damages to the facility caused by the scope of work for this
   project covered by this Warranty.

Three Year Contractor Warranty
01 77 05 - 1

15235
5. During the Warranty Period, if the Owner allows alteration of the work by anyone other than the Prime Contractor without written consent of the Prime Contractor, including cutting, patching and maintenance in connection with penetrations, alteration of said flashings, attachment of other work, and positioning of anything on the building envelope (roofing, waterproofing and exterior walls) system, this Warranty may become null and void at the specific locations upon the date of said alterations, but only to extent said alterations affect work covered by this Warranty. If the Owner engages the Prime Contractor to perform said alterations, the Warranty shall not become null and void, unless the Prime Contractor, prior to proceeding with alteration work, shall have notified the Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate the work as warranted, thereby reasonably justifying a termination of this Warranty in the area of the altered work.

6. During the Warranty Period, if the original use of the building envelope (roofing, waterproofing and exterior walls) is changed and it becomes used for use other or service more severe than originally specified, this Warranty may become null and void at the specific locations upon the date of the said change, but only to the extent said change affects work covered by this Warranty.

7. The Owner shall promptly notify the Prime Contractor of observed, known or suspected leaks, defects, failures or deterioration, and shall afford reasonable opportunity for Prime Contractor to inspect the work, and to examine the evidence of such leaks, defects or deterioration regardless of the direct cause or causes.

8. Contractor will promptly inspect reported issues/leaks and if found to be attributed to work performed as part of the scope of this project, make the required repairs within 72 hours of written notification.
   a. If leaks are found to be from other sources beyond the scope of this warranty, Contractor shall so inform the Owner in writing. There will be no charge for this first service call.
   b. Future service calls and leak repairs not attributed to contractors work will be for Owner's account. Cost of repairs will be at a fair and reasonable rate. Materials required will be at a maximum of cost plus 15%.
   c. If the Prime Contractor fails to perform repairs in allotted time frame assigned herein this warranty, this warranty will not be voided by the Prime Contractor because of work performed by Others to repair deficient conditions regardless of whether repairs by Others are temporary or permanent in nature.

9. This Warranty is recognized to be the only warranty of the Prime Contractor on said work, and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to him in cases of building envelope (roofing, waterproofing and exterior walls) failure. This warranty shall not void, reduce, restrict or otherwise affect manufacturer warranties or performance bonds. Specifically, this Warranty shall not operate to relieve the Prime Contractor of his responsibility for performance of the original work, regardless of whether the Contract was a contract directly with Owner, or a subcontract with Owner's General Contractor.

10. If an extended warranty is required during the course of construction, the more stringent requirements shall take precedence.

IN WITNESS WHEREOF, this instrument has been duly executed this ______ day of ______ 20____
Prime Contractor's Signature: ________________________________
Typed Name: _____________________________________________
As Its (position): __________________________________________
Date: ___________________________________________________

Three Year Contractor Warranty
01 77 05 - 2
15235

Supplemental Attachment for ACORD Certificate of Insurance 25-S

PROJECT (Name and address):
Colcock Hall Windows
Owner Project Number: 50059

INSURED

A. General Liability
1. Does the General Aggregate apply to this Project only? ☐ ☐ ☐
2. Does this policy include coverage for:
   a. Premises - Operations? ☐ ☐ ☐
   b. Explosion, Collapse and Underground Hazards? ☐ ☐ ☐
   c. Personal Injury Coverage? ☐ ☐ ☐
   d. Products Coverage? ☐ ☐ ☐
   e. Completed Operations? ☐ ☐ ☐
   f. Contractual Coverage for the Insured’s obligations in A201? ☐ ☐ ☐
3. If coverage is written on a claims-made basis, what is the:
   a. Retroactive Date? ☐ ☐ ☐
   b. Extended Reporting Date? ☐ ☐ ☐

B. Worker’s Compensation
1. If the Insured is exempt from Worker’s Compensation statutes, does the Insured carry the equivalent Voluntary Compensation coverage? ☐ ☐ ☐

C. Final Payment Information
1. Is this certificate being furnished in connection with the Contractor’s request for final payment in accordance with the requirements of Sections 9.10.2 and 11.1.3 of AIA Document A201, General Conditions of the Contract for Construction? ☐ ☐ ☐
2. If so, and if the policy period extends beyond termination of the Contract for Construction, is Completed Operations coverage for this Project continued for the balance of the policy period? ☐ ☐ ☐

D. Termination Provisions
1. Has each policy shown on the certificate and this Supplement been endorsed to provide the holder with 30 days notice of cancellation and/or expiration? List below any policies which do not contain this notice. ☐ ☐ ☐

E. Other Provisions

Authorized Representative

Date of Issue
Contractor’s Affidavit of Payment of Debts and Claims

PROJECT: (Name and address) Colecock Hall Windows
Owner Project Number: 50059

ARCHITECT’S PROJECT NUMBER: ADC 15235
ARCHITECT:
CONTRACTOR:
SURETY:
OWNER:

CONTRACT FOR: TO OWNER: (Name and address) The Medical University of South Carolina

CONTRACT DATED: 325 Calhoun Street MSC 109
Charleston, SC 29425

STATE OF:
COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner’s property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:
1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose
Indicate Attachment □ Yes □ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor’s Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.


CONTRACTOR: (Name and address)

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:
## Contractor's Affidavit of Release of Liens

**PROJECT:** (Name and address)
Colcock Hall Windows
Owner Project Number: 50059

**ARCHITECT'S PROJECT NUMBER:**
ADC 15235

**OWNER:**

**ARCHITECT:**

**CONTRACTOR:**

**SURETY:**

**TO OWNER:** (Name and address)
The Medical University of South Carolina
325 Calhoun Street MSC 109
Charleston, SC 29425

**CONTRACT FOR:**

**CONTRACT DATED:**

**STATE OF:**

**COUNTY OF:**

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

### EXCEPTIONS:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

**SUPPORTING DOCUMENTS ATTACHED HERETO:**

**CONTRACTOR:** (Name and address)

**BY:**

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:
Consent Of Surety to Final Payment

PROJECT: (Name and address)
Colcock Hall Windows
Owner Project Number: 50059

ARCHITECT'S PROJECT NUMBER: ADC 15235
OWNER:
ARCHITECT:
CONTRACTOR:
SURETY:

TO OWNER: (Name and address)
The Medical University of South Carolina
325 Calhoun Street MSC 109
Charleston, SC 29425

CONTRACT DATED:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

SURETY,

on bond of
(Insert name and address of Contractor)

CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety
of any of its obligations to
(Insert name and address of Owner)

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)
certification of asbestos-free materials

Project Title: Colcock Hall Windows
Owner Project No.: 50059
ADC Project No.: 15235

1. I am authorized to bind ________________________________
   (Company's Name by which I am employed).

2. I certify that no materials on this project will contain asbestos. No asbestos-containing
   materials will be submitted or installed.

3. I recognize that my company's contract is subject to suspension of payments or
   termination or both, and that my company is responsible for total asbestos abatement
   of any materials installed by my company.

________________________________________
Company Name

________________________________________
Name and Title of Authorized Representative

________________________________________
Signature                   Date
CERTIFICATE OF FINAL COMPLETION

AGENCY: The Medical University of South Carolina

PROJECT NAME: Colcock Hall Windows

PROJECT NUMBER: 50059

CONTRACTOR: [Blank]

CONTRACTOR'S NOTIFICATION AND CERTIFICATION

I hereby notify the A/E and the Agency that the Contract Work for the above Project is or will be fully completed on the date shown below. All items of punch-list and all items required by the Construction Documents have been completed and all Work is in conformance with the Contract Documents. The Facility is or will be ready for FINAL INSPECTION and TESTING on the date shown.

BY: [Blank]

(Signature of Contractor Representative)

PRINT NAME OF CONTRACTORS REPRESENTATIVE: [Blank]

TITLE: [Blank]

DATE FOR FINAL COMPLETION INSPECTION: [Blank]

A/E CERTIFICATION AND AGENCY ACCEPTANCE OF FINAL COMPLETION

The A/E and Agency agree that the Project is complete and the Final Inspection of the Project was acceptable. Final Completion of the Project is hereby declared to be effective on the date stated below.

DATE FOR FINAL COMPLETION: [Blank]

SPECIAL CONDITIONS OR STIPULATIONS CONCERNING FINAL COMPLETION:

THIS FORM DOES NOT CONFER PERMISSION TO OCCUPY/USE THE FACILITY

A/E CERTIFICATION

BY: [Blank]

(Signature of A/E Representative)

PRINT NAME: Richard L. Cook, Jr.

TITLE: Vice President

AGENCY ACCEPTANCE

BY: [Blank]

(Signature of Agency Representative)

PRINT NAME: [Blank]

TITLE: [Blank]

INSTRUCTIONS TO THE AGENCY:

1. Forward a copy of the completed SE-560 and any attachments to OSE.
## Section 01 77 25
### Contract Close-Out Checklist

<table>
<thead>
<tr>
<th>Request for Substantial Completion with Contractor Punchlist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate of Substantial Completion – SE-550</td>
</tr>
<tr>
<td>• This will be generated by ADC Engineering, Inc. and forwarded for signature once Substantial Completion date is awarded.</td>
</tr>
<tr>
<td>Certificate of Final Completion – SE-560 with Initialed ADC Substantial Completion Punchlist</td>
</tr>
<tr>
<td>• Correct Project Information</td>
</tr>
<tr>
<td>• Correct Date</td>
</tr>
<tr>
<td>• Signed and Dated</td>
</tr>
<tr>
<td>Contractor's Affidavit of Payment of Debts and Claims - AIA G706</td>
</tr>
<tr>
<td>• Correct Project Information</td>
</tr>
<tr>
<td>• Signed and Dated</td>
</tr>
<tr>
<td>• Notarized and Sealed</td>
</tr>
<tr>
<td>Contractor's Affidavit of Release of Liens Form – AIA G706A</td>
</tr>
<tr>
<td>• Correct Project Information</td>
</tr>
<tr>
<td>• Signed and Dated</td>
</tr>
<tr>
<td>• Notarized and Sealed</td>
</tr>
<tr>
<td>Consent of Surety to Final Payment - AIA G707</td>
</tr>
<tr>
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<td>• Signed and Dated</td>
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<td>• Notarized and Sealed</td>
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<td>Supplemental Attachment for ACORD Certificate of Insurance 25-S</td>
</tr>
<tr>
<td>Manufacturer’s Warranties</td>
</tr>
<tr>
<td>• Provide Manufacturer’s Warranties as required by the Contract Documents</td>
</tr>
<tr>
<td>• Dated on or after Substantial Completion date and signed</td>
</tr>
<tr>
<td>Operation and Maintenance Data</td>
</tr>
<tr>
<td>• Provide any required / necessary operation / maintenance data for systems</td>
</tr>
<tr>
<td>Three-Year Contractor Warranty</td>
</tr>
<tr>
<td>• Provide Three-Year Contractor Warranty as required by the Contract Documents</td>
</tr>
<tr>
<td>• Dated on or after Substantial Completion date and signed</td>
</tr>
<tr>
<td>ADC Substantial Completion Inspection Punch List</td>
</tr>
<tr>
<td>• All items signed off by the Contractor as completed</td>
</tr>
<tr>
<td>ADC Final Completion Inspection Punch List</td>
</tr>
<tr>
<td>• All items signed off by the Contractor as completed</td>
</tr>
<tr>
<td>List of Materials Used by Specifications Section</td>
</tr>
<tr>
<td>• Provide list of materials / manufacturers</td>
</tr>
<tr>
<td>Supplier – Address and Phone Numbers</td>
</tr>
<tr>
<td>• Provide list of suppliers for systems</td>
</tr>
<tr>
<td>Asbestos Close-Out Certifications / Receipts</td>
</tr>
<tr>
<td>• Provide Certification of Asbestos-Free Materials, included in the Contract Documents, signed and dated.</td>
</tr>
<tr>
<td>Record Drawings</td>
</tr>
<tr>
<td>• Provide set of contract drawings with all field changes / modifications shown in red</td>
</tr>
<tr>
<td>Summary of Unit Prices</td>
</tr>
<tr>
<td>• Provide required documentation of required unit prices</td>
</tr>
<tr>
<td>• Provide summary balance of all unit prices and remaining balance</td>
</tr>
<tr>
<td>Final Change Order</td>
</tr>
<tr>
<td>• Provide Final Change Order with Unit Prices / Balances included</td>
</tr>
<tr>
<td>Final Application for Payment</td>
</tr>
<tr>
<td>• Provide Final Invoice, including Final Change Order</td>
</tr>
</tbody>
</table>

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Contract Close-Out Checklist

01 77 25-1
SECTION 02 04 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. This section establishes general requirements pertaining to cutting, fitting, and patching of the work.

1. Portions of this work require cutting and/or patching components of the existing facility. Plan and coordinate this demolition neatly and safely.

2. Use proper shoring, bracing and protection at all times.

3. Uncover work to provide for installation, inspection, or both, of ill-timed work.

4. Cut and completely remove existing coatings and sealants to provide all new sealant joints.

5. Grinding, chipping, saw-cutting and cutting to the building envelope as required to complete the scope of work.

6. Remove all materials, components or accessories required to complete the repairs, modifications and/or replacements.

7. Cutting and coring of masonry exterior walls to complete modifications and repairs to include the following.
   a. Masonry demolition and repairs.
   b. Modifications and repairs at fenestrations, terminations and penetrations.

8. Cutting and patching to complete modification and repairs to include the following.
   a. Slate roofs (repairs).
   b. Copper roofs (repairs).
   c. Drainage outlets to roofs (repairs/modifications).

9. Remove all mechanical, electrical and plumbing equipment to complete work and reinstall with new sheet metal closures.

10. Remove and replace work not conforming to requirements of the Construction Documents, defective or substandard work.
11. Survey existing conditions, coordinate shutdowns, have qualified craftsmen disconnect necessary plumbing, mechanical and electrical components.

12. Make the several parts fit properly, to accomplish the work within these Construction Documents.

B. Protect building from inclement weather all times.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. In addition to other requirements specified, upon the Owners request, uncover work to provide for inspection of covered work by the Owner or Owner’s representative, and remove samples of installed materials for testing.

C. Section 02 05 00: Demolition and Removal

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 06 20 00: Finish Carpentry

F. Section 06 20 08: Epoxy Wood Repairs/Modifications

G. Section 07 50 00: General Roof Repairs/Maintenance

H. Section 07 92 10: Sealants for Building Envelope

I. Section 08 61 00: Wood Windows

J. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 REFERENCES

A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):


B. INTERNATIONAL CODE COUNCIL (ICC):


C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

D. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION:
   1. 29 CFR 1926 – Safety and Health Regulations for Construction

E. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
   1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills

F. U.S. ARMY CORPS OF ENGINEERS (USACE):

1.04 QUALITY ASSURANCE

A. Requirements for building envelope and structural work.
   1. General: Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or increase in the load/deflection ratio.
   2. Prior to cutting-and-patching the following categories of work, obtain the Owner’s approval to proceed with cutting- and-patching as proposed in the submittal by the Contractor:
      a. Timber, wood framing, wood framing and nailers.
      b. Wood windows and trim.
      c. Brick masonry and trim.
      d. Sealants.
      e. Copper, slate and the gutters/downspouts.

B. Operational and Safety Limitations
   1. This is a historic building with significant importance, value and contents.
   2. General: Do not cut-and-patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.
3. Prior to cutting-and-patching the following categories of work, and similar categories where directed, obtain the Owner’s approval to proceed with cutting-and-patching as proposed in the submittal by the Contractor:

a. Roofing, exterior walls, fenestrations structural elements should include shoring and structural bracing during work as needed based on construction loads and phasing.

b. Primary operational systems and equipment. (Do not overload system with materials/equipment).

c. Water / moisture/vapor/air/smoke barriers, membranes and flashings.

d. Noise and vibration control elements and systems.

e. Temporarily disconnect, and then re-install immediately the control, communication, mechanical and electrical wiring systems.

f. Protection of building and contents during construction.

4. Contractor is required to maintain system to protect occupants on interior from falling debris, dust, etc. during construction. Contractor is also required to clean all areas where dust or debris exists as a result of construction.

5. Monitor and schedule construction noise to ensure function of facility is maintained during construction.

C. Appearance Requirements - General

1. Do not cut-and-patch work which is observable on the exterior or exposed in occupied spaces of the building, in a manner resulting in a reduction of visual qualities or resulting in substantial evidence of the cut-and-patch work, both as judged solely by the Owner.

2. Remove and replace work judged by the Owner to be cut-and-patched in a visually unsatisfactory manner.

1.05 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. Proposals for Cutting and Patching

1. Submit proposed demolition and removal procedures with the cutting and patching procedures to the Owner for approval before work is started.
a. Include description of why cutting-and-patching cannot (reasonably) be avoided, how it will be performed, how structural elements (if any) will be reinforced, products to be used, firms and tradesmen to perform the work, approximate dates of the work, and anticipated results in terms of variations from the work as originally completed (structural, operational, visual and other qualities of significance).

b. Where applicable, include cost proposal, suggested alternatives to the cutting and patching procedure proposed, and a description of the circumstances that lead to the need for cutting-and-patching.

2. Approval by Owner to proceed with proposed cutting-and-patching does not waive the right to later require complete removal and replacement of work found to be cut-and-patched in an unsatisfactory manner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. For replacement of work removed, use materials, which comply with the pertinent sections of these specifications.

2.02 PAYMENT FOR COSTS

A. Perform all cutting and patching needed to comply with the Construction Documents at no additional cost to the Owner.

PART 3 - EXECUTION

3.01 CONDITIONS

A. Inspection

1. Inspect existing conditions, including elements subject to movement or damage during sounding, selective demolition, cutting and patching.

2. After uncovering the work, inspect conditions affecting installation of new work.

B. Discrepancies

1. If uncovered conditions are not as anticipated, immediately notify the Consultant/Engineer and secure needed directions.

2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

C. Protection

1. Protect building from inclement weather at all times.
3.02 PREPARATION

A. Temporary Support: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work.

B. Protection: Provide adequate protection of other work during cutting-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.

3.03 CUTTING AND PATCHING

A. General: Employ skilled tradesmen to perform cutting- and-patching. Except as otherwise indicated or approved by the Owner, proceed with cutting-and-patching at the earliest feasible time, in each instance, and perform the work promptly.

B. Cut work by methods least likely to damage work to be retained and work adjoining. Review proposed procedure with original Installer where possible, and comply with his recommendations.

1. In general, where physical cutting action is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.

2. Comply with the requirements of Section 02 05 00, Demolition and Removal.

C. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

1. Where feasible, inspect and test patched areas to demonstrate integrity of work.

D. Restore exposed finishes of patched areas and, where necessary, extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.

3.04 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 02 04 00

Cutting and Patching
02 04 00-6

15235
SECTION 02 05 00

DEMOLITION AND REMOVAL

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes the demolition of the following products/accessories/systems to complete the work.

1. Function, access and usage of the facility shall be maintained during the demolition and construction process.

2. Disconnect, relocate, remove and re-install any interior and exterior items required to complete the work.
   a. This includes mechanical, electrical, plumbing or communications equipment.

3. Remove all signage, lights, security cameras, conduits, pipes or other items on the exterior surfaces to permit complete cleaning and preparation of all surfaces.

4. Demolition of individual masonry units, wood trim, interior sills, expansion joints and mortar joints to complete the repairs in accordance with Section 04 50 05, Minor Masonry Restoration and Cleaning.

5. Demolition of rotted, deteriorated and/or damaged carpentry to permit replacement in accordance with Section 06 20 00, Finish Carpentry and Section 06 20 08, Epoxy Wood Repairs/Modifications.

6. Removal of all sealants on the systems and adjacent wall surfaces for replacement in accordance with Section 07 92 10, Sealants for Building Envelope.

7. Removal of all gaskets/sealants on the window systems for replacement in accordance with Section 08 61 00, Wood Windows.

8. Removal of paint for exterior wood surfaces in accordance with Section 09 90 02, Painting for Exterior Wood Surfaces.

B. Contractor shall immediately notify the Consultant/Engineer and the Owner, in writing, when conditions are uncovered which will affect or deter completion of the work in accordance with the Contract Documents.

C. All demolition shall adhere to ANSI, SCDHEC, and OSHA guidelines and as applicable to Section 01 52 05, Safety Requirements.

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D. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.

1. SDS sheets are required for all products/materials used for this project. Any products with strong or distinct odors must be identified prior to use and submitted to Consultant/Engineer for review and approval.

E. Building must be protected from inclement weather at all times. Contractor shall have plan and materials (means and methods) to protect area areas during inclement weather.

F. Unit prices and set quantities are included for various items in accordance with Section 01 21 10, Unit Prices and Allowances and documentation is required accordingly.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 01 52 05: Safety Requirements

C. Section 02 04 00: Cutting and Patching

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 06 20 00: Finish Carpentry

F. Section 06 20 08: Epoxy Wood Repairs/Modifications

G. Section 07 50 00: General Roof Repairs/Maintenance

H. Section 07 92 10: Sealants for Building Envelope

I. Section 08 61 00: Wood Windows

J. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
B. AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI):
   1. ANSI/ASSE A10.6 (2006) Safety Requirements for Demolition Operations

C. INTERNATIONAL CODE COUNCIL (ICC):

D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

E. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
   1. 29 CFR 1926 – Safety and Health Regulations for Construction

F. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
   1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills

G. U.S. ARMY CORPS OF ENGINEERS (USACE):

1.04 GENERAL REQUIREMENTS

A. Do not begin demolition until Demolition plan is approved and authorization is received from the Consultant/Engineer.

B. Remove rubbish and debris from the site daily; do not allow accumulation around the building or grounds.

C. Coordinate sequencing and temporary shutdowns with occupants and owner.

1.05 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
C. Demolition Plan:

1. Submit proposed demolition and removal procedures to the Consultant/Engineer for approval before work is started.

2. Include procedures for careful removal and disposition of materials while function of building is maintained, a disconnection schedule of effected utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

3. State safety precautions to be used during conduct of demolition work

1.06 REGULATORY AND SAFETY REQUIREMENTS

A. Comply with federal, state, and local hauling and disposal regulations.

1. In addition to the requirements of the contract clauses, safety requirements shall conform to ANSI A10.6 and applicable OSHA requirements.

B. Contractor shall assure compliance with applicable safety and fall protection requirements of federal, state and local regulations throughout performance of work.

C. The Contractor shall make application to all necessary Building Officials/governing bodies and obtain the required permits for work.

1.07 DUST AND DEBRIS CONTROL

A. Provide adequate protection of areas which will be subject to demolition debris and dust.

B. Clean up all fasteners, drive pins, nails and sheet metal clippings from ground/horizontal surfaces.

C. Contractor shall monitor interior and adjacent spaces during the demolition process.

D. Prevent the spread of dust and debris to the interior portions of the building, to the surrounding grounds, and avoid the creation of a nuisance or hazard in the surrounding area.

E. Removal of existing work shall be coordinated not to affect current building occupants, pedestrians or function/usage of building.

F. Do not damage existing substrate or overload assembly with construction traffic, debris or equipment.

G. Provide protection at roof gutters, downspouts and prefabricated drain piping to ensure debris/trash does not enter pipes.
H. Interior side of all fenestrations should have “sheetrock” insert installed and sealed during work at each location.

I. Removal of existing work shall be limited to days where low winds (15 mph or less) unless netting/wind shading are used to ensure roof debris is contained and disposed of properly.

J. Do not damage existing exterior surfaces, masonry walls, expansion joints, guy wires, conduits, cables, security equipment, fireproofing, insulation, on underside of the existing roof deck and framing.

1.08 PROTECTION

A. Provide protection system for roofing and adjacent wall surfaces.

B. Traffic Control Signs:

1. Where pedestrian safety is endangered in the area of removal work, use traffic barricades with flashing lights.

C. Ingress/Egress Protection:

1. During the construction period, exits from the building(s) shall not be blocked or impaired without expressed approval of the Agency Life, Safety/Fire Protection Officer

2. Overhead protection and traffic control signs required at all ingress/egress points affected by this work including thoroughfares and adjacent facilities.

D. Existing Work:

1. Protect existing work, which is to remain in place or be reused.

2. Protect grass, shrubbery and all horizontal (asphalt, concrete and landscaping) surfaces as well as adjacent roof and wall surfaces.

3. Repair items, which are to remain and which are damaged during performance of the work to their original condition or replace with new.

4. Do not overload existing structural system.

5. Interior:

a. The interior of the building shall be protected at all times from dust, debris, materials and equipment associated with the roof construction.

b. Safety, the uninterrupted function of the building and the protection of the interior contents shall be maintained at all times.

c. Disconnect, relocate, remove and re-install any interior items required to complete the work.
E. Weather Protection:

1. Building must be protected from inclement weather at all times. Contractor shall have plan and materials (means and methods) to protect areas during inclement weather.
   a. Ensure safety plan includes hurricane preparation and procedures for project.

2. For portions of the building to remain, protect building interior and materials and equipment from the weather at all times.

3. When removal of the existing roofing system is accomplished, have the materials and workmen ready to provide adequate and temporary covering of exposed areas during inclement weather and at the end of each day's construction.

F. Facilities:

1. It is the Contractor's responsibility to return the structure and any damaged items to their original condition.

2. Protect all mechanical and electrical services and accessories during the demolition process.

3. Temporary removal/disconnection of utilities during the demolition process; shall be accomplished by qualified craftsman.

4. All interruptions in service shall be coordinated with the Consultant/Engineer and Owner.

5. All surfaces damaged or stained during the construction process shall be the Contractors responsibility to return to its original condition.

G. Adjacent Surfaces:

1. The Contractor shall return to its original state, any damaged shrubbery, grass, concrete, skylights, equipment or other adjacent surface.

1.09 RELOCATIONS

A. Perform the removal and reinstallation of the relocated items as indicated with workmen skilled in the trades involved.

B. Repair items to be relocated, which are damaged or replace damaged items with new undamaged items as approved by the Consultant/Engineer.
PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 EXISTING FACILITIES

A. Existing Facilities are to be removed as specified, noted or as necessary to accomplish work.

B. Roof Repair:
   1. Where indicated on drawings, roof repairs and modifications are required.
   2. Repairs and modifications (penetrations and terminations) are required.
   3. Maintain a protection system for the existing roof system, components and accessories as repairs and modifications are completed.

C. Masonry
   1. Remove brick and mortar to extent necessary to complete work in accordance with Section 04 50 05, Minor Masonry Restoration and Cleaning.
   2. Mockups are required for brick repairs, stitching, pinning and re-pointing areas.
   3. Extent of brick repairs shall be limited to extents specified and quantities included.

D. Sealants in Building Envelope
   1. Remove existing sealant (caulk) and backer rod from area of work and complete work in accordance with Section 07 92 10, Sealants for Building Envelope.
   2. Extents of work shall be limited to extents specified.

E. Fenestrations
   1. Cut away gasket, trim and any existing sealants. Clean glass and adjacent surfaces to permit wet seal application in accordance with Section 07 92 10, Sealants for Building Envelope.
   2. Selective fenestration replacement is required at broken windows and windows with trapped water.
F. General M/E/P Work Specific to Building Envelope

1. Disconnect and remove all mechanical and electrical equipment as necessary to affect work in the areas and reinstall upon completion of the work in the area to minimize down time. Provide for extension and modification of service. Utilities, interior components and all connections as necessary to accommodate new heights and locations.

2. Any lightning protection, cables, wires, dishes, antennas and rooftop mechanical, electrical components shall be temporarily disconnected and reconnected by qualified craftsman. This includes roof areas, exterior walls, flashings, fenestrations and adjacent wall areas.

3. Extend / raise all penetrations, curbs, mechanical, electrical and plumbing components to a minimum 4 inches out from the vertical exterior wall surfaces. Provide for extension and modification of service, utilities, interior components and all connections as necessary to accommodate new heights and locations.

4. The underside of the substrate and interior of walls have fixtures and attachments. Contractor shall have qualified craftsman remove and reinstall all affected items related to the completion of the scope of this project.

5. Ensure any M/E/P systems which require a specific contractor to complete the work (i.e. Johnson Controls, Honeywell, Trane, Etc.) are included in the Bid.

3.02 DISPOSITION OF MATERIALS

A. Title of Materials:

1. Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from the job site.

2. Title to the materials resulting from demolition, and materials and equipment removed, is vested in the Contractor upon approval by the Consultant/Engineer of the Contractor's demolition and removal procedures, and authorization by the Consultant/Engineer to begin demolition.

3. The Owner will not be responsible for the condition or loss of, or damage to, such property after notice to proceed.

B. Reuse of Materials and Equipment:

1. Remove and store materials and equipment to be reused to prevent damage, and reinstall as the work progresses.
3.03 CLEANUP

A. Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas.

B. Limit to 3/8 cubic yard capacity buggies or other conveyances used on the roofs to transport debris to chute locations.

3.04 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 02 05 00
PART 1 - GENERAL

1.01 SUMMARY

A. See Section 01 11 00, Summary of Work for removal and reinstallation of brick casing.

B. The base bid also includes minor inspection of specific masonry wall areas directly above the roof areas and repair and repointing of the quantities indicated below located in other random areas.
   1. Repointing in randomly located areas as listed on the Bid Form. One SF shall be equal to 7 LF.
   2. Counterflashing to have lead wedges installed 12” o.c. and a tooled sealant joint installed.

C. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowances. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowances. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching

C. Section 02 05 00: Demolition and Removal

D. Section 06 20 00: Finish Carpentry

E. Section 06 20 08: Epoxy Wood Repairs/Modifications

F. Section 07 50 00: General Roof Repairs/Maintenance

G. Section 07 92 10: Sealants for Building Envelope

H. Section 08 61 00: Wood Windows

I. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
B. AMERICAN CONCRETE INSTITUTE (ACI):

C. ASTM INTERNATIONAL (ASTM):

D. BRICK INDUSTRY ASSOCIATION (BIA):

E. COPPER DEVELOPMENT ASSOCIATION (CDA):
1. CDA 4115 (various dates) Copper in Architecture

F. Definitions
1. CLEANED SURFACE: All masonry surface that will be cleaned by a cleaning agent, an acid solution, by sand blasting, pressure steam, pressure water, or cleaning detergent; the method for which will be described in this section.
2. **CRAZING:** A term describing the minute surface cracking of masonry units.

3. **BRICK:** Masonry materials intended for cleaning.

4. **EFFLORESCENCE:** The white powder salt deposit left on the face of masonry units after moisture has evaporated.

5. **POINTING:** Placing pointing mortar into masonry joints and tooling to achieve a dense smooth finish.

6. **SPALLING:** The breaking or separation of a masonry unit face, parallel to the face plane; usually caused by pressure applied to the masonry unit edge or by pressure from behind the face caused by freeze/thaw cycling.

7. **REPOINTING:** Cutting into or mechanically raking existing masonry joints approximately 1/4 to 1/2-inch deep then placing pointing mortar into joints and tooling to achieve a dense smooth finish.

8. **WEEP HOLES:** Openings in vertical mortar joints at intervals along the bottom course of masonry, just above the structural supporting device or ledge, to permit moisture in the masonry cavity to migrate to the exterior.

G. **INTERNATIONAL CODE COUNCIL (ICC):**


1.04 **SUBMITTALS**

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. **Shop Drawings:** Indicate specific means and methods to require work per Contract if different than details of the contract drawings.

D. **Product Data:** Provide data on cleaning compounds, cleaning solutions, and other related products.

E. **Samples:** If new brick is required, submit four samples of face brick, units to illustrate color, texture and extremes of color range to match existing.
F. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, or methods.

G. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 and ACI 530.1.

B. Adhere to BIA Technical Notes 7 thru 7F.

C. Maintain one copy of each document on site.
   1. Construction Documents
   2. ACI Standards

D. Restorer: Company specializing in masonry restoration with minimum three years documented experience specific to this project.

1.06 MOCKUP / SAMPLE AREA

A. Provide mockup/sample area of restored masonry under provisions of Section 01 45 00, Quality Control.

B. Restore and re-point a masonry wall sized 8 feet long above counter flashing, which includes mortar and accessories, wall openings or flashings.

C. Locate where directed.

D. Acceptable panel and method of procedure will become the standard for work of this section.

1.07 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work, but after all submittals have been received of this section, under provisions of the contract.

B. Require attendance of parties directly affecting work of this section.

C. Review conditions of installation, installation procedures, and coordination with related work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle products to site under provisions of Section 01 60 00, Materials and Equipment.
B. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.

C. Store acid solution and restoration cleaner materials in manufacturer's packaging.

1.09 PROTECTION

A. Protect elements surrounding the work of this section from damage or disfiguration.

B. Immediately remove stains, efflorescence, or other excess resulting from the work of this section.

C. Protect roof membrane, flashings and other surrounding areas from damage.

1.10 ENVIRONMENTAL REQUIREMENTS


B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.


D. Do not sandblast or use process creating dust, dirt, or mist/spray when wind is over 10 mph.

1.11 COORDINATION

A. Coordinate work of this section with interfacing and adjacent work for proper sequencing. Ensure weather resistance at all times during construction and durability of work and protection of materials and finishes.

1.12 SEQUENCING

A. Sequence work under the provisions of Section 01 11 00, Summary of Work.

B. Perform repointing after cleaning masonry surfaces.

1.13 SCHEDULING

A. Schedule work under the provisions of Section 01 33 00, Submittals.

B. Perform cleaning and washing to exterior masonry between the hours of 7 am to 5 pm.
PART 2 - PRODUCTS

2.01 BRICK MASONRY
A. Contractor to salvage and reuse the brick whenever possible.
B. Contractor to match existing brick masonry units, and request approval with mockup/sample area.

2.02 CLEANING MATERIALS
A. Cleaning Agent: Detergent, Solvent cleaner or Acid solution.
B. Contractor to submit specific products and methods, with supporting date to substantiate is use.

2.03 MORTAR MATERIALS
A. Mortar for re-pointing
   1. Historic or older brick work – Type "O".
   2. Newer brick work – Type "N".
B. Contractor to match existing mortar color.
C. Mortar strength and density shall be comparable to existing mortar.
D. Mortar color shall match existing conditions.
E. A pre-hydrated mortar is required.

2.04 ACCESSORIES
A. Joint Sealant:
   1. One-part, copper compatible elastomeric polyurethane, polysulfide, butyl or silicone rubber sealant as tested by sealant manufacturer for copper substrates. Refer to Division 07.
B. High Temperature Grade Water Barrier Underlayment:
   1. Cold applied, self-adhering membrane composed of a high density, cross laminated polyethylene film coated on one side with a layer of butyl rubber or high temperature asphalt adhesive. Provide primer when recommended by water barrier manufacturer.
   2. Minimum Thickness:
      a. 30 mil.
3. Tensile Strength:
   a. ASTM D 412 (Die C Modified); 250 psi.

4. Membrane Elongation:
   a. ASTM D 412 (Die C Modified); 250%

5. Permeance (Max):
   a. ASTM E96; 0.05 Perms.

6. Acceptable Products:
   c. CCW MiraDRI WIP 300 High Temperature, Carlisle Coatings and Waterproofing.

C. Rivets:

1. Pop Rivets:
   a. 1/8-inch (3-mm) to 3/16-inch (4.5-mm) diameter, with solid brass mandrels.
   b. Provide solid copper rivet (tinner's rivets) where structural integrity of seam is required.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces to be restored are ready for work of this section. Cleaning is only required to the extent necessary to complete the work and provide acceptable match.

3.02 PREPARATION

A. Complete all masonry repairs and repointing prior to commencing roof work.
B. Carefully remove and store fixtures, fittings, finishing hardware, and accessories on the exterior walls.
C. Close off, seal, mask, and board up areas, landscaping, materials, and surfaces not receiving work of this section to protect from damage.
D. Construct dust proof and weatherproof partitions to close off occupied areas.

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3.03 GENERAL INSTALLATION

A. Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with the "Copper in Architecture" handbook published by the Copper Development Association Inc. (CDA). Anchor units of work securely in place by methods indicated, providing for thermal expansion of units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.

1. Install units plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.

2. Apply asphalt mastic on copper surfaces of units in contact with dissimilar metals.

3. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

4. Miter, lap seam and close corner joints at all conditions. Seal seams and joints watertight with sealants/adhesions/mastics in all laps.

5. Install expansion joints at frequency recommended by CDA. Do not fasten moving seams such that movement is restricted.

6. All terminations shall have side and end dams of the flashing material.

B. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

C. Install reglets to receive counterflashing in manner and by methods indicated in concrete and masonry.

D. Counterflashings and Reglets:

1. Fabricate counterflashings and reglets as 2 piece assemblies to permit installation of counterflashing after base flashings are in place.

2. Fabricate reglets of same metal and thickness as counterflashings.

3. Overlap all flashing 4” minimum and sealant/mastic within lap.

E. Install laminated flashing in accordance with contract and adhere to the manufacturer's recommendations. Where required, provide for movement at joints by forming loops or bellows in width of flashing. Locate cover or filler strips at joints to facilitate complete drainage of water from flashing. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.
3.04 REBUILDING (PER QUANTITIES AND UNIT PRICES)

A. Repair in accordance with the drawings after cutting out damaged and deteriorated brick masonry with care in a manner to prevent damage to any adjacent remaining materials.

B. All broken bricks shall be repaired per detail or cut out, as well as bedding mortars. Headers shall be removed to full depth in backup masonry. No half-bricks shall be substituted for headers.

C. Needle, shore and support structure as necessary in advance of cutting out units.

D. Cut away loose or unsound adjoining masonry and mortar to provide firm and solid bearing for new work.

E.Build in reclaimed and masonry units following standard procedures and industry practices.

F. Mortar Mix: Colored and proportioned to match existing work.

G. Ensure that anchors ties, reinforcing and flashings are correctly located and built in.

H. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.

3.05 REPOINTING (PER QUANTITIES AND UNIT PRICES)

A. Cut out loose or disintegrated mortar in joints to minimum 3/4-inch depth or until sound mortar is reached.

B. Utilize hand tools or power tools only after test cuts determine no damage to masonry units will result.

C. Do not damage masonry units.

D. When cutting is complete, remove dust and loose material by brushing with water jet.

E. Pre-moisten joint and apply mortar specified. Pack tightly in maximum 1/4-inch layers. Form a smooth, compact joint to match existing as shown on the drawings.

F. Moist cure for 72 hours.

3.06 THRU-WALL FLASHING

A. Provide as indicated. Unless indicated otherwise, extend flashing from a point 1/4 inch outside of exterior face of walls, upward across wall cavity, not less than 6 inches and onto backing wythe. Bend down exterior edge to form a 1/4-inch drip.
Secure flashing as indicated and seal. Provide flashing in lengths as long as practicable. Lap ends not less than 1 1/2-inches for interlocking type and 4 inches for other types. Seal laps as necessary to ensure watertight construction. Provide dams at ends of flashing where masonry abuts concrete and where flashing ends within the masonry.

3.07 CLEANING EXISTING MASONRY (LIMITED AREAS)

A. Cleaning is only required to the extent necessary to complete the work and provide acceptable match at repairs and repointing.

B. Pressure Steam Cleaning: Apply pressure to masonry surfaces at locations, maintaining uniform depth and surface texture throughout.

C. Cleaning Detergent: Brush, Spray or Hand wash clean masonry surfaces at locations with detergent in accordance with the manufacturer's instructions. Saturate masonry with clean water and flush loose mortar and dirt.

D. Also remove all excessive mortar.

3.08 CLEANING NEW MASONRY (LIMITED AREAS)

A. Cleaning is only required to the extent necessary to complete the work and provide acceptable match at repairs and repointing.

B. Verify mortar is fully set and cured.

C. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

D. Scrub walls with detergent solution using stiff brush. Thoroughly rinse and wash off cleaning solution, dirt and mortar crumbs using clean, pressurized water.

E. Protect area below cleaning operation and keep masonry soaked with water and flushed free of acid and dissolved mortar continuously for duration of cleaning.

F. Before solution dries, rinse and remove solution and dissolved mortar, using clean, pressurized water.

3.09 AGING

A. Rub in or dust new masonry work to match, as close as possible, adjacent original work.

B. Use carbon black in small amounts, rubbing in well with burlap rags or medium bristle brush.

C. After each application, dust off surplus and wash down with low-pressure hose. Allow surface to dry before proceeding with succeeding applications.

D. Continue process until acceptance.
3.10 CLEANING

A. As work proceeds and on completion, remove excess mortar, smears, droppings.

B. Clean surrounding surfaces.

3.11 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 04 50 05
SECTION 06 20 00
FINISH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes the finish carpentry required for siding and trim where replacement is needed. See Section 01 11 00, Summary of Work.

B. All wood trim is to be removed and salvaged in accordance with Section 02 05 00, Demolition and Removal, and reinstalled over new underlayment system.

1. New trim to match existing in size, thickness and type.

C. Paint all exposed carpentry in accordance with Section 09 90 02, Painting for Exterior Wood Surfaces.

D. Paint all exposed carpentry with primer and 2 coats of Sherwin Williams Duration Exterior or approved equal. Color and finish selected by Owner.

E. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowances. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowances. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1. Unless specifically noted otherwise, Contractor may assume finish carpentry may be reused. Any carpentry found to be damaged or deteriorated shall be replaced based on the quantities listed in Section 01 21 10, Unit Prices and Allowances.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching

C. Section 02 05 00: Demolition and Removal

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 06 20 08: Epoxy Wood Repairs/Modifications
F. Section 07 50 00: General Roof Repairs/Maintenance

G. Section 07 92 10: Sealants for Building Envelope

H. Section 08 61 00: Wood Windows

I. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. AMERICAN FOREST & PAPER ASSOCIATION (AF&PA):

C. AMERICAN WOOD-PRESERVERS’ ASSOCIATION (AWPA):
   1. AWPA C1 (2003) All Timber Products – Preservative Treatment by Pressure Processes
   2. AWPA C2 (2003) Lumber, Timber, Bridge Ties and Mine Ties- Preservative Treatment by Pressure Processes
   5. AWPA C9 (2003) Plywood – Preservative Treatment by Pressure Process
   6. AWPA M2 (2001) Inspection of Treated Wood Products
   7. AWPA M6 (2007) Brands Used on Forest Products

D. APA – THE ENGINEERED WOOD ASSOCIATION (APA):

E. ASTM INTERNATIONAL (ASTM):

F. INTERNATIONAL CODE COUNCIL (ICC):
G. FACTORY MUTUAL ENGINEERING AND RESEARCH (FM):
   1. FM DS 1-49 (2000) Perimeter Flashing

H. SOUTHERN PINE INSPECTION BUREAU (SPIB):

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-
   Construction Conference has been completed.

C. Certificates of Treatment and Grade.

D. Samples
   1. Wood siding (to match existing)
   2. Fascia and soffit configurations.

E. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification
   section and include with Safety Plan in accordance with Section 01 52 05, Safety
   Requirements.

1.05 PRODUCT DATA

A. For each type of product and process specified in this specification and
   incorporated into items of architectural woodwork during fabrication, finishing,
   and installation.

1.06 WOOD TREATMENT DATA

A. Including chemical treatment manufacturer’s instructions for handling, storing,
   installation, and finishing of treated material:

B. Warranty of chemical treatment manufacturer for each type of treatment.

C. Samples for initial selection purposed of the following:
   1. Siding in 2-foot length.

1.07 QUALITY ASSURANCE

A. Installer Qualifications
   1. Arrange installation of finish carpentry by a firm that can demonstrate
      successful experience in installing finish carpentry items similar in type and
      quality to those required for this Project.
B. AWI Quality Standard:

1. Comply with applicable requirements of “Architectural Woodwork Quality Standards” published by the Architectural Woodwork Institute (AWI), except as otherwise indicated.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage

1. Keep materials under cover and dry. Protect against exposure to weather and contact with damp and wet surfaces. Stack lumber as well as plywood and other panels. Provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

1.09 PROJECT CONDITIONS

A. Environmental Conditions

1. Comply with finish carpentry manufacturer and installer’s coordinated advice for optimum temperature and humidity conditions for finish carpentry during its storage and installation.

B. Field Measurements: where wood is indicated to be fitted to other construction or to match existing profiles, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Lumber Standards

1. Comply with PS 20 “American Softwood Lumber Standard” for lumber and with applicable grading rules of inspection agencies certified agencies certified by American Lumber Standards Committee Board of Review.

B. Inspection Agencies

1. Inspection agencies and the abbreviations used to reference them with lumber grade and species include the following:

a. RIS – Redwood Inspection Service

b. SPIB – Southern Pine Inspection Bureau

C. Grade Stamps

1. Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mil.
2.02 EXTERIOR TRIM

A. Trim
   1. For trim provide lumber complying with following requirements including those of the grading agency listed with species.
   2. Species
      a. Redwood, Clear All Heart, RIS or preservative treated southern pine
   3. Texture
      a. Surfaced (smooth)
   4. Lumber for Painted Finish
      a. Solid Lumber Stock

2.03 SIDING

A. Lumber Siding
   1. Redwood Shiplap. Clear All Heart S1S2E. Kiln-dried wood lumber for siding in size pattern as shown on drawings.

2.04 COLUMNS

A. Wood Columns
   1. Clear All Heart Redwood. Stave construction, minimum 2 inch thick, interlocked construction using first quality Type 1 exterior glue. Interior of shaft shall be waterproofed with asphaltum. Dimensions and profiles as indicated on drawings. Fastenings, flashing, and ventilation requirements shall be per manufacturer’s instructions.

2.05 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry
   1. Stainless steel, noncorrosive aluminum or hot-dip galvanized nails, in sufficient length to penetrate minimum of 1 1/2 inches into substrate unless recommended otherwise by manufacturer.
   2. Use stainless steel screw shank nail for siding applications.
   3. Countersink nails and fill surface where face nailing is unavoidable.

B. Felt Underlayment
   1. Asphalt-saturated organic felts, unperforated, conforming to requirements of ASTM D 26, Type 1, No. 30.
C. Sealants
   1. Comply with requirements of Section 07 92 10, Sealants for Building Envelope for materials required for sealing siding work.

D. Painting
   1. Comply with requirements of Section 09 90 02, Painting for Exterior Wood Surfaces for painting requirements.

2.06 PRESERVATIVE TREATMENT BY NON PRESSURE METHOD

A. Treatment Standard
   1. Comply with NWWDA I.S.4 for exterior finish carpentry to receive water-repellent formulation containing 3-iodo-2-propynyl butyl carbamate (IPBC) as its active ingredient.

2. Extent of Treatment: as indicated.

2.07 FABRICATION

A. Wood Moisture Content
   1. Comply with requirements of specified inspection agencies and manufacturer’s recommendations for moisture content of finish carpentry in relation to relative humidity conditions existing during time of fabrication and in installation areas. Provide finish carpentry with moisture content that is compatible with Project requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerance and other conditions affecting installation and performance of finish carpentry. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Condition finish carpentry to average prevailing humidity conditions in installation areas before installation for a minimum of 24 hours unless longer conditioning recommended by manufacturer.

C. Backprime lumber painted finished exposed on the exterior. Comply with requirements for surface preparation and application in Section 09 90 02, Painting for Exterior Wood Surfaces.
3.03 INSTALLATION, GENERAL

A. Do not use finish carpentry materials that are unsound, warped, bowed, twisted, improperly treated or finished, not adequately seasoned, or too small to fabricate with proper jointing arrangements.

B. Install finish carpentry plumb, level, true, and aligned with adjacent materials. Use concealed shims where required for alignment.

C. Scribe and cut finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

D. Install to tolerance of 1/8 inch in 8 feet for plumb and level. Install adjoining finish carpentry with 1/16-inch maximum offset for flush installation and 1/8-inch maximum offset for reveal installation.

E. Coordinate finish carpentry with materials and systems that may be in or adjacent to standing and running trim and rails. Provide cutouts for mechanical and electrical items that penetrate exposed surfaces of trim and rails.

F. Finish in accordance with specified requirements.

G. Refer to Section 09 90 02, Painting for Exterior Wood Surfaces for final finishing of finish carpentry.

3.04 EXTERIOR TRIM

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related standing and running trim and rails. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane back of casings to provide uniform thickness across joints if required.

B. Match color and grain pattern across joints.

C. Drill pilot holes in hardwood prior to nailing or fastening to prevent splitting. Fasten to prevent movement or warping. Countersink nail heads on exposed carpentry work and fill holes.

D. Fit exterior joint to exclude water. Apply flat grain lumber with bark side exposed to weather.

3.05 ADJUSTING

A. Repair damaged or defective finish carpentry where possible to eliminate functional or visual defects. Where not possible to repair, replace finish carpentry. Adjust joinery for uniform appearance.
3.06 PROTECTION

A. Provide final protection and maintain conditions that ensure finish carpentry is without damage or deterioration at time of Substantial Completion.

3.07 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 06 20 00
SECTION 06 20 08
EPOXY WOOD REPAIRS/MODIFICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes the repair and rebuilding of various wood substrates and wood surfaces where local or isolated areas of damage, rot or deterioration exist.

B. This is related to the finish and trim carpentry as well as the wood windows and is for non-structural repairs.

C. Replacement of wood components is covered in Section 06 20 00, Finish Carpentry.

D. An epoxy-based product is to be used based on the material types, adhering to the manufacturer’s printed preparation and printed installation instruction.

E. This work is to be completed along with the finish and rough carpentry work and prior to the cleaning, preparation and painting.

F. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowances. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowances. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching

C. Section 02 05 00: Demolition and Removal

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 06 20 00: Finish Carpentry

F. Section 07 50 00: General Roof Repairs/Maintenance

G. Section 07 92 10: Sealants for Building Envelope

H. Section 08 61 00: Wood Windows

I. Section 09 90 02: Painting for Exterior Wood Surfaces
1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. AMERICAN FOREST & PAPER ASSOCIATION (AF&PA):

C. APA – THE ENGINEERED WOOD ASSOCIATION (APA):

D. INTERNATIONAL CODE COUNCIL (ICC):

E. NATIONAL PARK SERVICE (U.S DEPARTMENT OF THE INTERIOR):
   1. The Repair of Historic Wooden Windows

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. Mock-ups of sample repairs
   1. Field Mock-ups
      a. Wood restoration: following the requirements of this section, perform a mock-up of each type of wood repair system specified to demonstrate materials and methods intended to be used in the finished work.
         1) Perform mock-ups in areas indicated by the Consultant/Engineer
         2) Obtain the written approval of each mock-up before proceeding with the work of the section.
         3) Protect the approved mock-ups until the completion of all the work.
         4) Approved mock-up shall represent the minimum, acceptable standard for each type and detail of the restoration work.
D. Manufacturer: Obtain primary repair materials from a single manufacturer. Provide secondary materials as recommended by the manufacturer of the primary materials.

E. Shop drawings

F. Product Data
   1. Hardware
   2. Weatherstripping
   3. Qualifications

G. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 QUALITY ASSURANCE

A. Provide qualified workers trained and experienced in repairing, restoring, replicating, and replacing windows in historic buildings; submit documentation of their Qualifications during five (5) consecutive years of work of this type; and a list of installations made identifying when, where and for whom the installations were made.

B. Submit Shop Drawings indicating elevations of units, full-size sections, fastenings, methods of installation and anchorage, method of wood, trim, glazing, locations of operating hardware, method and material for weatherstripping, insect screen, details, connections with other work and window schedules showing location of each repair.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Materials shall be stored out of contact with the ground and under weathertight covering.

1.07 PROJECT CONDITIONS

A. Lead: Existing paint contains lead. Take all necessary precautions to ensure the safety of all person engaged in removing lead-based paint and dispose of all residues generated from lead-based paint stropping in a legal manner in accordance with all local, state and federal codes.

B. Coordination: Coordinate wood repair with paint striping so that the effected surfaces are exposed for a minimal time to avoid further damage to bare wood. Coordinate with painting so that all restored surfaces are primed as soon as possible after repair.
C. Weather: Proceed with the work of this section only when existing and foreseen weather conditions permit the work to be performed in accordance with the manufacturer’s recommendations for temperature and humidity range, minimum and maximum.

D. Substrate Conditions: Do not proceed with product applications until substrates have been inspected and are determined to be in satisfactory conditions. Substrate moisture content shall not be in excess of 19 degrees during preparation and application.

1. Remove all decayed wood to a clean, sound, unaffected substrate.

2. Remove all built-up paints and other debris to a clean, sound substrate.

3. Remove all wood sawdust to a clean, sound substrate.

E. Protection:

1. Use all necessary means to protect interior of building from all damage caused by precipitation and other environmental conditions during the work of this section.

2. Protect all adjacent building surfaces from damage, staining or deterioration resulting from wood restoration work.

3. Protect the restoration work in progress to prevent further deterioration exposed wood surfaces. Protect the completed work until the time of final inspection and acceptance by the Consultant/Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Reuse existing materials whenever possible in the repair and rehabilitation of historic wood surfaces/windows. This includes all wood elements, hardware and glazing that are determined to be of historic significance. Replace window elements with new material only when originals are so deteriorated as to prohibit their useful function.

2.02 WOOD

A. Wood used to replace deteriorated window members shall be of the same species and grade as the original, unless otherwise noted. Finger-jointed stock may be used for interior casing and trim only where scheduled to be painted.
2.03 GLASS AND GLAZING

A. Reuse existing intact original glass. Replace broken glass and plexiglass as noted. Any removed lights shall be reused in their original frames and positions. New glass and glazing materials shall conform to Section 08 61 00, Wood Windows.

2.04 HARDWARE

A. Reuse existing original hardware, when it is salvageable. Replacement hardware shall match original in design, material, and finish. Submit Manufacturer's installation instructions for each type of hardware and weatherstripping; see paragraph WEATHERSTRIPPING in PART 3. Submit representative sample of each type of hardware with identifying tags.

2.05 FASTENERS

A. Fasteners shall be stainless steel.

2.06 GLAZING COMPOUND

A. Provide glazing compound for single pane glass which is oil-based, non-staining and non-bleeding.

2.07 GLAZING POINTS

A. Glazing points shall be stainless steel.

2.08 EPOXY CONSOLIDANTS

A. Liquid Consolidant

1. Liquid wood consolidant shall consist of a two-part, low-viscosity liquid epoxy that meets the criteria of Table A.

B. Epoxy Paste

1. Epoxy paste shall consist of a two-part, thixotropic paste that meets the criteria of Table A.
Table A

<table>
<thead>
<tr>
<th></th>
<th>Liquid Consolidant</th>
<th>Epoxy Paste</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Properties</strong></td>
<td>Low-Viscosity Liquid</td>
<td>No-Slump, Thixotropic Paste</td>
</tr>
<tr>
<td><strong>Toxicity</strong></td>
<td>Low</td>
<td>Very Low</td>
</tr>
<tr>
<td><strong>Toxicity Cured</strong></td>
<td>Non-Toxic</td>
<td>Non-Toxic</td>
</tr>
<tr>
<td><strong>Ratios</strong></td>
<td>1:1 by Volume</td>
<td>1:1 by Volume</td>
</tr>
<tr>
<td><strong>Pot Life @Room Temp.</strong></td>
<td>30 min. minimum</td>
<td>50 min. minimum</td>
</tr>
<tr>
<td><strong>Hardening @ Room Temp.</strong></td>
<td>1 hr. or longer</td>
<td>1 hr. or longer</td>
</tr>
<tr>
<td><strong>Hardening @ 60 deg. C</strong></td>
<td>16 min. or less</td>
<td>18 min. or less</td>
</tr>
<tr>
<td><strong>Viscosity Poises @ 22 deg. C</strong></td>
<td>4.7 max.</td>
<td>Thixotropic paste</td>
</tr>
<tr>
<td><strong>Solids</strong></td>
<td>95% min.</td>
<td>98% min.</td>
</tr>
<tr>
<td><strong>Tensile Strength</strong></td>
<td>4000 psi</td>
<td>2500 psi</td>
</tr>
<tr>
<td><strong>Elongation (%)</strong></td>
<td>50</td>
<td>4</td>
</tr>
</tbody>
</table>

PART 3 - EXECUTION

3.01 EVALUATION

A. Perform a complete evaluation survey of the existing conditions of the exterior wood surfaces to determine the extent of repairs necessary. The evaluation survey may be in the form of a schedule and shall note at a minimum:

1. Location.
2. Condition of the paint.
3. Condition of the frame and sill.
4. Condition of the interior and exterior trim.

Epoxy Wood Repairs/Modifications
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5. Condition of the sash (including rails, sills, and muntins).


7. Window hardware and operating system.

8. The overall condition of the window.

3.02 REPAIRS

A. Example Repair

1. Prepare an existing repair of each type to serve as an example of the quality of repairs to be provided for inspection and approval by the Consultant/Engineer.

B. Paint Removal

1. Areas on wood, frame, sill, sash where paint or varnish has peeled, alligatored, blistered or crazed shall have paint removed to bare wood or first sound paint layer, using non-destructive means such as a chemical stripper or heat gun. If chemical strippers are used, neutralize wood after stripping to a litmus pH of 5 to 8.5. Allow wood to dry to a moisture content of 8 to 12 percent before repainting. If heat methods are used for paint removal, protect glass from sudden temperature change to avoid breakage.

2. Wood Repair

   a. Remove badly decayed areas (with more than 30 percent wood decayed) from wood sash, sill, frame, and trim assemblies. Moderately decayed areas (less than 30 percent decayed), weathered, or gouged wood shall be patched with approved patching compounds, and shall be sanded smooth. Intact sash rails and stiles that are loose shall be repaired with new dowels to make joints tight.

C. Epoxy Wood Repair

1. Apply epoxy wood repair materials in accordance with manufacturer's written instructions. Health and safety instructions shall be followed in accordance with the manufacturer's instructions. The source or cause of wood decay shall be identified and corrected prior to application of patching materials. Wet wood shall be completely dried to a moisture content of 8 to 12 percent to its full depth before patching. Wood that is to be patched shall be clean of dust, grease, and loose paint. Use clean mixing equipment to avoid contamination. Mix and proportions shall be as directed by the manufacturer. Batches shall be only large enough to complete the specific job intended. Patching materials shall be completely cured before painting or reinstallation of patched pieces.
a. Epoxy Liquid Wood Consolidant
   1) Epoxy liquid wood consolidant shall be used to penetrate and impregnate deteriorated wood sections to reinforce wood fibers that have become softened or absorbent.

b. Epoxy Paste
   1) Use epoxy paste to fill areas where portions of wood are missing such as holes, cracks, gaps, gouges, and other voids. Areas to receive epoxy paste patching material shall be primed with compatible epoxy liquid wood consolidant or a primer recommended by the manufacturer.

c. Wood Replacement
   1) Replace pieces decayed beyond repair with new pieces that match originals in all respects. Joinery shall match that of existing. Muntins shall have coped mortise and tenon joints. Molded members shall have mitered or coped joints.

d. Hardware
   1) Reuse existing hardware, which is in good condition, unless otherwise noted. Reused existing hardware shall be stripped of paint down to bare metal. Install new hardware where original is missing, damaged, or unsuitable for new operation, in accordance with manufacturer's directions to provide a secure and smoothly operating window assembly.

e. Glazing
   1) Reinstall glass (lights) to be reused in their original frames and positions. Rabbeted integral glazing recesses shall be brushed with boiled linseed oil prior to the application of bed glazing compound. Replace broken glass as specified in Section 08 61 00, Wood Windows.

f. Weatherstripping and Moldings
   1) Install Weatherstripping on all operable windows. Weatherstripping shall consist of brass, compression or interlocking weather strips designed for permanent sealing under bumper or wiper action. Weatherstripping shall be provided at the perimeter of each sash including meeting rails and shall be installed in accordance with manufacturer's instructions.
3.03 PAINTING

A. Wood elements shall be primed and painted in accordance with Section 09 90 02, Painting for Exterior Wood Surfaces.

3.04 REASSEMBLY

A. After repairs are completed, the area shall be reassembled with all parts tight, true and functioning properly. Wood surfaces shall be free of blemishes.

3.05 CLEANING

A. Repairs shall be cleaned on all exterior surfaces.

3.06 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 06 20 08
SECTION 07 50 00
GENERAL ROOF REPAIRS / MAINTENANCE

PART 1 - GENERAL

1.01 SUMMARY

A. Remove all loose materials and replace all removed and/or missing roofing.

B. Remove and replace the sealants at the roofing counterflashings.

C. Clean out all gutters and downspouts, provide repairs at all gutter laps and provide bee hive strainers at all downspout locations.

D. Remove, re-trench and provide new, perforated drain piping with filter ‘sock’ 10 feet away from building foundation.

G. All other requirements of the original contract remain unchanged.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching

C. Section 02 05 00: Demolition and Removal

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 06 20 00: Finish Carpentry

F. Section 06 20 08: Epoxy Wood Repairs/Modifications

G. Section 07 50 00: General Roof Repairs/Maintenance

H. Section 07 92 10: Sealants for Building Envelope

I. Section 08 61 00: Wood Windows

J. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

C. Copper in Architecture, Copper Development Association (CDA), December 1992.

D. INTERNATIONAL CODE COUNCIL (ICC):

E. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA)
   1. NRCA Roofing and Waterproofing Manual, Sixth Edition

F. SHEET METAL & AIR CONDITION NATIONAL CONTRACTOR'S ASSOCIATION (SMACNA)
   2. SMACNA, 1929 Standards of Practice in Sheet Metal


1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. Manufacturer's Catalog Data and Instructions: Include applicable materials descriptions and technical data sheets or catalog cuts.

   1. Copper
   2. Solder
   3. Sealants
   4. Bee Hive Strainer
5. Perforated Pipe with Filter Sock

6. Slate

D. Administrative or Close-out Submittals:

1. Warranty: Furnish warranty for repairs as provided on last two pages of this section.

2. Warranty shall run directly to the Owner.

3. In no event shall warranty period be less than three (3) years from the date of acceptance of the work.
   
   a. If the Contractor fails to perform repairs within 72 hours of written notification, the warranty will not be voided because of work being performed by others to repair roofing regardless of Contractor's warranty to the contrary.
   
   b. Provide Contractor warranty provided on last two pages of this section.

E. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 QUALITY ASSURANCE

A. Qualification of Manufacturer:

1. The modified bitumen sheet roofing system manufacturer shall have a minimum of five (5) years experience in manufacturing modified bitumen roofing products in the United States.

2. Show evidence that specified products and materials are manufactured in the United States.

B. Qualifications of Applicator

1. Applicator shall be approved in writing by the system manufacturer and shall have a minimum of 5 years experience as an approved applicator with the manufacturer.

2. Contractor shall be certified/approved to provide the required warranty.

3. Applicator shall also have applied 5 installations of similar size and scope as this project, within the previous 3 years.
1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver materials in manufacturers' original, unopened containers and rolls with labels intact and legible.
2. Mark and remove wet materials from the site.
3. Where materials are covered by a referenced specification, the container shall bear the specification number, type and class, as applicable.
4. Deliver materials in sufficient quantity to allow work to proceed without interruption.

B. Storage:

1. Protect materials against moisture absorption.
2. Store roof materials on end on clean raised platforms or pallets one level high in dry locations with adequate ventilation, such as an enclosed building or closed trailer.
3. Do not store roof materials in buildings under construction until concrete, mortar and plaster work is finished and dry.
4. Maintain roof materials at temperatures above 50 degrees F for 24 hours immediately before application.
5. Do not store materials outdoors unless approved by Contracting Officer.
6. Completely cover felts stored outdoors, on and off roof, with waterproof canvas protective covering.
   a. Do not use polyethylene sheet as a covering.
   b. Tie covering securely to the pallets to make completely weatherproof and yet provide sufficient ventilation to prevent condensation.
7. Do not store more materials on roof than can be installed the same day and remove unused materials at end of each days work.
   a. Distribute materials temporarily stored on roof to stay within live load limits of the roof construction.

C. Handling:

1. Select and operate material handling equipment so as not to damage applied roofing.
2. Prevent damage to edges and ends of roof materials.
1.07 ENVIRONMENTAL CONDITIONS

A. Do not install roofing system when air temperature is below 40 degrees F, during any form of precipitation -- including fog -- or where there is ice, frost, moisture or any other visible dampness on the roof deck.

B. Adhere to all local, state and federal regulations pertaining to the disposal and removal of any materials, and the use and application of new materials.

1.08 PROTECTION OF PROPERTY

A. Install protective coverings at paving and building walls adjacent to hoist and kettles prior to starting the work.

1. Lap protective coverings not less than six (6) inches, secure against the wind and vent to prevent collection of moisture on covered surfaces.

2. Keep protective coverings in place for the duration of the roofing work.

B. Flame-Heated Equipment:

1. Do not place flame-heated equipment on roof.

2. Provide and maintain a fire extinguisher adjacent to flame-heated equipment and on the roof.

C. Electric-Heated Equipment:

1. Provide adequate electrical service as required by manufacturer of electrical equipment to insure against damage to equipment and property and to insure proper application of roofing materials.

1.09 WARRANTY

A. Contractor and manufacturer warranties shall be exclusive and independent of each other. Each warranty shall be issued directly to the Owner and dated as noted below.

B. Furnish the Three-Year Contractor Warranty as provided in Section 01 77 05, Three-Year Contractor Warranty. The warranty period shall be not less than 3 years from the date of substantial completion.

1. If the Contractor fails to perform repairs within 72 hours of written notification, the warranty will not be voided because of work being performed by others to repair deficiencies/failures regardless of manufacturer’s warranty to the contrary.
PART 2 - PRODUCTS

2.01 DESCRIPTION OF ROOF REPAIR MATERIALS

A. Slate, Type I, size to match existing.
B. Copper, 20 oz.
C. Perforated pipes/sock.
D. Accessories/fasteners, per industry standards.
E. Beehive strainer, copper or stainless steel.

2.02 LUMBER

A. Framing Lumber:
   1. Air dry and kiln dry lumber.
   3. Maximum moisture content of wood products shall be as follows at the time of delivery to the job site. Framing lumber and boards - 19% maximum.
   4. Lumber and timber shall be treated in accordance with AWPA C1 and AWPA C2.
   5. All wood shall be air or kiln dried after treatment.

B. Nailers, Edge Strips, Crickets, Curbs and Cants, as indicated or required.
   1. Minimum 2x6 nailers, and the overall thickness to match the insulation or existing materials.

2.03 OTHER MISCELLANEOUS COMPONENTS

A. Fasteners:
   1. For Felts or Modified Bitumen Flashing
      a. Use fasteners driven through metal discs or one-piece composite fasteners with heads not less than one inch in diameter or one inch square with rounded or 45-degree tapered corners.
      b. Do not drive fasteners through top, horizontal surface of EPDM on parapet walls.

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2. Masonry Walls and Vertical Surfaces:
   a. Fasteners for Securing Felts, Modified Bitumen Sheets and Metal Items to Masonry Walls and Vertical Surfaces:
      1) Hardened steel nails with flat heads, diamond shaped points and mechanically deformed shanks not less than one inch long.
      2) Use power-driven fasteners only when approved in writing.

B. Sheet Metal Materials:
   1. Provide accessories and other items essential to complete the sheet metal installation.
   2. These accessories shall be made of the same material as the items to which they are applied (galvanized steel, galvalume, aluminum or copper).
      a. Use the same metal or a metal compatible with the item fastened.

PART 3 - EXECUTION

3.01 PREPARATION

   A. Coordinate the work with other trades to assure that components, which are to be secured to or stripped into the roofing system are available and that flashing and counter flashing are installed as the work progresses.

   B. Demolition

      1. Old materials shall be removed from areas to be repaired/replaced.
      2. All dirt, old sealants/repairs and other debris shall be removed before repairs are initiated.

   C. Wood Roof Nailers, Edge Strips, Curbs and Cants

      1. Provide sizes and configurations to match existing conditions at edge perimeters, curbs, and expansion joints.
      2. Thicknesses to match insulation thicknesses.
      3. Anchor securely to existing construction.

3.02 GENERAL ROOF APPLICATION

   A. Apply roofing materials as specified herein, unless specified or recommended otherwise by the manufacturer's printed application instructions.
1. Keep roofing materials dry before and during application.

2. Do not permit phased construction, except where Modified Bitumen Base Sheet is used and written approval and application requirements are provided by the manufacturer.

3. Complete application of roofing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.

4. Maintain the specified temperatures for the asphalt.

5. Provide temporary roofing and flashing as specified herein prior to the application of the permanent roofing system.

B. Protection of Applied Roofing Against Moisture Absorption:

1. At the end of the day's work and whenever is imminent, protect applied roofing system as follows.

2. Water Cut-offs:
   a. The insulation line shall be straightened using loose-laid cut insulation sheets and the terminated edge of the roofing system shall be sealed with two full width strips of roofing felt set in and coated with asphalt roof cement.
   b. One-half width of the strips shall extend up and over the finished roofing and the other half-width extended out onto the adjoining roofing, unless recommended otherwise in the membrane manufacturer's printed application instructions.
   c. Membrane shall be pulled free or cut to expose the insulation when resuming work and the insulation sheets used for fill-in shall be removed.

3. Temporary Walkways, Runways and Platforms:
   a. Do not permit storing, walking, wheeling and trucking directly on applied roofing materials.
   b. Provide temporary walkways, runways and platforms of smooth clean boards or planks as necessary to avoid damage to applied roofing materials and to distribute weight to conform to indicated live load limits of roof construction.
   c. Use clean rubber-tired equipment for roofing work.

General Roof Repairs and Maintenance
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3.03 GENERAL SHEET METAL APPLICATION

A. Requirements:
   1. Match existing metal for all repairs as noted in drawings.
   2. Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections, which might affect application.
   3. For installation of items or criteria not provided refer to Architectural Sheet Metal Manual, 4th Edition.
   4. Provide sheet metal flashing in angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight.

B. Nailing:
   1. Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches.
   2. Confine nailing or flashing to one edge only. Space nails 3 inches on center, and staggered.
   3. Face nailing will not be permitted.
   4. Nailers are specified in 3.8.

C. Rivets and Screws:
   1. Install were indicated or required.
   2. Provide compatible fasteners and washers where required to protect surface of sheet metal and to provide a watertight connection.

D. Seams:
   1. Lap Seams:
      a. Overlap seams of counterflashings not less than 3 inches.
      b. Completely and neatly fill the joints with the specified sealant, applied at not less than two - 1/8-inch thick bed on each side of joint.

E. Reglets:
   1. Care should be taken not to damage existing reglet/counterflashings when cutting counterflashings and installing new materials.
2. After completion of all base and counterflashing work is complete, the caulking of all reglets shall be completely removed, the area cleaned and new caulking installed, as specified.

3. Any damaged reglet shall be replaced to match existing.

4. Reglets to have a minimum depth of 1-1/4 inches.

5. New counterflashing to have a friction locking leg and shall use lead/copper wedges.

3.04 SPECIFIC INTERMEDIATE REPAIRS

A. See Sheet R100.

3.05 CLEAN UP

A. Remove debris, scraps, containers and other rubbish and trash resulting from installation of the roofing system from job site each day.

END OF SECTION 07 50 00
SECTION 07 92 10
SEALANTS FOR BUILDING ENVELOPE

PART 1 - GENERAL

1.01 SUMMARY

A. Work in this section includes removal and replacement of all exterior sealant systems of building envelope for this project including:

1. Wall Assemblies
2. Wall Fenestrations
3. Wall Penetrations
4. Wet Seal of Windows, Storefront and Curtain Walls

B. General Guidelines:

1. Joints shall not be less than 1/4-inch in width and not greater than 1 1/4-inch in width.
2. Joint width shall be 4 times greater than anticipated movement.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching
C. Section 02 05 00: Demolition and Removal
D. Section 04 50 05: Minor Masonry Restoration and Cleaning
E. Section 06 20 00: Finish Carpentry
F. Section 06 20 08: Epoxy Wood Repairs/Modifications
G. Section 07 50 00: General Roof Repairs/Maintenance
H. Section 08 61 00: Wood Windows
I. Section 09 90 02: Painting for Exterior Wood Surfaces
1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. ASTM INTERNATIONAL (ASTM):
   2. ASTM C 920 (2014) Elastomeric Joint Sealants

C. SEALANT WATERPROOFING RESTORATION INSTITUTE (SWRI):
   2. Validation Program

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. Manufacturer's Catalog Data
   1. Sealants
   2. Tapes
      a. Butyl
      b. Preformed
   3. Primers
   4. Backstop materials
   5. Data for the sealants shall include shelf life, recommended cleaning solvents, modulus and type cure.
D. Manufacturer's Standard Color Chart
   1. Sealants:
      a. Submit color for each varying surface color.

E. Manufacturer's Instructions
   1. Sealants/Tapes: Submit application instructions, precautions and mixing
      instructions for multi-component sealants.

F. Samples
   1. Sealants: Submit one tube of each color for each sealant type to be used.

G. Sample Installations – Mock-Up:
   1. Finished Joint:
      a. Before sealant work is started, submit a sample of each type of finished joint
         where directed.
      b. Sample shall show the workmanship, bond and color of sealant.
      c. The workmanship, bond and color of sealant throughout the project shall match
         the approved sample joints.

H. Certificates of Compliance or SWRI Validation Program
   1. Sealants – Liquid Sealants
   2. Tapes – Pre-cured Silicone
   3. Tapes – Butyl
   4. Primers
   5. Bond breakers
   6. Backstops
   7. Submit certificates from the manufacturers attesting that materials meet the specified
      requirements and compatible for specified use. For liquid sealants and pre-cured
      sealants, SWRI Validation will be accepted.

I. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section
   and include with Safety Plan in accordance with Section 01 52 05, Safety
   Requirements.
1.05 ENVIRONMENTAL CONDITIONS

A. The ambient temperature shall be within the limits of 40 and 100 degrees F when sealant is applied.

B. Joint application should consider the expansion/contraction state of the joint at the time of application and during curing cycle.

1.06 DELIVERY AND STORAGE

A. Delivery:

1. Deliver materials to the job site in unopened in manufacturers’ external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon.

2. Elastomeric sealant containers shall be labeled to identify type, class, grade and use.

B. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 100 F degrees or less than 40 degrees F.

1. Adhere to more stringent temperature restrictions of the Manufacturer as required for specific products.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide sealant that has been tested and suitable for each specific substrates to which it will be applied.

B. Exterior Sealant – A polyurethane based or silicone based product adhering to the below requirements shall be used.

1. Modulus

   a. Low Modulus

      1) To be used for exterior insulation and finish systems, coatings and preformed silicone tape (pre-cured sealant) joints.

   b. Medium Modulus

      1) To be used for majority of building envelope joints.

   c. High Modulus

      1) To be used to wet seal glass.

2. Grade – NS, a non-sag sealant shall be used.
3. Type – A type S, single component, or type M, multi-component may be used.

4. Locations and Colors
   a. Colors will be selected from standard color charts after mock-ups for each condition field of at least 3 choices is provided.

5. Class
   a. A Class 50 shall be provided unless specifically approved or noted otherwise.

6. Use
   a. Sealant use for each condition or application shall adhere to use classification of ASTM C 920.

C. Sealant Tapes:

1. Butyl (for sheet metal laps)
   a. Provide a partially cured butyl tape, thickness 1/8 inch by a minimum of 1/2 inch wide.
   b. Locations shall be as follows:
      1) Lap joints of all metals.
      2) Beneath cover plates of cap and counterflashings.
      3) Where noted or specified elsewhere.

2. Preformed Tape System – Silicone Based:
   a. Provide a preformed tape system equal to Dow 123.
   b. Color shall match adjacent surfaces and be approved by Owner.
   c. Width and shape as indicated on drawings.

D. Preformed Silicone, Pre-Compressed, Self-Expanding Sealant Joint System

1. Color to be selected by Owner; factory applied.
2. Joint sizes based on actual field conditions.
3. Movement capability of +/-25%.

2.02 PRIMER FOR SEALANT

A. Provide a non-staining, quick drying type and consistency recommended by the sealant manufacturer for the particular application.
2.03 BOND BREAKERS
   A. Provide the type and consistency recommended by the sealant manufacturer for the particular application.
   B. Liquid applied bond breakers are not permitted.

2.04 BACKSTOPS
   A. Provide glass fiber roving or neoprene, butyl, polyurethane or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer.
   B. Backstop material shall be compatible with sealant.
   C. Do not use absorptive materials.

2.05 CLEANING SOLVENTS
   A. Provide type recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION
   A. Surfaces shall be clean, dry to the touch, and free from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion.
   B. When resealing an existing joint, completely remove the existing caulking/sealant and any foreign matter, dirt, dust or debris, prior to application of new sealant.
   C. Use compatible materials when existing silicone sealants exist.

3.02 SEALANT PREPARATION
   A. Prepare surfaces in strict accordance with the Contract Documents and any Manufacturers printed instructions.

3.03 APPLICATION OF SEALANTS
   A. Backstops:
      1. Install backstops dry and free of tears or holes.
      2. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified.
      3. Install backstops in the following locations:
         a. Where indicated.
         b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width to Depth Ratios".
B. Primer:

1. Immediately prior to application of the sealant, clean out dust/dirt/loose particles from joints.

2. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry and metal surfaces in accordance with sealant manufacturer's instructions.

3. Do not apply primer to exposed finish surfaces.

C. Bond Breaker:

1. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for the type joint and sealant specified.

2. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

D. Sealants:

1. Provide a sealant compatible with the materials to which it is applied.

2. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the gun.

3. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width.

4. Force sealant into joints to fill the joints solidly without air pockets.

5. Tool sealant after application to ensure adhesion.

6. Sealant shall be uniformly smooth and free of wrinkles.

7. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant and tool smooth as specified.

3.04 APPLICATION OF BUTYL TAPES

A. Surfaces shall be cleaned and prepared as noted below.

B. No exposed applications of butyl tapes/sealants are permitted.

C. At each lap, provide 2 continuous applications of tape approximately 1 inch apart within the lap.

D. Directly after tapes are installed, set and secure metal.
3.05 APPLICATION OF PREFORMED (PRE-CURED SEALANTS) TAPES

A. Surfaces shall be cleaned and prepared as noted below.

B. Prime surfaces.

C. Mask (tape) exterior edge on each side of tape joint.

D. Provide even, uniform application of silicone-based sealant on each side of joint.

E. Directly after sealant is installed, install preformed silicone-based tape.

F. Remove tape and clean all surfaces.

3.06 PROTECTION AND CLEANING

A. Protection:

1. Protect areas adjacent to joints from sealant smears.

2. Masking tapes may be used for this purpose, if removed 5 to 10 minutes after joint is filled.

B. Final Cleaning:

1. Masonry and Other Porous Surfaces:
   a. Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer.
   b. Allow excess sealant to cure for 24 hours then remove by wire brushing or sanding.

2. Metal or Non-Porous Surfaces:
   a. Remove excess sealant with a solvent-moistened cloth.

3.07 UNIT PRICED QUANTITIES

A. In accordance with Section 01 21 10, Unit Prices and Allowances, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.

B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.

C. Provide photograph or videotape documentation of repairs.

D. Locate quantities and show their locations on the applicable drawings.

E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 07 92 10
SECTION 08 61 00
WOOD WINDOWS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes information for the repair of existing wood windows. Scope of work includes replacing glazing compound, repair of damaged windows, sashes and sills.
   1. See Section 01 11 00, Summary of Work.

B. This work is not replacement. This is a stabilization effort to repair/patch existing wood windows.

C. Contractor shall cut free paints, loosen windows, and adjust set/close. Work does not require the windows to be made operational.

D. Interior and exterior wood trim that is not included as part of the wood window units is specified in Section 06 20 08, Epoxy Wood Repairs/Modifications.

E. Joint sealing between wood windows and adjacent materials is specified in Section 07 92 10, Sealants for Building Envelope.

F. Painting existing wood windows is specified in Section 09 90 02, Painting for Exterior Wood Surfaces.

G. Field Measurements: Check actual window openings and units by accurate field measurement before fabrication. Coordinate fabrication schedule with construction progress to avoid delay.

1.02 RELATED REQUIREMENTS

The Provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching
C. Section 02 05 00: Demolition and Removal
D. Section 04 50 05: Minor Masonry Restoration and Cleaning
E. Section 06 20 00: Finish Carpentry
F. Section 06 20 08: Epoxy Wood Repairs/Modifications
G. Section 07 50 00: General Roof Repairs/Maintenance
H. Section 07 92 10: Sealants for Building Envelope
I. Section 09 90 02: Painting for Exterior Wood Surfaces

1.03 SUBMITTALS
A. Submit the following in accordance with Section 01 33 00, Submittals.
B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
C. Accessories meeting requirements of Sections 06 20 00, Finish Carpentry, Section 07 92 10, Sealants for Building Envelope and Section 09 90 02, Painting for Exterior Wood Surfaces.

PART 2 - PRODUCTS

2.01 WOOD SILLS
A. Preservative treated suitable fine-grain lumber that has been kiln dried to a moisture content of 6 to 12 percent at time of fabrication and is free of visible finger joints, blue stain, knots, pitch pockets and surface checks.

2.02 COMPRESSION WEATHERSTRIPPING
A. Provide compressible weather-stripping, designed for permanently resilient sealing under bumper or wiper action, completely concealed when sash is closed.
   1. Weather-stripping material: Nonferrous spring metal.
   2. Glass and Glazing Materials: Refer to "Glass and Glazing" section for glass and glazing requirements applicable to wood window units.

2.03 SASH BALANCES
A. Retain original weight and pulley system.
B. Repair windows to produce units that are equal to the existing window systems.
C. Provide weather-stripping at perimeter of each operating sash.

PART 3 - EXECUTION

3.01 GENERAL
A. Units shall be cleaned and primed before reinstallation. Deteriorated joints shall be repaired.
B. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by pre-construction sealant-substrate testing.

3.02 INSPECTION

A. Inspect existing conditions prior to bid.

B. Inspect openings before beginning re-installation. Verify that the opening is correct and the sill plate is level. Do not proceed with installation of window units until unsatisfactory conditions have been corrected.

C. Wood frame walls shall be dry, clean, free of deterioration, sound and well-nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in the opening and within 3 inches of the corner.

1. Coordinate window installation with wall flashings and other built-in components.

D. Set units plumb, level, true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.

E. Adjust operating sash and hardware to provide a tight fit at contact points and weather-stripping, and to provide smooth operation and a weathertight closure. Lubricate hardware and moving parts.

F. Clean interior and exterior surfaces promptly after installation. Take care to avoid damage to protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.

G. Clean glass of window units promptly after installation. Wash glass on both faces before Substantial Completion.

H. Remove and replace glass that has been broken, chipped, cracked, abraded or damaged during the construction period.

I. Protect window units from damage or deterioration until time of substantial completion.

END OF SECTION 08 61 00
SECTION 09 90 02

PAINTING FOR EXTERIOR WOOD SURFACES

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes 2 phases of work: Preparation and Painting for predominately wood surfaces for entire exterior of building envelope.

1. Phase 1 Preparation: Includes the removal of all loose, peeling, flaking or delaminating paint, removal and repair to all damaged, deteriorated or missing carpentry and priming of all surfaces. This phase is to be completed per area or section and review and approval by Consultant/Engineer prior to commencing work.

2. Phase 2 Painting: Includes the painting and sealing of all exposed surfaces. Paint system shall include a primer, base coat (minimum 4 mil wft/1.4 mil dft) and topcoat (minimum 4 mil wft/1.4 mil dft).

B. Reference standards for other paint types and surfaces are included for incidental surfaces which may occur/exist on the exterior.

C. Whether or not colors are designated in the schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Consultant/Engineer will select from standard colors or finishes available.

1.02 RELATED REQUIREMENTS

A. The provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

B. Section 02 04 00: Cutting and Patching

C. Section 02 05 00: Demolition and Removal

D. Section 04 50 05: Minor Masonry Restoration and Cleaning

E. Section 07 50 00: General Roof Repairs/Maintenance

F. Section 06 20 00: Finish Carpentry

G. Section 06 20 08: Epoxy Wood Repairs/Modifications

H. Section 07 92 10: Sealants for Building Envelope

I. Section 08 61 00: Wood Windows
REFERENCES

A. ASTM INTERNATIONAL (ASTM):
   2. ASTM D 2092 (1995; R 2001e1) Standard Guide for Preparation of Zinc-Coated (Galvanized) Steel Surfaces for Painting

B. MASTER PAINTERS INSTITUTE (MPI):
   1. MPI 1 (Oct 2009) Aluminum Paint
   2. MPI 10 (Oct 2009) Exterior Latex, Flat, MPI Gloss Level 1
   3. MPI 101 (Oct 2009) Epoxy Anti-Corrosive Metal Primer
   4. MPI 107 (Oct 2009) Rust Inhibitive Primer (Water-Based)
   5. MPI 108 (Oct 2009) High Build Epoxy Coating, Low Gloss
   7. MPI 113 (Oct 2009) Exterior Pigmented Elastomeric Coating (Water Based)
   8. MPI 116 (Oct 2009) Epoxy Block Filler
   10. MPI 13 (Oct 2009) Exterior Solvent-Based Semi-Transparent Stain
   11. MPI 134 (Oct 2009) Galvanized Primer (Waterbased)
   12. MPI 16 (Oct 2009) Exterior Latex-Based Solid Hide Stain
   15. MPI 164 (Oct 2009) Exterior W.B. Light Industrial Coating, Gloss, MPI Gloss Level 6
17. MPI 2 (Oct 2009) Aluminum Heat Resistant Enamel (up to 427 C and 800 F)
18. MPI 21 (Oct 2009) Heat Resistant Enamel, Gloss (up to 205 degrees C and 400 degrees F), MPI Gloss Level 6
19. MPI 22 (Oct 2009) Aluminum Paint, High Heat (up to 590 degrees C and 1100 degrees F.
20. MPI 23 (Oct 2009) Surface Tolerant Metal Primer
21. MPI 42 (Oct 2009) Latex Stucco and Masonry Textured Coating
22. MPI 5 (Oct 2009) Exterior Alkyd Wood Primer
23. MPI 6 (Oct 2009) Exterior Latex Wood Primer
24. MPI 7 (Oct 2009) Exterior Oil Wood Primer
25. MPI 79 (Oct 2009) Alkyd Anti-Corrosive Metal Primer
26. MPI 8 (Oct 2009) Exterior Alkyd, Flat, MPI Gloss Level I
27. MPI 9 (Oct 2009) Exterior Alkyd, Gloss, MPI Gloss Level 6
28. MPI 90 (Oct 2009) Interior Wood Stain, Semi-Transparent
30. MPI 95 (Oct 2009) Quick Drying Primer for Aluminum

C. THE SOCIETY FOR PROTECTIVE COATINGS (SSPC):

5. SSPC SP 1 (1982; E 2004) Solvent Cleaning
8.  SSPC SP 3 (2004; E 2004) Power Tool Cleaning
9.  SSPC SP 6 (2007) Commercial Blast Cleaning
10. SSPC SP 7 (2007) Brush-Off Blast Cleaning

D. U.S. ARMY CORPS OF ENGINEERS (USACE):

E. U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA):

1.04 DEFINITIONS

A. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of our products.

1.  Flat - Less than 5 Percent.
2.  Matte - 0 - 10 Percent.

1.05 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, Submittals.
B. No work will begin until submittals have been received and approved, and Pre-Construction Conference has been completed.

C. Product data for each paint system specified, including primer and sealants.
   1. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
   2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

D. Samples for initial color selection in the form of manufacturer's color charts. After color selection, the Consultant/Engineer will furnish color chips for surfaces to be coated.

E. Applicator Qualifications
   1. Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.

F. Single-Source Responsibility
   1. Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

G. Field Mockups
   1. For each area, condition or surface, the Contractor shall provide a 2 phase mockup.
   2. At areas approved by Consultant/Engineer, Contractor shall complete the required preparation elements for the Consultant/Engineer’s review and approval.
   3. Upon approval of Phase 1, Preparation, install the complete finishes and colors required.
   4. Each mockup location shall be a minimum 100 SF.

1.06 DELIVERY AND STORAGE

A. The Consultant/Engineer will select one surface to represent surfaces and conditions for each type of coating and substrate to be painted. Apply coatings on this surface according to the schedule or as specified.
B. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the product trade name manufacturer's instructions.

C. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Protect from freezing. Keep storage area neat and orderly. Remove all debris and waste daily.

D. Project Conditions

1. Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 80 percent, or at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.

E. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).

F. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

1.07 EXTRA MATERIALS

A. At project closeout, supply the Owner with 2 gallons of each product for touch-up purposes.

B. At project closeout, provide the color mixture name and code to the Owner for accurate future color matching.

PART 2 - PRODUCTS

2.01 PAINT

A. Subject to compliance with requirements, provide products of one of the following:

1. Benjamin Moore Glidden Co.

2. Dutch Boy Pittsburgh Paints

3. Pratt & Lambert Sherwin Williams

B. Provide the following paint coatings and thicknesses for the various substrates indicated:

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C. Paint Materials, General

1. Provide fillers, primers, finish coat materials, sealants, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer, based on testing and field experience.

D. Material Quality

1. Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

E. Proprietary Names

1. Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.

F. Colors

1. Provide color selections made by the Owner from the manufacturer's full range of standard colors.

2.02 EXTERIOR PRIMERS - PREVIOUSLY PAINTED SURFACES

A. Concrete, Masonry, Stucco, Wood and Metal Surfaces

B. Latex:

   1. Provide a primer from the paint manufacturer for each specific surface of the building envelope of the work area.

2.03 EXTERIOR FINISH COATS

A. Flat Finish:

   1. Latex:

      a. Provide a primer from the paint manufacturer for each specific surface of the building envelope of the work area.
B. Low Luster Finish:
   1. Alkyd:
      a. Two (2) Coats.
   2. Latex:
      a. Two (2) Coats.
C. Satin Finish:
   1. Alkyd:
      a. Two (2) Coats.
   2. Latex:
      a. Two (1) (2) Coats.
D. Soft/Medium Gloss Finish:
   1. Latex:
      a. Two (2) Coats.
E. Semi-Gloss Finish:
   1. Alkyd:
      a. Two (2) Coats.
   2. Latex:
      a. Two (2) Coats.
F. High Gloss Finish:
   1. Alkyd:
      a. Two (2) Coats.
   2. Latex:
      a. Two (2) Coats.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with requirements. Do not begin application until unsatisfactory conditions have been corrected.
B. Provide equipment and facilities for protection of workers from hazardous materials resulting from paint removal and surface preparation.

C. If, during the course of construction, the Contractor encounters materials that he believes may contain lead, notify the Consultant/Engineer immediately.

D. Coordination

1. Review other Sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

E. Notify the Consultant/Engineer about anticipated problems using the materials specified over substrates primed by others.

F. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Consultant/Engineer and obtain direction before beginning work.

1. Concrete and Masonry: 13 percent. Allow new concrete to cure a minimum of 28 days.
2. Exterior Wood: 17 percent.
3. Metal surfaces.
4. Concrete Slab-On-Grade: Perform calcium chloride test over 24 hour period or other acceptable test to manufacturer. Verify acceptable moisture transmission and pH levels.

3.02 PREPARATION

A. Remove all hardware and accessories and all mechanical, electrical and plumbing components from surfaces to be prepared and painted.

B. Protect all adjacent surfaces (including windows, doors, landscaping, adjacent properties, vehicles, etc.) from preparation and painting process.

C. Work is to be completed in 2 separate phases, preparation (approval from Consultant/Engineer and/or Owner) and painting.

D. Clean all existing and new substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

E. Surface Preparation

1. Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
F. Provide barrier coats over incompatible primers or remove and re-prime.

G. Wood
   1. Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
   2. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before applying primer.

H. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood.

I. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.

J. Other Surfaces
   1. Clean un-galvanized ferrous-metal surfaces that have not been shop-coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.
   2. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents and touch up with the same primer as the shop coat.
   3. Galvanized Surfaces
      a. Clean galvanized surfaces with non-petroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

K. Materials Preparation
   1. Carefully mix and prepare paint materials according to manufacturer's directions.
   2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
   3. Use only thinners approved by the paint manufacturer and only within recommended limits.
3.03 APPLICATION

A. General

1. Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

2. Provide finish coats that are compatible with primers used.

3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until previous coat has cured. Sand between applications where sanding is required to produce an even smooth surface.

4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance.

5. The term exposed surfaces includes areas visible when permanent or built-in fixtures are in place. Extend coatings in these areas to maintain system integrity and provide desired protection.

B. Scheduling Painting

1. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable and before subsequent surface deterioration. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried.

C. Application Procedures

1. Apply paints and coatings by brush or roller according to manufacturer's directions. Spray methods will not be accepted.

D. Brushes

1. Use brushes best suited for the material applied.

E. Rollers

1. Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

F. Minimum Coating Thickness

1. Apply materials at the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

Painting for Exterior Wood Surfaces
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G. Prime Coats

1. Before applying finish coats, apply a prime coat to material to be painted or finished that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

H. Completed Work

1. Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

I. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.

J. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.

K. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet (1.5 m).

L. Remove dust and other foreign materials from substrate immediately prior to applying each coat.

M. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.

N. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.

O. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

3.04 CLEANING

A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.

B. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.

C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.

E. Remove protective materials.

F. At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

G. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.05 PROTECTION

A. Protect completed coating applications from damage by subsequent construction activities.

B. Repair to Consultant/Engineer's acceptance coatings damaged by subsequent construction activities. Where repairs cannot be made to Consultant/Engineer's acceptance, re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

C. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Consultant/Engineer.

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 09 90 02
Drawings