# TABLE OF CONTENTS – INDEFINITE DELIVERY CONTRACT

**PROJECT NAME:** IDC GC 2016 (BSB East Side First Floor Restroom Renovations)

**PROJECT NUMBER:** H51-N353-PG / H51-D175-PG (MUSC# 50046)

<table>
<thead>
<tr>
<th>SECTION</th>
<th>NUMBER OF PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents................................................................................</td>
<td>3</td>
</tr>
<tr>
<td>Invitation for Construction Services Indefinite Delivery Contract (SE-655)</td>
<td>1</td>
</tr>
<tr>
<td>Instructions to Bidders for Construction Services Indefinite Delivery Contract (SE-656)</td>
<td>9</td>
</tr>
<tr>
<td>Bid Bond (AIA A310)............................................................................</td>
<td>2</td>
</tr>
<tr>
<td>Construction Services Indefinite Delivery Contract Bid Form (SE-659)</td>
<td>4</td>
</tr>
<tr>
<td>Construction Services Indefinite Delivery Services Contract (SE-680)</td>
<td>2</td>
</tr>
<tr>
<td>General Conditions to Construction Services Indefinite Delivery Contract (SE-685)</td>
<td>13</td>
</tr>
<tr>
<td>Construction Services IDC Delivery Order (SE-690)................................</td>
<td>1</td>
</tr>
<tr>
<td>Construction Services IDC Delivery Order Modification (SE-695)...........</td>
<td>1</td>
</tr>
<tr>
<td>Minority and Women’s Business Enterprises (M/WBEs)..........................</td>
<td>8</td>
</tr>
<tr>
<td>Human Resources Management Policy-Tobacco-Free Campus Policy 49, and Tobacco-free map</td>
<td>6</td>
</tr>
<tr>
<td>Application for MUSC Construction Identification Badge ......................</td>
<td>1</td>
</tr>
</tbody>
</table>

TOC-1
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Division</th>
<th>Section Description</th>
<th>Date</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>010000</td>
<td>Special Conditions and Requirements</td>
<td>07/01/16</td>
<td>2 pages</td>
</tr>
<tr>
<td>011000</td>
<td>Summary</td>
<td>07/01/16</td>
<td>3 pages</td>
</tr>
<tr>
<td>011010</td>
<td>Additional Information</td>
<td>07/01/16</td>
<td>2 pages</td>
</tr>
<tr>
<td>011400</td>
<td>Work Restrictions</td>
<td>07/01/16</td>
<td>4 pages</td>
</tr>
<tr>
<td>012500</td>
<td>Contract Modification Procedures</td>
<td>07/01/16</td>
<td>3 pages</td>
</tr>
<tr>
<td>012900</td>
<td>Payment Procedures</td>
<td>07/01/16</td>
<td>6 pages</td>
</tr>
<tr>
<td>013100</td>
<td>Project Management and Coordination</td>
<td>07/01/16</td>
<td>10 pages</td>
</tr>
<tr>
<td>013200</td>
<td>Construction Progress Documentation</td>
<td>07/01/16</td>
<td>7 pages</td>
</tr>
<tr>
<td>013300</td>
<td>Submittal Procedures</td>
<td>07/01/16</td>
<td>10 pages</td>
</tr>
<tr>
<td>014000</td>
<td>Quality Requirements</td>
<td>07/01/16</td>
<td>11 pages</td>
</tr>
<tr>
<td>015000</td>
<td>Temporary Facilities and Controls</td>
<td>07/01/16</td>
<td>10 pages</td>
</tr>
<tr>
<td>016000</td>
<td>Product Requirements</td>
<td>07/01/16</td>
<td>11 pages</td>
</tr>
<tr>
<td>017000</td>
<td>Execution Requirements</td>
<td>07/01/16</td>
<td>7 pages</td>
</tr>
<tr>
<td>017310</td>
<td>Cutting and Patching</td>
<td>07/01/16</td>
<td>5 pages</td>
</tr>
<tr>
<td>017320</td>
<td>Selective Demolition</td>
<td>07/01/16</td>
<td>10 pages</td>
</tr>
<tr>
<td>017700</td>
<td>Closeout Procedures</td>
<td>07/01/16</td>
<td>10 pages</td>
</tr>
<tr>
<td>017810</td>
<td>Project Record Documents</td>
<td>07/01/16</td>
<td>5 pages</td>
</tr>
<tr>
<td></td>
<td>Division 2</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Division 3</td>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td>035050</td>
<td>Self-Leveling Underlayment</td>
<td>07/01/16</td>
<td>4 pages</td>
</tr>
<tr>
<td></td>
<td>Division 4</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Division 5</td>
<td>Metals</td>
<td></td>
</tr>
<tr>
<td>055000</td>
<td>Miscellaneous Metals</td>
<td>07/01/16</td>
<td>5 pages</td>
</tr>
<tr>
<td></td>
<td>Division 6</td>
<td>Wood, Plastic, Composites</td>
<td></td>
</tr>
<tr>
<td>061053</td>
<td>Miscellaneous Carpentry</td>
<td>07/01/16</td>
<td>5 pages</td>
</tr>
<tr>
<td>064116</td>
<td>Interior Architectural Woodwork</td>
<td>07/01/16</td>
<td>6 pages</td>
</tr>
<tr>
<td></td>
<td>Division 7</td>
<td>Thermal and Moisture Protection</td>
<td></td>
</tr>
<tr>
<td>078400</td>
<td>Firestopping</td>
<td>07/01/16</td>
<td>3 pages</td>
</tr>
<tr>
<td>079200</td>
<td>Joint Sealants</td>
<td>07/01/16</td>
<td>8 pages</td>
</tr>
<tr>
<td></td>
<td>Division 8</td>
<td>Openings</td>
<td></td>
</tr>
<tr>
<td>081113</td>
<td>Hollow Metal Doors and Frames</td>
<td>07/01/16</td>
<td>8 pages</td>
</tr>
<tr>
<td>081416</td>
<td>Flush Wood Doors</td>
<td>07/01/16</td>
<td>3 pages</td>
</tr>
<tr>
<td>087110</td>
<td>Door Hardware</td>
<td>07/01/16</td>
<td>17 pages</td>
</tr>
</tbody>
</table>
**Division 9  Finishes**

- 091113 Non-Load Bearing Metal Framing  
  07/01/16  2 pages
- 092600 Gypsum Board Assemblies  
  07/01/16  4 pages
- 093013 Ceramic Tile  
  07/01/16  3 pages
- 093050 Tile Setting Materials and Accessories  
  07/01/16  6 pages
- 095113 Suspended Acoustical Ceilings  
  07/01/16  5 pages
- 099123 Interior Painting  
  07/01/16  9 pages

**Divisions 10  Specialties**

- 101550 Toilet Partitions  
  07/01/16  5 pages
- 102800 Washroom Accessories  
  07/01/16  3 pages

**Divisions 11-28 Not Used**

**DRAWINGS**

- G000  Cover Sheet and Index  
  07/01/16
- G001  Code Information  
  07/01/16
- G002  General Notes and Legend  
  07/01/16
- G101  Contractor Access  
  07/01/16
- G102  Fire and Life Safety  
  07/01/16
- G103  Site Plan and Lay Down Area  
  07/01/16
- AD101  Demolition Plans  
  07/01/16
- A101  Renovation Plans  
  07/01/16
- A121  Reflected Ceiling Plans  
  07/01/16
- A200  Elevations and Details  
  07/01/16
- A210  Interior Elevations  
  07/01/16
- A500  Seismic and Ceiling Details  
  07/01/16
- A501  Details  
  07/01/16
- A700  Finish Plan  
  07/01/16
- M101  Mechanical Plan  
  07/01/16
- E101  Electrical Plans  
  07/01/16
- P001  Plumbing Notes and Legend  
  07/01/16
- P101  Plumbing Plan  
  07/01/16
INVITATION FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

IDC PROJECT NAME: IDC General Construction 2016

REPRESENTATIVE PROJECT NAME (if applicable): BSB East Side First Floor Restroom Renovations

IDC PROJECT NUMBER: H51-D175-PG

REPRESENTATIVE PROJECT NUMBER (if applicable): H51-N353-PG

PROJECT LOCATION: 173 Ashley Avenue, Charleston, SC 29425

BID SECURITY REQUIRED? Yes ☒ No ☐

DESCRIPTION OF CONSTRUCTION SERVICES (Include Contractor License category/subcategory): The project is a two year IDC not to exceed a total of $1 million and $250,000 per single delivery order for a general contractor with a BD3, BD4, or BD5 license. This project (H51-N353-PG) is a "seed" for IDC and will be the basis of award. Project scope is a complete renovation of the 1st floor restrooms in the Basic Science Building (approximately 389 SF). Work includes demolition, new partitions, ceiling, casework, ceramic tile, toilet partitions, finishes and supporting mechanical, electrical, and plumbing.

CONTRACT INFORMATION
1. The contract period of the awarded Indefinite Delivery Contract (IDC): Two years
2. Maximum expenditures over the period of the awarded IDC: $1,060,000
3. Maximum single project expenditure that will be allowed under the awarded IDC: $250,000
4. Maximum number of IDC's Agency may award under this solicitation: Five
5. Method Agency will use to award Delivery Orders under the awarded IDC: Low Bid
6. Minimum dollar value of services Agency will procure under each awarded IDC (Check box if Applicable): $ 1,060,000

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

PLAN DEPOSIT AMOUNT: $0.00 IS DEPOSIT REFUNDABLE Yes ☐ No ☐ N/A ☒

Bidders must obtain Bidding Documents/Plans from the above listed source(s) to be listed as an official plan holder. Only those Bidding Documents/Plans obtained from the above listed source(s) are official. Bidders that rely on copies of Bidding Documents/Plans obtained from any other source do so at their own risk. All written communications with official plan holders & bidders WILL ☒ WILL NOT ☐ be via email or website posting.

IN ADDITION TO THE ABOVE OFFICIAL SOURCE(S), BIDDING DOCUMENTS/PLANS ARE ALSO AVAILABLE AT:

AGENCY: Medical University of South Carolina
AGENCY PROJECT COORDINATOR: Wade Lewis Gatlin, AIA
ADDRESS: Street/PO Box: 97 Jonathan Lucas Street, MSC 190
City: Charleston State: SC ZIP: 29425-1900
EMAIL: gatlin@musc.edu
TELEPHONE: 843-792-2233 FAX: 843-792-1252

PRE-BID CONFERENCE: Yes ☒ No ☐ PRE-BID DATE: 8/8/16 TIME: 10:00 am
MANDATORY ATTENDANCE: Yes ☐ No ☒ PLACE: 2nd Floor Conference Rm 209; 97 Jonathan Lucas St.
BID CLOSING DATE: 8/23/16 TIME: 11:00 am
PLACE: 2nd Floor Conference Rm 209; 97 Jonathan Lucas St.

HAND-DELIVERY:
Attn: Wade Lewis Gatlin, AIA
MUSC Engineering & Facilities, 2nd Floor Conf. Rm 209
97 Jonathan Lucas St., Charleston, SC 29425

Mandatory service:
Attn: Wade Lewis Gatlin, AIA
MUSC Engineering & Facilities, 97 Jonathan Lucas St.
MSC 190, Charleston, SC 29425-1900

APPROVED BY: ____________________________ DATE: 7/28/16
(OSE Project Manager)

INSTRUCTIONS TO THE AGENCY:
1. Submit a copy of the completed SE-655 to the OSE Project Manager in Word format.
SE-656
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

AGENCY: Medical University of South Carolina
PROJECT NUMBER: H51-D175-PG (MUSC# 50046)
PROJECT NAME: IDC General Construction 2016
PROJECT LOCATION: 173 Ashley Avenue Charleston, SC 29425

DESCRIPTION OF CONSTRUCTION SERVICES (Include Contractor License category/subcategory): The construction services is for a general contractor with a BD3, BD4, or BD5 license. The representative project scope includes the complete renovation of the 1st Floor bathrooms of the Basic Science Building (approximately 389 SF). Work includes demolition, new partitions, ceiling, casework, ceramic tile, toilet partitions, finishes and supporting mechanical, electrical, and plumbing.

The above named Agency hereby solicits bids for the Construction Services Indefinite Delivery Contract shown above. The Invitation for Bids includes the advertisement (SE-655), bid form, Notice of Intent to Award Indefinite Delivery Contract (SE-670), Construction Services Indefinite Delivery Contract (SE-680), General Conditions to Construction Services Indefinite Delivery Contract (SE-685), drawings and specifications (if applicable), and all addenda issued prior to bid opening, all of which are collectively referred to herein as the Solicitation Documents.

The Invitation for Bids is issued pursuant to South Carolina Code § 11-35-3310 and the Manual for Planning and Execution of State Permanent Improvements, Part II (Manual).

1. GENERAL INFORMATION

1.1 Agency may award up to four Indefinite Delivery Contract(s) (IDC) under this solicitation provided the Agency receives and adequate number of responsive and responsible bids. In no event, will the Agency award more contracts than the number set forth in the previous sentence.

1.2 Work is to be performed at the following location(s): (Insert location of work, e.g. a particular campus or campuses)

Medical University of South Carolina

1.3 The awarded IDC will be for a period not to exceed 2 years. (may not exceed 2 years).

1.4 The awarded IDC allows the Agency to award a total amount of work not to exceed $1,000,000.

1.5 Work awarded under the IDC will be awarded using form SE-690, Construction Services IDC Delivery Order. Agency will provide IDC awardees the opportunity to bid on all Delivery Orders for the services set forth in this Invitation.

1.6 The Agency may only award one Delivery Order per project to the contractor. However, a Delivery Order may be amended. A Delivery Order may only be amended in writing signed by both parties using form SE-695, Construction Services Delivery Order Modification.

1.7 Work awarded under the IDC for a single project may not exceed $250,000.

1.8 Projects and Delivery Orders may not be divided to avoid the limits set forth in 1.6 and 1.7 above.

1.9 (Check the block for the provision applicable to this solicitation)

☐ The minimum amount of work to be awarded under the IDC is $__________________________.

☒ Agency does not guarantee a minimum amount of work, nor does it guarantee the size or quantity of any work that is awarded under the IDC.

1.10 Bidders will agree to perform work for the advertised discipline in the following manner: (Check one)

☐ The cost of the work to the Agency will be determined using unit prices listed by the Bidder on its Bid Form. No other additions to the cost of the work will be permitted except the cost of Performance and Payment Bonds if required for specific Delivery Orders; or

☒ The cost of the work to the Agency will be determined by competitive bidding of each Delivery Order among all contractors having an active contract that the Agency awarded pursuant to this Invitation for Bids.
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

1.11 Bidders must be properly licensed in the discipline and the Group Classification to permit an award up to the maximum individual project award set forth in 1.7. Successful bidder(s) must maintain this license for the term of the contract.

2. SOLICITATION DOCUMENTS

2.1 All persons obtaining Bidding Documents from the issuing office designated in the advertisement shall provide that office with Bidder’s contact information to include the Bidder’s name, telephone number, mailing address, and email address. Agency will send all addenda modifying the Solicitation Documents to all plan holders of record.

2.2 By submitting a bid, Bidder represents that it has read and understands the Solicitation Documents. Bidders are expected to examine the Solicitation Documents thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements. Failure to do so will be at the Bidder’s risk. Bidder assumes responsibility for any patent ambiguity that Bidder does not bring to the Agency’s attention prior to bid opening. Bidder shall make any requests for substitution, questions, clarifications, or interpretations of the bid documents in writing to the Agency at least 10 days before the Bid Date. The Agency will not give oral instruction prior to bidding nor will any oral instructions to bidders be binding on the Agency.

2.3 The Agency will make corrections, interpretations, or changes that modify the Solicitation Documents by written addendum. As provided in Regulation 19-445.2042(B), if this solicitation provides for a pre-bid conference, nothing stated at the pre-bid conference shall change the Solicitation Documents unless a change is made by written addendum.

2.4 The Agency will not issue addenda later than 120 hours before the date and time specified in the advertisement for receipt of Bids except to withdraw the Invitation for Bids or to extend the date for receipt of bids.

2.5 When the date for receipt of Bids is postponed and there is insufficient time to issue a written Addendum prior to the original Bid Date, Agency will notify prospective Bidders by telephone or other appropriate means with immediate follow up with a written Addendum. This Addendum will verify the postponement of the original Bid Date and establish a new Bid Date. The new Bid Date will be no earlier than the fifth (5th) calendar day after the date of issuance of the Addendum postponing the original Bid Date.

3. BID PREPARATION

3.1 Bidder shall submit its bid using the bid form included in the Solicitation Documents. Bidder shall fill in any blanks on the bid form legibly using an indelible medium. Bidder shall sign its bid in ink or other indelible media. Sums shall be expressed in figures.

3.2 Bidder shall not make stipulations or qualify its bid in any manner not permitted on the bid form. An incomplete Bid or information not requested that is written on or attached to the bid form that could be considered a qualification of the Bid, may be cause for rejection of the Bid.

3.3 Pursuant to Title 11, Chapter 35, Section 3020(b)(i) of the South Carolina Code of Laws, as amended, the bid form may set forth a list of subcontractor specialties for which Bidder is required to list only the subcontractors Bidder will use to perform the work of each listed specialty. Bidder must follow the Instructions in the Bid Form for filling out this section of the Bid Form. Failure to properly fill out this Section may result in rejection of Bidder’s bid as non-responsive.

3.4 Bid Security: (Agency, check the block for the provision applicable to this solicitation)

☐ Bidder is not required to submit Bid Security with its bid.
☒ Bid shall be accompanied by a Bid Security in an amount of not less than $12,500. The Bid Security shall be a bid bond or a certified cashier’s check made payable to the Agency.

3.4.1 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Failure of the Bidder to enter into a contract with the Agency, furnish such bonds if required, or to correct any Bid deficiencies allowed by law, shall cause bid security to be forfeited to the Agency as liquidated damages, not as a penalty.
3.4.2 If Bidder submits a bid bond as its bid security, the bond shall be written on AIA Document A310, Bid Bond. The bond must be accompanied by a certified and current Power of Attorney for the attorney-in-fact who executes the bond on behalf of the surety company. The Bid Bond shall:

a. Be issued by a Surety Company licensed to do business in South Carolina;

b. Be issued by a Surety Company having, at a minimum, a “Best Rating” of “A” as stated in the most current publication of “Best’s Key Rating Guide, Property-Casualty,” which company shows a financial strength rating of at least five (5) times the contract price.

c. Be enclosed in the bid envelope at the time of Bid Opening, either in paper copy or as an electronic bid bond authorization number provided on the Bid Form and issued by a firm or organization authorized by the Surety to receive, authenticate and issue binding electronic bid bonds on behalf the Surety.

3.4.3 By submitting a Bid Bond via an electronic bid bond authorization number on the Bid Form and signing the Bid Form, the Bidder certifies that an electronic bid bond has been executed by a Surety meeting the standards required by the Bidding Documents and the Bidder and Surety are firmly bound unto the State of South Carolina under the conditions provided in this Section 3.4.

3.4.4 The Agency will retain the Bid Security of those Bidders being considered for award until an IDC has been executed, all bids are rejected, or the time specified in the Solicitation Documents for holding bids open has elapsed, whichever is earlier.

3.5 Submission of Bids: The Bidders shall submit their Bid, Bid Security, if any, and any other documents required by the Solicitation Documents to be submitted with the Bid, in a sealed opaque envelope. Unless hand delivered by the Bidder, the sealed envelope must be addressed to the Agency’s designated purchasing office as shown in the advertisement. The envelope shall be identified on the outside with the Project Name and Number, and the Bidder’s name and address. If the Bidder sends its bid to the Agency by mail or special delivery service (UPS, Federal Express, etc.), the envelope should be labeled “BID ENCLOSED” on the face thereof. Bidders hand delivering their bids shall deliver bids to the place of the bid opening as shown in the advertisement. Whether or not Bidders attend the bid opening, they shall give their bids to the Agency’s procurement officer or his/her designee as shown in the Advertisement prior to the time of the bid opening.

3.5.1 Each copy of the Bid submitted to the Agency shall be signed by the person(s) legally authorized to bind the Bidder to a contract. If the Bid is submitted by an agent of the Bidder, a current Power of Attorney certifying the agent’s authority to bind the Bidder shall be attached to the bid.

3.5.2 The Agency must receive Bids at the designated location before the time and date specified in the Solicitation Documents for receipt of Bids. The Agency will return bids received after the time and date for receipt of Bids unopened.

3.5.3 The official time for receipt of Bids will be determined by reference to the clock designated by the Agency’s Procurement Officer or his/her designee. The Procurement Officer conducting the Bid Opening will determine and announce that the deadline has arrived and no further Bids or bid modifications will be accepted. All Bids and bid modifications in the possession of the Procurement Officer at the time the announcement is completed will be timely, whether or not the bid envelope has been date/time stamped or otherwise marked by the Procurement Officer.

3.5.4 If an emergency or unanticipated event interrupts normal government processes so that Bids cannot be received at the government office designated for receipt of Bids by the exact time specified in the solicitation, the time specified for receipt of Bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Addendum may be issued to reschedule bid opening. If state offices are closed at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference.

4. CONDUCT OF BID OPENING AND CONSIDERATION OF BIDS

4.1 Bid Opening:

4.1.1 Agency will publicly open and read aloud Bids received on time.
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES INDEFINITE DELIVERY CONTRACT

4.1.2 At Bid Opening, Agency will announce the date and location of the posting of the Notice of Intent to Award IDC.

4.1.3 Agency will send a copy of the final Bid Tabulation to all Bidders within ten (10) working days of the bid opening.

4.1.4 If Agency determines to make an award, Agency will, after posting a Notice of Intent to Award IDC, send a copy of the Notice to all Bidders.

4.1.5 If only one Bid is received, Agency will open and consider the Bid.

4.2 Agency intends to award contracts in the number set forth in the Solicitation Documents to the lowest responsive and responsible bidders.

4.3 Bid Rejection: The Agency reserves the right to reject any and all bids.

4.3.1 Responsiveness:

4.3.1.1 The reasons for which the Agency will reject Bids include, but are not limited to:

a. Failure by a Bidder to be represented at a Mandatory Pre-Bid Conference or site visit;

b. Failure to deliver the Bid on time;

c. Failure to comply with Bid Security requirements, except as expressly allowed by law;

d. Listing an invalid electronic Bid Bond authorization number on the bid form;

e. Failure to bid an alternate, except as expressly allowed by law;

f. Failure to list qualified Subcontractors as required by law;

g. Showing any material modification(s) or exception(s) qualifying the Bid;

h. Faxing a Bid directly to the Agency or their representative; or

j. Failure to include a properly executed Power-of-Attorney with the Bid Bond.

4.3.1.2 The Agency may reject a Bid as nonresponsive if the prices bid are materially unbalanced between line items or sub line items. A Bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Agency, even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

4.3.2 Bidder Responsibility: Agency will make a determination of Bidder’s responsibility before awarding a contract. Bidder shall provide all information and documentation requested by the Agency to support the Agency’s evaluation of responsibility. Failure of Bidder to provide requested information is cause for the Agency, at its option, to determine the Bidder to be non-responsive.

4.4 Clarification: Pursuant to Section 11-35-1520(8), the Procurement Officer may elect to communicate with a Bidder after opening for the purpose of clarifying either the Bid or the requirements of the Invitation for Bids. Such communications may be conducted only with Bidders who have submitted a Bid which obviously conforms in all material aspects to the Invitation for Bids and only in accordance with Appendix D (Paragraph A(6)) to the Manual for Planning and Execution of State Permanent Improvement, Part II. Clarification of a Bid must be documented in writing and included with the Bid. Clarifications may not be used to revise a Bid or the Invitation for Bids. [Section 11-35-1520(8); R.19-445.2080]

5. TENDERING CONTRACT, CERTIFICATES OF INSURANCE, AND PERFORMANCE AND PAYMENT BONDS

5.1 After expiration of the protest period, the Agency will tender a signed IDC to the successful Bidder(s). The Bidder(s) shall return the fully executed IDC to the Agency within seven (7) days thereafter. The Bidder(s) shall deliver the required proof of insurance and bonding capacity to the Agency not later than three (3) days following the date of execution of the IDC. Failure to deliver these documents as required shall entitle the Agency to consider the Bidder’s failure as a refusal to enter into a contract in accordance with the terms and conditions of the Bidder’s bid and to make claim on the bid security.

5.2 The IDC will be written on OSE form SE-680, Construction Services Indefinite Delivery Contract.

5.3 After the IDC is fully executed, the Agency may award work to the successful Bidder(s) by issuing a Delivery Order in the manner described in the SE-680 and SE-685, General Conditions to the SE-680.
6. **BIDDER CERTIFICATIONS**

6.1 Certification of Independent Price Determination

**GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SECTION 16-9-10 OF THE SOUTH CAROLINA CODE OF LAWS AND OTHER APPLICABLE LAWS.**

(a) By submitting a bid, the Bidder certifies that—

(1) The prices in this Bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other Bidder or competitor relating to—

   (i) Those prices;
   (ii) The intention to submit a bid; or
   (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this Bid have not been and will not be knowingly disclosed by the Bidder, directly or indirectly, to any other Bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the Bidder to induce any other concern to submit or not to submit a Bid for the purpose of restricting competition.

(b) Each signature on the Bid is considered to be a certification by the Signatory that the Signatory—

(1) Is the person in the Bidder’s organization responsible for determining the prices being offered in this Bid, and that the Signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2) (i) Has been authorized, in writing, to act as agent for the Bidder’s principals in certifying that those principals have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

   (ii) As an authorized agent, does certify that the principals referenced in subdivision (b)(2)(i) of this certification have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

   (iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification.

(c) If the Bidder deletes or modifies paragraph (a)(2) of this certification, the Bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

6.2 Drug Free Workplace: By submitting a bid, the Bidder certifies that Bidder will maintain a drug free workplace in accordance with the requirements of Title 44, Chapter 107 of South Carolina Code of Laws, as amended.

6.3 Certification Regarding Debarment and Other Responsibility Matters:

(a) (1) By submitting an Bid, Bidder certifies, to the best of its knowledge and belief, that-

   (i) Bidder and/or any of its Principals-

      (A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;

      (B) Have not, within a three-year period preceding this Bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and
6.4 Ethics Certification: By submitting a bid, the Bidder certifies that the Bidder has and will comply with, and has not, and will not, induce a person to violate Title 8, Chapter 13 of the South Carolina Code of Laws, as amended (ethics act). The following statutes require special attention: Section 8-13-700, regarding use of official position for financial gain; Section 8-13-705, regarding gifts to influence action of public official; Section 8-13-720, regarding offering money for advice or assistance of public official; Sections 8-13-755 and 8-13-760, regarding restrictions on employment by former public official; Section 8-13-775, prohibiting public official with economic interests from acting on contracts; Section 8-13-790, regarding recovery of kickbacks; Section 8-13-1150, regarding statements to be filed by consultants; and Section 8-13-1342, regarding restrictions on contributions by contractor to candidate who participated in awarding of contract. The state may rescind any contract and recover all amounts expended as a result of any action taken in violation of this provision. If contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed.

6.5 Restrictions Applicable to Bidders and Gifts: Violation of these restrictions may result in disqualification of your bid, suspension or debarment, and may constitute a violation of the state Ethics Act. (a) After issuance of the solicitation, bidder agrees not to discuss this procurement activity in any way with the Owner or its employees, agents or officials. All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed. (b) Unless otherwise approved in writing by the Procurement Officer, bidder agrees not to give anything to the Owner, any affiliated organizations, or the employees, agents or officials of either, prior to award. (c) Bidder acknowledges that the policy of the State is that a governmental body should not accept or solicit a gift, directly or indirectly, from a donor if the governmental body has reason to believe the donor has or is seeking to obtain contractual or other business or financial relationships with the governmental body. Regulation 19-445.2165(C) broadly defines the term donor.
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

6.6 Iran Divestment Act Certification: (a) The Iran Divestment Act List is a list published by the State Fiscal Accountability Authority pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. The list is available at the following URL: http://procurement.sc.gov/PS/PS-iran-divestment.phtml. Section 11-57-310 requires the government to provide a person ninety days written notice before he is included on the list. The following representation, which is required by Section 11-57-330(A), is a material inducement for the State to award a contract to you. (b) By signing your Offer, you certify that, as of the date you sign, you are not on the then current version of the Iran Divestment Act List. (c) You must notify the Procurement Officer immediately if, at any time before posting of a final statement of award, you are added to the Iran Divestment Act List.

6.7 Open Trade Representation (Jun 2015): By submitting an Offer, Offeror represents that Offeror is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [02-2A083-1]

7. MISCELLANEOUS PROVISIONS

7.1 Non-Resident Taxpayer Registration Affidavit - Income Tax Withholding:

IMPORTANT TAX NOTICE - NONRESIDENTS ONLY

Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed $10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department’s website at: www.sctax.org

This notice is for informational purposes only. This Owner does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, SC 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898-5383.

PLEASE SEE THE “NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING” FORM (FORM NUMBER I-312) LOCATED AT: http://www.sctax.org/Forms+and+Instructions/withholding/default.htm

7.2 Contractor Licensing: Contractors and Subcontractors listed on the Bid Form who are required by the South Carolina Code of Laws to be licensed, must be licensed at the time of bidding.

7.3 Submitting Confidential Information: For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word “CONFIDENTIAL” every page, or portion thereof, that Bidder contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged and confidential, as that phrase is used in Section 11-35-410. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the words “TRADE SECRET” every page, or portion thereof, that Bidder contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word “PROTECTED” every page, or portion thereof, that Bidder contends is protected by Section 11-35-1810. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire bid as confidential, trade secret, or protected! If your bid, or any part thereof, is improperly marked as confidential or trade secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page. By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

response, & documents submitted during negotiations), unless the page is conspicuously marked “TRADE SECRET” or “CONFIDENTIAL” or “PROTECTED,” (2) agrees that any information not marked, as required by these bidding instructions, as a “TRADE SECRET” is not a trade secret as defined by the Trade Secrets Act, and (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure. In determining whether to release documents, the State will detrimentally rely on Bidder’s marking of documents, as required by these bidding instructions, as being either “CONFIDENTIAL” or “TRADE SECRET” or “PROTECTED”. By submitting a response, Bidder agrees to defend, indemnify & hold harmless the State of South Carolina, its officers & employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney’s fees, arising out of or resulting from the State withholding information that Bidder marked as “CONFIDENTIAL” or “TRADE SECRET” or “PROTECTED”.

7.4 Posting of Notice of Intent to Award IDC:
Notice of Intent to Award, SE-670, will be posted at the following location:

Room or Area of Posting: Bulletin Board Located outside of Room 203

Building Where Posted: MUSC Parking Garage 1, 2nd Floor

Address of Building: 97 Jonathan Lucas Street, Charleston, SC 29425

WEB site address (if applicable):
http://academicdepartments.musc.edu/vpfa/eandf/construction_projects/index.html

Posting date will be announced at bid opening. In addition to posting the notice, the Owner will promptly send all responsive bidders a copy of the notice of intent to award and the final bid tabulation.

7.5 Protest of Solicitation or Award: Any prospective bidder, offeror, contractor or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen days of the date of issuance of the applicable solicitation document at issue. Any actual bidder, offeror, contractor or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest within ten (10) days of the date notification of intent to award is posted in accordance with Title 11, Chapter 35, Section 4210 of the South Carolina Code of Laws, as amended. A protest shall be in writing, shall set forth the grounds of the protest and the relief requested with enough particularity to give notice of the issues to be decided, and must be received by the State Engineer within the time provided. Any protest must be addressed to the CPO, Office of State Engineer, and submitted in writing (a) by email to protest-ose@mmo.sc.gov, (b) by facsimile at 803-737-0639, or (c) by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201. By submitting a protest to the foregoing email address, you (and any person acting on your behalf) consent to receive communications regarding your protest (and any related protests) at the e-mail address from which you sent your protest.

7.6 Solicitation Information From Sources Other Than Official Source: South Carolina Business Opportunities (SCBO) is the official state government publication for State of South Carolina solicitations. Any information on State agency solicitations obtained from any other source is unofficial and any reliance placed on such information is at the bidder’s sole risk and is without recourse under the South Carolina Consolidated Procurement Code.

7.7 Installation Floater/Builder’s Risk Insurance: Agency insures its property through the South Carolina Insurance Reserve Fund. The Insurance Reserve Fund will not name a third party as an additional insured nor will it allow the Agency to waive subrogation. Pursuant to Section H of the SE-680, Agency may require Bidder to provide an installation floater or builder’s risk insurance when issuing a Delivery Order under the IDC.

7.8 Tax Credit for Subcontracting with Disadvantaged Small Businesses: Pursuant to Section 12-6-3350, a taxpayer having a contract with this State who subcontracts with a socially and economically disadvantaged small business is eligible for an income tax credit equal to four percent of the payments to that subcontractor for work pursuant to the contract. The subcontractor must be certified as a socially and economically disadvantaged small business as defined in Section 11-35-5010 and regulations pursuant to it. The credit is limited to a maximum of fifty thousand dollars annually. A taxpayer is eligible to claim the credit for ten consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. A taxpayer claiming the credit shall maintain evidence of work performed for the contract by the subcontractor. The credit may be claimed on Form TC-2, “Minority Business Credit.” A copy of the subcontractor’s certificate from the Governor’s Office of Small and Minority Business (OSMBA) is to be attached to the contractor’s income tax return. Questions regarding the
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION SERVICES
INDEFINITE DELIVERY CONTRACT

7.9 Performance & Payment Bonds: Pursuant to SC Code Ann § 11-35-3030, when the Agency awards a Delivery Order to the Indefinite Delivery Contractor in excess of $50,000, the Contractor shall provide Performance and Payment Bonds each in the amount of 100% of the delivery order price. See Section H of the SE-680 for more details.

7.10 Other Special Conditions:

7.11 Special documents required to be submitted with the bid for this project include:

[List of required documents]

[Specific details for each required document]
Bid Bond

CONTRACTOR:  
(Name, legal status and address)

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

OWNER:  
(Name, legal status and address)

BOND AMOUNT: $

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

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

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

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

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.
Signed and sealed this day of ,

(Contractor as Principal) (Seal)

(Witness)

(Title)

(Surety) (Seal)

(Witness)

(Title)
SE-659
CONSTRUCTION SERVICES INDEFINITE DELIVERY CONTRACT
REPRESENTATIVE PROJECT BID FORM
Bidders shall submit bids on only Bid Form SE-659.

BID SUBMITTED BY: ________________________________
(Bidder’s Name)

BID SUBMITTED TO: ________________________________
(Owner’s Name)

FOR: PROJECT NAME: IDC GC 2016 (BSB East Side First Floor Restroom Renovations)

PROJECT NUMBER: H51-N353-PG / H51-D175-PG (MUSC# 50046)

OFFER

§ 1. In response to the Invitation for Indefinite Delivery of 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 11-32-3030(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 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 REPRESENTATIVE PROJECT WORK DESCRIPTION (as indicated in the Bidding Documents and generally described as follows): The project scope includes the complete renovation of the 1st Floor bathrooms of the Basic Science Building (approximately 389 SF). Work includes demolition, new partitions, ceiling, casework, ceramic tile, toilet partitions, finishes and supporting mechanical, electrical, and plumbing.

$, which sum is hereafter called the Base Bid.

(Bidder - insert Bid Amount for Representative Project on line above)

This bid price will be used to determine which bidders will receive award of an Indefinite Delivery Contract. The lowest responsive and responsible bidder will also receive a Delivery Order to perform the above described work at the price bid. Award and pricing of subsequent Delivery Orders shall be determined by competitive bidding between Indefinite Delivery Contractors receiving an award of an Indefinite Delivery Contract pursuant to this solicitation.
§ 6.2 BID ALTERNATES as indicated in the Bidding Documents and generally described as follows:

**ALTERNATE # 1** (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 # 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)

§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED: (Owner check box that applies.)

☑ Bidder shall list on Appendix A to this bid form those subcontractors which bidder intends to use to perform the work requiring the license classification and/or subclassification listed therein. Bidder shall only use the listed subcontractors in performance of such licensed work.

☐ Bidder is not required to list subcontractors.

§ 8. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES – INDEFINITE DELIVERY CONTRACT

Bidder agrees that the Date of Commencement of any contract awarded pursuant to the Invitation for Bids shall be established in the Agreement for Indefinite Delivery of Construction Services to be executed by the Owner and the successful Bidder. Bidder also agrees that individual Delivery Orders, if any, shall establish the Date of Commencement, the time to complete the Work included in the Delivery Order (or the completion date), and the amount, if any, the Owner shall retain from the compensation to be paid as Liquidated Damages 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.

**§ 8.1 TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES - REPRESENTATIVE PROJECT**

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 120 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 $ 200,000 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.
§ 9. 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 execution of the Construction Services Indefinite Delivery Contract 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 execution of the Construction Services Indefinite Delivery Contract.

§ 10. 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:________________________________________________________________
**SE-659 – APPENDIX A**  
**CONSTRUCTION SERVICES INDEFINITE DELIVERY CONTRACT**  
**REPRESENTATIVE PROJECT BID FORM**

**LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED.**

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 NAME (Must be completed by Bidder)</th>
<th>SUBCONTRACTOR'S SC LICENSE NUMBER (Requested, but not Required)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASE BID</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumbing (PB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical (EL)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INSTRUCTIONS FOR SUBCONTRACTOR LISTING**

1. Completing the form above:
   a. **First Column**: 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 classifications or sub classifications listed in Title 40 of the South Carolina Code of laws. If the owner has not identified a specialty, the bidder does not list a subcontractor.
   b. **Second and Third Columns**: In these columns the Bidder identifies the subcontractors it will use for the work of each specialty listed by the Agency in the First Column. 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. 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) are not subcontractors and Bidder should not insert their names in the spaces provided on the Bid Form. Likewise, Bidder should not insert the names of sub-subcontractors in the spaces provided on the Bid Form but only the names of those entities with which Bidder will contract directly.

3. **Subcontractor Qualifications**: Bidder must only list subcontractors who are qualified to perform the work of the listed specialties as specified in the Bidding Documents and who possess a South Carolina Contractor’s license with the license classification and/or sub classification identified by the Owner in the first column on the left. 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 classification listed and Bidder does not intend to subcontract 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 classification.

5. **Use of Multiple Subcontractors**:
   a. If Bidder intends to use multiple subcontractors to perform the work of a single classification listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the names 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 classification listing and to use one or more subcontractors to perform the remaining work for that classification listing, Bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word “and”.  
   b. **Optional Listing Prohibited**: Bidder may not list multiple subcontractors for a classification 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 classification 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. Owner 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 Owner may reasonably interpret as an optional listing.

6. If Bidder is awarded the contract, Bidder must use the listed entities to perform the work for which they are listed. Bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Appendix A of the Bid Form except for one or more of the reasons allowed by the SC Code of Laws.

7. 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.
SE-680
CONSTRUCTION SERVICES INDEFINITE DELIVERY CONTRACT

AGENCY: Medical University of South Carolina
PROJECT NAME: IDC GC 2016
PROJECT NUMBER: H51-D175-PG
AGENCY PROCUREMENT OFFICER: Wade Gatlin

THIS AGREEMENT is made this the _____ day of _____ in the year Two Thousand _____ by and between

NAME: ____________________________
ADDRESS: ____________________________

hereinafter called the “Agency”, and

NAME: ____________________________
ADDRESS: ____________________________

hereinafter called the “Contractor.”

WHEREAS, the Agency solicited bids for construction services, for the work description below, for projects to be determined, on an as-needed basis:

WORK DESCRIPTION: The project is a two year IDC not to exceed a total of $1 million and $250,000 per single delivery order. This project is a “seed” for IDC and will be the basis of award.

WHEREAS, Contractor submitted a successful bid to provide the services described above on an as-needed basis.

NOWTHEREOFOR, in consideration of the mutual covenants and obligations set forth herein, the Agency and Contractor (hereinafter jointly referred to as the “parties”) agree as follows:

A. Contract Term:
   1. The effective date of this agreement shall commence as of the date at the top of this page and the term shall extend until _____, 20____ (not to exceed two (2) years). The parties may not renew this agreement for an additional term nor may they extend the duration of this agreement by amendment or waiver.
   2. Contractor proposals accepted by the Agency within the time limits of the contract may be completed by the Contractor even though the completion date may extend beyond the term of the contract.

B. Contract Documents:
   1. Documents forming a part of the contract are:
      a. This Agreement for Indefinite Delivery of Construction Services;
      b. Invitation for Construction Services Indefinite Delivery Contract dated _____;
      c. General Conditions to Construction Services Indefinite Delivery Contract, SE-685 (General Conditions);
      d. Contractors completed IDC Bid Form SE-659;
      e. Agency requests for proposals for construction services made pursuant to this contract;
      f. Proposals issued by the contractor in response to the Agency’s request for proposals;
      g. Delivery Orders (SE-690) and Modifications (SE-695) issued by the Agency pursuant to this contract;
      h. Project Manual issued with the Invitation for Construction Services Indefinite Delivery Contract, if any;
      i. Addenda to the Invitation for Construction Services Indefinite Delivery Contract issued prior to the date of bid opening;
      j. The following other documents:
         ______
         ______
   2. The contract is the entire and integrated agreement between the parties and supersedes prior negotiations, representations, or agreements, whether written or oral.
C. The Work:
1. The Agency will request proposals for construction services on an as-needed basis. The scope of services will be within the general description of work set forth above and within the expenditure limits set forth in the Invitation for Construction Services Indefinite Delivery Contract. The Agency will award work by issuing the contractor a Delivery Order using form SE-690, Construction Services IDC Delivery Order. The method for requesting proposals and awarding Delivery Orders shall be in accordance with the procedures set forth in Part 4 of the General Conditions.

2. The Contractor shall not incur any expense chargeable to the Agency on or about the work of any Delivery Order assigned to this contract until the Delivery Order has been awarded and fully executed by both the Agency and the Contractor.

D. Payment:
Contractor shall make application for payment for work performed under Delivery Orders and the Agency shall make payment in the form and manner set forth in Part 4.3 of the General Conditions.

E. Termination:
The parties may terminate the contract only in the manner provided in Part 9 of the General Conditions.

F. Dispute Resolution:
The parties shall resolve all disputes in the manner provided in Part 5 of the General Conditions.

G. Representatives:
1. Agency’s Representative:
   Agency designates the individual listed below as its Representative, which individual has the authority and responsibility set forth in Part 2.2 of the General Conditions:

   NAME: Wade Gatlin
   TITLE: Project Manager
   ADDRESS: 97 Jonathan Lucas Street MSC 190
   TELEPHONE: 843-792-2233   FAX: 843-792-0251
   EMAIL: gatlin@musc.edu

2. Contractor’s representative:
   Contractor designates the individual listed below as its Contractor’s Representative, which individual has the authority and responsibility set forth in Part 3.2 of the General Conditions:

   NAME: _______________________
   TITLE: _______________________
   ADDRESS: _______________________
   TELEPHONE: _______________________
   FAX: _______________________
   EMAIL: _______________________

3. Neither the Agency nor the Contractor shall change their representatives without ten days written notice to the other party.

H. Insurance and Performance & Payment Bonds:
The Contractor shall purchase and maintain insurance and provide Performance and Payment Bonds as set forth in Parts 3.18 and 3.19 of the General Conditions.
GENERAL CONDITIONS TO CONSTRUCTION SERVICES INDEFINITE DELIVERY CONTRACT

AGENCY: Medical University of South Carolina
PROJECT NAME: IDC GC 2016
PROJECT NUMBER: H51-D175-PG
CONTRACTOR:

1. GENERAL INFORMATION
1.1 Contract Documents: The Contract Documents are identified in the Construction Services Indefinite Delivery Contract (the “Contract”). The Contract can only be modified by written agreement signed by both the Agency and the Contractor. The Contract Documents do not create a contractual relationship between the Contractor and any separate Contractor having a contract with the Agency; between the Agency and any subcontractor to the Contractor of any tier; or between any persons or entities other than the Agency and the Contractor.
1.2 Delivery Order: A Delivery Order is a written order issued by the Agency to the Contractor under the terms and conditions of the Contract, directing the Contractor to perform the work described therein. The Agency shall issue the Delivery Order on the SE-690, Construction Services IDC Delivery Order.
1.3 Contractor shall not incur any expense chargeable to the Agency on or about the work of any Delivery Order assigned to this contract until the Delivery Order has been awarded and fully executed by both the Agency and the Contractor.
1.4 The Contract is subject to strict expenditure and term limits set forth in State Law at S.C. Code Ann. § 11-35-3310 and further explained in the Manual for Planning and Execution of State Permanent Improvements, Part II (the “Manual”). Any modification to the Contract purporting to exceed these strict limits are null and void. The limits applicable to this Contract are set forth in Part I of the Invitation for Indefinite Delivery of Construction Services.
1.5 The Work: As used herein, the “Work” means any work required of or performed by the Contractor pursuant to each and every Delivery Order issued by the Agency under this Contract.

2. AGENCY
2.1 The term “Agency” means the Agency or the Agency’s Representative.
2.2 Representative: The Agency’s representative designated in Part G(1) of the agreement shall have the authority to bind the Agency with respect to all matters regarding the Contract and requiring the Agency’s approval or authorization.
2.3 Information to the Contractor: The Agency shall furnish, with reasonable promptness, information requested by the Contractor that is necessary for the performance of the Contract Services and under the Agency’s control. Any information or documentation provided by the Agency to the Contractor relating to the Project or Site is provided only for the convenience of the Contractor. The Agency makes no representation or warranty to as to the sufficiency, completeness, or accuracy of such information.
2.4 Utility Access and Use:
☒ If this box is checked, the Agency shall allow the Contractor to use reasonable quantities of water and electricity for construction purposes without charge, as long as these utilities are available and in close proximity to the Work area. Contractor shall be conscientious in controlling excessive or frivolous use of the utilities or the Agency may charge the Contractor for wasteful usage.
2.5 Sanitary Facilities: (Agency, check box that applies to this contract)
☒ The Contractor may use those sanitary facilities designated by the Agency in each Delivery Order as available for use.
☐ The Contractor may not use the Agency’s sanitary facilities. The Contractor shall provide sanitary facilities at the job site and maintain same in a clean and sanitary condition for the use of its employees and employees of its subcontractors for the duration of construction. The sanitary facilities shall conform to the requirements of the South Carolina Department of Health and Environmental Control.
Permits, Assessments, and Easements: The Agency shall secure and pay for all building permits, zoning permits, assessments, and easements except as required by any Delivery Order issued under the terms of the contract.

Agency’s Architect-Engineer (A/E): The Agency may retain an independent A/E to prepare design documents for the work of a specific Delivery Order. In such event, the A/E will be a representative of the Agency during the performance of such work through final completion of such work. In the absence of an independent A/E, the Agency will assign one of its employees to act as A/E for the work of a particular Delivery Order. The Contractor shall cooperate with the A/E in the performance of its duties. The A/E will perform the following duties:

a. The A/E will make periodic visits to the site during contract administration to become familiar with the progress of the work and to determine if the work is generally progressing in accordance with the contract documents.

b. The A/E will make recommendations to the Agency as to acceptance or rejection of the work and, upon the Agency’s concurrence, communicate the acceptance or rejection of the work to the Contractor.

c. The A/E will review and approve or reject shop drawings and samples submitted by the Contractor showing details/finishes of the work proposed to be installed.

d. The decision of the A/E in all matters relating to design and interpretation of contract documents shall, subject to the provisions of Part 5 (Dispute Resolution) be final.

e. The A/E will not be responsible for construction means, methods, techniques, procedures and safety measures in the performance of the work nor acts or omissions of the Contractor, subcontractors or any other entity performing work on the site.

f. The A/E will review requests for payment, and make recommendations to the Agency for approval or rejection of all or part of the request.

g. The A/E will prepare change orders or change directives for review and approval by the Agency.

Construction by Agency: The Agency may do work with its own forces or award separate contracts for work on the same project as may be awarded by Delivery Order under this contract. The Contractor shall allow access to the site by the Agency’s work force or separate Contractor(s), and shall cooperate in coordinating the progress of the work with the Agency. The Agency shall have the responsibility to coordinate the activities of the various Contractors working at the project location.

3. CONTRACTOR

3.1 The term “Contractor” means the Contractor or the Contractor’s Representative.

3.2 Representative: The Contractor’s representative designated in Part G(2) of the Agreement shall have the authority to bind the Contractor with respect to all matters regarding the Contract and requiring the Contractor’s approval or authorization.

3.3 Supervision and Performance of the Work: The Contractor shall supervise, perform, and direct the Work, using the professional skill, care, and attention reasonably required for similar projects. The Contractor shall be solely responsible for and have control over means, methods, techniques, sequences, and procedures and for coordinating the Work, unless the Contract Documents give other specific instructions concerning these matters. The Contractor agrees to faithfully and fully perform the terms of this Contract, and any Delivery Order issued under this Contract and shall complete the Work in accordance with the Contract Documents and deliver the Work to the Agency free and clear of all liens and claims. The Contractor shall, at all times during the progress of the Work, employ enough skilled workers and have on hand and maintain an adequate supply of materials and equipment to complete the Work in accordance with the construction schedules agreed to in applicable Delivery Orders.

3.4 Employee Discipline: The Contractor shall enforce discipline and good order among the Contractor’s and subcontractors’ employees, and other persons carrying out the Work. Contractor shall be responsible to the Agency for acts and omissions of the Contractor’s employees, subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

3.5 Safety: The Contractor shall comply with all federal and state work site safety requirements and shall be responsible for initiating, maintaining, and supervising reasonable safety precautions and programs in connection with the performance of the Contract Services. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable and appropriate protection to prevent damage, injury or loss to (1) employees on the Work and other persons who may be affected thereby; (2) the Work and materials and equipment to be incorporated therein; and (3) other property at the site of the Work or adjacent thereto.
3.6 Waste Materials and Rubbish: The Contractor shall keep the premises and surrounding areas free from accumulation of waste materials or rubbish caused by the Work. Upon Final Acceptance of the Work, the Contractor shall, to the Agency’s satisfaction, remove from and about the site, all waste materials, rubbish, surplus material, and Contractor’s tools, equipment, machinery.

3.7 Recycling: The Contractor shall give preference to the use of products containing recycled content in the performance of the Work. The Contractor shall cooperate with any recycling program established for the site of the work of any Delivery Order or available through the state or a political subdivision of the state.

3.8 Access to the Work: The Contractor shall provide the Agency with unrestricted access to the Work in preparation and progress wherever located.

3.9 Use of Site: The Contractor shall confine its operations to the portions of the site identified in each Delivery Order or otherwise approved by the Agency, and shall not unreasonably encumber the portions of the site used for the Work with materials, equipment, or similar items. The Contractor and all subcontractors shall use only such entrances to the Site as are designated by the Agency. During occupied hours, Contractor shall limit construction operations to methods and procedures that do not adversely affect the environment of occupied spaces within the Site, including but not limited to creating noise, odors, air pollution, ambient discomfort, or poor lighting.

3.10 Correction of the Work:

3.10.1 The Agency shall have the right and authority to reject Work that does not conform to the Contract Documents. The Contractor shall promptly correct Work rejected by the Agency for failing to conform to the requirements of the Contract Documents, whether or not fabricated, installed or completed. The provisions of this Section 3.10 apply to Work done by subcontractors as well as to Work done by direct employees of the Contractor.

3.10.2 If the Contractor fails to correct the Work, or any portion thereof, that is not in accordance with the requirements of the Contract Documents or fails to carry out Work or provide information in accordance with the Contract Documents, the Agency may make written demand upon the Contractor to cure its defaults within seven days. Within seven days after receipt of the Agency’s demand, the Contractor shall cure its defaults unless the default is such that it is not capable of cure within seven days. If the default is such that it is not capable of cure within seven days, the Contractor shall reach an agreement with the Agency on a plan to cure its defaults within five days after receipt of the Agency’s demand. The Contractor shall commence and diligently and continuously pursue the cure of such defaults in accordance with the agreed plan. If the Contractor fails to cure its defaults as hereinafter provided, the Agency may order the Contractor, in writing, to stop the Work, or any portion thereof, until the Contractor has eliminated the cause for such order or has provided the Agency with a plan for corrective action acceptable to the Agency. The right of the Agency to stop the Work shall not give rise to a duty on the part of the Agency to exercise this right for the benefit of the Contractor or any other person or entity.

3.10.3 Correction after Substantial Completion: If, within one year after the date of Substantial Completion of the Work, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Agency to do so. The Contractor’s obligation set forth in this Part 3.10.3 is in addition to the Contractor’s obligations under Part 3.12.

3.10.4 Nothing contained in this Part 3.10 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of such time period as described in this Section 3.10 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor’s liability with respect to the Contractor’s obligations other than specifically to correct the Work.

3.11 Manufacturers’ Warranties: At Final Acceptance of the Work, the Contractor shall furnish the Agency two original complete sets of all manufacturers’ warranties, guarantees, parts lists, and literature applicable to equipment, systems, fittings, and furnishings included in the Work (collectively referred to as “Manufacturers’ Warranties”), completed in favor of the Agency. These Manufacturers’ Warranties are in addition to and not in lieu of the Contractor’s warranty set forth in Part 3.12, and the Agency is entitled to look to the Contractor for remedy in all cases where the Contractor’s warranty applies regardless of whether a Manufacturer’s Warranty also applies. The Agency shall acknowledge receipt of the sets of Manufacturers’ Warranties on the set itself, and the Contractor shall cause six (6) copies of an acknowledged set to be made and furnished to the Agency. All Manufacturers’ Warranties will be for applicable periods and contain terms not less favorable to the Agency than those terms that are standard for the applicable industries, and will either be issued in the first instance in the name of and for benefit of the Agency, or be in a freely assignable form and be assigned to the Agency without limitations.
3.12 Contractor Warranty: The Contractor warrants to the Agency that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from faults and defects not inherent in the quality required or permitted, that the materials, equipment and Work will conform with the requirements of the Contract Documents, and that the Work will be free from any encumbrances, liens, security interests, or other defects in title upon conveyance of title to the Agency. The Contractor’s warranty excludes remedy for damage or defect to the extent caused by (i) abuse by anyone other than the Contractor or those for whose acts the Contractor is responsible, (ii) modifications not approved or executed by the Contractor or subcontractors, (iii) improper or insufficient maintenance or operation not the fault of the Contractor or those for whose acts the Contractor is responsible, or (iv) normal wear and tear under normal usage. If required by the Agency, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment and the recommended maintenance thereto to meet the requirements of this Part.

3.13 After completion of the Work but no later than the date of Substantial Completion, the Contractor shall submit operation and maintenance manuals, recommended spare parts lists, and copies of all warranties to the Agency. As-Built drawings shall be submitted no later than the Final Completion Date.

3.14 Compliance with Law:
3.14.1 The Contractor shall comply with and give all notices required by federal, state, county, and municipal laws, ordinances, regulations, and orders bearing on the performance by the Contractor of the duties or responsibilities under this Contract.

3.14.2 The Contractor shall promptly remedy any violation of any such law, ordinance, rule, regulation, or order that comes to its attention to the extent that the same results from its performance of the Work. The Contractor shall promptly, and in no event later than the close of the next business day following receipt, give notice to the Agency by telephone, with confirmation in writing, of receipt by the Contractor of any information relating to violations of laws, ordinances, rules, regulations, and orders.

3.15 Subcontractors:
3.15.1 The Contractor shall furnish in writing to the Agency for its approval the names of the subcontractors to whom the Contractor plans to award any portion of the Contract Services.

3.15.2 Contracts between the Contractor and subcontractors shall require each subcontractor, to the extent of the Contract Services to be performed by the subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by the Contract Documents, assumes toward the Agency.

3.15.3 The Contractor shall be responsible to the Agency for acts and omissions of the subcontractors, their agents and employees, and any other persons performing portions of the Contract Services, to the same extent as the acts or omissions of the Contractor hereunder.

3.15.4 The Iran Divestment Act List is a list published by the State Fiscal Accountability Authority pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. The list is available at the following URL: http://procurement.sc.gov/PS/PS-iran-divestment.phtm(. Consistent with Section 11-57-330(B), the Contractor shall not contract with any person to perform a part of the Work, if, at the time you enter into the subcontract, that person is on the then-current version of the Iran Divestment Act List.

3.16 Publicity: Contractor shall not publish any comments or quotes by State employees, or include the State in either news releases or a published list of agencies, without the prior written approval of the Agency.

3.17 Indemnification
3.17.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Agency and the Agency’s agents and employees from and against claims, damages, losses and expenses, including, but not limited to, reasonable attorney’s fees, arising out of or resulting from performance of the work of a Delivery Order, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including loss of use resulting therefrom, but only to the extent caused by negligent acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

3.17.2 In claims against any person or entity indemnified under Part 3.17.1 by an employee of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Part 3.17 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for Contractor or a subcontractor under workers’ or workmen’s compensation acts, disability benefit acts, or other employee benefit acts.
3.18 Insurance

3.18.1 Commercial General Liability, Business Automobile Liability, and Worker’s Compensation: The Contractor shall purchase from and maintain, in a company or companies lawfully authorized to do business in South Carolina, such insurance as will protect Contractor from claims set forth below, which may arise out of or result from Contractor’s operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

(a) claims under workers’ compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;

(b) claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor’s employees;

(c) claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor’s employees;

(d) claims for damages insured by usual personal injury liability coverage;

(e) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

(f) claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

(g) claims for bodily injury or property damage arising out of completed operations; and

(h) claims involving contractual liability insurance applicable to the Contractor’s obligations under Part 3.17, Indemnification.

3.18.1.1 The insurance required by Part 3.18.1 shall be written for not less than the limits of liability specified below or required by law, whichever is greater. Coverage shall be written on an occurrence basis and shall be maintained without interruption from the date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment and, with respect to the Contractor’s completed operations coverage, until the expiration of the period for correction of Work set forth in Part 3.10 or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

(a) COMMERCIAL GENERAL LIABILITY:
   (1) General Aggregate (per project) ................................................................. $1,000,000
   (2) Products/Completed Operations ............................................................... $1,000,000
   (3) Personal and Advertising Injury ............................................................... $1,000,000
   (4) Each Occurrence ......................................................................................... $1,000,000
   (5) Fire Damage (Any one fire) ......................................................................... $50,000
   (6) Medical Expense (Any one person) ......................................................... $5,000

(b) BUSINESS AUTO LIABILITY (including All Owned, Non-owned, and Hired Vehicles):
   (1) Combined Single Limit ................................................................................. $1,000,000 OR
   (2) Bodily Injury & Property Damage (each) ..................................................... $750,000

(c) WORKER’S COMPENSATION:
   (1) State Statutory
   (2) Employers Liability ...................................................................................... $100,000 Per Acc.

In lieu of separate insurance policies for Commercial General Liability, Business Auto Liability, and Employers Liability, the Contractor may provide an umbrella policy meeting or exceeding all coverage requirements set forth in this Part 3.18.1. The umbrella policy limits shall not be less than $5,000,000.
3.18.1.2 Prior to commencement of the Work, and thereafter upon replacement of each required policy of insurance, Contractor shall provide to the Agency a written endorsement to the Contractor’s general liability insurance policy that:

(i) names the Agency as an additional insured for claims caused in whole or in part by the Contractor’s negligent acts or omissions during the Contractor’s operations;

(ii) provides that no material alteration, cancellation, non-renewal, or expiration of the coverage contained in such policy shall have effect unless all additional insured have been given at least ten (10) days prior written notice of cancellation for non-payment of premiums and thirty (30) days prior written notice of cancellation for any other reason; and

(iii) provides that the Contractor’s liability insurance policy shall be primary, with any liability insurance of the Agency as secondary and noncontributory.

3.18.1.3 Before commencement of the Work, and thereafter upon renewal or replacement of each required policy of insurance, Contractor shall provide to the Agency a signed, original certificate of liability insurance (ACORD 25). Consistent with this Part 3.18.1, the certificate shall identify the types of insurance, state the limits of liability for each type of coverage, name the Agency as Certificate Holder, provide that the general aggregate limit applies per project, and provide that coverage is written on an occurrence basis. Both the certificates and the endorsements must be received directly from either the Contractor’s insurance agent or the insurance company. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, naming the Agency as an additional insured for claims made under the Contractor’s completed operations, and otherwise meeting the above requirements, shall be submitted with the Contractor’s final request for payment for the Work and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Part 3.18.1. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

3.18.1.4 A failure by the Agency either (i) to demand a certificate of insurance or written endorsement required by Part 3.18.1, or (ii) to reject a certificate or endorsement on the grounds that it fails to comply with Part 3.18.1, shall not be considered a waiver of Contractor’s obligations to obtain the required insurance.

3.18.2 Property Insurance:

3.18.2.1 Builder’s Risk Insurance: Unless otherwise specified in the Delivery Order, at the time of execution of a Delivery Order and before commencing work under that Delivery Order, Contractor shall purchase property insurance written on a builder’s risk "all risk" or equivalent policy form on a replacement cost basis. Contractor shall maintain such property insurance until the Agency has made final payment for the work of the Delivery Order or until no person or entity other than the Agency has an insurable interest in the property required by this Paragraph 3.18.2 to be covered, whichever is later. This insurance shall include and be in an amount sufficient to cover at all times during the performance of the work of the Delivery Order, the interests of the Contractor, Subcontractors and Sub-subcontractors in the Delivery Order Project. The property insurance shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, false work, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect’s and Contractor's services and expenses required as a result of such insured loss.

3.18.2.2 Equipment Breakdown Insurance: In the event the Contractor installs and runs and/or operates (whether for testing or other purposes) heating, air conditioning, and electrical machinery and equipment, the Contractor shall purchase and maintain equipment breakdown (boiler and machinery) insurance, which shall specifically cover such objects during installation and until final acceptance by the Agency. This insurance shall include interests of the Agency, Contractor, and subcontractors at any tier in the Work, and the Agency and Contractor shall both be named insured.

3.18.2.3 Before an exposure to loss may occur, the Contractor shall file with the Agency a copy of each policy that includes insurance coverage required by this Part 3.18.2. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project.
3.18.2.4 Waiver of Subrogation: The Agency and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent the property insurance provided by the Contractor pursuant to this Section 3.18.2 covers and pays for the damage, except such rights as they have to proceed of such insurance held by the Contractor. The Agency or Contractor, as appropriate, shall require of the subcontractors, sub-subcontractors, agents and employees, each of the other, by appropriate written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though such person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

3.19 Performance and Payment Bonds: Prior to beginning work on a Delivery Order, the Contractor shall deliver to the Agency a Performance Bond and a Labor & Material Payment Bond if the Contractor’s agreed upon compensation for the Work of the Delivery Order exceeds $50,000 or the Agency requests such bonds. Each bond shall be in the amount of 100% of the amount of the Delivery Order. The Contractor’s Performance Bond shall be in the form of the SE-355, Performance Bond, and the Labor & Material Payment Bond shall be in the form of the SE-357, Labor & Material Payment Bond. The surety company providing the Bonds shall have, at a minimum, a “Best Rating” of “A” as stated in the most current publication of “Best’s Key Rating Guide, Property - Casualty.” Contractor’s failure to provide bonds as herein required shall be an event of default justifying the Agency, in its sole discretion, in terminating this Contract for cause.

3.20 Shop Drawings and Samples:

3.20.1 Contractor shall prepare or cause to be prepared shop drawings for fabricated items. Shop drawings shall consist of drawings, diagrams, illustrations, schedules, brochures, and other data which are prepared by the Contractor, sub-Contractor, manufacturer, supplier, or distributor and depict that portion of the work. Shop drawings shall be submitted, reviewed, and approved by the Contractor prior to submitting to the Agency and A/E. Shop drawings approved by the Contractor shall bear a stamp denoting that they have been review and are “approved” or “approved as noted” or similar designation. Contractor shall submit the number of sets as specified in the Delivery Order plans or specifications or in the absence of a specification submit enough copies for the Agency to retain two copies plus the number desired to be returned to the Contractor. The Agency and A/E will review the shop drawings with reasonable promptness but only for conformity with the design.

3.20.2 Contractor shall submit samples as required by the Delivery Order. Samples are physical examples furnished by the Contractor of sufficient size and quantity to provide a good representation of the material proposed to be installed. Samples submitted will not be returned unless requested by Contractor and agreed to by the A/E. The Contractor shall pay shipping costs. The final installed product shall match the approved sample.

3.21 Inspection and Testing of Materials:

3.21.1 The Contractor shall leave uncovered all areas of work that will be covered that are called out in the construction documents to be left uncovered, or the Agency or A/E requests to be left uncovered prior to being inspected. The Contractor shall give adequate notice to the Agency and A/E of the time requested for an inspection of areas to be covered.

3.21.2 If the Contractor covers areas that were to be left uncovered, the Contractor shall cause the area to be uncovered for inspection. After being inspected, the Contractor shall repair the area with craftsmen skilled in the appropriate trades needed for the repair at no additional cost to the Agency.

3.22 Substitutions:

3.22.1 The Contractor shall submit proposed substitutions to the Agency for the Agency’s approval prior to execution of each Delivery Order.

3.22.2 Reference in the Contract Documents to a designated material, product, thing, or service by specific brand or trade name followed by the words “or equal” and “or approved equal” shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may use the products of other another manufacturer’s provided it is an ‘approved equal’ that meets or exceeds the specification for the specified product. The Contractor must submit adequate information about the product to show that the submitted product meets the level of quality as the product specified.

3.22.3 The Contractor shall not substitute any product, article, appliance, equipment, or material that is specified without prior written approval of the Agency.
3.23 Receiving and Storing Materials and Equipment: The Contractor shall have an authorized person or persons to receive all items delivered to the site of the Work and shall properly unload, check for completeness of shipment, and in-transit damage. The Contractor shall properly handle and store materials, supplies, equipment etc. in accordance with the contract documents or manufacturer’s printed instructions for each product.

3.24 Schedule and Reports: Promptly after the Agency issues a Delivery Order, the Contractor shall present a construction schedule in a form satisfactory to the Agency. At intervals agreed upon in the Delivery Order, the Contractor shall update the schedule showing the actual progress of the work and adjustment in completion dates. If the work falls behind schedule, the Contractor shall present a plan for completion of the work by the scheduled date for completion.

3.25 Time for Completion:

3.25.1 Each Delivery Order signed by the Agency and Contractor shall set forth the time for completion of the Work specified therein. Contractor shall make a request for extension of time within seven days of the event giving rise to the request. The Contractor shall adequately document delays of the work that are due to circumstances beyond the control of the Contractor and shall submit the documentation to the Agency with any request for an extension. In the event of ongoing delay, the Contractor shall notify the Agency in its request for an extension of time that the cause of delay is ongoing. In such case, the Contractor shall supplement its request the cause of delay ends or the project is completed, whichever is sooner.

3.25.2 The Agency will review each request for time extension and equitably adjust the time for completion where (1) the event of delay actually impacted the critical path of the project and was beyond the control of the Contractor, and (2) completion of the Work was actually delayed.

4. CONTRACT ADMINISTRATION

4.1 Delivery Order - Cost Proposal: From time to time, the Agency will request a cost proposal for specific work and provide the Contractor adequate project information necessary to prepare a cost proposal. The Contractor shall prepare a cost proposal to complete the Work as requested. Unless specified by the Agency in its request, the cost proposal shall include the time frame for completion of the work. The Contractor shall submit the cost proposal to the Agency within one week of the request or as otherwise agreed upon by the Agency. The cost proposal shall be prepared according to the following method: (Agency, check box that applies to this contract)

- Multiplier – Unless the Contractor proposes to provide work at a lower price, the Contractor shall use the multiplier, as bid, times the unit prices contained in the cost data guide specified in the contract documents, times the number of units of Work. The unit prices in the cost data guide include all labor, supervision, material, equipment, taxes, overhead (including but not limited to insurance, performance bond, and payment bond premiums), delivery, setup, installation, and profit. The Contractor may not add any additional mark-up to its price. If the Contractor chooses to subcontract some or all of the Work, the Contractor must still use its multiplier with the cost data guide for pricing the subcontracted work. However, if the work of the proposed Delivery Order is such that the Contractor may legally act as the sole prime Contractor under the licensing laws of this State and the subcontracted work (1) is outside the Contractor’s license; (2) is outside the license of any subcontractor listed in Section 7 of the bid; (3) is outside the scope of services covered by the Contract; and (4) does not exceed 20% of the total value of the work of the proposed Delivery Order, the Contractor may include a markup not to exceed 13% on the price of such subcontracted work. If the Contractor proposes not to use its multiplier and the cost data guide as the basis for the price of its work or subcontracted work, it must document that the proposed price is lower than the price would be if the Contractor used the multiplier and cost data guide.

- Unit Prices – Unless the Contractor proposes to provide work at a lower price, the Contractor shall use the unit prices, as bid, times the number of units required for the Work to arrive at an extended price for that item of Work. The total of all extended prices becomes the Contractors price for the cost proposal. The unit prices include all labor, supervision, material, equipment, taxes, overhead (including but not limited to insurance), delivery, setup, installation, and profit. The Contractor may not add any additional mark-up to its price. If the Contractor chooses to subcontract some or all of the Work, the Contractor must still use the unit prices bid for pricing the subcontracted work. If the Contractor proposes not to use the unit prices bid as the basis for the price of its work or subcontracted work, it must document that the proposed price is lower than the price would be if the Contractor used the multiplier and cost data guide.

- Low Bid – The Agency shall competitively bid the Work against all eligible Indefinite Delivery Contractors. The Delivery Order bid price shall include all labor, supervision, material, equipment, taxes, overhead (including but not limited to insurance), delivery, setup, installation, and profit. Under this pricing method, the Agency will award the Delivery Order to the lowest bidder.
4.2 Changes in the Work of a Delivery Order:

4.2.1 Any changes in the work must be approved by the Agency and executed by using the SE-695, Construction Services IDC Delivery Order Modification. The SE-695 must be signed by the Contractor and Agency. Except when the Delivery Order was awarded on the basis of competitive bids, the cost of any change order shall be calculated using the same method as pricing the Delivery Order.

4.2.2 In the absence of a total agreement concerning the item(s) for a change order, a Construction Change Directive shall be used.

4.2.3 Agreed Overhead and Profit Rates:

For any adjustment to the Delivery Order for which overhead and profit may be recovered, other than those made pursuant to Unit Prices stated in the Contract Documents, the Contractor agrees to charge and accept, as full payment for overhead and profit, the following percentages of costs attributable to the change in the Work. The percentages cited below shall be considered to include all indirect costs including, but not limited to: field and office managers, supervisors and assistants, incidental job burdens, small tools, and general overhead allocations. The allowable percentages for overhead and profit are as follows:

.1 To the Contractor for work performed by the Contractor’s own forces, 17% of the Contractor’s actual costs.

.2 To each Subcontractor for work performed by the Subcontractor’s own forces, 17% of the subcontractor’s actual costs.

.3 To the Contractor for work performed by a subcontractor, 10% of the subcontractor’s actual costs (not including the subcontractor’s overhead and profit).

4.3 Payments:

4.3.1 Contractor may submit monthly applications for payment for the Work of Delivery Orders scheduled to last two months or more in duration. Contractor shall submit only one application for payment for the Work of Delivery Orders scheduled to last less than two months in duration.

4.3.2 Delivery Orders Awarded by low bid: If the Contractor intends to submit more than one application for payment, the Contractor shall submit to the A/E, within ten days of Delivery Order award, a schedule of values allocating the entire Delivery Order Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the A/E may require. This schedule, unless objected to by the A/E, shall be used as a basis for reviewing the Contractor’s Applications for Payment. Contractor shall base its monthly applications for payment on work completed up to the date of the application using the approved schedule of values. The sum of all payments to the Contractor shall not exceed the agreed upon cost of the work set forth in the Delivery Order as adjusted by subsequent modifications to the Delivery Order, if any.

☐ 4.3.2.1 Contractor shall base its applications for payment on work completed up to the date of the application using the units of measure and prices contained in the (Agency, check box that applies to this Contract)
☐ Unit price schedules in the cost data guide incorporated by the Contract Documents
☐ Unit price schedule in Contractors bid.

4.3.3 Contractor’s applications for payment may include materials suitably stored on site for use in the Work provided the Contractor submits:

a. Proof of purchase & delivery;

b. Documentation showing the location of the material;

c. Certificate of insurance for the material with adequate coverage showing the Agency as the certificate holder.

4.3.4 The Agency will make payments to the Contractor for completed work based on the actual units or quantity of work completed. The Agency will make payments on the undisputed amounts of an application for payment within 21 days of receipt of the application.

4.3.5 Subcontractor Payments (Chapter 6 of Title 29 of the South Carolina Code of Laws, as amended): The Contractor shall pay each subcontractor no later than seven (7) days after receipt of payment from the Agency the amount to which the subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the subcontractor’s portion of the Work. By appropriate agreement with its subcontractors, the Contractor shall require each subcontractor to make payments to Sub-subcontractors in a similar manner.

4.3.6 If the Agency does not pay the Contractor within seven (7) days after the time established in Part 4.3.2 the undisputed amount of a payment request, then upon seven (7) additional days written notice to the Agency, the Contractor may stop the Work until the Contractor has received payment of the undisputed amount owing. The Contract Time and the Contract Sum shall be equitably adjusted by the amount of the Contractor’s reasonable costs of shut down, delay and start-up, plus interest as provided for in the Contract Documents.

4.3.8 Final Payment: Upon final payment by the Agency to the Contractor for the Work of a Delivery Order, all rights, title, and interest in and to all improvements and equipment constructed or installed on the premises shall vest in the Agency at no additional cost, free and clear of all any liens and encumbrances created or caused by the Contractor.

4.3.9 Withholding of Payments: Payments may be withheld to the extent of, and on account of (1) defective Work not remedied, or Work not performed in accordance with the Contract Documents; (2) claims filed by third parties; (3) failure of the Contractor to make payments promptly to the subcontractors for labor, materials, or equipment; (4) persistent failure to carry perform the Work in accordance with the Contract Documents; (5) failure by the Contractor to perform its obligations under the Contract Documents; or (6) a default by the Contractor under the Contract Documents. The Agency shall promptly notify the Contractor of any reason for withholding payment.

4.4 Delivery Order Completion and Closeout: Upon completion of all Work, the Contractor shall notify the Agency of its completion. The Agency shall schedule a Final Inspection and allow the Contractor to demonstrate that all equipment and systems operate as designed. The Agency may elect to have other persons, firms, or agencies participate in the inspections. Projects exceeding the Agency’s construction procurement certification level shall require an inspection by the Office of State Engineer (OSE) and the State Engineer’s issuance of a Certificate of Occupancy. (The Contractor may find Agency construction certification limits on Procurement Services website at http://procurement.sc.gov/PS/agency/PS-agency-audits.phptm.) Final payment will not be due nor retained funds released until (1) the Agency agrees that the project is complete, (2) OSE or the Agency, which ever has authority, issues a Certificate of Occupancy, and (3) the Agency receives from the Contractor the following:
  a. Affidavit of payment of debts and claims;
  b. Consent of Surety, if any, to final payment.

5. DISPUTES

5.1 Both parties shall attempt to resolve disputes through good faith negotiations.

5.2 All disputes, claims, or controversies relating to the Contract, that cannot be resolved through good faith negotiations between the parties shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the State regarding the Contract is not a waiver of either the State’s sovereign immunity or the State’s immunity under the Eleventh Amendment of the United States Constitution. As used herein, “the State” includes the Agency and the State Fiscal Accountability Authority.

5.3 Interest: Payments due to the Contractor and unpaid under the Contract Documents shall bear interest only if and to the extent allowed by Title 29, Chapter 6, Article 1 of the South Carolina Code of Laws. Amounts due to the Agency shall bear interest at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.

5.4 Contractor consents that any papers, notices, or process necessary or proper for the initiation or continuation of any claims or controversies relating to the Contract; for any court action in connection therewith; or for the entry of judgment on any award made, may be served on Contractor by certified mail (return receipt requested) addressed to Contractor at the address provided for the Contractor’s Representative or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.

5.5 Continuation of Work: Pending final resolution of any dispute under this Contract, the Contractor will proceed diligently with the performance of its duties and obligations under the Contract Documents, and the Agency will continue to make payments of undisputed amounts in accordance with the Contract Documents.

6. LIMITATION OF LIABILITY

6.1 Notwithstanding any other provision of the Contract Documents, but subject to a duty of good faith and fair dealing, the Contractor and Agency waive Claims against each other for listed damages arising out of or relating to this Contract. This mutual waiver includes
6.1.1 For the Agency, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) reasonable attorney’s fees, (vii) any interest, except to the extent allowed by Part 5.3 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency, and (x) damages incurred by the Agency for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

6.1.2 For the Contractor, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) reasonable attorney’s fees, (vi) any interest, except to the extent allowed by Part 5.3 (Interest); (vii) unamortized equipment costs; and (viii) losses incurred by subcontractors for the types of damages the Contractor has waived as against the Agency.

6.2 This mutual waiver is applicable, without limitation, to all listed damages due to either party’s termination in accordance with Part 9. Nothing contained in this Part 6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. This mutual waiver is not applicable to amounts due or obligations under Part 3.17 (Indemnification).

7. Hazardous Materials

7.1 Contractor’s Responsibilities With Respect to Hazardous Materials: The scope of Work the Contractor is to perform pursuant to this Contract excludes any work or service of any nature associated or connected with the discovery, identification, abatement, cleanup, control, or removal of any currently existing Hazardous Materials or Mold on, in, or nearby the site of the Work. When requesting cost proposals, the Agency will identify known Hazardous Materials or Mold on, in, or nearby the site of the Work. The Agency agrees that all duties and obligations in connection with any Hazardous Materials or Mold currently located in, on or nearby the Site or brought into the Site by a party other than the Contractor or its subcontractors, other than those defined in the Delivery Order for the Work affected by the Hazardous Material or Mold, are not the Contractor’s responsibility. Should the Contractor become aware, discover or based on reasonable evidence suspect the presence of Hazardous Materials or Mold beyond those addressed in the Delivery Order for the Work affected by the Hazardous Material or Mold, the Contractor will immediately cease work in the affected area, and will promptly notify the Agency of the conditions discovered. Should the Contractor stop work because of such discovery or suspicion of Hazardous Materials or Mold, then the Contract Time will, should the Agency elect to choose to continue the Work after remedy thereof, be reasonably extended by Change Order to cover the period required for abatement, cleanup, or removal of the Hazardous Materials or Mold. The Contractor will not be held responsible for any claims, damages, costs, or expenses of any kind associated with such period during which work has been stopped as a result of Hazardous Materials or Mold.

7.2 Hazardous Materials Introduced to the Site by Contractor: If the Contractor, its subcontractors, and any party for whom they may be liable, introduces any Hazardous Materials to the Site then the Contractor, at its sole cost and expense, shall be responsible for any response, removal, cleanup, and/or other remedial action required by applicable law. If any Mold occurs within the Site as the result of the negligent implementation of the Project or the improper functioning of the Conservation Measures, then the Contractor, at its sole cost and expense, shall be responsible for any response, removal, cleanup, or other remedial action required by applicable law. Except as to the Contractor’s initial response to an emergency, any such remedial action(s) shall require the prior review and approval of the Agency.

8. MISCELLANEOUS PROVISIONS

8.1 Governing Law: This Contract shall be governed by the laws of South Carolina, except its choice of law rules.

8.2 Severability: If any provision of this Contract shall be held to be invalid, illegal, or unenforceable, the validity, legality and enforceability of the remaining provisions shall not be affected or impaired thereby.

8.3 No Waiver: No course of dealing or failure of the Agency and/or the Contractor to enforce strictly any term, right or condition of this Contract shall be construed as a waiver of such term, right or condition. No express waiver of any term, right, or condition of this Contract shall operate as a waiver of any other term, right, or condition.

8.4 Rights Cumulative: Except as otherwise provided in this Contract, (i) rights and remedies available to the Agency and/or the Contractor as set forth in this Contract shall be cumulative with and in addition to, and not in limitation of, any other rights or remedies available to the Parties at law and/or in equity, and (ii) any specific right or remedy conferred upon or reserved to the Agency and/or the Contractor in any provision of this Contract shall not preclude the concurrent or consecutive exercise of a right or remedy provided for in any other provision hereof.
8.5 Notices: Any notices required to be given under this Contract shall be in writing and shall be delivered either by (i) certified mail, return receipt requested, in which case notice shall be deemed delivered three (3) business days after deposit, postage prepaid, in the U.S. mail; (ii) a reputable messenger service or a nationally recognized overnight courier, in which case notice shall be deemed delivered one (1) business day after deposit with such messenger or courier; or (iii) personal delivery with receipt acknowledged in writing, in which case notice shall be deemed delivered when received. All notices shall be sent to the representatives identified in the Part G of the Agreement at the addresses provided therein. The foregoing addresses may be changed from time to time by notice to the other Party in the manner herein provided for.

8.6 Economic Conflict of Interest: A Contractor shall not have or exercise any official responsibility regarding a public contract in which the Contractor, or a business with which he is associated, has an economic interest. A person working for Contractor shall not have or exercise any official responsibility regarding a public contract in which the person, an individual with whom he is associated, or his family members have an economic interest. If Contractor is asked by any person to violate, or does violate, either of these restrictions, Contractor shall immediately communicate such information to the Agency Representative. The State may rescind, and recover any amount expended as a result of, any action taken or contract entered in violation of this provision. The terms “business with which he is associated,” “economic interest,” “family member,” “immediate family,” “individual with whom he is associated,” “official responsibility” and “person” have the meanings provided in S.C. Code Ann. § 8-13-100.

8.7 Illegal Immigration: Contractor certifies and agrees that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, “A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both.” Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at www.procurement.sc.gov)

8.8 Drug-Free Workplace: The Contractor certifies to the Agency that Contractor will provide a Drug-Free Workplace, as required by Title 44, Chapter 107 of the South Carolina Code of Laws, as amended.

8.9 False Claims: According to the S.C. Code Ann. § 16-13-240, “a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty” of a crime.

8.10 Non-Indemnification: Any term or condition is void to the extent it requires the State to indemnify anyone. It is unlawful for a person charged with disbursements of state funds appropriated by the General Assembly to exceed the amounts and purposes stated in the appropriations (§ 11-9-20). It is unlawful for an authorized public officer to enter into a contract for a purpose in which the sum is in excess of the amount appropriated for that purpose. It is unlawful for an authorized public officer to divert or appropriate the funds arising from any tax levied and collected for any one fiscal year to the payment of an indebtedness contracted or incurred for a previous year. (§ 11-1-40)

8.11 Enforcement and Interpretation of Building Codes: As required by Title 10, Chapter 1, Section 180 of the South Carolina Code of Laws, as amended, OSE shall determine the enforcement and interpretation of all building codes and referenced standards on state buildings. The Contractor shall refer any questions, comments, or directives from local officials to the Agency and OSE for resolution. When the amount of a Delivery Order exceeds the construction procurement certification of the Agency, the Contractor shall not commence the Work of the Delivery Order before receiving a copy of the Building permit issued by OSE. (The Contractor may find Agency construction certification limits on Procurement Services website at http://procurement.sc.gov/PS/agency/PS-agency-audits.phtm.)

8.12 Assignment: The Agency and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements and obligations contained in this Contract. Neither party to the Contract shall assign the Contract as a whole, or in part, without written consent of the other and then only in accordance with and as permitted by Regulation 19-445.2180 of the South Carolina Code of Regulations, as amended. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

8.13 Open Trade (Jun 2015): During the contract term, including any renewals or extensions, Contractor will not engage in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [07-7A053-1]
9. SUSPENSION OR TERMINATION

9.1 Agency Right of Suspension: The Agency may, at any time, suspend the work, in whole or in part, with or without cause for such period of time as determined by the Agency. Except in the event of suspension due to a default of the Contractor, the contract sum will be equitably adjusted to reflect reasonable costs actually incurred by the Contractor due to delay or interruption resulting from such suspension.

9.2 Agency Right of Termination:

9.2.1 Termination for Cause: If the Contractor defaults, persistently fails or neglects to perform the Work in accordance with the Contract Documents, or fails to perform a provision of the Contract, the Agency shall provide written notice of such default, failure, or neglect to the Contractor. If the Contractor fails to cure such default, failure, or neglect within fifteen days from receipt of the Agency’s notice, the Agency may, without prejudice to any other right or remedy the Agency may have, terminate the Contract and take possession of the area at the Site affected by the Work.

9.2.2 Termination for Convenience: The Agency may, for its convenience, terminate all or any portion of the Work under an individual Delivery Order, or terminate this entire Contract, by ten (10) days written notice stating the effective date of the termination. Thereafter, the Agency shall pay the Contractor for Work actually performed before the date of termination. No payments shall be made for Work not actually performed, and no payment shall be made or due for lost profits on account of Work not performed.

9.3 Contractor Right of Termination:

9.3.1 The Contractor may terminate the contract, or Delivery Order, if work is stopped through no fault of the Contractor, or other persons performing work either directly or indirectly for the Contractor, for a period of time exceeding 60 consecutive calendar days due to a court order or other public authority having jurisdiction; or a Declared National emergency which requires the work to be stopped.

9.3.2 Agency Failure to Make Payment: Subject to the Agency’s right to withhold payments pursuant to Part 3.4.7, if the Agency fails to make payments to the Contractor as set forth in Part 10 and any other applicable provisions of the Contract Documents, the Contractor may, upon thirty (30) days’ prior written notice to the Agency, terminate the Contract and recover from the Agency payment for all Work performed and for proven loss with respect to materials, equipment, tools, and machinery, including reasonable overhead, profit and damages applicable to the Work for the Contract Services performed through the date thereof.
CONSTRUCTION SERVICES IDC DELIVERY ORDER

AGENCY: Medical University of South Carolina

DELIVERY ORDER PROJECT NAME: BSB East Side First Floor Restroom Renovations
DELIVERY ORDER PROJECT NUMBER: 50046
STATE IDC PROJECT NUMBER: H51-N353-PG / H51-D175-PG

CONTRACTOR: 

COST INFORMATION:

1. Maximum Total Amount of this IDC: $ 
2. Maximum Total Amount Allowed for Delivery Order: $ 
3. Amount of this Delivery Order: $ 
4. Total Amount of Previous Delivery Orders (including Modifications): $ 
5. IDC Total, Including this Delivery Order: $ 0.00
6. Balance Remaining for this IDC: $ 0.00

SCHEDULE:

1. Date of Commencement: 
2. Days Allowed 
3. Date of Substantial Completion: 

DESCRIPTION OF DELIVERY ORDER SCOPE OF WORK: (attach Contractor’s Proposal)

LIST OF DELIVERY ORDER DOCUMENTS: (refer to attachments as necessary)

The Agency and the Contractor hereby agree, as indicated by the signatures below, to the scope of work identified in the Contract Documents listed above, the Contractor’s Cost Proposal dated the ____ day of ____, 20____, and this Delivery Order which shall be assigned to the Indefinite Delivery Contract identified above.

NOTICE TO PROCEED is hereby given on this the ____ day of ____, 20____. The Dates of Commencement and Substantial Completion are as noted above and shall be used for determining completion and the applicability of Liquidated Damages. Liquidated Damages in the amount of $ ____ per day will be assessed for failure to complete the Work by the agreed upon date of completion. Failure to commence actual work on this Delivery Order within seven (7) days from the Date of Commencement will entitle the Agency to consider the Contractor non-responsible, and may withdraw this Delivery Order and terminate the Contract in accordance with the Contract Documents.

AGENCY: 
BY: ___________________________ (Signature of Representative)
Print Name: ___________________________ 
Print Title: ___________________________ 
Date: ___________________________

CONTRACTOR: 
BY: ___________________________ (Signature of Representative)
Print Name: ___________________________ 
Print Title: ___________________________ 
Date: ___________________________

COMPLETION CONFIRMATION BY AGENCY:

ACTUAL COMPLETION DATE: ___________________________ 
LIQUIDATED DAMAGES ASSESSED: ___________________________
CONFIRMED BY: ___________________________ 
(Signature of Agency Representative) 
DATE: ___________________________ 
TITLE: ___________________________
CONSTRUCTION SERVICES IDC DELIVERY ORDER MODIFICATION

AGENCY: Medical University of South Carolina
DELIVERY ORDER PROJECT NAME: BSB East Side First Floor Restroom Renovations
DELIVERY ORDER PROJECT NUMBER: 50046
STATE IDC PROJECT NUMBER: H51-N353-PG / H51-D175-PG

CONTRACTOR: 

COST INFORMATION:

1. Maximum Total Amount of this IDC: $ 
2. Maximum Total Amount Allowed for Delivery Order: 
3. Current Amount of this Delivery Order: 
4. Amount of this Modification: 
5. Adjusted Amount of this Delivery Order $ 0.00
6. IDC Total (Sum of all Delivery Orders, including this DO) Prior to this Modification: 
7. IDC Total (Sum of all Delivery Orders) Including this Modification: $ 0.00
8. Balance Remaining for this IDC: $ 0.00

SCHEDULE:

1. Date of Commencement: 
2. Previous Days Allowed 
3. Additional Days Allowed with this Modification 
4. Revised Date of Completion: 

DESCRIPTION OF DELIVERY ORDER SCOPE MODIFICATION: (attach Contractor’s Proposal) 

LIST OF MODIFICATION DOCUMENTS: (refer to attachments as necessary) 

The Agency and the Contractor hereby agree, as indicated by the signatures below, to the revised scope of work identified in the Modification Documents listed above, the Contractor’s Cost Proposal dated the ___ day of ____, 20___. and this Delivery Order Modification, which shall be assigned to the Indefinite Delivery Contract identified above above.

AGENCY: 
BY: ___________________________ (Signature of Representative) 
PRINT NAME: ____________________ 
PRINT TITLE: _____________________ 
DATE: ____________________________

CONTRACTOR: 
BY: ___________________________ (Signature of Representative) 
PRINT NAME: ____________________ 
PRINT TITLE: _____________________ 
DATE: ____________________________

2016 Edition
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 M/WBE 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 M/WBE 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 (M/WBE) 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-MWBE** - 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 MWBE 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 (CSMBA) 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

M/WBE CONTRACT PROVISIONS

ITEM 1: PROVISIONS FOR CONSTRUCTION

A. APPLICATION:

The requirements of the MUSC/MUHA Minority and Women's Business Enterprise (M/WBE) 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 M/WBE Program may be obtained from the M/WBE Administrator, Engineering and Facilities, 97 Jonathan Lucas Street, P.O. Box 250190, Charleston, SC 29425.

B. M/WBE SUBCONTRACT GOALS:

The goals for participation by M/WBE 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, M/WBE Utilization Commitment Form the percentage of M/WBE participation. Submit signed copies of Appendix II - Letters Of Intent to Perform as a Subcontractor, to the Project Manager.

C. COMPLIANCE DOCUMENTATION:

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

1. M/WBE 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 M/WBE 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 M/WBE 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 M/WBE Utilization Commitment (Appendix I) that the goals have been met, or awards all subcontracts to M/WBEs, 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)
of the total dollar amount of the contract with Minority/Women 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 regardless of the amount of M/WBE participation attained.

<table>
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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

MUSC/MUHA

Rev. 10/14/08
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:


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

MUSC/MUHA

Rev. 10/14/08
APPENDIX III
MWBE 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>MWBE 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

MUSC/MUHA

Rev. 10/14/08
HUMAN RESOURCES MANAGEMENT POLICY

TOBACCO-FREE CAMPUS

Policy 49

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**

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. The use of tobacco products in University owned, operated or leased vehicles is prohibited. Use of tobacco products is also prohibited in personal vehicles parked on MUSC property. 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 map). 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.

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.

2. Failure by the contractor/vendor or their employees to comply with the provisions of this policy could result in the termination of the contract.

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>
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| Lisa P. Montgomery  
Vice President for Finance & Administration | Director of Human Resources Management | November, 2011  
**Effective**  
March 1, 2012 |
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
APPLICATION FOR MUSC
CONSTRUCTION IDENTIFICATION BADGES

The following information is to be provided by the prime contractor for each employee, subcontractor(s), vendor or anyone contracted by them to be on the construction site that are required for the completion of the contract documents. The contractor is to submit this information to the MUSC Project Manager, 97 Jonathan Lucas Street, Charleston, South Carolina, or via facsimile at 843-792-0251. After the information is entered into the Identity Management Database, the contractor will be notified to contact Public Safety, 101 Doughty Street, Charleston, South Carolina, via facsimile at 843-792-6650, for scheduling of the time for the photograph identification badges to be issued. It will be the responsibility of the prime contractor to insure that all employees are wearing current badges. Anyone without a badge will be required to leave the site immediately. Public Safety will inspect for proper identification routinely and violators will be removed from the site. It will be the responsibility of the individual to replace any badges that are lost or stolen. The prime contractor at the completion of the project will return all badges to Public Safety. Please telephone Public Safety at 843-792-4023 should you have questions.

| Construction Company Name: | ________________________________ |
| Construction Company Representative: | ________________________________ |
| Construction Company Telephone: | ________________________________ |

| Project Name: | ________________________________ |
| Project Number: | ________________________________ |
| Expiration Date of Construction Badge: | ________________________________ |

| Employee Name: | ________________________________ |
| Employee Address: | __________________________________ |
| ________________________________ |
| Employee Telephone Number: | ________________________________ |
| Employee Social Security Number: | ________________________________ |
| Employee’s Driver’s License Number and State | ________________________________ |
| ________________________________ |
| Employee Date of Birth: | ________________________________ |
| Employee Signature: | ________________________________ |
SECTION 01000 SPECIAL CONDITIONS AND REQUIREMENTS

PART 1 GENERAL

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

1.2 BIDDING AND CONTRACT DOCUMENTS
   A. The following documents are to be used by all Contractors and Bidders and are considered to be part of the Agreement between the Owner and Contractor:
      1. Invitations for Construction Services Indefinite Delivery Contract – Refer to SE-655 (2016 Editions)
      2. Instructions to Bidders for Construction Services Indefinite Delivery Contract – SE-656.

1.3 TIME OF COMPLETION/CONSTRUCTION SCHEDULE
   A. It is the intent of the Owner to award the contract and issue a Notice of Intent to Award if the bid/price is within the funds available for the project. Based on this, the Contractor shall commence preparations to begin work under this Contract within seven (7) calendar days of the Notice to Proceed. The site will be available to the Contractor to commence work immediately. The Contractor must reach Substantial Completion in 90 calendar days from Notice to Proceed and Final Completion within 30 days following Substantial Completion date. This is a total work period of one hundred and twenty (120) calendar days. The Contract will indicate dates for Substantial Completion and Final Completion. Any revision to this contract date must be approved by the Owner via Change Order.

   B. Contractor shall submit a Construction Schedule within seven (7) days after the Notice to Proceed. No applications for Payment will be issued until the Project Schedule has been submitted. Updated Project Schedule must be submitted with each monthly Application for Payment. See also Division 01 Sections for schedule and submittal requirements.

1.4 PERMITS, FEES, LICENSES, AND INSPECTIONS
   A. The Owner shall obtain all permits from the local governing authorities and pay any costs or fees associated with permits and required inspections.

   B. The Contractors and Subcontractors must obtain and possess any and all business licenses required by the local authorities having jurisdiction over the project.
C. The Contractors and Subcontractors must meet any local or State licensing requirements regarding demolitions or disposal of materials including hazardous materials.

1.5 CHANGE PROPOSALS

A. All proposals related to changes in the work must be detailed for the Owner and Architect for review. The cost proposal must include detailed breakdowns for labor cost, number of hours, material unit costs, quantities, mark ups, taxes, shipping, etc. Any proposals submitted without detail information will be rejected. Any request for additional time must be submitted along with cost proposals for review. See Supplementary Conditions for requirements related to itemized information.

1.6 HAZARDOUS MATERIALS (HAZMAT) SURVEY

A. A copy of the Hazardous Materials Survey for this project is included as an attachment to this section or issued as an addendum. The information is for the Bidder’s review and use. Contractor shall examine the hazmat survey to become aware of locations where hazardous materials are present.

The hazardous materials that are expected to be encountered in the Work will be removed by the Owner under a separate contract and prior to the Contractor’s commencement of the Work.

B. If suspected hazardous materials are encountered, do not disturb; immediately notify Owner and Architect.

1.7 NOTIFICATION

A. In case of emergency, notify Wade Gatlin, MUSC Engineering and Facilities, Project Manager for this project at 792-2233 or MUSC Department of Public Safety at 792-4196.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01000
SECTION 011000 - SUMMARY

PART 1  GENERAL

1.1  RELATED DOCUMENTS

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

1.2  SUMMARY

A. This Section includes the following:
   1. Work covered by the Contract Documents.
   2. Type of the Contract.
   3. Work under other contracts.
   4. Use of premises.
   5. Owner's occupancy requirements.
   6. Work restrictions.
   7. Specification formats and conventions.

B. Related Sections include the following:
   1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3  WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: BSB East Side First Floor Restroom Renovations
   1. Project Location: 173 Ashley Avenue, Charleston, SC 29425

B. Owner: Medical University of South Carolina
   1. Owner's Representative: Wade Gatlin, Project Manager

C. Architect: Compass 5 Partners, LLC, 1329 State Street Cayce, SC 29033.
   1. Architect's Representative: Maryellyn Cannizzaro, AIA, NCARB, LEED AP

D. The Work consists of the following:

   The project scope includes the complete renovation of the 1st floor bathrooms of the Basic Science Building (approximately 389 SF). Work includes demolition, new partitions, ceiling, casework, ceramic tile, toilet partitions, finishes and supporting mechanical, electrical and plumbing.

E. Resources
1. The bidders and selected contractor shall refer to Compass 5 Partners, LLC contract documents.

F. Obtain Contract Documents
1. Contract Documents will be available through the MUSC purchasing website. All questions throughout the bidding period shall be directed to Maryellyn Cannizzaro in writing. mcannizzaro@compass5partners.com

1.4 TYPE OF CONTRACT
A. Project will be constructed under a single prime contract.

1.5 WORK UNDER OTHER CONTRACTS
A. General: Cooperate fully with separate contractors so work on other contracts, if concurrent, may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 SPECIFICATION FORMATS AND CONVENTIONS
A. Specification Format: The Specifications are organized into Divisions and Sections using the CSI/CSC's "Master Format" numbering system.
1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.7 MISCELLANEOUS PROVISIONS

A. By execution of this Contract, Contractor acknowledges review of proposed details and specifications and agrees to provide warranties and bonds for products and systems specified herein, detailed on drawings and as approved as a substituted or equal product or system in accordance with Division 1 Section "Product Requirements".

B. No material containing asbestos shall be used in the construction of this project or incorporated into the completed work. Contractor shall provide certification that the new building addition is asbestos free at the completion of construction, as required in Division 1 Section “Closeout Procedures”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
SECTION 011010 ADDITIONAL INFORMATION

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes additional information

1.2 MUSC ESTABLISHED SOLE SOURCE CONTRACTORS AND PRODUCTS

A. The following contractors must be used exclusively for the listed construction activities unless approved in advance with the MUSC Project Manager. General Contractor should contract with these vendors directly and are responsible for coordinating their work and ensuring they meet schedule demands. These vendors will provide their services in compliance with all MUSC standards and warranties.

1. Edwards System Technology – Contractor/Sub-Contractor shall be an authorized Edwards System technology installer. Fire protection (i.e. demo, install, & tie-in of smoke detectors, pull stations, annunciators, etc / programming of fire alarm system).

2. Johnson Controls (JCI) – HVAC controls must be compatible with JCI Metasys system / HVAC programming.

1.3 MUSC ESTABLISHED SOLE SOURCE CONTRACTED SPECIALTY CONTRACTORS ASSIGNED TO THE GENERAL CONTRACTOR:

A. The following contractor(s) must be used exclusively for the listed construction activities unless approved in advance with the MUSC Project Manager. MUSC shall contract with and provide payment to these contractor(s) directly. General Contractor shall supply these vendors with a copy of all construction documents required to perform the listed construction activities. General Contractor shall include the listed construction activities on their schedule and shall coordinate all work directly with the contractor to maintain their schedule. These vendors will provide their services in compliance with all MUSC standards and warranties.

1. Data – Vendor to be selected: MUSC will solicit proposals from approved vendors. Demo, install, circuit activation of all telephone/data cables and receptacles. Demo and install of all security cables. Demo and install of all cable television cables. (Conduit and boxes provided by general contractor.)

2. Code and Room Signage - Vendor to be selected: MUSC will solicit proposals from approved vendors for signage and installation. MUSC shall contract directly with
the signage vendor. General Contractor is responsible for coordinating vendors work and ensuring they meet schedule demands.

END OF SECTION 011010
SECTION 011400 WORK RESTRICTIONS

PART 1 GENERAL

1.1 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Limits: Confine constructions operations to work areas indicated and other areas as directed. Do not use Owners toilet rooms or other facilities unless authorized prior to use.

2. Owner Occupancy: Allow for Owner occupancy of site at all times.

3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to the Owner and Owner’s employees at times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize use of driveways and entrances. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Parking is allowable only in designated areas as confirmed with the Owner’s Project Manager and are subject to change.

C. Deliveries: Provide representative to receive all materials and offload at the job site. The Owner will refuse all deliveries to other locations.

D. Burning/Welding Operations: Comply with Owners requirements related to Burning and Welding permits. Coordinate turning off of fire/smoke detection systems in affected areas. Contractor shall be responsible for Fire Department response fees related to construction operations.

E. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

F. Use of Owner Equipment and Supplies: Contractor and contractor's personnel may not use Owner equipment or supplies in the course of the Work.

G. Contractor shall maintain emergency egress exit route including existing fire stairs for all occupants during construction. Contractor shall maintain clearly marked exit routes on all floors at all times.
H. At the beginning of the project, the MUSC Project Manager will establish the Contractor’s lay-down area if available. This area will also be used for the Contractor’s work vehicles. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site that are not regular or authorized parking lots. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Vehicles parked in the lay down area (or designated parking areas) will be clearly marked.

I. Access to Building and Storage:

1. Contractor will be permitted to bring workmen, material, equipment, etc., into building through Owner-designated entrance and stairway.

2. Material shall arrive on site only as they are needed and immediately delivered to construction area.

3. Supplies, equipment and materials to be delivered to construction area in closed containers sized to be conveniently transported through existing corridors and door openings.

4. Contractor shall remove all waste material via same route.

5. Debris, trash and unused materials may not be transported through existing occupied spaces.

J. Any damage to existing landscaping (including lawn areas) will be remediated before final payment is made.

1.2 MANNER OF CONDUCT OF THE WORK

A. Existing building will be occupied during construction. Work shall be done, and such temporary facilities provided, so as not to interfere with daily operation of building or any essential service thereof.

B. Noisy operations, such as drilling, etc., shall be restricted by Owner to avoid disruption of daily activities. Schedule of Operations shall be approved by Owner.
C. No jack hammering will be allowed unless written permission is received from Owner. All holes will be core drilled using a diamond core drill.

D. Cell phones are allowed unless otherwise prohibited by the Owner in areas where they may disrupt occupants.

E. No radios, smoking or foul language will be allowed in building.

G. Responsibility for enforcing coordination requirements and close adherence to time schedule rests solely with general contractor.

1.3 SAFETY:

A. Safety and security: Comply with Owner's requirements related to security and fire drills and alerts.

B. All contractors are required to comply with regulations of the Owner.

C. The Contractor is responsible for maintaining a Material Safety Data Sheet (MSDS) Book at the construction site that is easily accessible and available upon request at any time. The MSDS Book must contain the most current MSDS for all chemicals or substances used by the Contractor or sub-contractors during work performed.

1.4 WORK SCHEDULE

A. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner’s goal usage. Perform the Work so as not to interfere with Owner’s operations.

1. Work hours: 7:00 am to 6:00 pm, Monday through Friday. Work at other times may be allowed with prior consent of Owner.

2. A dedicated Site Superintendent shall be on site during working hours.

3. Superintendent shall be available by cell phone or pager twenty-four hours a day, seven days a week.

4. He shall advise Owner’s authorities of his intended work schedule and obtain their approval.

B. The Owner reserves the right to direct Contractor to stop work temporarily.
C. Prior to demolition of any utility system, electrical, mechanical, and plumbing, the Contractor shall request approval and verification from the Owner.

1.5 WORK REQUIRING OWNER’S APPROVAL

A. Present all requests for shut-down or interruption of existing services for approval by the Agency not less than ten (10) working days before proposed work is scheduled to be done. Do not proceed without written approval of scheduled activity.

B. Schedule interruptions and shut-downs for nights and weekends, whenever possible.

C. The following activities require Owner's prior approval:

1. Electrical or mechanical work that may interfere with the operation of other areas or systems of the facility.

2. Shutdown of fire alarm system.

3. Work outside of the construction limits.

4. Work in other areas of the building that is necessary to gain access to electrical or mechanical systems.

PART 2 -PRODUCTS (Not Used)

PART 3 -EXECUTION (Not Used)

END OF SECTION 011400
SECTION 012500 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

B. See Division 1 Section "Allowances" for procedural requirements for handling and processing allowances, if any.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract time.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract time. If necessary, the description will include supplemental or revised Drawings and Specifications.

   1. Proposal Requests issued by the Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

   2. Within 21 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract time necessary to execute the change. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts. Include an updated Contractor’s Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract time.

5. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.


1.4 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, if Work includes allowances, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.

2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.

3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.

4. Owner reserves the right to establish the quantity of work-In-place by independent quantity survey, measure, or count.
B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor’s handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days after such authorization.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.

2. No change to Contractor's indirect expense is permitted for selection of higher or lower priced materials or systems of the same scope and nature as originally indicated.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on OSE480.

1.6 CONSTRUCTION CHANGE DIRECTIVE


1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

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

PART 2-PRODUCTS (Not Used)
PART 3-EXECUTION (Not Used)

END OF SECTION 012500
SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process an Application for Payment.

1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

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

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following: Application for Payment forms with Continuation Sheets, Submittals Schedule, Contractor's Construction Schedule.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values.

1. Identification: Include the following Project identification on the Schedule of Values:
   - Project name and location.
   - Name of Architect.
   - Architects project number.
   - Contractor's name and address.
   - Date of submittal.

2. Submit draft of AIA Document G703 Continuation Sheets.
3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
   Related Specification Section or Division.
   Description of the Work.
   Name of subcontractor.
   Name of manufacturer or fabricator.
   Name of supplier.
   Change Orders that affect value.
   Dollar value.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.

7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

8. Include a Coordination Documents valuation as a line item in the Schedule of Values for development and implementation of coordination documents directly related to mechanical, electrical, plumbing, fire protection and architectural portions of the work.

9. Include a closeout valuation as a line item in the Schedule of Values for closeout activities in the Work.
10. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

11. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractors Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
3. Include construction progress photos corresponding to the period of work represented by the Application for Payment.

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.

2. When an application shows completion of an item, submit final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.

2. Schedule of Values.

3. Contractors Construction Schedule.

4. Products list.
5. Schedule of unit prices.
7. List of Contractor's staff assignments.
8. List of Contractors principal consultants.
10. Initial progress report.
12. Progress draft of Coordination Drawings.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is Substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

I. Submittals that must precede or coincide with submittal of Application for Payment at Substantial Completion include the following:

1. Operation and Maintenance Data final submittal.

J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of project closeout requirements. (Refer to Section 01770-Close-out Procedures.)
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

3. Updated final statement, accounting for final changes to the Contract Sum.

4. AIA Document G706, Contractor’s Affidavit of Payment of Debts and Claims.


6. AIA Document G707, Consent of Surety to Final Payment.

7. Evidence that any and all claims have been settled.

8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.


PART 2 -PRODUCTS (Not Used)

PART 3 -EXECUTION (Not Used)

END OF SECTION 012900
SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Information (RFIs).

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for preparing and submitting Coordination Drawings.
2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
3. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
4. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI Request from Contractor seeking information or clarification of the Contract Documents.

1.4 GENERAL COORDINATION

A. Coordination: Coordinate instruction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in
different Sections that depend on each other for proper installation, connection, and operation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

1.5 COORDINATION OF MECHANICAL AND ELECTRICAL WORK

A. Coordinate location of mechanical, electrical, fire suppression and other Work shown diagrammatically on Contract Documents, including Work under other Contracts and Work by Owner. Maintain dimensions and clearances indicated on Drawings.

B. Meet with subcontractors, Owner and other contractors, as applicable to the location of the Work, to develop procedures for preparation of Coordination Drawings.

C. Prepare and submit Coordination Drawings that fully layout mechanical, electrical, fire suppression and other Work to coordinate and resolve material placement conflicts and plan utilization of limited space.

D. If conflicts cannot be resolved, advise Architect and Owner and submit RFI or Proposal Request for changes in Contract Documents which may be required to accommodate the Work.

1.6 SUBMITTALS
A. Coordination Drawings: Prepare Coordination Drawings to show limited space availability and maximum utilization of space for efficient installation of different components and as Coordination is required for installation of products and materials fabricated by separate entities.

1. Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
   a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
   b. Indicate required installation sequences.
   c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
   d. Indicate loads and reactions at connections to building structure and to other components of exterior cladding.

2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

3. Number of Copies: Submit three opaque copies of each submittal. Architect will return two copies. Mark up and retain one returned copy as a Project Record Drawing.

4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

5. Coordination Drawings are not Shop Drawings but a means of fulfilling Contractor’s responsibility to coordinate the work.

B. Key Personnel Names: Within 15 days of starting construction operations, submit to Owner, and Architect a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers.
Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.7 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated. The Superintendent shall represent the General Contractor at Project Meetings.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner, and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor, and its superintendent; major subcontractors; suppliers; and other concerned parties—shall attend the Conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:
   a. Tentative construction schedule.
   b. Critical work sequencing and long-lead items.
c. Designation of key personnel and their duties.
d. Distribution of the Contract Documents.
e. Submittal procedures.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFI.
h. Submittal procedures.
i. Preparation of Record Documents.
j. Use of the premises and existing building.
k. Work restrictions.
l. Owner’s occupancy requirements.
m. Responsibility for temporary facilities and controls.
n. Construction waste management and recycling.
o. Parking availability.
p. Office, work, and storage areas.
q. Equipment deliveries and priorities.
r. First aid.
s. Security.
t. Progress cleaning.
u. Working hours.

C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Purchases.
   f. Deliveries.
   g. Submittals.
   h. Review of mockups.
   i. Possible conflicts.
   j. Compatibility problems.
   k. Time schedules.
l. Weather limitations.
m. Manufacturer’s written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

1. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

2. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to restore impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that
current and subsequent activities will be completed within the Contract Time.

1. Review schedule for next period.

   b. Review present and future needs of each entity present, including the following:
      1. Interface requirements.
      2. Sequence of operations.
      4. Deliveries.
      5. Off-site fabrication.
      7. Site utilization.
      8. Temporary facilities and controls.
      9. Work hours.
     10. Hazards and risks.
     11. Progress cleaning.
     12. Quality and work standards.
     14. Field observations.
     15. RAs.
     17. Pending changes.
     19. Pending claims and disputes.
     20. Documentation of information for payment requests.

3. Minutes: Record the meeting minutes.

4. Reporting: Distribute minutes of the meeting within 3 days to each party present and to parties who should have been present.

   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. User Group Meetings: Contractors superintendent shall attend weekly user meetings to coordinate installations, shutdowns, and impact to user areas. Owner shall publish meeting minutes.

F. Major Sub-contractors shall attend the regularly scheduled project meetings where the Owner is in attendance.
2.0 REQUESTS FOR INFORMATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RA to Architect through Construction Manager in the form specified.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Project name.

2. Date.

3. Name of Contractor.


5. RFI number, numbered sequentially.

6. Specification Section number and title and related paragraphs, as appropriate.

7. Drawing number and detail references, as appropriate.

8. Field dimensions and conditions, as appropriate.

9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

10. Contractor's signature.

11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references,
and details of affected materials, assemblies, and attachments.

C. Hard-Copy RFIs: CSI Form 13.2A.

1. Identify each page of attachments with the RFI number and sequential page number.

D. Architect’s Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for coordination information already indicated in the Contract Documents.
   d. Requests for adjustments in the Contract Time or the Contract Sum.
   e. Requests for Interpretation of Architects actions on submittals.
   f. Incomplete RFIs or RFI with numerous errors.

2. Architect's action may include a request for additional information, in which case Architect’s time for response will start again.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section “Contract Modification Procedures”.
   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log with Application for Payment. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect’s response was received.
2.1 CONTINUAL AND REGULAR UPDATING OF PROJECT RECORD CONTRACT DOCUMENTS

A. The Contractor shall maintain and regularly update the Project Record Set of Contract Documents which will be reviewed at progress meetings.

PART 2 -PRODUCTS (Not Used)
PART 3 –EXECUTION (Not Used)

END OF SECTION 013100
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
4. Daily construction reports.
5. Material location reports.
6. Field condition reports.
7. Material recycling reports.
8. Special reports.

B. Related Sections include the following:

1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
2. Predecessor activity is an activity that must be completed before a given activity can be started.
B. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.

C. Event: The starting or ending point of an activity.

D. Float: The measure of leeway in starting and completing an activity.
   1. Float time belongs to Owner.
   2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
   3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

E. Fragment: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

F. Major Area: A story of construction, a separate building, or a similar significant construction element.

G. Milestone: A key or critical point in time for reference or measurement.

H. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.4 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.
   6. Sequence of finishes work.
   7. Scheduled date for Architect's final release or approval.

C. Preliminary Construction Schedule: Submit two printed copies; one a single sheet of reproducible media, and one a print.
D. Preliminary Network Diagram: Submit two printed copies; one a single sheet of reproducible media, and one a print; large enough to show entire network for entire construction period.

E. Contractor's Construction Schedule: Submit two printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.

1. Submit an electronic copy of schedule in .pdf format. Electronic copy shall be labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

F. Daily Construction Reports: Submit two copies at weekly intervals.

G. Material Location Reports: Submit two copies at weekly intervals.

H. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

I. Special Reports: Submit two copies at time of unusual event.

1.5 QUALITY ASSURANCE

A. Pre-scheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including area separations, interim milestones.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.

B. Fire Alarm Testing and Data Coordination: The Contractor is responsible for ensuring all life safety devices are tested and operating per design as part of substantial completion.

C. Concrete Curing and Floor Installation Planning: The Contractor shall review methods, procedures and manufacturer’s recommendations to expedite and facilitate the critical
path schedule as affected by the cure time of concrete and related floor underlayment systems.

1.6 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Initial Submittal: Submit concurrently with preliminary construction schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
   a. At Contractor's option, show submittals on the Preliminary Construction Schedule, instead of tabulating them separately.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include not less than two days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
2. Work Restrictions: Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Partial occupancy before Substantial Completion.
   e. Use of premises restrictions.
   g. Seasonal variations.
   h. Sustainable construction practices.
   i. Environmental control.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

E. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

1. Refer to Division 1 Section "Payment Procedures" for cost reporting and payment procedures.
F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragments to demonstrate the effect of the proposed change on the overall project schedule.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within seven days of date established for commencement of the Work.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. High and low temperatures and general weather conditions.
5. Accidents.
6. Meetings and significant decisions.
7. Recycled products and waste removal.
8. Unusual events (refer to special reports).
9. Stoppages, delays, shortages, and losses.
10. Meter readings and similar recordings.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received.
15. Services connected and disconnected.
16. Equipment or system tests and startups.
17. Partial Completions and occupancies.
18. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
PART 3 - EXECUTION

3.1 CONTRACTOR’S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include and track delivery, coordination and installation of any and all Owner furnished materials and/or equipment.

3. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

4. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200
SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each Submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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

B. Submittals Schedule: Comply with requirements in Division 1 section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.
1. **Initial Review:** Allow 15 days for initial review of each submittal unless otherwise indicated. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Allow 15 days for processing each resubmittal.

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

5. **Concurrent Consultant Review:** Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architects Consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. **Identification:** Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractors review and approval markings and action taken by Architect.

3. Include the following information on label for processing and recording action taken;
   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Unique identifier, including revision number.
   i. Number and title of appropriate Specification section.
   j. Drawing number and detail references, as appropriate.
   k. Other necessary identification.
E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.

1. Do not submit additional copies for maintenance manuals.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

1. Include Contractor’s certification stating that information submitted complies with requirements of the Contract Documents.

2. Transmittal Form: Use AIA Document G810, CSI Form 12.1A, or other form acceptable to Architect.

3. On an attached separate sheet, prepared on Contractor’s letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.

3. Resubmit submittals until they are marked Approved, Approved as noted or No exceptions taken.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.
PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Submit four copies of submittal for portions of work designed by consulting design professionals. Architect will return two copies. Mark up and retain one returned copy as a Project Record Document.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. Do not submit product data unless specifically required.

2. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

3. Mark each copy of each submittal to show which products and options are applicable.

4. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Manufacturer's catalog cuts.
   e. Standard or custom color charts.
   f. Wiring diagrams showing factory-installed wiring.
   g. Printed performance curves.
   h. Operational range diagrams.
   i. Compliance with recognized trade association standards.
   j. Compliance with recognized testing agency standards.
   k. Standard product operating and maintenance manuals.
   l. Application of testing agency labels and seals.
   m. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable;
   a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.
m. Relationship to adjoining construction clearly indicated.
n. Seal and signature of professional engineer if specified.
o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

D. Coordination Drawings: Comply with requirements in Division 1 Section "Project Management and Coordination."

E. Samples: Prepare physical units of materials or products, including the following:

1. Comply with requirements in Division 1 section "Quality Requirements" for mockups.

2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and furnished in manner Specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, partial sections of manufactured or fabricated components; small cuts or containers of materials;
complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned.

4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architects sample where so indicated. Attach label on unexposed side.

5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed. Submit samples requiring selection at same time.

6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

F. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.
4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

a. Mark up and retain one returned copy as a Project Record Document.

G. Delegated-Design Submittal: Comply with requirements in Division 1 section "Quality Requirements."

H. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

I. Application for Payment: Comply With requirements in Division 1 Section "Payment Procedures."
J. Schedule of Values: Comply with requirements of Division 1 Section “Payment Procedures.”

K. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements.”

B. Contractor’s Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation.”

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Product certificates: Prepare written statements on manufacturer’s letterhead certifying that product complies with requirements.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer’s letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

H. Material certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

J. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

K. Reid Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard forms indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

L. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

M. Research/Evaluation Reports: Prepare written evidence from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 section "Closeout Procedures.”

O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures.
for installing or operating a product or equipment. Include name of Product and name, address, and telephone number of manufacturer.

Q. Manufacturer’s Reid Reports: Prepare written information documenting factory-authorized service representative’s tests and inspections.

R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

S. Construction Photographs: Comply with requirements in Division 1 section "Construction Progress Documentation.”

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3-EXECUTION

3.1 CONTRACTOR’S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification
Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT’S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

F. List of Specification sections requiring submittals.

END OF SECTION 013300
SECTION 014000 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified test, inspections, and related actions do not limit Contractor’s quality control procedures that facilitate compliance with the Contract Document requirements.

2. Requirements for Contractor’s to provide quality-control services required by Architect, Owner or authorities having jurisdiction are not limited by provisions of this section.

C. See Divisions 2 through 16 sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality-Assurance services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specially for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 REGULATORY REQUIREMENTS

A. Copies of Regulations: Obtain copies of the applicable regulations and retain at Project site to be available for reference by parties who have a reasonable need.
1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that
indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

2. NVLAP: A testing agency accredited according to NIST's National Voluntary laboratory Accreditation Program.

G. Factory- Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer’s products that are similar in material, design, and extent to those indicated for this Project.

H. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

   a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.

d. Build site-assembled test assemblies and mock-ups using installers who will perform same tasks for Project.

e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mock-ups do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.

2. Notify Architect seven days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mock-ups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL
A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.

2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agendas at least: 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment Installation, Including service connections. Report results in writing.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services,
including retesting and reinspecting, for construction that revised or
replaced Work that failed to comply with requirements established by the
Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor
in performance of duties. Provide qualified personnel to perform required
tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or
deficiencies observed in the Work during performance of its
services.

2. Interpret tests and inspections and state in each report whether
tested and inspected work complies with or deviates from
requirements.

3. Submit a certified written report, in duplicate, of each test,
inspection, and similar quality control service through Contractor

4. Do not release, revoke, alter, or increase requirements of the
Contract Documents or approve or accept any portion of the Work.

5. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests,
inspections, and similar quality-control services, and provide reasonable
auxiliary services as requested. Notify agency sufficiently in advance of
operations to permit assignment of personnel. Provide the following:

1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and
inspections.

3. Adequate quantities of representative samples of materials that
require testing and inspecting. Assist agency in obtaining samples.

4. Facilities for storage and field-curing of test samples.

5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that
require control by testing agency.

7. Security and protection for samples and for testing and inspecting
equipment at Project site.
G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.
2. Do not install finishes until required inspection of concealed construction is completed and work approved.
   a. Coordinate in-wall and above-ceiling inspection by authorities having jurisdiction and observation by Architect.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to Owner, Architect, testing agencies and each party involved in performance of portions of the Work where tests and inspections are required.

I. Special Tests and Inspections: Owner will engage a Qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and Inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.

6. Retesting and reinspecting corrected work.

PART 2-PRODUCTS (Not Used)

PART 3-EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect’s reference during normal working hours.

3.2 ABOVE-CEILING INSPECTIONS

A. Prior to installation of ceiling systems, Architect will conduct an above ceiling completion inspection. The purpose of this inspection is to verify:

1. Suspended ceiling system and seismic support are complete.
2. Electrical work above ceiling is complete.
3. HVAC work above ceiling is complete.
4. Insulation, fireproofing and firestopping (where applicable) above ceiling are complete.
5. Fire and smoke rated construction above ceiling is satisfactory.
6. Fire rated construction designations marked above ceilings are satisfactory.
7. That all above ceiling work is complete to the status where only service or maintenance type work remains to be done above the
ceiling. Architect may designate sections of the project to be inspected and may require 100% prior to performing the inspection.

B. Following inspection by Owner and Architect will perform an above ceiling inspection to verify compliance.

3.3 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Comply with the Contract Document requirements for Division 1 section “Cutting and Patching.”

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor’s responsibility, regardless of the assignment of responsibility for quality control services.

END OF SECTION 014000
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. Temporary utilities include, but are not limited to, the following:

1. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
2. Heating and cooling facilities.
3. Ventilation.
4. Electric power service.
5. Lighting.
6. Telephone service.

C. Support facilities include, but are not limited to, the following:

1. Project identification and temporary signs.
2. Waste disposal facilities.
3. Temporary elevator usage.
4. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:

1. Environmental protection.
2. Dust control.
3. Pest control.
5. Barricades, warning signs, and lights.
6. Fire protection.

1.2 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:

1. Owner's construction forces.
2. Occupants of Project.
3. Architect.
4. Testing agencies.
5. Personnel of authorities having jurisdiction.

B. Water service: Use water from Owner's existing water system without metering and without payment of use charges.

C. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

D. Electric Power service: Pay metered electric power service use charges for electricity used by all entities engaged in construction activities at Project site.

1.3 SUBMITTALS

A. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Within 15 days of date established for submittal of Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility.

C. Proposed Dust- and Noise- Control Measures: Submit statement and drawings that indicate the measures proposed for infection, dust and noise control, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.

1.4 QUALITY ASSURANCE


1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.

2. Electric service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
C. Construction Waste Management: Contractor is encouraged to use means available to divert to greatest extent possible and economically feasible, construction and demolition waste from landfills and incinerators. Contractor and subcontractors are encouraged to establish a construction waste management program that addresses the following:

1. Minimizing packaging waste.
2. Salvage and reuse.
3. Salvage for resale or donation.
5. Disposal.

1.5 PROJECT CONDITIONS

A. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work.

B. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.

B. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular type panels with tapered edges. Comply with ASTM C 36.

C. Paint: Comply with requirements in Division 9 section "Painting."

D. Water: Potable.
2.2 EQUIPMENT

A. General: Provide equipment suitable for use intended.

B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
   1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of tire exposure.

C. Self-contained Toilet Units: Single-occupant units of chemical, aerated recirculation or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

D. Heating Equipment: Unless Owner authorizes use of permanent heating system/provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.

E. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.

F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110-to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

G. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 -EXECUTION

3.1 INSTALLATION GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction.

B. Water service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Provide rubber hoses as necessary to serve Project site.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.

2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.

a. Provide safety showers, eyewash fountains, and similar facilities where required by authorities having jurisdiction.

3. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

E. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

G. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Install separate telephone line for each field office and first-aid station.

1. At each telephone, post a list of important telephone numbers.
2. Provide voice-mail service on superintendent's telephone.
3. Provide a portable cellular telephone for superintendent’s use in making and receiving telephone calls when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.

2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
B. Temporary Signage: Prepare Project identification and other signs in sizes indicated. Install signs where indicated to inform staff and building occupants and to provide directional information to construction personnel. Do not permit installation of unauthorized signs.

C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

D. Janitorial Services: Provide janitorial services on a daily basis for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms, and similar areas.

E. Existing Elevator Usage: Refer to Division 1 Section "Work Restrictions."

F. Existing Stair Usage: Refer to Division 1 Section "Work Restrictions".

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

B. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

2. Vertical Openings: Close openings of 25 sq. ft. or less with plywood or similar materials.

3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.

4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.

5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire-retardant treated material for framing and main sheathing.

D. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.

   a. Field Offices: Class A stored-pressure water-type extinguishers.

   b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.

   c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.

1. Store combustible materials in containers in fire-safe locations.

2. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other areas routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.

3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
4. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

5. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

6. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, does not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed.
because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section “Closeout Procedures.”

END OF SECTION 015000
SECTION 016000 –PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements for selection of products for use in Project; product delivery storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:

1. Divisions 2 through 28 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "products" includes the terms "material" "equipment" "system" and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product Substitution to have the indicated qualities related to type, function, dimension in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design" including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.3 SUBMITTALS

A. Product List: Submit a list, in tabular form showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.

2. Form: Tabulate information for each product under the following column headings:
   a. Specification Section number and title.
   b. Generic name used in the Contract Documents.
   c. Proprietary name, model number, and similar designations.
   d. Manufacturer's name and address.
   e. Projected delivery date or time span of delivery period.
   f. Identification of items that require early submittal approval for scheduled delivery date.

3. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.

4. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect’s response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect’s response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specifications Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided in this project manual.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified material or product cannot be provided.
b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Use of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction, where available for type of material proposed.
i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract time. If specified product or method of construction cannot be provided within the Contract time, include letter from manufacturer, on manufacturer’s letterhead, stating lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect’s Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: Change Order.
b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Division 1 Section "Submittal Procedures".
b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section “Submittal Procedures”. Show compliance with requirements.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project; product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project Structure.

3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.

4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

7. Protect stored products from damage and liquids from freezing.

D. Material Moisture and Mold Control: Comply with recommendations contained in Associated General Contractors (AGC) document "Managing the Risk of Mold in the Construction of Buildings." Prepare and submit plan for protecting materials from water damage, including the following:
1. Indicate delivery, checking and storage operations affected by water damage control efforts.

2. Indicate procedures for protecting porous materials from water damage, and how damaged materials will be handled.

3. Indicate sequencing of work that requires water, such as sprayed fire-resistant materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet work has dried sufficiently to permit installation of related finish materials.

4. Describe protocol for dealing with large and unexpected water intrusion into completed portions of building. Indicate procedures for investigation of cause and effects, and methods for dealing with both.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section “Closeout Procedures.”

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners and other items needed for a complete installation and Indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term “as selected” Architect will make selection.

5. Where products are accompanied by the term “match sample,” sample to be matched is Architect’s.

6. Descriptive, performance and reference standard requirements In the Specifications establish “salient characteristics” of products.

7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or “or approved equal” or “or approved,” comply with provisions in Part 2 "Comparable Products” Article to obtain approval for use of an unnamed product.
B. Product selection Procedures:

1. Product: Where specifications name a single product and manufacturer, provide the named product that complies with requirements.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.

3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

4. Manufacturers: Where Specifications include a list of manufacturer’s names provide a product by one of the manufacturers listed that complies with requirements.

5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed or an unnamed product that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.

6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.

7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.

8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications Indicate Sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
   
a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. Visual Selection Specification: Where Specifications include the phrase lies selected from manufacturer’s colors, patterns, textures or a similar phrase, select a product that complies with other specified requirements.
   
a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures or similar phrase, Architect will select color, pattern, density, or texture from manufacturer’s product line that does not include premium items.

b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Requests for substitution following award of contract must comply with requirements of this article and are restricted to those necessitated by the following circumstances:

1. Specified product is no longer available for purchase.
2. Specified product is not available within schedule requirements of project.
3. Specified product is not compatible with other product approved for project.
4. Specified warranty is not available.

B. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

C. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied and so certified by Contractor.
If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner’s additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.

4. Substitution request is fully documented and property submitted.

5. Requested substitution will not adversely affect Contractor’s Construction Schedule.

6. Requested substitution has received necessary approvals of authorities having jurisdiction.

7. Requested Substitution is compatible with other portions of the Work.

8. Requested substitution has been coordinated with other portions of the Work.

9. Requested substitution provides specified warranty.

10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 **COMPARABLE PRODUCTS**

A. Conditions: Architect will consider Contractor’s request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the
Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant Qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested in Division 1 Section “Closeout Procedures."

END OF SECTION 016000
SECTION 017000 -EXECUTION REQUIREMENTS

PART 1-GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

   A. This section includes general procedural requirements governing
      execution of the Work Including, but not limited to, the following:

       2. General installation of products.
       3. Coordination of Owner-installed products.
       4. Progress cleaning.
       5. Starting and adjusting.
       6. Protection of installed construction.
       7. Correction of the Work.

PART 2 -PRODUCTS (Not Used)

PART 3-EXECUTION

3.1 EXAMINATION

   A. Existing Conditions: The existence and location of utilities and other
      construction indicated as existing are not guaranteed. Before beginning
      work investigate and verify the existence and location of mechanical and
      electrical systems and other construction affecting the Work.

       1. Before construction, verify the location and points of connection of
          utility services.

   B. Existing Utilities: The existence and location of utilities and construction
      indicated as existing are not guaranteed.

   C. Acceptance of Conditions: Examine substrates areas, and conditions, with
      Installer or Applicator present where indicated, for compliance with
      requirements for installation tolerances and other conditions affecting
      performance. Record observations.

       1. Verify compatibility with and suitability of substrates, including
compatibility with existing finishes or primers.

2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.


3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to layout the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. Building Lines and Levels: Locate and layout control lines and levels for structures, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels.
C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Make the log available for reference by Architect.

D. General: Layout the Work using accepted surveying practices.
   1. Establish benchmarks and control points to set lines and levels as needed to locate each element of Project.
   2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
   3. Inform installers of lines and levels to which they must comply.
   4. Check the location, level and plumb, of every major element as the Work progresses.
   5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and Wiring in finished areas, unless otherwise indicated.
   4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer’s written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.


2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, dean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject: to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.
3.9 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017000
SECTION 017310 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Division 1 Section "Selective Demolition' for demolition of selected portions of the building.

2. Division 7 Section "Through-Penetration Firestop Systems" for patching fire-rated construction.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut: and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Are-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment

D. Protect fire-resistive material, according to advice of product manufacturer from damage resulting from cutting and patching or other causes so fire protection will be without damage or deterioration at the time of Substantial Completion.

1. As installation of other construction proceeds, inspect fire-resistive material and patch any damaged or removed areas.

2. Repair or replace work that has not been successfully protected.

E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the buildings aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

F. Fire-Resistive Construction: Patch fire-resistive construction in such a manner to maintain established fire rating. Refer to Division 7 sections "Through Penetration Firestop Systems" and "Fire-resistive Joint Systems".

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.
PART 2 -PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3-EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and Suitability of substrates, including compatibility with in-place finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical and Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, dosing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, apply primer and intermediate paint mats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION
SECTION 017320 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of building or structure.

2. Salvage of existing items to be reused or recycled.

B. Related sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.

2. Division 1 Section "Cutting and Patching" for cutting and patching procedures.

3. Division 15 Sections for demolishing, cutting, patching, or relocating mechanical items.

4. Division 16 Sections for demolishing, cutting, patching, or relocating electrical items.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction prepare them for reuse, and reinstall them where indicated.
D. **Existing to Remain:** Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 **MATERIALS OWNERSHIP**

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.5 **SUBMITTALS**

A. **Inventory:** After selective demolition is complete, submit a list of items that have been removed and salvaged.

B. **Pre-demolition Photographs or Videotapes:** Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Comply with Division 1 section "Photographic Documentation." Submit before Work begins.

1.6 **QUALITY ASSURANCE**

A. **Demolition Firm Qualifications:**

1. An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. **Refrigerant Recovery Technician Qualifications:** Certified by an EPA-approved certification program.

C. **Regulatory Requirements:** Comply with governing DHEC 61-70 notification, hauling and disposal regulations before beginning selective demolition.

D. **Standards:** Comply with ANSI A10.6 and NFPA 241.

E. **Pre-demolition Conference:** Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination".

1. Inspect and discuss condition of construction to be selectively demolished. Remove ceiling tiles for Inspection of above-ceiling conditions. Identify any items not shown on drawings.

2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Waste management and recycling opportunities.

F. Post-Demolition Inspection and Conference: Make arrangements with Owner’s representative and Architect for a post-demolition Inspection and conference at Project site. Identify any items not shown on drawings and non-code-compliant conditions which have been uncovered by demolition. Discuss methods and procedures recommended for making such conditions code compliant.

1.7 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owners operations will not be disrupted.

1. Comply with requirements specified in Division 1 Section "Summary."

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.
1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 -PRODUCTS (Not Used)

PART 3 -EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs.

1. Comply with requirements specified in Division 1 Section "Photographic Documentation."

2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work. Make permanent record of measurements, materials, and construction details required to make exact reproduction.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
3.2 UTILITY SERVICES AND MECHANICAL / ELECTRICAL SYSTEMS

A. Existing services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

1. Comply with requirements for existing services/systems interruptions specified in Division 1 section “Summary.”

B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.

1. Provide at least 7 days' notice to Owner if shutdown of service is required during changeover.

C. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.

2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

   a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, adds, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Pest Control: Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.
C. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Division 1 section "Temporary Facilities and Controls."

D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

4. Cover and protect furniture, furnishings, and equipment that have not been removed.

5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 1 Section "Temporary Facilities and Controls."

E. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

F. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise. Refer to Section 015000 for additional requirements.
G. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly art openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

9. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items: As indicated on Drawings.

1. Clean and repair items to functional condition adequate for intended reuse.

2. Where existing equipment and components are to be modified for relocation and reinstallation comply with requirements for new work as indicated in appropriate specification sections.

3. Paint equipment to match new equipment.

4. Pack or crate items after cleaning and repairing. Identify contents of containers.

5. Protect items from damage during transport and storage.

6. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

B. Air-Conditioning Equipment Remove equipment without releasing refrigerants
3.6 PATCHING AND REPAIRS

A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Patching: Comply with Division 1 Section "Cutting and Patching."

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
   1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.

D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

E. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other sections of these Specifications.
   2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surface.
   3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

F. Ceilings: Patch, repair, or reran existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.
1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevate portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

4. Comply with requirements specified in Division 1 Section "Construction Waste Management."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally disposes of them.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 017320
SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning, including cleaning of HVAC system.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, paint color schedules, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner, if so required in Division 8 Section "Door Hardware." Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.

10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

11. Advise Owner of changeover in heat and other utilities.

12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

13. Complete final cleaning requirements, including touchup painting.

14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

15. Submit record indicating completion of all Owner training requirements.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each Item has been completed or otherwise resolved for acceptance.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Submit pest-control final inspection report and warranty.

5. Instruct Owners personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinsertion: Request reinsertion when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.

2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

- Project name.
- Date.
- Name of Architect.
- Name of Contractor.
- Page number.

1.5 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual specification Sections and as follows:

1. Operation Data:
   a. Point of contact, name of individual and phone number.
   b. Emergency instructions and procedures.
   c. System, subsystem, and equipment descriptions, including operating standards.
   d. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
   e. Description of controls and sequence of operations.
   f. Piping diagrams.

2. Maintenance Data:
   a. Point of contact, name of individual and phone number.
   b. Manufacturer's information, including list of spare parts.
   c. Name, address, and telephone number of Installer or supplier.
   d. Maintenance procedures.
   e. Maintenance and service schedules for preventive and routine maintenance.
   f. Maintenance record forms.
   g. Sources of spare parts and maintenance materials.
   h. Copies of maintenance service agreements.
   i. Copies of warranties and bonds.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title.
"OPERATION AND MAINTENANCE MANUAL,” Project name, and subject matter of contents.

1.6 WARRANTIES

A. Submittal lime: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title “WARRANTIES,” Project name, and name of Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Submit list of proposed cleaning agents with related product data to Owner prior to use.

PART 3 -EXECUTION

3.1 DEMONSTRATION AND TRAINING
A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Provide instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.

3. Schedule training with Owner, through Architect, with at least seven days advance notice.

4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.

B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:

1. System design and operational philosophy.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
7. Repair.

3.2 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

b. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits.

c. Rake grounds that are neither planted nor paved to a smooth/ even-textured surface.

d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Remove snow and ice to provide safe access to building.

f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains/ films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums/ shafts, trenches/ equipment vaults, manholes, attics, and similar spaces.

h. Sweep concrete floors broom clean in unoccupied spaces.

i. Vacuum carpet and similar soft: surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

k. Remove labels that are not permanent.

l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
1) Do not: paint over "UL" and similar labels including mechanical and electrical nameplates. Remove paint or other matter obscuring tables.

m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

n. Replace parts subject to unusual operating conditions.

o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury fixtures to comply with requirements for new fixtures.

q. Leave Project clean and ready for occupancy.

C. Final cleaning of HVAC System

1. All HVAC system cleaning shall be in accordance with National Air Duct cleaners Association (NADC) Standard 1992-01, Mechanical Cleaning of Non-Porous Air Conveyance Components, and the associated Guideline to the Standard.

   a. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

2. Cleaning shall be accomplished by hand vacuuming and hand cleaning of all interior surfaces of the HVAC system to render the HVAC components visibly clean of dirt and debris and capable of passing NADCA Non-Porous Surfaces Cleaning Verification.

3. Any cleaned surface not being visibly clean or capable of passing the Vacuum Test as stipulated by the NADCA Standard 1992-01 shall be re-cleaned by the Contractor at no expense to the Owner.

4. Take air handlers (AHU) off-line during the cleaning process to minimize airborne migration of particulate matter within the ducts. Coordinate AHU shutdown with Owner.
a. Install clean polyester filter media pads in all supply diffusers prior to cleaning the system.

b. Provide access holes as required to perform thorough cleaning, and repair upon inspection and approval of cleaning.

c. All vacuuming shall be accomplished utilizing HEPA equipped vacuum cleaners. The equipment shall be so labeled or proof provided before commencement of the Work.

d. Where the particulate collection equipment is exhausting inside the building, use HEPA filtration with 99.97% collection efficiency for .03 micron size particles.

5. Supply Air System: Vacuum clean all interior surfaces and components in supply ductwork from the air handlers to all supply diffusers served by each air handler.

a. Vacuum dean all supply fan plenums.
b. Vacuum dean all coil plenums.
c. Wire brush and vacuum dean interior of fan housings and fan blades.
d. Wash supply fan bell inlets, fan blades, and fan interior surfaces using 500 to 1,000 psi moderate pressure wash with approved disinfectant.
e. Clean all turning vanes at both upstream and downstream sides.
f. Vacuum dean all interior components of all VAV mixing boxes.
g. Remove all supply air diffusers, vacuum, wash dean and re-install.
h. Vacuum and wash dean all filter holding frames and install new filters.

6. Return Air System: Vacuum clean all interior surfaces and components in return air ductwork from individual return grilles to the air handlers.

a. Vacuum clean all fresh air intake louvers, dampers, and return air/fresh air intake plenums.
b. Clean all turning vanes at both upstream and downstream sides.
c. Remove all return air grilles and wash clean and re-install.
7. Clean and disinfect all condensate trays and insure that drain lines are free-flowing.

8. Dispose of all debris removed from the HVAC system.

D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

E. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700
SECTION 017810 - PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

1.2 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up Record Prints.

B. Record Specifications: Submit one copy of Project’s Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one copy of each Product Data submittal.

   1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 – PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue-or black-line white prints of the Contract Drawings and Shop Drawings.

   1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an understandable drawing technique.

c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing Concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following Architect's written orders.
   l. Details not on the original Contract Drawings.
   m. Field records for variable and concealed conditions.
   n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross reference on the Contract Drawings.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.

2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product indicate whether Record Product Data has been submitted in operation and maintenance manuals Instead of submitted as Record Product Data.

5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

2.4 ELECTRONIC RECORD DRAWINGS, SPECIFICATIONS AND PRODUCT DATA.

A. All drawings must be received by MUSC in AutoCad 2010 format and include all files required to view, modify, and print the complete drawing set. All other electronic drawings must be in “pdf” format, Microsoft Word (compatible with 2007 version), or Microsoft Excel (compatible with 2007 version) unless otherwise agreed upon with Project Manager. Each document should be included as a separate document file, not combined into one PDF file. Each document file shall be named with text such that it is easily understood what information is contained within the file.

B. The General Contractor shall provide the following “record documents” to the Lead Architect prior to Substantial Completion:

1. One electronic list of all Record Documents submitted
2. Original “As-Built Master Mark-up Documents” from the construction site
3. One electronic version of all required installation, operation and maintenance manuals.
4. One electronic version of all warranties, manufacturer start-up, and guarantees.
5. One electronic version of all commissioning documentation.
6. One electronic version of all T&B documentation.
C. The General Contractor shall provide the following “record documents” to the Lead Architect within 15 days of Final Completion:

1. One electronic version of final Submittal Log
2. One electronic version of final Change Order Log
3. One electronic version of all other documentation required by specifications and not already provided.

2.5 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 -EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017810
SECTION 035050

SELF-LEVELING UNDERLAYMENT

PART 1  GENERAL

1.01  SECTION INCLUDES

A. Liquid-applied self-leveling cement based floor underlayment for use below all interior floor coverings where existing flooring, beds, pans, previous patching, glues and mastics have been removed. A minimum 1/8” average thickness is required unless noted otherwise. This includes bathroom floors where finish ceramic tile has been removed to expose either a stable layer of previous tile or the concrete slab.

1.02  RELATED REQUIREMENTS

A. Section 017000 - Execution Requirements: Alteration project procedures; selective demolition for remodeling.

1.03  REFERENCE STANDARDS


1.04  SUBMITTALS

A. See Section 013300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.

1.05  QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience. Installer who is approved by manufacturer for application of underlayment products required for this Project.

B. Manufacturers of the underlayment, adhesives and sheet flooring products systems shall certify in writing that the products are compatible.

C. Conduct a pre-installation conference at the Project site to comply with requirements in Division 1 Section 013100 "Project management and Coordination."

1.06  DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation. Comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.
B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.07 FIELD CONDITIONS
A. Do not install underlayment until floor penetrations and peripheral work are complete.
B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during and 72 hours after installation of underlayment.
C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS
2.01 MANUFACTURERS
A. Cementitious Underlayment: Hydraulic-cement-based, polymer modified product that can be applied in minimum uniform thicknesses of 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. MAPEI Corporation; Product: Ultraplan Easy Ardex Engineered Cements Inc. or comparable product from one of the following:
2. ChemRex.
3. L&M Construction Chemicals, Inc.

2.02 MATERIALS
A. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:

1. Compressive Strength: Minimum 4000 psi after 28 days, tested per ASTM C 109/C 109M.
2. Flexural Strength: Minimum 1000 psi after 28 days, tested per ASTM C 348.
4. Final Set Time: 1-1/2 to 2 hours, maximum.
5. Thickness: Feather edge to maximum 3-1/2 inch.
6. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E 84.

B. Aggregate: Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer.

C. Water: Potable and not detrimental to underlayment mix materials.

D. Bonding Agent/Primer: Manufacturer's recommended type in writing for substrate, conditions and application indicated.

E. Joint and Crack Filler: Latex based filler, as recommended by manufacturer.

2.03 MIXING
A. Site mix materials in accordance with manufacturer's instructions.
B. Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment
and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.

C. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum bi-products, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION


B. Vacuum clean surfaces.

C. Prime substrate in accordance with manufacturer's instructions. Apply bonding agent. Allow to dry.

D. Close floor openings.

3.03 APPLICATION

A. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

B. Install underlayment in accordance with manufacturer's instructions.

C. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft. Apply underlayment to produce uniform surface, screening materials to form smooth transition between floors at different levels. Trowel finish. Feather edges to match adjacent floor elevations.

D. Where slope is required for water to flow to drains, install and test to ensure that water flows to drains and floors are dry within 12 hours of use. Coordinate with finish epoxy floor and epoxy underlayment installer to ensure drainage and drying quality.

D. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

E. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.04 CURING

A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.

B. Air cure in accordance with manufacturer's instructions.

3.05 PROTECTION
A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.

B. Do not permit traffic over unprotected floor underlayment surfaces. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 035050
SECTION 055000

MISCELLANEOUS METALS

PART 1  GENERAL

1.01  SECTION INCLUDES
   A. Steel framing and supports for application where framing and supports are not specified in other Sections.
   B. Steel framing and supports for countertops & miscellaneous equipment.
   C. Miscellaneous steel or aluminum trim.

1.02  RELATED REQUIREMENTS
   A. Section 061053 - Miscellaneous Carpentry
   B. Section 099123 – Interior Painting: Paint finish.

1.03  REFERENCE STANDARDS
   F. ASTM A 325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Tensile Strength (Metric); 2007.

K. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society; 2006 and Errata.


M. AWS D1.6 - Structural Welding Code - Sheet Steel; American Welding Society.

N. SSPC-Paint 15 - Steel Joist Shop Primer; Society for Protective Coatings; 1999 (Ed. 2004).


P. SSPC-SP 2 - Hand Tool Cleaning; Society for Protective Coatings; 1982 (Ed. 2004).

1.04 SUBMITTALS

A. See Section 013300- Submittal Procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

C. Provide Design Calculations, prepared by a qualified professional engineer, for miscellaneous framing and supports.

D. For installed products indicated to comply with design loads, include structural analysis data designed and sealed by the qualified professional engineer responsible for their preparation.

E. Templates: For anchor bolts or other anchoring systems for equipment.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A 36/A 36M.

B. Steel Tubing: ASTM A 500, Grade B cold-formed structural tubing.

C. Pipe: ASTM A 53/A 53M, Grade B Schedule 40, black finish.

D. Slotted Channel Framing: ASTM A 653, Grade 33.

E. Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, galvanized to ASTM A 153/A 153M where connecting galvanized components.

F. Fasteners: Type 304 or 316 Stainless-steel fasteners for exterior use and zinc plated fasteners with coating complying with ASTM B 633, Class Fe/SN 5, where built into exterior walls, of type, grade, and class required by application indicated.

G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM
   A. Extruded Aluminum: ASTM B 221 (ASTM B 221M), 6063 alloy, T6 temper.
   B. Bolts, Nuts, and Washers: Stainless steel.

2.03 FABRICATION
   A. Fit and shop assemble items in largest practical sections, for delivery to site.
   B. Fabricate items with joints tightly fitted and secured.
   C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
   D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 MISCELLANEOUS FRAMING AND SUPPORTS
   A. Provide steel framing and supports not specified in other Sections as needed to complete the Work.
   B. Fabricate Unites from steel shapes, plates and bars of welded construction, unless otherwise indicated. Fabricate to sixes, shapes and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
      1. Fabricate units from slotted channel framing where indicated.
      2. Furnish inserts if units are installed after concrete is placed.
   C. Galvanize miscellaneous framing and supports where indicated.

2.05 FINISHES - STEEL
   A. Prime paint all steel items. Finish metal fabrications after assembly. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
   B. Prepare surfaces to be primed in accordance with SSPC-SP2.
   C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
   D. Shop prime ferrous-metal items not indicated to be galvanized.
1. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with SSPC- SP 3, "Power Tool Cleaning."
2. Apply shop primer to comply with SSPC-PA1, "Paint Application Specification No.1", for shop painting.

E. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1", for shop painting.

1. Stripe paint corners, crevices, bolts, welds and sharp edges.

F. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A 123/A 123M requirements.

G. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A 123/A 123M requirements.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION
A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION
A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.
C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
D. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
E. Field weld components indicated. Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Perform field welding in accordance with AWS D1.1/D1.1M.

G. Obtain approval prior to site cutting or making adjustments not scheduled.

H. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

I. Touch up surfaces and finishes after erection.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION 055000
SECTION 061053 - MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Wood blocking, cants and nailers.
2. Plywood backing panels.

1.3 DEFINITIONS

A. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. ALSC: American Lumber Standards Committee
3. NLGA: National lumber Grades Authority.
5. WCLIB: West Coast Lumber Inspection Bureau.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

B. Deliver interior wood materials that are to be exposed to view only after building is endorsed and weatherproof, wet work other than painting is dry, and HVAC system is operating and maintaining temperature and humidity at occupancy levels.

PART 2 -PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

2. Use Categories:

   a. AWPA U1-UC1: Interior, dry applications, such as furniture, some millwork.

   b. AWPA U1-UC 2: Interior/ potentially damp applications, such as beams, timbers, flooring, framing, millwork, sill plates.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with
requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:
   1. Wood sills, blocking, and similar concealed members in contact with masonry or concrete.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction including the following:
   1. Blocking.
   2. Nailers.
   3. Cants.

B. For items of dimension lumber size, provide Construction or No.2 grade lumber with 19 percent maximum moisture content of any species.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
   1. Spruce-pine-fir (south) or spruce-pine-fir, Construction or 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
   2. Eastern softwoods, No.2 Common grade; NELMA.

D. For blocking not used for attachment of other construction utility, stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

A. General: Provide fasteners d size and type indicated that comply with requirements specified in this Article for material and manufacture.

B. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
C. Nails, Brads, and Staples: ASTM F 1667.


F. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

G. Lag Bolts: ASME B18.2.1.

H. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

I. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.


PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. At carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Do not splice structural members between supports, unless otherwise indicated.

C. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

D. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.
2. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet O.C.

E. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

F. Comply with A’WPA recommendations for applying field treatment to cut surfaces of preservative-treated lumber.

G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.

2. Table 2304.9.1, 'Fastening Schedule', in ICC's International Building Code.

H. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

1. Do not use wood blocking in fire-resistance-rated assemblies unless specifically allowed by authorities having jurisdiction.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 PROTECTION

A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA registered label.

END OF SECTION 061053
SECTION 064116

INTERIOR ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Solid Surface Countertops.

B. Class C Finish for Solid Surface Finishes.

1.02 RELATED REQUIREMENTS

A. Section 061053 - Miscellaneous Carpentry: Support framing, grounds, and concealed blocking.

B. Section 099123 – Interior Painting.

1.03 REFERENCE STANDARDS


C. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2003 (ANSI/BHMA A156.9).

D. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting not less than one week before starting work of this section; require attendance by all affected installers. Meeting shall comply with requirements in Division 1 Sections "Project Management and Coordination".

1.05 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
   1. Show details full size.
   2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
   3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers and other items installed in architectural woodwork.

C. Product Data: For each type of product indicated, including cabinet hardware and accessories and finish materials and processes.

D. Samples: Architectural countertop construction, minimum 3 samples, 12 inches square, for each type, color, pattern and surface finish for proposed countertop and shelf unit substrate and finish.

E. Samples: Solid-surfacing materials, minimum 3 samples, 12 inches square.

F. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets,
demonstrating hardware design, quality, and finish.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

B. Perform countertop construction in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of continuous experience.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

B. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.09 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

B. Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 43 and 70 percent during the remainder of the construction period.

C. Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.

2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

D. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other

PART 2 PRODUCTS

2.01 COUNTERTOPS and BACK SPLASHES

A. Solid Surface Countertops: Solid surface material as specified, conventionally fabricated and eased edge as shown on drawings.

B. Manufacturer: Zodiaq® Surfaces from DuPont (basis of design).
C. Material:
   1. Homogeneous quartz surfaces material.
   2. Material shall have minimum physical and performance properties specified.

D. Thickness:
   1. 2 cm (3/4”).

E. Edge treatment:
   1. Mitered.

F. Seam width:
   1. <1/8”.

G. Sink Mounting:
   1. Undermount.

F. Performance characteristics: Zodiaq® physical properties data sheet:

<table>
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<tr>
<th>Property</th>
<th>Typical Result</th>
<th>Test Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural Strength</td>
<td>&gt;5,300 psi</td>
<td>ASTM D 790</td>
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<tr>
<td>Flexural Modulus</td>
<td>5.3–5.7E⁶ psi</td>
<td>ASTM D 790</td>
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<tr>
<td>Flexural Elongation</td>
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<td>ASTM D 790</td>
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<td>~27,000 psi</td>
<td>ASTM C 170</td>
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<tr>
<td>Compression Strength (Wet)</td>
<td>~24,000 psi</td>
<td>ASTM C 170</td>
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<td>Hardness</td>
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<td>Mohs’ Hardness Scale</td>
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<td>Thermal Expansion</td>
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<td>Gloss (60° Gardner)</td>
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<td>ANSI Z 124</td>
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<td>Colorfastness</td>
<td>Passes</td>
<td>ANSI Z 124.6.5.1</td>
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<tr>
<td>Wear and Cleanability</td>
<td>Passes</td>
<td>ANSI Z 124.6.5.3</td>
</tr>
<tr>
<td>Stain Resistance</td>
<td>Passes</td>
<td>ANSI Z 124.6</td>
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<td>(stain 5.2, chemical 5.5, cigarette 5.4 resistances)</td>
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<tr>
<td>Fungal and Bacterial Resistance</td>
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<td>High Temperature Resistance</td>
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<td>Boiling Water Resistance</td>
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<td>NEMA LD 3.3.5*</td>
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<td>Ball Impact</td>
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<td>Slip Resistance</td>
<td>Above 0.80 for textured models</td>
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Compass 5 Partners, LLC
07/01/16 Interior Architectural Woodwork
Page 3 of 6 BSB East Side First Floor Restroom Renovations
Static Coefficient of Friction 0.89/0.61 (wet/dry)  ASTM C 1028
(as received)

Static Coefficient of Friction 0.87/0.65 (wet/dry)  ASTM C 1028
(with renovator)

Abrasion Resistance 139  ASTM C 501
Specific Gravity 2.44  ASTM D 792
Density ~2400 kg/m3
Water Absorption 0.12%  ASTM C 373
Long- and Short-Term <0.04%  ASTM D 570
Moisture Expansion <0.01% on average  ASTM C 370
Toxicity Passes, LC50=68–128  Pittsburgh Protocol
Flammability For all colors tested  ASTM E 84,
UL 723
(Class I and Class A) and NFPA 255
Flame Spread Index FSI <10 for 3 cm and <15 for 2 cm
Smoke Developed Index SDI <50 for 3 cm and <100 for 2 cm
Nominal Thickness 2 cm and 3 cm
Nominal Weight 10 lb./ft.2 (2 cm)15 lb./ft.2 (3 cm)

* NEMA results based on the NEMA LD 3-2000

2.02 ACCESSORIES (Zodiaq Solid Surface)

A. Joint adhesive:

1. DuPont-approved adhesive to create color-matched seam.

B. Bowl mounting Hardware:

1. Manufacturer’s approved bowl clips, brass inserts and fasteners for attachment of undermount bowls.

2.03 ACCESSORIES (as required)

A. Adhesive: Type recommended by fabricator to suit application.

B. Provide cabinet hardware and accessory materials for a complete installation of architectural woodwork, except for items specified in Division 8 Section "Door Hardware" if included in this Project Manual.

C. Exposed Hardware Finishes: Complying with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA626 for brass or bronze base; BHMA 652 for steel base.
2. Bright Brass: BHMA605 for brass base.

G. For concealed hardware, provide manufacturer’s standard finish that complies with product class requirements in BHMA A156.9.
2.04 SITE FINISHING MATERIALS

A. Finishing: Site finished as specified in Section 099123.

2.05 INSTALLATION MATERIALS

A. Furring, blocking shims and hanging strips: softwood or hardwood lumber, fire retardant treated and kiln dried to less than 15 percent moisture content.

2.06 FABRICATION

A. Interior Woodwork Grade: Unless otherwise indicated, provide Custom-grade interior woodwork complying with reference quality standard.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
   1. Corners of Cabinets and Edges of Solid Wood (Lumber) Members 3/4 inch thick or less: 1/16 inch.

D. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
   1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
   2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.

E. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
   1. Seal edges of openings in countertops with a coat of varnish.

2.07 SHOP FINISHING

A. General: Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

B. Preparation for Finishing; comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.
   1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative panels.
PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.
B. Verify location and sizes of utility rough-in associated with work of this section.
C. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
D. Before installing architectural woodwork, examine shop-fabricated work or completion and complete work as required, including removal of packing and backpriming.

3.02 INSTALLATION

A. Set and secure custom countertops in place, assuring that they are rigid, plumb, and level.
B. Use fixture attachments in concealed locations for wall mounted components.
C. Use concealed joint fasteners to align and secure adjoining cabinet units.
D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
E. Secure countertops using appropriate angles and anchorages.
F. Anchor countertops securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
G. Caulk space between backsplash and wall with sealant specified in Division 7 section "Joint Sealants."
H. Touch up finish work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

3.03 ADJUSTING

A. Adjust installed work. Shim as required to align with walls, soffits etc.
B. Adjust moving or operating parts to function smoothly and correctly.
C. Damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

3.04 CLEANING

A. Clean counters, shelves, hardware, fittings, and fixtures. Lubricate parts as required for smooth operation.

END OF SECTION 064116
SECTION 078400

FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping of all joints and penetrations in fire-resistance rated and smoke-resistant assemblies, whether indicated on drawings or not.

1.02 RELATED REQUIREMENTS

A. Section 017000 - Execution Requirements: Cutting and patching.

1.03 REFERENCE STANDARDS


1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on product characteristics, performance ratings, and limitations.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section and:

1. Having the necessary experience, staff and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its through-penetration firestop system products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.

2. Assign installation of through-penetration firestop systems in Project to a single qualified installer.

C. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project, curing time, and mixing instructions for multicomponent materials.

D. Store and handle materials for through-penetration firestop systems to prevent deterioration or damage due to moisture, temperature changes, contaminants, or other causes.
E. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.

F. Coordinate sizing of sleeves, opening, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.

G. Notify Owner's inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations as applicable.

H. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by Owner's inspecting agency and building inspector, if required by authorities having jurisdiction.

1.06 FIELD CONDITIONS

A. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 FIRESTOPPING SYSTEMS

A. Available products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include, but are not limited to, those systems indicated that are produced by one of the following manufacturers:
   1. Hilti, Inc.
   2. 3M; Fire Protection Products Division.

B. Provide through-penetration firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

C. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
   1. Permanent forming/damming/backing materials, including the following:
      a. Slag-/Rock -wool-fiber insulation.
   2. Temporary forming materials.
   3. Collars.
   4. Steel Sleeves.

D. Fill Materials: Provide through-penetration firestop systems containing the types of fill materials as appropriate for the type and rating of through-penetration. fill materials are those referred to in directories of referenced testing and inspecting agencies as "fill," "void", or " cavity" materials.

2.02 MATERIALS

A. Firestopping Sealants: Provide only products having lower volatile organic compound
(VOC) content than required by South Coast Air Quality Management District Rule No.1168.

B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

   A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

   A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.

   B. Remove incompatible materials that could adversely affect bond.

3.03 INSTALLATION

   A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

3.04 CLEANING

   A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

   A. Protect adjacent surfaces from damage by material installation.

END OF SECTION 078400
SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Coordinate with finish schedule notes for limited repair of sealants at windows, walls, casework and other locations as noted.

1.2 SUMMARY

A. This Section includes joint sealants for the following applications:

   1. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Perimeter joints of exterior openings where indicated.
      c. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
      d. Joints between plumbing fixtures and adjoining walls, floors, and counters.
      e. Joints between casework and adjoining walls, floors, counters and other materials.
      f. Joints between ceiling grid and adjoining walls, ceilings and other materials.
      g. Other joints as indicated.

B. Related Sections include the following:

   1. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

1.3 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.
B. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS
A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

D. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant ES-2:
   1. Available Products:
      a. Pecora Corporation; 898 Sanitary Silicone Sealant, white.
      b. Tremco; Tremsil 600 White.
      c. GE Silicones; Sanitary 1700
      d. Dow Corning Corp; 786
   2. Type and Grade: S (single component) and NS (nonsag).
   4. Use Related to Exposure: NT (nontraffic).
   5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

E. Single-Component Pourable Urethane Sealant ES-3:
   1. Available Products:
      a. Sika Corporation, Inc.; Sikaflex - 1CSL.
      b. Sonneborn, Division of ChemRex Inc.; SL 1.
   2. Type and Grade: S (single component) and P (pourable).
   4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
   5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.

F. Single-Component Non-sag Urethane Sealant ES-4:
   1. Available Products:
2. Type and Grade: S (single component) and NS (non-sag).
4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.

2.4 LATEX JOINT SEALANTS

A. Latex Sealant LS-1: Comply with ASTM C 834, Type P, Grade NF.

B. Available Products:
   1. Pecora Corporation; AC-20+.
   2. Sonneborn, Division of ChemRex Inc.; Sonolac.
   3. Tremco; Tremflex 834.

2.5 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) O (open-cell material) B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
   a. Concrete.
   b. Masonry.
   c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.

4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   a. Metal.
   b. Glass.
   c. Glazed surfaces of ceramic tile.
B. **Joint Priming:** Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. **Masking Tape:** Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

A. **General:** Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. **Sealant Installation Standard:** Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. **Acoustical Sealant Application Standard:** Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. **Tooling of Nonsag Sealants:** Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
3. Provide flush joint configuration where indicated per Figure 5B in ASTM C 1193.
4. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in ASTM C 1193.
   
   a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A. Vertical movement joints on exposed interior surfaces of exterior walls:
   1. Joint sealant: Single component nonsag polyurethane sealant:
   2. Joint-Sealant Color: As selected by Architect from manufacturer’s full range.

B. Interior perimeter joints of exterior openings:
   1. Joint sealant: Single component nonsag polyurethane sealant:
   2. Joint-Sealant Color: As selected by Architect from manufacturer’s full range.

C. Interior joints between plumbing fixtures and adjoining walls, floors, and counters.

D. Interior control, expansion, and isolation joints in horizontal traffic surfaces of ceramic tile flooring and other interior horizontal traffic surfaces.
   1. Joint Sealant: Multicomponent pourable urethane sealant.
   2. Joint-Sealant Color: As selected by Architect from manufacturer’s full range.
E. Perimeter joints between interior wall surfaces and frames of interior doors, window, elevator entrances and cabinets.


END OF SECTION 079200
SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

   1. Standard hollow metal frames.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating, temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:

   1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
   2. Locations of reinforcement and preparations for hardware.
   3. Details of each different wall opening condition.
   4. Details of conduit and preparations for power, signal, and control systems.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

   1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.

C. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-
protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section “Project Management and Coordination”.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to finish of factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (102-mm-) high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.8 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amweld Building Products, LLC.
2. Benchmark; a division of Therma-Tru Corporation.
3. Ceco Door Products; an Assa Abloy Group company.
4. Curries Company; an Assa Abloy Group company.
5. Fleming Door Products Ltd.; an Assa Abloy Group company.
7. Mesker Door Inc.
8. Pioneer Industries, Inc.
9. Steelcraft; an Ingersoll-Rand company.
2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A60 (ZF180) metallic coating.

D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.
   1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.3 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Interior Frames: Fabricated from cold-rolled steel sheet unless metallic-coated sheet is indicated.
   1. Fabricate frames with mitered or coped corners.
   2. Fabricate frames as face welded unless otherwise indicated.
   3. Frames for Level 2 Steel Doors: 0.053-inch- (1.3-mm-) thick steel sheet.
   4. Frames for Wood Doors: 0.067-inch- (1.7-mm-) thick steel sheet.
   5. Frames for Borrowed Lights: 0.042-inch- (1.0-mm-) thick steel sheet.

C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.4 FRAME ANCHORS

A. Jamb Anchors:
1. **Masonry Type:** Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (50 mm) wide by 10 inches (250 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick.

2. **Stud-Wall Type:** Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.

**B. Floor Anchors:** Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (50-mm) height adjustment. Terminate bottom of frames at finish floor surface.

### 2.5 STOPS AND MOLDINGS

**A. Moldings for Glazed Lites in Doors:** Minimum 0.032 inch (0.8 mm) thick, fabricated from same material as door face sheet in which they are installed.

**B. Fixed Frame Moldings:** Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated.

**C. Loose Stops for Glazed Lites in Frames:** Minimum 0.032 inch (0.8 mm) thick, fabricated from same material as frames in which they are installed.

### 2.6 FABRICATION

**A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle.** Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

**B. Tolerances:** Fabricate hollow metal work to tolerances indicated in ANSI/NAAMM-HMMA 861.

**C. Hollow Metal Frames:** Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. **Welded Frames:** Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
2. **Sidelight and Transom Bar Frames:** Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
3. **Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.**
4. **Grout Guards:** Weld guards to frame at back of hardware mortises in frames to be grouted.
5. **Floor Anchors:** Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
6. **Jamb Anchors:** Provide number and spacing of anchors as follows:
   a. **Masonry Type:** Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:
      1) Two anchors per jamb up to 60 inches (1524 mm) high.
      2) Three anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
3) Four anchors per jamb from 90 to 120 inches (2286 to 3048 mm) high.
4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 120 inches (3048 mm) high.

b. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:

1) Three anchors per jamb up to 60 inches (1524 mm) high.
2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.
5) Two anchors per head for frames above 42 inches (1066 mm) wide and mounted in metal-stud partitions.

7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
   a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
   b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8 ANSI/NAAMM-HMMA 861.
2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

F. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow metal work.
5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

2.7 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer’s standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

B. Factory-Applied Paint Finish: Manufacturer’s standard, complying with ANSI/SDI A250.3 for performance and acceptance criteria.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
   1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
   3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION
A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 HMMA 840.
1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
   a. At fire-protection-rated openings, install frames according to NFPA 80.
   b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
   c. Install frames with removable glazing stops located on secure side of opening.
   d. Install door silencers in frames before grouting.
   e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
   f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
   g. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
   a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.


4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.

5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.

6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

7. In-Place Gypsum Board Partitions: Secure frames in place with postinstalled expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

8. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.

9. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
   a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
   c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113
SECTION 081416 - FLUSH WOOD DOORS

PART 1  GENERAL

1.01  SUBMITTALS

A. See Section 013300 - Submittal Procedures.
B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
C. Specimen warranty.
D. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria.
E. Samples: Submit two samples of door veneer, 4" x 4" inch in size illustrating wood grain, stain color, and sheen.
F. Manufacturer's Installation Instructions: Indicate special installation instructions.
G. Warranty, executed in Owner's name.

1.02  QUALITY ASSURANCE

A. Hinge and Strike shall be field verified by the door supplier prior to ordering doors. Width of doors to be verified prior to ordering.
B. Maintain one copy of the specified door quality standard on site for review during installation and finishing.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
C. Installed Fire Rated Doors: Conform to NFPA 80 for fire rated class as indicated.

1.03  DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.
B. Accept doors on site in manufacturer's packaging. Inspect for damage.
C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.04  WARRANTY

A. See Section 017700 - Closeout Procedures for additional warranty requirements.
B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2  PRODUCTS

2.01  MANUFACTURERS

A. All Doors: Algoma (Basis of Design)
2.02 DOORS AND PANELS

A. All Doors: See drawings for locations and additional requirements.
   1. Quality Level: Custom Grade, Extra Heavy Duty performance, in accordance with WDMA LS.1-A.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with NFPA 252, UL 10B, or UBC Standard 7-2-94 ("neutral pressure"); UL or WH (ITS) labeled without any visible seals when door is open.
   3. Wood veneer facing with factory transparent finish where indicated on drawings.

2.03 DOOR AND PANEL CORES

A. Doors: Particle core, 20 minute Type PC, plies and faces as indicated above.

2.04 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: Plain Sliced Birch stained to match existing. Submit stain sample on door substrate for approval.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.
B. Cores Constructed with Stiles and Rails:
C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
E. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with specified quality standard:
   1. Transparent Finish: Transparent catalyzed polyurethane, Premium quality, matte sheen to be selected by Architect.
B. Factory finish doors in accordance with approved sample.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
C. Use machine tools to cut or drill for hardware.
D. Coordinate installation of doors with installation of frames and hardware.

3.03 ADJUSTING

A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

3.04 SCHEDULE - See Drawings

END OF SECTION 081416
SECTION 087110 – Door Hardware

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Definition: "Finish Hardware" includes items known commercially as finish / security hardware and systems which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.

B. Extent of finish/security hardware required is indicated on drawings and in schedules.

C. Types of finish hardware required include, but are not limited to, the following:

Butt Hinges/Continuous Hinges
Pivots
Bi-fold Door Set
Lock cylinders and keys
Lock and latch sets
Exit devices
Pull units
Closers
ADA Operators and actuators
Door trim units
Weatherstrip for exterior doors
Protection plates
Thresholds, Gaskets, and Door Bottoms
Electrified Hardware
Coat Hooks at office doors

D. References

NFPA – 70 – National Electric Code
ADA – The Americans with Disabilities Act – Title III – Public Accommodations
ANSI-A156.5-American National Standards Institute – Auxiliary Locks and Associated Products
1.3 RELATED WORK
   A. Flush Wood Doors - Section 081416.

1.4 QUALITY ASSURANCE

   A. Manufacturer: Obtain each type of hardware (ie lock sets / security equipment) from a single manufacturer, although several may be indicated as offering products complying with requirements.

   B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware and installation in the project's vicinity for a period of not less than 4 years. The supplier shall be, or shall employ, a certified Architectural Hardware Consultant (AHC) who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to the Owner, Architect and the Contractor. The certified architectural hardware consultant (AHC) shall prepare all hardware and wiring diagrams. This Supplier is responsible for proper coordination of all finished hardware with related sections to insure compatibility of products.

   C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware, which has been tested and listed by UL / WHI or FM for types and sizes of doors required and complies with requirements of door and door frame labels. Provide door seals to meet Positive Pressure Testing UL10C and UBC7 – 2 as required.

   D. Where emergency exit devices are required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL / WHI or FM label on exit devices indicating "Fire Exit Hardware".

   E. Thru-bolt door closers and exit devices as standard application. Verify and coordinate with the MUSC Project Manger. If solid blocking is specified in the wood door specification, thru-bolts may not be required for hardware attachment in these doors.

   F. Unless otherwise specified, provide lever handle locksets ADA compliant.

   G. Pre-Installation Meeting: The Contractor shall initiate and conduct a jobsite meeting with the hardware supplier and the Installer, and all related trades for mechanical and electrical hardware. This meeting shall convene at least one month prior to commencement of the related work, specifically, the electrical rough-in for coordination of electrified hardware applications. All approved shop drawings,
wiring diagrams, and schedules shall be made available to all related trades as required for work to be performed. The Owner’s representative shall attend all pre-install meetings. In addition to reviewing and the coordinating the applications, the hardware supplier shall, with the assistance of the manufacturer’s representative, provide a review and training to the MUSC Lock Shop and the Installers of the following products prior to installation of these products: closers, exit devices, locks, and electrified hardware. The Hardware Supplier shall provide a written certificate of attendance to the Installers at the training. The Hardware Supplier shall provide the Contractor the names of the training attendees.

H. Keying Meeting: Not required. Owner shall self-perform all keying.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer’s technical product data for each item of hardware in accordance with Division-1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.

B. Hardware Schedule: Submit seven copies of schedule in accordance with Division 1 – "Submittals", General Requirements. Schedule to be in vertical format, listing each door opening, including: Keying Information, handing of opening, all hardware scheduled for opening or otherwise required to allow for proper function of door openings as intended, and finish of hardware. At doors with door closers or door controls, include degree of door opening. All submittals (schedules, cut sheets, diagrams) shall be reviewed by the MUSC project manager & MUSC Locksmith prior to ordering of material. Supply the schedules and all templates within two (2) weeks from date purchase order is received by the door openings supplier. Furnish wiring diagrams (elevation, riser, and point-to-point) for all electrified hardware.

1. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into a vertical format with "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

   a. Type, style, function, size and finish of each hardware item.
   b. Name and manufacturer of each item.
   c. Fastenings and other pertinent information.
   d. Location of hardware set cross-referenced to indications on
   e. Drawings both on floor plans and in door and frame schedule.
   f. Explanation of all abbreviations, symbols, codes, etc., contained in schedule.
   g. Mounting locations for hardware.
   h. Door and frame sizes and materials.
   i. Keying information.
   j. Describe door operation function with the electrified hardware.

C. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames), which is critical in the project construction schedule. Include with
schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.

D. Omitted

E. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit samples of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.

F. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location, coordination and installation of hardware.

G. Manufacturer’s Catalog Cuts: Submit manufacturer’s cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.

I. Wiring Diagrams: Provide complete wiring diagrams for each opening requiring electrified hardware. Provide a copy with each hardware schedule submitted after approval. Supply a copy with delivery of hardware to job site and another copy to the Owner at time of job completion. All electrical components to be listed by opening in the hardware submittals.

J. Operational Descriptions: Provide complete operational descriptions of electronic components listed by opening in the hardware submittals. Operational descriptions to detail how each electrified component functions within the opening incorporating all conditions of ingress and egress. Provide a copy with each hardware schedule submitted for approval. Supply another copy with delivery of hardware to job site and another copy to the Owner upon project completion. **Review these descriptions with all related trades at the Pre-Install meetings.**

K. Elevation Drawings: Provide elevation drawings of electronic hardware and systems identifying locations of the system components with respect to their placement in the door opening. Provide a copy with each hardware schedule submitted for approval. Supply another copy to the Owner upon project completion.

1.6 PRODUCT HANDLING

A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Inventory hardware jointly with the General Contractor, representatives of hardware supplier / hardware installer until each is satisfied that count is correct.

C. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.
D. The General Contractor shall provide secure lock-up for hardware and security equipment delivered to the project, but not yet installed. Control handling and installation of hardware items, which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

1.7 SEQUENCING AND SCHEDULING

A. Deliver all finish hardware to the job site in a timely manner so not to delay progress of other trades.

1.8 WARRANTY

A. Provide manufacturers’ warranties as follows:
   2. Mortise Locksets: 10-year warranty, minimum, against manufacturing defects and workmanship.
   3. Door Closers: 10-year warranty, minimum, against manufacturing defects and workmanship.
   4. Exit Devices: 3-year warranty, minimum, against manufacturing defects and workmanship.
   5. ADA Operators: 2-year warranty, minimum, against manufacturing defects and workmanship.
   6. Balance of items shall carry a manufacturer’s 1-year warranty against manufacturing defects and workmanship.

B. During the warranty period, replace defective product, including labor, materials, and other costs incidental to the work. Upon written notice from the MUSC Project Manger, the Contractor and the Hardware Supplier shall inspect the work within 24 hours after completion, and provide written receipt of completion of the warranty work to the MUSC Project Manager.

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is indicated in the Hardware Sets at the end of this section. Products are identified by using hardware designation numbers of the following:

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Specified Manufacturer</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butts:</td>
<td>Ives</td>
<td>IVE</td>
</tr>
<tr>
<td>Continuous Hinges</td>
<td>Ives</td>
<td>IVE</td>
</tr>
<tr>
<td>Locksets:</td>
<td>Corbin-Russwin</td>
<td>C-R</td>
</tr>
<tr>
<td>Pocket door locksets</td>
<td>Baldwin</td>
<td>BAL</td>
</tr>
<tr>
<td>Cylinders/Cores</td>
<td>Corbin-Russwin</td>
<td>C-R</td>
</tr>
<tr>
<td>Silencers:</td>
<td>Ives</td>
<td>IVE</td>
</tr>
<tr>
<td>Stops:</td>
<td>Ives</td>
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<tr>
<td>Item</td>
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<tr>
<td>Closers</td>
<td>LCN</td>
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<tr>
<td>Thresholds</td>
<td>National Guard</td>
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<tr>
<td>Gasket/Door Bottoms</td>
<td>National Guard</td>
<td></td>
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<tr>
<td>Kickplates</td>
<td>Ives</td>
<td></td>
</tr>
<tr>
<td>Pulls</td>
<td>Ives</td>
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</tr>
<tr>
<td>Exit Devices</td>
<td>Von Duprin</td>
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</tr>
<tr>
<td>Flush Bolts</td>
<td>Ives</td>
<td></td>
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<tr>
<td>Automatic Flush Bolts</td>
<td>Ives</td>
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<tr>
<td>Magnetic Holders</td>
<td>LCN</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Hardware</td>
<td>Ives, Glynn-Johnson</td>
<td></td>
</tr>
<tr>
<td>Electric Strikes</td>
<td>Von Duprin</td>
<td></td>
</tr>
<tr>
<td>Power Supplies/Power Transfers</td>
<td>Von Duprin</td>
<td></td>
</tr>
<tr>
<td>Door Position Switch</td>
<td>Schlage Electronics</td>
<td></td>
</tr>
<tr>
<td>Overhead Stops</td>
<td>Glynn-Johnson</td>
<td></td>
</tr>
</tbody>
</table>

B. Provide products as hereafter specified. Substitutions other than those manufacturers listed, must be approved, in writing, via addenda, prior to bid. Procedure for substitutions shall be as outlined in Division 1. No substitutions will be considered after award of contract.

### 2.2 MATERIALS AND FABRICATION

A. General:

1. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
2. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
3. Manufacturer's identification will be permitted on rim of lock cylinders only.
4. Finishes:
   a. 626/652 for all finished metal hardware items except as 630 is otherwise indicated. Door closers to be powder coated to match 652/626. Exit devices to be US26D with stainless steel touchbars.
5. Lockset Design: Lever handle design shall be “RWA” for mortise locks.
6. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware, which has been prepared for self-tapping sheet metal screws, except, as specifically indicated.
7. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
8. Provide concealed fasteners for hardware units which are exposed when door is open.
closed, except to extent no standard units of type specified are available with concealed fasteners. Use thru-bolts for closer and exit devices. Coordinate wood door blocking at all wood doors and all fire rated wood doors. Provide sleeves for each thru-bolt or use sex screw fasteners.

9. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner’s continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3  HINGES AND BUTTS

A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

B. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1. Steel Hinges: Steel pins.
5. Interior Doors: Non-rising pins.
6. Tips: Flat button, or Hospital Tips as required for project type. Match plug finish to match hinge leaves
7. Number of hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30” of additional height.

D. Continuous Geared Hinges: Hinges shall be manufactured of 6063-T6 aluminum alloy with anodized finish, except where noted for custom paint finish to match the Door/Frame assembly. Door and frame leaves to be machined, anodized and assembled as a matched pair. Door and frame leaves to be anodized after all machining and drilling processes are complete. All hinge profiles shall be manufactured to template screw locations, with heavy duty hole patterns identical as to number and placement of holes. All hinge profiles to be manufactured to template bearing locations, with heavy duty at 2-9/16” spacing with minimum of 32 bearings for 83” – 85” length hinge. All continuous hinges shall be certified to ANSI 156.25, Grade 2, and shall be tested and approved UL 10C (90 minutes). Field modifications for cutting shall be permitted up to 6” from the bottom.

E. Continuous Pin and Barrel Hinges: Pin and Barrel Continuous Hinges: ANSI/ BHMA A156.26 Grade 1

1. Provide full mortise, non-handed, full height hinges with symmetrically template hole pattern made from 14 gauge, 304 stainless steel.
2. Each knuckle shall be approximately 2”, including split nylon bearing at each separation.
3. Pin Diameters: 1/4”
4. External Barrel Diameter; 7/16”
5. Finish: BHMA #630 (US32D)
6. Acceptable Manufacturers:
   a. Hager: 790-900
   b. Ives: 700 Series
   c. Markar: FM 300 Series

F. Floor Closers shall not be specified for any MUSC projects.

2.4 LOCK CYLINDERS AND KEYING

A. General: Supplier will meet with Owner to finalize cylinder requirements and obtain final instructions in writing. Owner shall key all permanent cores.

B. Review the keying system with the MUSC Lock Shop and provide the keyway type required. MUSC Lock Shop will key all cylinders.

   1. Equip locks and cylinders with cylinders for interchangeable core, 7-pin housings with construction cores as specified. All cylinders and cores shall be by Corbin-Russwin. The Owner shall provide and install all permanent keyed cores.

E. Furnish temporary Construction Keyed cores for the duration of the construction period. Construction cores shall be furnished as – (Corbin Russin) as L4 keyway x Red Core x 7 pin.

   The Hardware Supplier shall furnish the construction cores and they shall remain the property of the Hardware Supplier. The Contractor shall return all construction cores and keys to the Hardware Supplier at project completion. **Furnish ten (10) Construction Keys and one (1) control key (35-003) for the General Contractor’s use during project construction.**

F. Equip locks with cylinders that comply with performance requirements for Grade 1 cylinders as listed in ANSI A156, and are UL-listed.

G. Omitted

2.5 LOCKS, LATCHES AND BOLTS

A. Locksets shall be as specified: Mortise type lockset shall be Series 1000, Grade 1 Operational and Security, UL Listed for 3-hour fire door. Approved manufacturers: Corbin-Russwin ML2000 series. Strikes: Provide manufacturer’s standard wrought box strike for each latch or lock bolt, with ANSI curved lip extended to protect frame, finished to match hardware set. Where specified, provide a vandal resistant trim. At single toilet rooms specify privacy as ML2060 function RWA with 720F222 indicator.

B. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.
C. Lock Throw: Provide solid stainless steel 1 ½” deadbolt with 1” minimum throw. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

D. Provide 3/4” minimum throw on latch bolts.

E. Flush Bolt Heads: Minimum of 1/2” diameter rods of brass, bronze or stainless steel, with minimum 12” long rod for doors up to 7'-0” in height. Provide longer rods as necessary for doors exceeding 7'-0” in height.

F. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.

G. Rabbeted Doors: Where rabbeted door stiles are indicated, provide special rabbeted front on lock and latch units and bolts.

H. Keypad Stand-alone Programmable Locksets: To be determined by the MUSC Locksmith. Finish shall be 626.

2.6 PULLS/ PUSH PLATES

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through-bolted for matched pairs, but not for single units. Furnish type and size as specified in Hardware Sets.

2.7 CLOSERS AND DOOR CONTROL DEVICES

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.

B. Closers: All door closers shall be of one manufacturer to provide for proper installation and servicing after installation. All closers shall be inspected after installation by a factory representative to ensure proper adjustment and operation. A report shall be filed with the architect after said visit has been made. Closer shall carry a manufacturer's TEN YEAR WARRANTY for hydraulic units and 2 year warranty for electrical and/or handicap power assist door closers against manufacturing defects and workmanship. All closers shall be high strength cast iron with one piece forged steel piston. PRV [ pressure relief valves ] are not acceptable.

C. Parallel Arm Closers: Shall incorporate one piece solid forged steel arms with bronze bushings. 1-9/16” x 1/2” steel stud shoulder bolts, shall be incorporated in regular arms, hold open arms, arms with stop built in, arms with hold open and stop built in. All other closers shall have forged steel main arms for strength, and durability.

D. Built-In Stops: Where closers with built-in positive stops are used, the stops shall be
of one piece cast malleable iron material with built in springs. Where required, the
hold-open assembly handle for these stops shall rotate on ball bearings.

E. All door closers shall pass UL10C positive pressure fire test.

F. Non-sized and specific to door mounting: All exterior closers shall be non-sized to
provide a full range of Size 1 to 5 closing power, and shall be handed.

G. Hydraulic Fluid: All closers, with the exception of interior electronic closers, shall
utilize temperature stable fluid capable of withstanding temperature ranges of 120
degrees F. to -30F. without requiring seasonal adjustment of closer speed to properly
close the door. Fluid shall be nonflammable.

H. All closers shall have a powder coat finish on closer body, arm, cover and adapter
plate. Furnish special rust inhibiting pre-treat coating, as specified, for closer
body, arm, cover and plates before the powder coat finish.

I. Provide all drop plates, shoe supports, templates, etc. to properly mount closers
according to manufacturers’ recommendations.

J. The preferred manufacturer: LCN 4111/4011. Acceptable manufacturers: Sargent
281 series; Corbin-Russwin DC8200 series.

K. ADA Operators: Furnish ADA low energy operators as defined by ANSI Standard
A156.19, such as LCN 9550 series as specified. Electro-mechanical operators shall
comply with 1990 ADA standard for opening force, speed, and time to close. A
control box shall provide all electrical functions as self-contained. Operator shall
allow for manual operation for regular pedestrian traffic door with no increased
opening resistance from the motor. Operators shall be furnished with Push N Go
feature, and Auto Reverse function. Operators shall be provided with a
microprocessor.

7. Surface Mount, Simultaneous Pair, push side mount.
8. Finish shall be anodized aluminum.
9. Provide a minimum two year warranty.
10. Operators shall be field serviceable.
11. Operators shall include control box with:
    a. Digital keypad user interface.
    b. Adjustable back-check position.
    c. Auto-reverse on closing.
    d. Relay for electric lock.
    e. Alternate action open/close.
    f. Power Boost Disable.
12. Manufacturer’s representative shall conduct installation training for the
    installer prior to operators being installed. No service contract shall be
    required.
13. Furnish actuators and bollard post mounting requirements to all related trades
    at least one month prior to installation. ADA operator installation instructions,
    wiring, and mounting requirements shall be reviewed at the project pre-
14. Actuators shall be capable of wireless transmission with capable receiver as specified.

L. ADA Operators: Furnish ADA low energy operators as defined by ANSI Standard A156.19
   Electro-Hydraulic Operators: ANSI A156.19
1. Power door operator shall conform to ADA law, section 4.13.12; ANSI A117.1.
2. Power operator shall combine an electronic control system with heavy-duty electrically powered hydraulic door closer to provide easy access for physically handicapped persons and shall provide full closing force to close and latch door.
3. System shall have a motor/clutch assembly controlled by a microprocessor based control module to open doors slowly to 90 degrees. Control System shall be designed to provide adjustable opening force, delay times adjustable up to 60 seconds, adjustable closing power, and shall comply with ADA reduced opening force requirements.
   a. Furnish system complete with components necessary for proper installation, including door closer (operator), actuators at each side of door, connectors, wiring, on/off switch, and other components as needed.
   b. Unit to have a built-in power supply with maximum output load of 1.0 amperes @ 12VDC or 24VAC.
   c. Both high voltage and low voltage output circuits to be protected by electronic circuit breakers that will reset to normal operation after a fault is corrected. The use of replaceable fuses is not acceptable.
   d. Coordination of power operator and security hardware shall be the responsibility of the power operator supplier and installer.


M. Closers shall be thru-bolt mounted, unless otherwise directed.

2.8 EXIT DEVICES

A. General: All devices shall be of one manufacturer to provide for proper installation and servicing. Devices shall be furnished non-handed and capable of direct field conversion for all available trim functions. All devices shall carry a three year warranty against manufacturing defects and workmanship. All devices shall be either narrow-stile cross-bar type or push-through touch pad design as specified. No exposed touch bar fasteners, no exposed cavities when operated.

B. Furnish all touch-pad type devices with stainless steel touch bars. Plastic parts are not acceptable.

C. Furnish all touch-pad type exit devices with deadlocking latch bolts. Latchbolts shall be moly-coated to reduce friction against the strike.
D. Furnish all touch-pad exit devices with heavy duty cast metal end caps, flush with device housing.

E. Furnish roller strikes with all rim exit devices.

F. Furnish stabilizers similar to Von Duprin 154 with all removable mullions.

G. Outside Trim: Shall be heavy duty type and fastened by means of concealed welded lugs and thru-bolts from the inside. Trim shall be forged brass with a minimum average thickness on the escutcheon of .130. Plate with trim shall be brass with minimum average thickness of .090 and have forged pulls. Where Lever Handles are specified provide 996 type Break Away Trim. Where outside trim is specified, furnish trim that thru-bolts directly to the exit device center case.

H. Furnish cylinders with all lockable exit devices.

I. Furnish required filler plates and shim kits for flush mounting of exit devices on all doors requiring same.

J. Springs: Compression type only. Torsion springs are not acceptable.

K. Exit device: Von Duprin 35A/98 series or approved equal. Corbin-Russwin ED5200 series is acceptable, in the hardware sets. Electrified devices shall include the QEL feature at all rim-mounted applications.

L. Exit devices shall be furnished with thru-bolts. Acceptable exit device applications: Rim and Surface Vertical Rod. Removable Mullions are not acceptable, unless it is the only approved application for a fire-rated pair of doors.

2.9 DOOR TRIM UNITS

A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screws.

B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

C. Fabricate protection plates (armor, kick or mop) not more than 2” less than door width on stop side and not more than 1” less than door width on pull side, x the height indicated.

G. Metal Plates: Stainless steel, .050" (U.S. 18 ga.), bevel 3 edges: top and both sides.

2.10 GASKETS, DOOR BOTTOMS

A. General: Except as otherwise indicated, provide continuous weatherstripping at each
edge of every exterior door leaf, except where stated the door manufacturer will provide the weatherstripping. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated. All gaskets for fire label doors shall comply the door manufacturers label approvals. Fire-label wood doors shall be furnished as “Category A” type with the intumescent seal, integrated into the door construction.

2.11 THRESHOLDS

A. General: Except as otherwise indicated provide standard aluminum threshold unit of type, size and profile as shown or scheduled.

B. Provide thresholds that are 1” wider than depth of frame.

C. **Provide thresholds with return closed ends where specified in Hardware Sets.**

2.12 DOOR SILENCERS

A. All hollow metal frames shall have gray resilient type silencers. Quantity (3) on single doors and quantity (2) on pair of doors.

2.13 Omitted

2.14 KEY CONTROL SYSTEM

A. No key cabinet or key control system shall be specified for any MUSC project.

2.15 ELECTRIFIED HARDWARE

A. Where scheduled, supply electrified function as specified. Electric exit devices shall be furnished with electric latch retraction feature or electrified locking for outside trim. All electric devices shall be free egress at all times. The Owner has an existing networked access control system. The Owner shall provide the card readers and the credentials to the project. The Owner’s system shall also allow for cameras, monitoring, alarms, and client software. All wiring, junction boxes, and final connections for electrified hardware shall be furnished and installed by the electrical contractor.

B. General Electrified Hardware:

   a. Electrically operated locking devices shall be connected to building fire and smoke/heat alarm systems. Activation of alarm system shall disengage electric locking mechanism allowing free, unrestricted egress through opening.

   b. Coordinate installation of electrically operated hardware to insure proper size
wire is used to power load(s).

c. Voltage drop shall not exceed 5% of load’s stated voltage.

d. Wire length shall equal distance to load and back to supply (lock 50ft from power supply; wire length = 100 ft.) Two loads powered by on pair of wires draw double current and have half (50%) of resistance.

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Resistance Per 1,000 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Gauge</td>
<td>1.6 OHM</td>
</tr>
<tr>
<td>14 Gauge</td>
<td>2.5 OHM</td>
</tr>
<tr>
<td>16 Gauge</td>
<td>4.1 OHM</td>
</tr>
<tr>
<td>18 Gauge</td>
<td>6.4 OHM</td>
</tr>
<tr>
<td>20 Gauge</td>
<td>10.1 OHM</td>
</tr>
<tr>
<td>22 Gauge</td>
<td>16.0 OHM</td>
</tr>
</tbody>
</table>

e. Furnish electrically operated hardware with power supply units, junction boxes, and other accessories needed for a complete, efficient installation. Coordinate electrified hardware requirements with all related trades at the Pre-Installation meeting, prior to project electrical rough-in.

f. **All electrical applications shall be verified with the MUSC Project Manager during the shop drawing process.**

g. **Electrified Interior opening:** Provide magnetic locks, or possibly an electric strike.

h. **Provide new stairwell hardware to match existing including electrified trim for fail-safe application.**

D. Components Specified:

1. **Power Transfers:** Furnish type recessed into the door and frame to allow electrical power to pass from door to frame without the use of door cords or butt type transfer hinges for electric latch retraction function. Furnish manufacturer’s back box of zinc dichromated treated steel, both power transfer and thru-wire butt hinge. Back boxes shall be provided to the hollow metal frame manufacture for installation on the frame prior to frame shipped to jobsite. Preferred application: Von Duprin EPT 2 or 10.

2. **Exit Sensors:** Furnish devices as a passive infrared detector specifically designated for “request to exit” applications. This device shall have an adjustable relay latch time, and shall be internal pointable, and shall provide two Form “C” sets of relay contacts. Coverage area shall be up to 8 by 10 feet. Coverage shall depend on mounting height and pattern angle. Surface mounting height range shall be from 7 to 15 feet. Relay latch time shall be adjustable up to 60 seconds. The unit shall include an externally visible activation LED.

3. **Magnetic Locks:** Furnish only as a choice for interior traffic control.
application. Magnetic locks shall not be specified or furnished for Exterior entry doors or stairwell applications. Magnetic locks shall be fail-safe, and shall be compliant with all current life safety codes, including all related and required components: power supply, request to exit sensors, dedicated push buttons. Shear-Lock type magnetic locks are not acceptable. Preferred magnetic lock: Schlage Electronics: M450P/452P or M490P/M492P.

4. Power Supply: Furnish type required for the specified electrical function. Power supply shall have regulated output that is field selectable for either 24VDC @ 2 amps or 12VDC @ 4 amps. Standard input at 120VAC @ 1 amp or 240VAC @ 0.5 amp. Power supply unit shall be capable of handling up to 16 amp current inrush to retract exit device latchbolt.

5. Door Position Switch: Furnish concealed type in frame and door. Furnish as single pole, double throw. Verify application requiring a DPS. Request to exit switch on the interior of opening, shall also be specified when DPS is specified for monitoring/ alarm of secured door.

6. Electric Un-lock Trim at Exit Device applications only. Typical application is stairwell doors where a card reader is specified for the stair side, and exit device is on the egress side. Electric Mortise locks are not acceptable. Electric un-lock shall be fail-safe, which allows free re-entry upon emergency relay to unlock the trim.

7. Electric Strikes: ANSI/ BHMA A156.5, Grade 1
   1. Electric strikes shall be listed by UL for fire door accessory and burglary resistance.
   2. Strikes shall be for use with mortise locks without deadbolt or cylindrical locks on single door; hollow metal or aluminum frame application.
   3. Operation shall be fail-safe or fail-secure as listed.
   4. Power Requirements: 24 VDC
   5. Finish: BHMA #630 (US32D).
   6. Acceptable Manufacturers:
      a. Von Duprin: 6200 Series
      b. Trine

8. Electric Butt Hinges:
   1. Electric butt hinges shall comply with requirements for size, quantity, type, etc., as set fourth for non-electric butt hinges. This application is only acceptable with interior applications in drywall wall applications.
   2. Provide number of power transfer devices as needed. Locate power transfer device as middle hinge (or intermediate pivot) in set of three hinges or as close to load to receive power (2nd hinge from bottom in set of four or five hinges per leaf) as possible.
   3. Electric hinges shall have junction box fastened to frame jamb installed by frame manufacturer. Furnish a mortar box or jamb box to protect the wire terminations on the inside of the frame. Mortar box shall be provided for all electrified hinges.
   4. Hinges shall permit passage of a constant flow of current from jamb to door, regardless of door position. Provide number of wires needed by
electro-mechanical hardware it supports plus two additional wires for future considerations. Electric hinges shall be used for only low voltage power transfer (24volts or less).

a. Wiring: 18 gauge minimum
b. Capacity: 1 amp; 24 volt

5. Continuous circuit hinge to have wires concealed with 12” leads.

6. Acceptable Manufacturers:
   a. Ives: TW8 Series
   b. McKinney: ETW-8 Series

PART 3 – EXECUTION

3.1 INSTALLATION

A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.

B. Install each hardware item in compliance with the manufacturer’s instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces, which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division-9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.

C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

C. Drill and countersink units, which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

D. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

E. Adjust and reinforce attachment substrate for proper installation and operation:
   Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc.

F. Locate floor stops not more than 4 inches from the wall.

G. Install closers and exit devices with the manufacturer’s provided thru-bolts. Verify this mounting with the architect and the Owner.

H. Certified Installers: Prior to installation of Locksets, Closers, and Exit Devices, hardware installers shall be trained by the manufacturers’ representative of each product. This training shall be conducted at the Pre-Installation Meeting at the project
site and be provided in both English and Spanish. The MUSC Lock Shop should be in attendance at this meeting.

3.2 ADJUST AND CLEAN

A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units, which cannot be adjusted to operate freely and smoothly as intended for the application made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Final Adjustment: Wherever hardware installations is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

D. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

H. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative[s] of the Finish Hardware manufacturer[s], shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items, which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of any current or predictable problems (of substantial nature) in the performance of the hardware and furnish copy to Owners Agent / Representative.

3.3 HARDWARE SETS:

A. See Drawings.

End Section 087110
SECTION 091113
NON-LOAD BEARING METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal partition, ceiling, and soffit framing.

1.02 REFERENCE STANDARDS


1.03 SUBMITTALS

A. See Section 01330 - Submittal Procedures.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years experience.

PART 2 PRODUCTS

2.01 FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 10 psf.
   1. Studs: C shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C shaped.
B. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
C. Furring and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C 754.
D. Fasteners: ASTM C 1002 self-piercing tapping screws.
E. Sheet Metal Backing: 0.016 inch thick, galvanized.
F. Backing Plates: 16 gage (.0538 inch (1.4 mm) minimum thickness) unless otherwise indicated, ASTM A1008 or A1011 sheet steel, minimum 40,000 psi, at counters and wall-supported items.
G. Anchorage Devices: Power actuated.
H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.
2.02 FABRICATION
   A. Fabricate assemblies of framed sections to sizes and profiles required.
   B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION
   A. Verify existing conditions before starting work.

3.02 INSTALLATION OF STUD FRAMING
   A. Comply with requirements of ASTM C 754.
   B. Extend partition framing to structure where indicated and to ceiling in other locations.
   C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   D. Align and secure top and bottom runners at 16 inches on center.
   E. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
   F. Align stud web openings horizontally.
   G. Secure studs to tracks using crimping method. Do not weld.
   H. Fabricate corners using a minimum of three studs.
   I. Double stud at wall openings, door and window jambs, not more than 2 inches from each side of openings.
   J. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

3.03 CEILING AND SOFFIT FRAMING
   A. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
   B. Install furring independent of walls, columns, and above-ceiling work.
   C. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.
   D. Space main carrying channels at maximum 72 inch on center, and not more than 6 inches from wall surfaces. Lap splice securely.
   E. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
   F. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.

END OF SECTION 091113
SECTION 092600

GYPSUM BOARD ASSEMBLIES

PART 1  GENERAL

1.01  SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.
B. Gypsum wallboard.
C. Joint treatment and accessories.

1.02  REFERENCE STANDARDS

C. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2007.

1.03  SUBMITTALS

A. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.04  QUALITY ASSURANCE
PART 2  PRODUCTS

2.01  BOARD MATERIALS

A. Wallboard and Ceiling Board: Paper-faced gypsum wallboard as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut. Not of Chinese origin.

1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated. See drawings for coordination with wall types.
2. At Assemblies Indicated with and without Fire-Rating: Use type indicated in item 3.
3. Use National Gypsum XP Gypsum Board: Type X Gyp Core mold/mildew/moisture resistant, 100% recycled purple paper. Basis of Design.
4. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
5. Thickness:

2.02  ACCESSORIES

A. Acoustic Sealant: As specified in Section 07921.

B. Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.

1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.

C. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.

1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.

D. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.

E. Screws for Attachment to Steel Members From 0.033 to 0.112 Inch in Thickness: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.

F. Screws: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that project conditions are appropriate for work of this section to commence.

3.02 ACOUSTIC ACCESSORIES INSTALLATION
A. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place one bead continuously on substrate before installation of perimeter framing members.
   2. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

3.03 BOARD INSTALLATION
A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.
C. Installation on Metal Framing: Use screws for attachment of all gypsum board.

3.04 INSTALLATION OF TRIM AND ACCESSORIES
A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
B. Corner Beads: Install at external corners, using longest practical lengths.
C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.05 JOINT TREATMENT
B. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
1. Level 5: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
3. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Finish all gypsum board in accordance with ASTM C 840 Level 4 or Level 5 if indicated.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

1. Feather coats of joint compound so that camber is maximum 1/32 inch.

3.06 FIELD QUALITY CONTROL

A. Above-Ceiling Observation: Before Contractor installs gypsum board ceilings, Architect and DHEC will conduct an above ceiling observation and report deficiencies in the Work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.

B. Notify Architect seven days in advance of date and time when Project, or part of Project, will be ready for above-ceiling observation.

C. Before notifying Architect, complete the following in areas to receive gypsum board ceilings:

1. Installation of 80 percent of lighting fixtures, powered for operation.
2. Installation, insulation, and leak and pressure testing of water piping systems.
3. Installation of air-duct systems.
4. Installation of air devices.
5. Of mechanical system control-sir tubing.
6. Installation of ceiling support framing.
7. Installation of through-penetration firestopping and fire-resistant joint sealants, with identification labels.

3.07 PROTECTION

A. Protect installed gypsum board products during remainder of construction period. Remove and replace gypsum board panels exposed to moisture in excess of limits recommended by manufacturer, or that exhibit moisture saturation or mold formation.

END OF SECTION 092600
SECTION 093013 – CERAMIC TILE

PART 1  GENERAL

1.1  SUMMARY

A.  Section Includes:
    1. Ceramic tile.
    2. Stone thresholds.

B.  Related Sections:
    1. Section 093050 – Tile Setting Materials and Accessories

1.2  SUBMITTALS

A.  Product Data:  For each type of product indicated

B.  Samples:
    1. Each type and composition of tile and for each color and finish required.
    2. Assembled samples, with grouted joints, for each type and composition of tile and for each color and finish required.

C.  Mock-ups as indicated on drawings.

D.  Provide shop drawings for any tile layout patterns and details if different from shown on drawings.

1.3  QUALITY ASSURANCE

A.  Supplier Qualifications:
    1. Installer Qualifications:  Company specializing in performing the work of this section with minimum five years experience.

B.  Source Limitations for Tile: Obtain tile from one source or producer.

PART 2 - PRODUCTS

2.1  TILE PRODUCTS

A.  ANSI Ceramic Tile Standard: Provide Standard grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

B.  Tile Types: Refer to finish schedule on drawings.

2.2  THRESHOLDS

A.  General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes. Thresholds shall align with the corridor face of the frame and the centerline of the door, unless noted otherwise.

1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to ½ inch or less above adjacent floor surface.
2. Minimum threshold material thickness of ¾”.
3. Cracked thresholds will not be acceptable.

B. Marble Thresholds: ASTM C 503, with a minimum abrasion resistance of 10 per ASTM C 1353 or ASTM C 241 and with honed finish.
   1. Description: Uniform, fine – to medium – grained white stone with gray veining.

2.3 SETTING MATERIALS
A. Unmodified Thin Set Mortar for tiled areas: Premium-grade, dry-set mortar for use in floor and wall applications meeting ANSI A118.1 when mixed with water.

2.4 GROUT MATERIALS
A. Water-Cleanable Rapid Set Flexible Sanded Grout Basis of Design:
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. Ardex FL with Van Hearron Grout Once Admixture.

PART 3 EXECUTION
3.1 EXAMINATION
A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
   1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

3.2 PREPARATION
A. Fill cracks, holes, and depression in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
B. Blending: For tile exhibiting color variations, use factory blended tile or blend tiles at Project site before installing.
C. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION
A. Comply with TCA’s “Handbook for Ceramic, Glass and Stone Tile Installation” for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series “Specifications for Installation of Ceramic Tile” that are referenced in TCA installation methods, specified in tile installation schedules, and
apply to types of setting and grouting materials used.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated. Refer to drawings for alignment and coordination of joint patterns.

E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
   1. Porcelain Stone Tile: 3/16 inch or minimum recommended by manufacturer, whichever is greater.

F. Protection of Installed Work: The tile contractor shall protect grouted tile with Ramboard for the full duration of curing time require by the mastic and grout manufacturer’s written instructions for all materials used to install tile and related materials.

G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where needed. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
   1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
   2. Prepare joints and apply sealants to comply with requirements in Division 7 Section “Joint Sealants.”

H. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
   1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).

END OF SECTION 093013
SECTION 093050 TILE SETTING MATERIALS AND ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Edge-protection and transition profiles for walls and floors.
B. Movement joint and cove-shaped profiles.
C. Uncoupling membrane.
D. Waterproofing Membrane.
E. Floor drain, with integrated bonding flange.
F. Setting materials: adhesives, mortars, grouts, and sealants.

1.2 RELATED SECTIONS

A. Section 079200 - Joint Sealers.
B. Section 092600 - Gypsum Board Assemblies
C. Section 093013 - Ceramic Tile
D. Section 154000 - Plumbing

1.3 REFERENCES

A. CSA B79-08: Floor, Area, and Shower Drains, and Cleanouts for Residential Construction.

1.4 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and finish.
D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years of experience.

B. Installer Qualifications: Company specializing in performing the work of this section using Schluter products with minimum five years of experience, and work on five projects in the last five years that include a minimum of fifty showers/toilets. Installer’s shall attend a manufacturer’s training session prior to the commencement of work on site.

C. Source Limitations for Setting Materials and Accessories: Obtain product of a uniform quality for each application condition from a single manufacturer.

D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship as depicted in drawings.
   1. Provide mock-up within three weeks of the notice to proceed.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

E. Preinstallation Conference: Conduct conference at the Project site.
   1. Convene three weeks prior to commencing work of this section.
   2. Require attendance of installation material manufacturer, tile supplier, tile installer and installers of related work. Review installation procedures and coordination required with related work.
   3. Meeting agenda includes but is not limited to:
      a. Surface preparation.
      b. Tile and installation material compatibility.
      c. Edge protection, transition and pre-fabricated movement joint profiles.
      d. Waterproofing techniques.
      e. Crack isolation techniques.

F. Contractor shall flood test all drain installations per ASTM D5957 Flood Testing Horizontal Waterproofing Installations.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.

C. Store materials in a dry, warm, ventilated weathertight location.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
1.8 COORDINATION

A. Coordinate Work with other operations and installation of floor finish materials to avoid damage to installed materials.

1.9 WARRANTY

A. Submit a written warranty executed by the manufacturer, agreeing to repair or replace tile setting materials and accessories that fail within the warranty period. Failures include, but are not limited to:
   1. Sagging, warping, delaminating, cracking, peeling, splitting and any other failures that result from defects in materials or factory workmanship.
B. Warranty Period Schluter Systems and related materials:
   1. Fifteen (15) years from date of substantial completion.
C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.1 MANUFACTURERS – BASIS OF DESIGN

A. Acceptable Manufacturer: Schluter Systems, L.P., 194 Pleasant Ridge Road, Plattsburgh, NY 12901-5841. ASD. Tel: (800) 472-4588. Fax (800) 477-9783. E-mail: specassist@schluter.com. Web: www.schluter.com.


C. Products shall be supplied from one manufacturer.

2.2 EDGE-PROTECTION PROFILES FOR FLOORS AND WALLS

A. L-shaped edge profile for tiled walls: Schluter-SCHIENE
   1. Description: L-shaped profile with 1/8 inch (3.2 mm) wide visible surface integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
   2. Material and Finish:
      a. E - Stainless.
      1) Height as required.

2.3 MOVEMENT JOINTS AND COVE-SHAPED PROFILES

A. Schluter-DILEX-BWA
   1. Description: profile with integrated rigid, recycled PVC trapezoid-perforated anchoring leg and dovetailed channel, which are connected by a 3/16 inch (5 mm) wide soft CPE movement zone that forms the visible surface, and a slit lower movement zone of soft CPE.
   2. Color:
      a. G – Grey for wall to floor connections.
b. SP - Sand Pebble for inside corner wall to wall connections.
   1) Height as required to coordinate with tile selection and setting system selected.

2.4 UNCOUPLING MEMBRANE

A. Waterproofing uncoupling membrane for Bathroom Floors as noted in drawings:
   Schluter-DITRA
   1. Description: 1/8 inch (3 mm) thick, orange, high-density polyethylene membrane with a grid structure of 1/2 inch by 1/2 inch (12 mm by 12 mm) square cavities, each cut back in a dovetail configuration, and a polypropylene anchoring fleece laminated to its underside. Conforms to definition for uncoupling membranes in the Tile Council of North America Handbook for Ceramic Tile Installation and is listed by cUPC to meet or exceed the requirements of the "American national standard specifications for load bearing, bonded, waterproof membranes for thin-set ceramic tile and dimension stone installation A118.10 and is listed by cUPC, and is evaluated by ICC-ES (see Report No. ESR-2467).

2. Waterproofing seaming membrane:
   a. Provide KERDI BAND Seams and Corners material 0.004 inch (0.1 mm) thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides.

2.5 WATERPROOFING MEMBRANE

A. Waterproofing uncoupling membrane for Bathroom Floors and for Shower Floors as noted in drawings: Schluter-KERDI
   1. Description: 0.008 inch (0.2 mm) thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides, which is listed by cUPC to meet or exceed requirements of the "American national standard specifications for load bearing, bonded, waterproof membranes for thin-set ceramic tile and dimension stone installation A118.10 and is listed by cUPC, and is evaluated by ICC-ES (see Report No. ESR-2467).

2. Corners and seals:
   a. Provide matching preformed inside corners.
   b. Provide matching preformed outside corners.
   c. Provide matching preformed pipe seals.
   d. Provide matching preformed mixing valve seals.

B. Waterproof Seaming Band for Bathroom Floors: Schluter-KERDI-BAND
   1. Description: Seams and Corners material 0.004 inch (0.1 mm) thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides
   2. Width:
      a. Width as required

2.6 FLOOR DRAIN WITH INTEGRATED BONDING FLANGE

A. Schluter-KERDI-DRAIN, Plastic:
   1. Description: floor drain 11-25/32 inch (300 mm) diameter,
trapezoid-perforated, integrated bonding flange with polypropylene fleece thermally laminated to the surface and hubbed connection to 2 inch (50 mm) drain pipe. Grate assembly includes 4 inch by 4 inch (102 mm by 102 mm) square grate, height adjustment collar, and lateral adjustment ring with trapezoid perforations.

2. Drain listed by UPC to meet requirements of "International Association of Plumbing and Mechanical Officials Interim Guide Criteria for Floor Drain with Integrated Bonding Flange" (IGC 195), listed by CSA to meet requirements of the Canadian Standards Association standard, "Floor, Area, and Shower Drains, and Cleanouts for Residential Construction" (CSA B79), and referenced in method B422 of the Tile Council of North America Handbook for Ceramic Tile Installation.

3. Drain Housing Material:
   a. PVC.

4. Grate Material and Finish:
   a. E - Stainless Steel Type 304 = V2A.

5. Nominal Grate Size:
   a. 6 inch (150 mm) by 6 inch (150 mm) square.

6. Drain Outlet:
   a. 2 inch (50 mm) outlet.

B. Schluter-KERDI-LINE DRAIN, Brushed Stainless Steel:

1. Description:
   a. Linear floor drain consisting of a formed stainless steel channel body and grate assembly that can be seamlessly adjusted to tile or stone covering thickness from 1/8 inch (3 mm) to 1 inch (25 mm). The channel body features a 2-1/4 inch (57 mm) wide trough, a 2 inch (50 mm) no-hub outlet and a 7/8 inch (22 mm) wide bonding flange laminated with a collar made of the Schluter-KERDI waterproofing membrane. The grate assembly includes a 3/8 inch (10 mm) wide brushed stainless steel grate frame and 2-1/8 inch (54 mm) wide grate insert that together form the visible surface. Drain type as referenced in methods B422 and B422 STONE in the Tile Council of North America Handbook for Ceramic, Glass, and Stone Tile Installation.

2. Channel Body Material:
   a. Stainless Steel 304 (1.4301 = V2A).

3. Channel Body and Grate Nominal Length:
   a. 60 inch (150 cm).

4. Grate Frame Height:
   a. 3/4 inch (19 mm).

5. Grate Design:
   a. Closed-design, brushed stainless steel 304 (1.4301 = V2A) grate.

6. Drain Outlet:
   a. Center.

7. Drain Grate Connector Plate:
   a. Brushed stainless steel 304 (1.4301 = V2A).

2.7 Setting Materials

A. Installation methods as specified in Section 093013 - Ceramic Tile.
PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared and are confirmed to be installed plumb and true.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Confirm that slope and configuration of all floor materials, substrates and underlayment are installed so the floors drain directly to floor drains and are completely dry within 12 hours. Compile and submit test data to show floors in each space comply with this requirement.

D. Confirm that slope and configuration of all floor materials, substrates and underlayment are installed so the floors fully drain with water fully flowing through the drainage system and are watertight for at least 24 hours when the p-trap and or drain are temporarily plugged for testing. Compile and submit test data to show membrane systems and floors in each space comply with this requirement.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Where full length pieces can be installed no shorts will be allowed for finished and exposed to view materials.

3.4 PROTECTION

A. Protect installed products until completion of project per the manufacturer’s written instructions. Coordinate with requirements in Section 093013 Ceramic Tile.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 093050
SECTION 095113

SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS


1.03 QUALITY ASSURANCE

A. Acoustical Testing Agency Qualifications; An independent testing laboratory, or an NVLAP-accredited laboratory, with the experience and capability to conduct the testing indicated. NVLAP-accredited laboratories must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified.

B. Source Limitations:
   1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
   2. Suspension System: Obtain each type through one source from a single manufacturer.
   3. Seismic Standard: provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
4. Conduct a pre-installation conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.04 FIELD CONDITIONS
A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS
2.01 ACOUSTICAL UNITS
A. Manufacturers:
   2. Acoustical Units - General: ASTM E 1264, Class A.
   3. Acoustical Panels Type ACT-1: Mars Acoustical Panels by USG or equal.

   Wet-formed mineral fiber, ASTM E 1264 Type IV, with the following characteristics:

   1. Size: 24 x 24 inches.
   2. Thickness: 3/4 inches.
   3. Light Reflectance: not less than 0.90 percent, determined as specified in ASTM E 1264.
   4. NRC Range: not less than 0.55 to 0.70, determined as specified in ASTM E 1264.
   5. Ceiling Attenuation Class (CAC): Not less than 35, determined as specified in ASTM E 1264.
   6. Edge: Tegular for Interface with USG Donn Centricitee DXT 9/16”
   7. Surface Color: White.
   8. Surface Pattern: E, G.
   9. Product: Mars Acoustical Panels by USG.
   10. Suspension System: Exposed grid.

2.02 SUSPENSION SYSTEM(S)
A. Manufacturers:
   1. Same as for acoustical units.
B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

   1. Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.

   2. Finishes and Colors, General: Comply with NAAM's "Metal Finishes manual for Architectural and Metal Products" for recommendations for applying and designating
finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.

a. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.

3. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

a. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.

1) Corrosion Protection: Carbon-steel components hot dipped galvanized to comply with ASTM B 633, Class Fe/ZN 5(0.005mm) for Class SC 1 service condition.

4. Wire hangers, Braces, and Ties: Provide wires complying with the following requirements:


b. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.135-inch diameter wire.

5. Seismic Stabilizer Bars: manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.

6. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.

7. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.

8. Hold-Down Clips: Provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees.

C. Exposed Steel Suspension system:

1. USG Donn Centricitee DXT Acoustical Suspension System 9/16”. Install per Manufacturers recommendation.

2. Color: White
2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.

1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.

C. Acoustical Sealant For Perimeter Moldings: Specified in Section 07921.

D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636/C 636M, ASTM E 580/E 580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

D. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

I. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
1. Use longest practical lengths.
2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 095113
SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

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

1.2 SUMMARY
   A. Section includes surface preparation and the application of paint systems on the following interior substrates. Coordinate with paints as scheduled on drawings, as well:
      1. Miscellaneous Metals
      2. Miscellaneous Wood

1.3 DEFINITIONS
   A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523, a matte flat finish.
   B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, a high-side sheen flat, velvet-like finish.
   C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, an eggshell finish.
   D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523, a satin-like finish.
   E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523, a semi-gloss finish.
   F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523, a gloss finish.

1.4 ACTION SUBMITTALS
   A. Product Data: For each type of product. Include preparation requirements and application instructions.
   B. Samples for Initial Selection: For each type of topcoat product.
C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
   1. Submit Samples on rigid backing, 8 inches (200 mm) square.
   2. Step coats on Samples to show each coat required for system.
   3. Label each coat of each Sample.
   4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:
   1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
   2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
   3. VOC content.

1.5 CLOSEOUT SUBMITTALS

A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
      a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
      b. Other Items: Architect will designate items or areas required.
   2. Final approval of color selections will be based on mockups.
      a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
   3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer’s label with the following information:

1. Product name and type (description).
2. Batch date.
3. Color number.
4. VOC content.
5. Environmental handling requirements.
6. Surface preparation requirements.
7. Application instructions.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Sherwin-Williams Company products indicated or comparable product from one of the following:

1. Benjamin Moore & Co.
2. Duron, Inc.

B. Source Limitations: Obtain paint materials from single source from single listed manufacturer.
1. Manufacturer’s designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:
   1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Colors: As indicated on the finish schedule.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

   1. Report, in writing, conditions that may affect application, appearance, or performance of paint.

B. Substrate Conditions:

   1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
      a. Wood: 15 percent.
      b. Gypsum Board: 12 percent.

   2. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
3. Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

C. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer[.] [but not less than the following:]

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."
3. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."
4. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

G. Aluminum Substrates: Remove loose surface oxidation.

H. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:
   a. Equipment, including panelboards.
   b. Uninsulated metal piping.
   c. Uninsulated plastic piping.
   d. Pipe hangers and supports.
   e. Metal conduit.
   f. Plastic conduit.
   g. Tanks that do not have factory-applied final finishes.
   h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
   i. Any other items with exposed surfaces.
2. Paint the following work where exposed in occupied spaces:
   a. Equipment, including panelboards.
   b. Uninsulated metal piping.
   c. Uninsulated plastic piping.
   d. Pipe hangers and supports.
   e. Metal conduit.
   f. Plastic conduit.
   g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
   h. Other items as directed by Architect.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
   1. Contractor shall touch up and restore painted surfaces damaged by testing.
   2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Metal Substrates (Aluminum, Steel, Galvanized Steel):
1. Latex System:
   a. Prime Coat: Primer, rust-inhibitive, water based[, MPI #107]: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils wet, 2.0 to 4.0 mils dry.
   c. Topcoat: Water-based acrylic, semi-gloss[, (Gloss Level 5), MPI #147 X-Green]: S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.
   d. Topcoat: Water-based acrylic, gloss[, (Gloss Level 6), MPI #148 X-Green]: S-W Pro Industrial Acrylic Gloss Coating, B66-660 Series, at 2.5 to 4.0 mils dry, per coat.

2. Water-Based Light Industrial Coating System:
   a. Prime Coat: Primer, rust-inhibitive, water based[, MPI #107]: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10.0 mils wet, 2.0 to 4.0 mils dry.
   c. Topcoat: Light industrial coating, interior, water based, eggshell[, (Gloss Level 3), MPI #151]: S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat.
   d. Topcoat: Light industrial coating, interior, water based, semi-gloss[, (Gloss Level 5), MPI #153]: S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

B. Wood Substrates: Including exposed wood items not indicated to receive shop-applied finish.

1. Latex System:
   a. Prime Coat: Primer sealer, latex, interior[, MPI #39]: S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils wet, 1.4 mils dry.
   a. Topcoat: Latex, interior, eggshell[, (Gloss Level 3), MPI #52 X-Green/#145 X-Green]: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
   b. Topcoat: Latex, interior, semi-gloss[, (Gloss Level 4), MPI #43 X-Green]: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
   c. Topcoat: Latex, interior, gloss[, (Gloss Level 5), MPI #54]: S-W ProMar 200 Latex Gloss, B11-2200 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

2. Acrylic/Alkyd System:
   a. Prime Coat: Primer sealer, latex, interior: S-W Premium Wall & Wood Primer, B28W8111, at 4.0 mils wet, 1.8 mils dry.
   Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series, at 4.0 mils wet,
   1.7 mils dry, per coat.
d. Topcoat: Water-based acrylic-alkyd, gloss, interior: S-W ProMar 200
   Waterbased Acrylic-Alkyd Gloss, B35-8200 Series, at 4.0 mils wet, 1.7
   mils dry, per coat.

3. Water-Based Light Industrial Coating System:
   a. Prime Coat: Primer sealer, latex, interior[, MPI #39]: S-W PrepRite
      ProBlock Primer Sealer, B51-620 Series, at 4.0 mils wet, 1.4 mils dry.
   b. Intermediate Coat: Light industrial coating, interior, water based, matching
      topcoat.
   c. Topcoat: Light industrial coating, interior, water based, eggshell[, (Gloss
      Level 3), MPI #151]: S-W Pro Industrial Pre-Catalyzed Water Based
      Epoxy, K45-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat.
   d. Topcoat: Light industrial coating, interior, water based, semi-gloss[, (Gloss
      Level 5), MPI #153]: S-W Pro Industrial Pre-Catalyzed Water Based
      Epoxy, K46-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

C. Gypsum Board Substrates:
   1. Latex System:
      a. Prime Coat: Primer, latex, interior[, MPI #149 X-Green]: S-W ProMar 200
         Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.
      c. Topcoat: Latex, interior, eggshell[, (Gloss Level 3), MPI #52 X-
         Green/#145 X-Green]: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-
         2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
   2. Water-Based Light Industrial Coating System:
      a. Prime Coat: Primer sealer, latex, interior[, MPI #50 X-Green]: S-W
         ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils
         dry.
      b. Intermediate Coat: Light industrial coating, interior, water based, matching
         topcoat.
      c. Topcoat: Light industrial coating, interior, water based, eggshell[, (Gloss
         Level 3), MPI #151]: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy,
         K45-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

END OF SECTION 099123
SECTION 101550 TOILET PARTITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Euroline High Pressure Plastic Laminate Toilet Compartments.

1.2 RELATED SECTIONS

A. Section 102800 - Washroom Accessories.

1.3 REFERENCES

D. NEMA LD 3 - High Pressure Decorative Laminates.

1.4 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Manufacturer's product data for materials, fabrication, and installation including catalog cuts of anchors, hardware, fastenings, and accessories in addition to:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
C. Shop Drawings:
   1. Provide shop drawings for fabrication and installation of compartment assemblies that are not fully described by architectural drawings.
   2. Provide template layouts and installation instructions for anchorage devices built into other work.
D. Selection Samples: Submit manufacturer's standard color selector. Two color chips of selected color will be sent for color verification purposes.
E. Verification Samples: Available minimum size 4 inches (150 mm) square samples representing the finished product are available upon request.
1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10 years manufacturing toilet partitions.

B. Installer Qualifications: Minimum 2 years experience installing toilet partitions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits. Manufacturer’s storage and handling instruction shall be reviewed and maintained.

B. Field Measurements: Take field measurements prior to component fabrication to ensure proper fitting of work.

C. Coordination: Furnish inserts and anchorages that will be built into other work for installation of toilet compartments and related items.

1.8 WARRANTY

A. Submit a written warranty executed by the manufacturer, agreeing to repair or replace toilet partition materials and accessories that fail within the warranty period. Failures include, but are not limited to:

   1. Sagging, warping, delaminating, cracking, peeling, splitting and any other failures that result from defects in materials or factory workmanship.

B. Warranty Period Schluter Systems and related materials:

   1. Twenty Five (25) years on phenolic components from date of substantial completion.

   2. Ten (10) years on hardware components from date of substantial completion.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.1 MANUFACTURERS (Basis of Design)
A. Acceptable Manufacturer: Ampco Products, LLC
   Miami, Florida (Headquarters): 11400 N. W. 36th Ave., Miami, FL 33167
   Tel: (305) 821-5700 Fax: (305) 507-1414
   Email: info@ampco.com
   Morristown, Tennessee: 1200 Violet Street, Morristown, TN 37814
   Tel: (423) 586-3993 Fax: (423) 586-3993
   Email: Tennessee@ampco.com
   Auburn, Washington: 4520 B Street NW Suite B, Auburn, WA 98001
   Tel: (253) 852-5900 Fax: (253) 856-2859
   Email: Washington@ampco.com
   Sanger, Texas: 201 Railroad Avenue, Sanger, TX 76266
   Tel: (940) 458-7401 Fax: (940) 458-5307
   Email: Texas@ampco.com

B. Requests for substitutions will be considered in accordance with provisions of Section 016000.

2.2 COMPARTMENTS AND SCREENS

A. General: Doors, panels, screens, and pilasters assembled into complete compartment system, with cutouts and drilled holes to receive hardware as indicated; processed and fabricated in a craftsmanlike manner; complying with ANSI/ICC A117.1, Americans with Disabilities Act (ADA), and as follows:

B. Toilet Compartments: Classic, Euroline.
   1. Compartment Depth and Width: As indicated on drawings.
   2. Door Opening Width: As indicated on drawings.
   3. Doors, Panels, and Pilasters:
      a. Top at 78 inches (1981 mm) above finished floor.
      b. Bottom at 6 inches (152 mm) above finished floor.
   4. Pilaster Width: As required to fit space; minimum 4 inches (76 mm).
   5. No sight gaps on hinge side or lock side of door.
   6. All fasteners and reinforcing concealed from view from outside compartment.
   7. Pedestal fastened to floor with concealed anchors.

C. Urinal Screens:
   1. Style: Wall mounted.
   2. Style: Floor leg integral with panel.
   3. Depth: As indicated on drawings.
   4. Height: Top at 60 inches (1524 mm) and bottom at 18 inches (458 mm) above finished floor.

2.3 HIGH PRESSURE DECORATIVE LAMINATE COMPONENTS

A. High pressure plastic laminate surface complying with NEMA LD 3, Grade GP 50, 0.050 inch (1.27 mm) nominal thickness.
1. Particleboard: 45 pcf (720 kg/cm³) density particleboard cores, bonded with polyvinyl acetate adhesive.
2. Color: Refer to Finish Schedule
3. Door Thickness: 7/8 inches (22 mm)
4. Pilaster Thickness: 7/8 inches (22 mm)
5. Panel Thickness: 7/8 inches (22 mm)
6. Thickness with Marine Grade Plywood Core: 7/8 inches (22 mm) doors, panels and screens.

B. Fabrication:
1. Furnish standard doors, panels, screens and stiles fabricated for compartment system. Furnish units with cutouts and drilled holes to receive compartment hardware as indicated.
2. High Pressure Plastic Laminate: One-piece seamless face sheets shall be pressure laminated to core material. Edges shall be applied prior to face sheets. Woodgrain panels over 60 inches (1524 mm) deep require seaming.

C. Hardware Set Classic:
1. Material: powder coated stainless steel finished aluminum material.
3. Brackets: U, F and T channel brackets, and stainless steel L brackets on inside of front panels where attached to walls.
4. Latch and Keeper/Indicator Bolt: Slide bar on interior with exterior indicator to indicate occupancy.
5. Coat Hook Bumper: Wall bumper and garment hook on interior of door, panel or wall with rubber bumper.
6. Door Pull: (To be selected from manufacturer options).
7. Exposed Fasteners: Chrome plated steel or stainless steel.
8. Pedestals: One adjustable height pedestal per side panel of compartment, with ground clearance of 5-1/5 inches (140 mm) to 6-11/16 inches (170 mm).

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
3.3 INSTALLATION

A. General: Install in accordance with manufacturer's instructions.
   1. Install compartment unit’s rigid, straight, plumb and level.
   2. Provide clearance of not more than 1/2 inch (12 mm) between stiles and panels and not more than 1 inch (25 mm) between panels and walls.
   3. Secure panels to walls with not less than two brackets attached near top and bottom of panel.
   4. Locate wall brackets so holes for wall anchorages occur in masonry or tile joints.
   5. Secure panels to stiles with not less than two brackets located to align with brackets at wall.
   7. Level, plumb, and tighten installation with devices furnished.

B. EuroLine Compartments:
   1. Install compartment units rigid, straight, plumb and level.
   2. Provide clearance of not more than 1/4 inch (6 mm) between pilasters and panels and not more than 3/8 inch (10 mm) between panels and walls.
   3. Secure panels to walls with three stirrup brackets.
   4. Secure panels to pilasters with three stirrup brackets to align with stirrup brackets at wall.
   5. Secure pedestals to floor and level, plumb, and tighten installation with devices furnished.
   6. Secure overhead brace to each pilaster.
   7. For screens: set units to provide support and to resist lateral impact.

C. Hardware Adjustment: Adjust and lubricate hardware for proper operation. Set hinges on in-swing doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swing doors (and entrance swing doors) to return to fully closed position.

3.4 ADJUSTING AND CLEANING

A. Hardware Adjustment: Adjust and lubricate hardware for proper operation. Set hinges on in-swing doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swing doors (and entrance swing doors) to return to fully closed position.

B. Clean and Protect: Clean exposed surfaces of compartment systems using materials and methods recommended by manufacturer, and provide protection as necessary to prevent damage during remainder of construction period.

END OF SECTION - 101550
SECTION 102800 WASHROOM ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Washroom accessories as scheduled in this Section and as indicated on the Drawings.

1.2 RELATED REQUIREMENTS

A. Section 061053 – Miscellaneous Carpentry, coordination with blocking.

B. Section 092600 – Gypsum Board Assemblies, coordination with blocking.

C. Section 093013 – Ceramic Tile, coordination with layout and installation.

D. Section 102116 – Solid Plastic Toilet Compartments, coordination with accessories.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's data sheets for each product specified, including the following:
   1. Installation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Cleaning and maintenance instructions.
   4. Replacement parts information.

B. Schedule: Submit a toilet accessory schedule, indicating the type and quantity to be installed in each washroom. Use room numbers as indicated on the Drawings.

C. Country of Origin: Manufacturer must supply, with first submittal, Country of Origin information for each type of washroom accessory for this project.

1.4 QUALITY ASSURANCE

A. Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.

B. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.
C. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable.


1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

1.6 WARRANTY

A. Manufacturer’s Warranty for Washroom Accessories: Manufacturer’s standard 1 year warranty for materials and workmanship.

B. Manufacturer’s Warranty for Electric Hand Dryers: Manufacturer’s standard 10 year warranty on parts, except 3 year warranty on motor brushes from date of purchase.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Products: Based on the quality and performance requirements of the project, specifications are based solely on the products of Bobrick Washroom Equipment, Inc. [www.bobrick.com], unless noted otherwise. Location of manufacturing shall be the United States.

B. Substitutions: The Architect will consider products of comparable manufacturers as a substitution, pending the contractor's submission of adequate documentation of the substitution in accordance with procedures in Division 1 of the Project Manual. Documentation shall include a list of five similar projects of equivalent size where products have been installed for a minimum of two years, and manufacturer's certification that products are fabricated in the United States.

2.2 TOILET ACCESSORY SCHEDULE

A. Women’s Bathroom: See Drawings
B. Men’s Bathroom: See Drawings

PART 3 EXECUTION

3.1 INSTALLATION
A. Install products in strict compliance with manufacturer’s written instructions and recommendations, including the following:
   1. Verify blocking has been installed properly.
   2. Verify location does not interfere with door swings or use of fixtures.
   3. Comply with manufacturer’s recommendations for backing and proper support.
   4. Use fasteners and anchors suitable for substrate and project conditions
   5. Install units rigid, straight, plumb, and level, in accordance with manufacturer’s installation instructions and approved shop drawings.
   6. Conceal evidence of drilling, cutting, and fitting to room finish.
   7. Test for proper operation.

3.2 CLEANING AND PROTECTION

A. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.

B. Touch-up, repair or replace damaged products until Substantial Completion.

END OF SECTION 102800