

PROJECT MANUAL
including Specifications

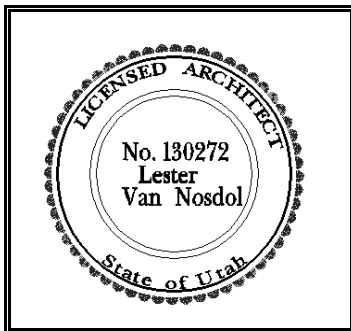
BRICK REPOINTING
FOR

CASCADE 6, 7

400 South 400 North
Orem, UT

Property No. 5051355010101

June 2017



Prepared By:

RVA ARCHITECTS, INC.

32 West Center St. Suite #203
Provo, Utah 84601
(801) 374-2100

PROJECT DIRECTORY

Owner: Corporation of the Presiding Bishop
of the Church of Jesus Christ of Latter-day Saints
A Utah Corporation Sole
50 East North Temple Street
Salt Lake City, UT 84150

Facilities Manager: Orem Central FM Group
140 North 400 West
Orem, UT 84097
801-222-3130

Architects: RVA Architects, Inc.
32 West Center St. #203
Provo, UT 84601
801-374-2100

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INVITATION TO BID (U.S.)

1. CONTRACTORS INVITED TO BID THE PROJECT:

**Dynamic Construction
Gines Construction
Oasis Builder
Painter Building Inc.
SRFCO**

2. PROJECTS:

Cascade 6, 7 Brick Repointing

3. LOCATION:

400 East 400 North
Orem, UT

4. OWNER:

Corporation of the Presiding Bishop of
The Church of Jesus Christ of Latter-day Saints,
A Utah Corporation Sole
50 East North Temple Street
Salt Lake City, Utah 84150

5. CONSULTANT:

RVA Architects, Inc.
32 W. Center St. #203
Provo, UT 84601

6. DESCRIPTION OF PROJECT:

- A. Brick Repointing
- B. Products or systems may be provided under a Value Managed Relationship (VMR) the Owner has negotiated with the supplier. VMR products and systems are indicated as such in the Specifications.

7. PRE-BID CONFERENCE: A pre-bid conference will be held on **Wednesday, June 14, 2017 @ 10:00 am** at the site located at 400 East 400 North Orem, UT.

8. TYPE OF BID: Bids will be on a lump-sum basis. Segregated bids will not be accepted.

9. TIME OF SUBSTANTIAL COMPLETION: The time limit for substantial completion of this work will be 30 calendar days and will be as noted in the Agreement.

10. BID OPENING: Sealed bids will be received until **2:00 pm, Wednesday, June 28, 2017 @ RVA Architects, Inc** located at 32 W. Center St. #203 Provo, UT. Bids will be publicly opened at that time.

11. BIDDING DOCUMENTS:

A. Bidding Documents may be examined at the following plan room locations:

- 1. Mountainlands Area Plan Room
3560 South 583 West Suite #4
Salt Lake City, UT 84115
- 2. McGraw Hill/Dodge Area Plan Room
<http://dodgeprojects.construction.com>

12. **BIDDER'S QUALIFICATIONS:** Bidding by the Contractors will be by invitation only.
13. **OWNER'S RIGHT TO REJECT BIDS:** Owner reserves the right to reject any or all bids and to waive any irregularity therein.

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS (U.S.)

1. DOCUMENTS:

- A. Bidding Documents include Bidding Requirements and proposed Contract Documents. Proposed Contract Documents consist of:
 - 1) Contractor's Bid Proposal and R & I Project Agreement (U.S.)
 - 2) Other documents included by reference
 - 3) Addenda.
- B. Bidding Requirements are those documents identified as such in proposed Project Manual.
- C. Addenda are written or graphic documents issued prior to execution of the Contract which modify or interpret the Bidding Documents. They become part of the Contract Documents as noted in the Contractor's Bid Proposal and R & I Project Agreement (U.S.) upon execution of the Agreement by Owner.

2. BIDDER'S REPRESENTATIONS:

- A. By submitting a bid proposal, bidder represents that
 - 1) Bidder has carefully studied and compared Bidding Documents with each other. Bidder understands the Bidding Documents and the bid is fully in accordance with the requirements of those documents,
 - 2) Bidder has thoroughly examined the site and any building located thereon, has become familiar with local conditions which might directly or indirectly affect contract work, and has correlated its personal observations with requirements of proposed Contract Documents, and
 - 3) Bid is based on materials, equipment, and systems required by Bidding Documents without exception.

3. BIDDING DOCUMENTS:

- A. Copies
 - 1) Owner will provide the Bidding Documents as set forth in the Invitation to Bid.
 - 2) Partial sets of Bidding Documents will not be issued.
- B. Interpretation or Correction of Bidding Documents
 - 1) Bidders will request interpretation or correction of any apparent errors, discrepancies, and omissions in the Bidding Documents.
 - 2) Corrections or changes to Bidding Documents will be made by written Addenda.
- C. Substitutions and Equal Products
 - 1) Equal products may be approved upon compliance with Contract Document requirements.
 - 2) Base bid only on materials, equipment, systems, suppliers or performance qualities specified in the Bidding documents.
 - 3) Where a specified product is identified as a "quality standard", products of other manufacturers that meet the performance, properties, and characteristics of the specified "quality standard" may be used without specific approval as a substitute.
- D. Addenda. Addenda will be sent to bidders and to locations where Bidding Documents are on file no later than one week prior to bid opening or by fax no later than 48 hours prior to bid opening.

4. BIDDING PROCEDURES:

- A. Form and Style of Bids
 - 1) Use Owner's Bid Form titled "Contractor's Bid Proposal and R & I Project Agreement (U.S.)".
 - 2) Bid will be complete and executed by authorized representative of Bidder.
 - 3) Do not delete from or add to the information requested on bid form.

- B. Submission of Bids
 - 1) Submit bid in sealed opaque envelope containing only bid form.
 - 2) It is bidder's sole responsibility to see that its bid is received at or before the specified time. Bids received after specified bid opening time may be returned to bidders unopened.
 - 3) No oral, facsimile transmitted, telegraphic, or telephonic bids, modifications, or cancellations will be considered.

- C. Modification or Withdrawal of Bid
 - 1) Bidder guarantees there will be no revisions or withdrawal of bid amount for 45 days after bid opening.
 - 2) Prior to bid opening, bidders may withdraw bid by written request or by reclaiming bid envelope.
 - 3) Prior to bid opening, bidder may mark and sign on the sealed envelope that bidder acknowledges any or all Addenda.

5. CONSIDERATION OF BIDS:

- A. Opening Of Bids - See Invitation To Bid.

- B. Acceptance Of Bid
 - 1) No bidder will consider itself under contract after opening and reading of bids until Owner accepts Contractor's Bid Proposal by executing same.
 - 2) Bidder's past performance, organization, subcontractor selection, equipment, and ability to perform and complete its contract in manner and within time specified, together with amount of bid, will be elements considered in award of contract.

6. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR:

- A. Agreement form will be "Contractor's Bid Proposal and R & I Project Agreement (U.S.)" provided by Owner.

7. MISCELLANEOUS:

- A. Pre-Bid Conference. A pre-bid conference will be held @ 10:00 am on Wednesday, June 14, 2017 at the job site located at 400 East 400 North Orem, UT.

- B. Examination Schedule for Existing Building and Site
 - 1) Lynn Adams 801-222-3130

END OF DOCUMENT

CONSTRUCTION MATERIAL ASBESTOS STATEMENT (U.S.)

Building Name: Cascade 6, 7

Building Plan ype: Brick Repointing

Building Address: 400 East 400 North
Orem, UT 84097

Building Owner: Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints, a Utah corporation sole.

Project Number: 5051355010101

Completion Date: _____

As PROJECT CONSULTANT and principal in charge; based on my best knowledge, information, inspection, and belief; I certify that on the above referenced Project, no asbestos-containing building materials were specified in the construction documents or given approval in shop drawings or submittals.

Project Consultant and Principal in Charge (signature) Date

Company Name

As GENERAL CONTRACTOR in charge of construction; based on my best knowledge, information, inspection, and belief; I affirm that on the above-referenced Project, no asbestos-containing building materials were used in the construction.

General Contractor (signature) Date

Company Name

CONTRACTOR BID PROPOSAL AND R & I PROJECT AGREEMENT (U.S.)

Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints, a Utah corporation sole, ("Owner") and the undersigned Contractor ("Contractor") enter into this *Contractor Bid Proposal and R & I Project Agreement (U.S.)* ("Agreement") and agree as follows:

1. Property/Project.

Property/Project Number: 5051355010101
Property Address ("Project Site"): 400 East 400 North Orem, UT
Project Type: Brick Repointing
Project Name ("Project"): Cascade 6, 7
Stake Name: Orem UT Cascade

2. **Scope of the Work.** Contractor will furnish all labor, materials, and equipment necessary to complete the Work in accordance with the Contract Documents. The Work is all labor, materials, equipment, construction, and services required by the Contract Documents.

3. **Contract Documents.** Contract Documents consist of:

- a. This Agreement;
- b. Supplementary Conditions R & I Project Agreement (U.S.) _____;
- c. The Specifications (Division 01 and Divisions 02,04,07,09);
- d. Drawings entitled Cascade 6, 7 and dated June 2017;
- e. Addendum No. _____ and dated _____; and
- f. All written Field Changes, written Construction Change Directives and written Change Orders when prepared and signed by Owner and Contractor.

4. **Compensation.** Owner will pay Contractor for performance of Contractor's obligations under the Contract Documents the sum of _____ Dollars (\$_____). This is the Contractor's Bid Proposal Amount.

5. Payment.

- a. If the Contractor's Bid Proposal Amount is over \$100,000, Contractor will submit to Owner a schedule of values which allocates the Contractor's Bid Proposal Amount to various portions of the Work. This schedule, when accepted by Owner will be used as a basis for reviewing Contractor's payment requests.
- b. Not more than once each month, Contractor will submit a payment request to Owner. Owner will pay Contractor for work completed within thirty (30) days after Owner receives:
 - 1) Contractor's payment request for work to date;
 - 2) a certification by Contractor that Contractor has paid for all labor, materials, and equipment relating to the Work covered by prior payment requests and that Contractor will pay for all labor, materials, and equipment relating to the Work covered by the current payment request; and
 - 3) releases of all mechanics' liens and claims of subcontractors, laborers, or material suppliers who supplied labor and/or materials for the Work covered by the payment request.
 - 4) updated Construction Schedule.
- c. Owner may modify or reject the payment request if, in Owner's opinion, the Work for which payment is requested is not acceptable or is less complete than represented on the payment request.

6. **Extras and Change Orders.** Owner may order changes in the Work by altering, adding to, or deducting from the Work. In the event of such a change, Contractor's compensation and/or the time of completion will be adjusted to reflect the change. Contractor will not commence work on any change until either: (a) Contractor and Owner have agreed in writing to the amount of the adjustment resulting from the change; or (b) Owner has issued a written order for the change acknowledging that there is a dispute regarding the compensation adjustment relating to the change. If Contractor proceeds with a change in the Work without complying with the preceding sentence, Contractor agrees that it will not be entitled to any additional compensation for such change.

7. **Correction of Work.** Contractor will promptly correct, at its own expense,
 - a. any portion of the Work which
 - 1) fails to conform to the requirements of the Contract Documents, or
 - 2) is rejected by the Owner as defective or because it is damaged or rendered unsuitable during installation or resulting from failure to exercise proper protection.
 - b. any defects due to faulty materials, equipment, or workmanship which appear within a period of one year from the date of Substantial Completion or within such longer period of time as may be pre-scribed by law or the terms of any applicable special warranty required by the Contract Documents.

8. **Time of Completion.** Contractor will complete the Work and have it ready for Owner's inspection within Thirty (30) calendar days from Notice to Proceed issued by Owner. Time is of the essence. If Contractor is delayed at any time in the progress of the Work by any act or neglect of Owner, or by changes in the Work, or by strikes, lockouts, unusual delay in transportation, unavoidable casualties, or acts of nature beyond Contractor's control, then the time for completion will be extended by the time that completion of the Work is delayed. However, Contractor expressly waives any damages for any such delays other than those delays willfully caused by Owner.

9. **Permits, Surveys, and Taxes.** Contractor will obtain and pay for all permits and licenses, and also pay any applicable taxes. Contractor will also obtain and pay for any surveys it needs to perform the Work. Contractor will conform to all ordinances and covenants governing the Project Site and/or Work.

10. **Compliance with Laws.** Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public authorities relating to performance of the Work.

11. **Payment of Subcontractors and Materialmen.** Contractor will promptly pay for all labor, materials, and equipment used to perform the Work.

12. **Contractor's Insurance.** Prior to performing any work, Contractor will obtain and maintain during the term of this Agreement the following insurance:
 - a. Workers Compensation Insurance.
 - b. Employers Liability Insurance with minimum limits of the greater of \$500,000 E.L. each accident, \$500,000 E. L. disease-each employee, \$500,000 E.L. disease-policy limit or as required by the law of the state in which the Project is located.
 - c. Commercial General Liability Insurance – ISO Form CG 00 01 (12/07) or equivalent Occurrence policy which will provide primary coverage to the additional insureds (the Owner and the Architect) in the event of any Occurrence, Claim, or Suit with:
 - 1) Limits of the greater of: Contractor's actual coverage amounts or the following:
 - a) \$2,000,000 General Aggregate;
 - b) \$2,000,000 Products - Comp/Ops Aggregate;
 - c) \$1,000,000 Personal and Advertising Liability;
 - d) \$1,000,000 Each Occurrence; and
 - e) \$50,000 Fire Damage to Rented Premises (Each Occurrence)
 - 2) Endorsements attached to the General Liability policy including the following or their equivalent:
 - a) ISO Form CG-25-03 (05/09), Amendment of Limits of Insurance (Designated Project or Premises) describing the Agreement and specifying limits as shown above.
 - b) ISO Form CG 20 10 (07/04), Additional Insured – Owners, Lessees, Or Contractors (Form B), naming Owner and Architect as additional insureds.
 - d. Automobile Liability Insurance, with:
 - 1) Combined Single Limit each accident in the amount of \$500,000 or Contractor's actual coverage, whichever is greater; and
 - 2) Coverage applying to "Any Auto" or its equivalent.

Contractor will provide evidence of these insurance coverages to Owner by providing an ACORD 25 (2010/05) Form or its equivalent: (1) listing Owner as the Certificate Holder and Additional Insured on the general liability and any excess liability policies, (2) listing the insurance companies providing coverage (all companies listed must be rated in A.M. Best Company Key Rating Guide-Property-Casualty and each

company must have a rating of B+ Class VII or higher), (3) attaching the endorsements set forth above for the Certificate of Liability Insurance, and (4) bearing the name, address and telephone number of the producer and signed by an authorized representative of the producer. (The signature may be original, stamped, or electronic.) Notwithstanding the foregoing, Owner may, in writing and at its sole discretion, modify these insurance requirements.

13. **Independent Contractor Relationship.** The parties expressly agree that Contractor is not an agent or employee of Owner but is an independent contractor solely responsible for all expenses relating to Contractor's business.
14. **Comply with Intellectual Property Rights of Others.** Contractor represents and warrants that no Work (with its means, methods, goods, and services attendant thereto), provided to Owner will infringe or violate any right of any third party and that Owner may use and exploit such Work, means, methods, goods, and services without liability or obligation to any person or entity (specifically and without limitation, such Work, means, methods, goods, and services will not violate rights under any patent, copyright, trademark, or other intellectual property right or application for the same).
15. **Confidentiality / Property Rights.**
 - a. Owner will retain ownership and intellectual property rights in all plans, designs, drawings, documents, concepts, and materials provided by or on behalf of Owner to Contractor and to all work products of Contractor for or relative to Work performed under this Agreement, such products, services, and Work of Contractor constituting works made for hire. Contractor will not reuse any portions of such items provided by Owner or developed by Contractor for Owner pursuant to this Agreement, or disclose any such items to any third party without the prior written consent of Owner. Owner may withhold its consent in its' absolute discretion.
 - b. In addition, Contractor shall ensure that Contractor, Subcontractors, and the employees, agents and representatives of Contractor and its Subcontractors maintain in strict confidence, and shall use and disclose only as authorized by Owner all Confidential Information of Owner that Contractor receives in connection with the performance of this Agreement. Notwithstanding the foregoing, Contractor may use and disclose any information to the extent required by an order of any court or governmental authority, but only after it has notified Owner and Owner has had an opportunity to obtain reasonable protection for such information in connection with such disclosure. For purposes of this Agreement, "Confidential Information" means:
 - 1) The name or address of any affiliate, customer or contractor of Owner or any information concerning the transactions of any such person with Owner;
 - 2) Any information relating to contracts, agreements, business plans, budgets or other financial information of Owner to the extent such information has not been made available to the public by the Owner; and
 - 3) Any other information that is marked or noted as confidential by the Owner at the time of its disclosure.
16. **Ownership and Use of Renderings and Photographs.** Renderings representing the Work are the property of Owner. All photographs of the Work, whether taken during performance of the Work or at completion, are the property of the Owner. The Owner reserves all rights including copyrights to renderings and photographs of the Work. No renderings or photographs shall be used or distributed without written consent of the Owner.
17. **Public Statements Regarding Work or Property.** Contractor will not make any statements or provide any information to the media about the Work or Property without the prior written consent of Owner. If Contractor receives any requests for information from media, Contractor will refer such requests to Owner.
18. **No Commercial Use of Transaction or Relationship.**
 - a. Without the prior written consent of Owner, which Owner may grant or withhold in its sole discretion, neither Contractor nor Contractor's affiliates, officers, directors, agents, representatives, shareholders, members, Subcontractors, or employees shall make any private commercial use of their relationship to Owner or the Work or Property, including, without limitation:
 - 1) By referring to this Agreement, Owner, or the Work or Property verbally or in any sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials except as may

- be necessary for Contractor to perform Contractor's obligations under the terms of this Agreement;
- 2) By using or allowing the use of any photographs of the Work or any part thereof, or of any service marks, trademarks or trade names or other intellectual property now or which may hereafter be associated with, owned by or licensed by Owner in connection with any service or product; or
 - 3) By contracting with or receiving money or anything of value from any person or commercial entity to facilitate such person or entity obtaining any type of commercial identification, advertising or visibility in connection with the Work or Property.

- b. Notwithstanding the foregoing, Contractor may include a reference to Owner and the services and equipment provided under this Agreement in a professional résumé or other similar listing of Contractor's references without seeking Owner's written consent in each instance; provided, that such reference to Owner, the services and equipment is included with at least several other similar references and is given no more prominence than such other references.

19. **Indemnity and Hold Harmless.**

- a. Contractor will indemnify and hold harmless Owner and Owner's representatives, employees, agents, architects, and consultants from and against any and all claims, damages, liability, demands, costs, judgments, awards, settlements, causes of action, losses and expenses (collectively "Claims" or "Claim"), including but not limited to attorney fees, consultant fees, expert fees, copy costs, and other costs and expenses, arising out of or resulting from performance of the Work, attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of real or personal property, including loss of use resulting therefrom, except to the extent that such liability arises out of the negligence of Owner, its representatives, agents, and employees. This indemnity includes, without limitation, indemnification of Owner from all losses or injury to Owner's property, except to the extent that such loss or injury arises out of the negligence of Owner, its representatives, agents, and employees. This indemnity applies, without limitation, to include Claims occurring both during performance of the Work and/or subsequent to completion of the Work. In the event that any Claim is caused in part by a party indemnified hereunder, that party will bear the cost of such Claim to the extent it was the cause thereof. In the event that a claimant asserts a Claim for recovery against any party indemnified hereunder, the party indemnified hereunder may tender the defense of such Claim to Contractor. If Contractor rejects such tender of defense and it is later determined that the negligence of the party indemnified hereunder did not cause all of the Claim, Contractor will reimburse the party indemnified hereunder for all costs and expenses incurred by that party in defending against the Claim. Contractor will not be liable hereunder to indemnify any party for damages resulting from the sole negligence of that party.
- b. In addition to the foregoing, Contractor will be liable to defend Owner in any lawsuit filed by any Subcontractor relating to the Project. Where liens have been filed against Owner's property, Contractor (and/or its bonding company which has issued bonds for the Project) will obtain lien releases and record them in the appropriate county and/or local jurisdiction and provide Owner with a title free and clear from any liens of Subcontractors. In the event that Contractor and/or its bonding company are unable to obtain a lien release, Owner in its absolute discretion may require Contractor to provide a bond around the lien or a bond to discharge the lien, at Contractor's sole expense.
- c. In addition to the foregoing, Contractor will indemnify and hold Owner harmless from any claim of any other contractor resulting from the performance, nonperformance or delay in performance of the Work by Contractor.
- d. The indemnification obligation herein will not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or a Subcontractor under worker's compensation acts, disability benefit acts, or other employee benefit acts.

20. **Resolution of Disputes.** In the event there is any dispute arising under the Contract Documents which cannot be resolved by agreement between the parties, either party may submit the dispute with all documentation upon which it relies to Director of Architecture, Engineering, and Construction, 50 East North Temple, Salt Lake City, Utah 84150, who will convene a dispute resolution conference within thirty (30) days. The dispute resolution conference will constitute settlement negotiations and any settlement proposal made pursuant to the conference will not be admissible as evidence of liability. In the event that the parties do not resolve their dispute pursuant to the dispute resolution conference, either party may commence legal action to resolve the dispute. Any such action must be commenced within six (6) months from the first day of the dispute resolution conference or be time barred. Submission of the dispute to the Director as outlined above

is a condition precedent to the right to commence legal action to resolve any dispute. In the event that either party commences legal action to adjudicate any dispute without first submitting the dispute to the Director, the other party will be entitled to obtain an order dismissing the litigation without prejudice and awarding such other party any costs and attorneys fees incurred by that party in obtaining the dismissal, including without limitation copy costs, and expert and consultant fees and expenses.

21. **Termination of Agreement by Contractor.** In the event Owner materially breaches any term of the Contract Documents, Contractor will promptly give Written Notice of the breach to Owner. If Owner fails to cure the breach within ten (10) days of the Written Notice, Contractor may terminate this Agreement by giving Written Notice to Owner and recover from Owner the percentage of the Contract Sum represented by the Work completed on the Project site as of the date of termination together with any out of pocket loss Contractor has sustained with respect to materials and equipment as a result of the termination prior to completion of the Work, less any offsets. Contractor will not be entitled to unearned profits or any other compensation or damages as a result of the termination and hereby waives any claim therefor. Contractor will provide to Owner all warranty, as built, inspection, and other close out documents as well as materials that Contractor has in its possession or control at the time of termination. Without limitation, Contractor's indemnities and obligations as well as all warranties relative to Work provided through the date of termination survive a termination hereunder.
22. **Termination of Agreement by Owner for Cause.** Should Contractor make a general assignment for the benefit of its creditors, fail to apply enough properly skilled workmen or specified materials to properly prosecute the Work in accordance with Contractor's schedule, or otherwise materially breach any provision of the Contract Documents, then Owner may, without any prejudice to any other right or remedy, give Contractor Written Notice thereof. If Contractor fails to cure its default within ten (10) days, Owner may terminate this Agreement by giving Written Notice to Contractor, take possession of the premises and all materials, tools, and appliances thereon, and finish the Work by whatever method Owner deems expedient. In such case, Contractor will not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Sum exceeds the expense of finishing the Work, including compensation for additional administrative, architectural, consultant, and legal services (including without limitation attorneys fees, expert fees, copy costs, and other expenses), such excess will be paid to Contractor, less any offsets and recoupment. If such expense exceeds the unpaid balance, Contractor will pay the difference to Owner. Contractor will provide to Owner all warranty, as built, inspection, and other close out documents as well as materials that Contractor has in its possession or control at the time of termination. Without limitation, Contractor's indemnities and obligations as well as all warranties relative to Work provided through the date of termination survive a termination hereunder.
23. **Termination of Agreement by Owner for Convenience.** Notwithstanding any other provision contained in the Contract Documents, Owner may, without cause and in its absolute discretion, terminate this Agreement at any time. In the event of such termination, Contractor will be entitled to recover from Owner the percentage of the Contract Sum equal to the percentage of the Work which Owner and/or its architect determines has been completed on the Project site as of the date of termination together with any out of pocket loss Contractor has sustained with respect to materials and equipment as a result of the termination prior to completion of the Work, less any offsets and recoupment. Contractor will not be entitled to unearned profits or any other compensation as a result of the termination and hereby waives any claim therefor. Contractor will provide to Owner all warranty, as built, inspection, and other close out documents as well as materials that Contractor has in its possession or control at the time of termination. Owner may, in Owner's sole discretion, take legal assignment of subcontracts and other contractual rights of Contractor. Without limitation, Contractor's indemnities and obligations as well as all warranties relative to Work provided through the date of termination survive a termination hereunder.
24. **Assignment of Contract.** The parties hereto will not assign any rights or obligations under this Agreement without the prior written consent of the other party.
25. **Integration Clause.** The Contract Documents reflect the full agreement of the parties with respect to the Project and the Work and supersede all prior discussions, agreements, and representations regarding the subject matter of the Contract Documents. The Contract Documents may be amended only in a written document signed by both parties hereto.

26. **Applicable Law.** The parties acknowledge that the Contract Documents have substantial connections to the State of Utah. The Contract Documents will be deemed to have been made, executed, and delivered in Salt Lake City, Utah. To the maximum extent permitted by law, (i) the Contract Documents and all matters related to their creation and performance will be governed by and enforced in accordance with the laws of the State of Utah, excluding conflicts of law rules, and (ii) all disputes arising from or related to the Contract Documents will be decided only in a state or federal court located in Salt Lake City, Utah and not in any other court or state. Toward that end, the parties hereby consent to the jurisdiction of the state and federal courts located in Salt Lake City, Utah and waive any other venue to which they might be entitled by virtue of domicile, habitual residence, place of business, or otherwise.
27. **Enforcement.** In the event either party commences legal action to enforce or rescind any term of the Contract Documents, the prevailing party will be entitled to recover its attorneys fees and costs, including without limitation all copy costs and expert and consultant fees and expenses, incurred in that action and on all appeals, from the other party.
28. **Bid Proposal/Agreement.** Contractor's submission to Owner of this agreement signed by Contractor will constitute Contractor's offer and bid proposal to perform the Work described in this agreement according to the terms thereof. Owner's signing of this agreement and delivery to Contractor of a signed copy will constitute acceptance of Contractor's offer and will convert this document to a binding agreement.
29. **Effective Date.** The effective date of this Agreement is the date indicated by the Owner's signature.

OWNER:

Corporation of the Presiding Bishop of
The Church of Jesus Christ of Latter-day Saints,
a Utah corporation sole.

CONTRACTOR:

(company)

Signature:

Signature:

Print Name:

Print Name:

Title:

Title:

Address:

Address:

Telephone No:

Telephone No:

Facsimile No:

Facsimile No:

Email:

Email:

Effective Date:

Fed. I.D. or SSN:

License No:

Reviewed By:

Date Signed:

S U P P L E M E N T A R Y C O N D I T I O N S

FOR CONTRACTOR BID PROPOSAL AND R & I PROJECT AGREEMENT (U.S.)

ITEM 1 - GENERAL

1. Conditions of the Contract apply to each Division of the Specifications.
2. Provisions contained in Division 01 apply to all Divisions of the Specifications.

ITEM 2 - LIQUIDATED DAMAGES PAYABLE TO OWNER

This section may be included as a separate additional paragraph to the Bid Proposal and R & I Project Agreement, at Owner's discretion:

Delay in Completion of the Work. For each day after the expiration of the designated Time of Completion that Contractor has not completed the Work, Contractor will pay Owner the amount of Two Hundred (\$200.00) per day as liquidated damages for Owner's loss of use and the added administrative expense to Owner to administer the Project during the period of delay. In addition, Contractor will reimburse Owner for any additional Architect's fees, attorneys' fees, expert fees, consultant fees, copy costs, and other expenses incurred by Owner as a result of the delay. Owner may deduct any liquidated damages or reimbursable expenses from any money due or to become due to Contractor. If the amount of liquidated damages and reimbursable expenses exceeds any amounts due to Contractor, Contractor will pay the difference to Owner within ten (10) days after receipt of a written request from Owner for payment.

ITEM 3 - STATE SPECIFIC SUPPLEMENTARY CONDITIONS

Utah

UTAH STATE SALES TAX:

Add the following to the Bid Proposal and R & I Project Agreement:

1. Contractors should be exempt on purchases of material installed or converted into real property to be used by the Owner. The Contractor will furnish each vendor with a completed Exemption Certificate Form TC-721. The certificate will be prepared by the Contractor for each vendor in order to obtain the exemption.
2. The Owner's tax exempt number is 11871701-002-STC.

UTAH NOTICE OF INTENT TO OBTAIN FINAL COMPLETION:

Add the following to the Bid Proposal and R & I Project Agreement:

- A. Contractor shall file with the State Construction Registry, on its own behalf and/or on behalf of Owner, a notice of intent to obtain final completion at least 45 days before the day on which the Owner or Contractor files or could file a notice of completion under Utah Code Ann. Section 38-1a-506 if:
 1. The completion of performance time under the original contract for construction work is greater than 120 days;
 2. The total original construction contract price exceeds \$500,000; and
 3. The original contractor or owner has not obtained a payment bond in accordance with Utah Code Ann. Section 14-2-1.

UTAH NOTICE OF COMPLETION:

Add the following to the Bid Proposal and R & I Project Agreement:

- A. Within five (5) calendar days of final completion of the Project and in compliance with Section 38-1a-507 Utah Code Annotated, Contractor shall file with the State Construction Registry, and copy to Owner, a notice of completion which shall include, without limitation, the following:
 1. The name, address, telephone number, and email address of the person filing the notice of completion;
 2. The name of the county in which the Project and/or Project site is located;
 3. The date on which final completion is alleged to have occurred;
 4. The method used to determine final completion; and
 5. One of the following:
 - a. The tax parcel identification number of each parcel included in the Project and/or Project site;
 - b. The entry number of a preliminary notice on the same project that includes the tax parcel identification number of each parcel included in the Project and/or Project site; or
 - c. The entry number of the building permit issued for the Project.
- B. Notwithstanding any other provision of the Contract Documents to the contrary, Contractor and Owner agree that any breach or failure to comply with this Section by the Contractor will constitute a breach of contract and the Contractor will be liable for any direct, indirect, or consequential damages to the Owner flowing from this breach.

UTAH STATE PROGRESS PAYMENTS AND FINAL PAYMENT:

Replace paragraph 5 of the Bid Proposal and R & I Project Agreement with the following:

5. Payment

- a. If the Contractor's Bid Proposal Amount is over \$100,000.00, Contractor will submit to Owner a schedule of values which allocates the Contractor's Bid Proposal Amount to various portions of the Work. This schedule, when accepted by Owner, will be used as a basis for reviewing Contractor's payment requests.
- b. Progress Payments: Not more than once each month, Contractor will submit a payment request to Owner. Owner will pay Contractor progress payments for work completed within fifteen (15) days after Owner receives:
 1. Contractor's progress payment request for work to date;
 2. A certification by Contractor that Contractor has paid for all labor, materials, and equipment relating to the Work covered by prior payment requests and that Contractor will pay for all labor, materials, and equipment relating to the Work covered by the current payment request; and
 3. Conditional Waiver and Release Upon Progress Payment documents submitted by Contractor (in content complying with Utah Code § 38-1a-802) executed by each of the subcontractors performing work and/or providing materials covered by the Contractor's progress payment request.
- c. Final Payment: Owner will make full and final payment of the Contract Sum due within thirty (30) days of the completion of all of the following requirements:
 1. Contractor has submitted its final payment request;
 2. Contractor has submitted a certification that Contractor has paid for all labor, materials, and equipment relating to the Work covered by prior payment requests and that Contractor will pay for all labor, materials, and equipment relating to the Work covered by the final payment request; and
 3. Contractor has submitted Waiver and Release Upon Final Payment documents (in content complying with Utah Code § 38-1a-802) executed by each of the subcontractors performing work and/or providing materials covered by the Contractor's final payment request.

Acceptance of final payment by Contractor or any Subcontractor will constitute a waiver of

claims by the payee except for those claims previously made to Owner in writing and identified by Contractor in its affidavit as still pending.
If the aggregate of previous payments made by Owner exceeds the amount due Contractor, Contractor will reimburse the difference to Owner.

- d. Owner may modify or reject any payment request if, in Owner's opinion, the Work for which payment is requested is not acceptable or is less complete than represented on the payment request.
- e. Upon receipt of any payment from Owner, Contractor will pay to each Subcontractor the amount paid to Contractor on account of such Subcontractor's portion of the Work.
- f. Contractor will maintain a copy of each payment request at the Project site for review by the Subcontractors.
- g. No payment made, either in whole or in part, by Owner will be construed to be an acceptance of defective or improper materials or workmanship.

END OF DOCUMENT

DIVISION 01**SECTION 01 0000****GENERAL REQUIREMENTS: R&I PROJECT**

01 1000 SUMMARY
01 1200 MULTIPLE CONTRACT SUMMARY
01 1400 WORK RESTRICTIONS
01 3000 ADMINISTRATIVE REQUIREMENTS
01 3100 PROJECT MANAGEMENT AND COORDINATION
01 3300 SUBMITTAL PROCEDURES
01 3500 SPECIAL PROCEDURES
01 4000 QUALITY REQUIREMENTS
01 4301 QUALITY ASSURANCE – QUALIFICATIONS
01 4523 TESTING AND INSPECTING SERVICES
01 5000 TEMPORARY FACILITIES AND CONTROLS
01 6100 PRODUCT REQUIREMENTS
01 6200 PRODUCT OPTIONS
01 6400 OWNER-FURNISHED PRODUCTS
01 6600 DELIVERY, STORAGE, AND HANDLING REQUIREMENTS
01 7000 EXECUTION REQUIREMENTS
01 7400 CLEANING AND WASTE MANAGEMENT
01 7700 CLOSEOUT PROCEDURES
01 7800 CLOSEOUT SUBMITTALS

SECTION 01 1000 SUMMARY

- A. Provisions contained in Division 01 apply to all other sections and divisions of Specifications. All instructions contained in Specifications are directed to Contractor. Unless specifically provided otherwise, all obligations set forth in Specifications are obligations of Contractor.
- B. Comply with applicable laws and regulations.
- C. Owner may provide furnishings and/or equipment for Project. Contractor will receive, store, and protect such items on site until the date Owner accepts Project.
- D. Work by Owner: Owner will furnish and install some portions of the Work with its own forces. Complete the Work necessary to accommodate the Work to be performed by Owner before scheduled date for performance of such Work.

SECTION 01 1200 MULTIPLE CONTRACT SUMMARY

- A. Separate Contracts may be issued by Owner for performance of certain construction operations at Project site. Contractor will afford other contractors reasonable opportunity to place and store their materials and equipment on site and to perform their work and will properly connect and coordinate its work with theirs where applicable.

SECTION 01 1400 WORK RESTRICTIONS

- A. During construction period, Contractor will have use of premises for construction operations. Contractor will ensure that Contractor, its employees, subcontractors, and employees comply with following requirements:
 - 1. Confine operations to areas within Contract limits shown on Drawings. Do not disturb portions of site beyond Contract limits.
 - 2. Do not allow alcoholic beverages, illegal drugs, or persons under their influence on Project Site.
 - 3. Do not allow use of tobacco in any form on Project Site.
 - 4. Do not allow pornographic or other indecent materials on site.
 - 5. Do not allow work on Project Site on Sundays except for emergency work.

6. Refrain from using profanity or being discourteous or uncivil to others on Project Site or while performing The Work.
7. Wear shirts with sleeves, wear shoes, and refrain from wearing immodest, offensive, or obnoxious clothing, while on Project Site.
8. Do not allow playing of obnoxious and loud music on Project Site. Do not allow playing of any music within existing facilities.
9. Do not build fires on Project Site.
10. Do not allow weapons on Project Site, except those carried by law enforcement officers and/or other uniformed security personnel who have been retained by Owner or Contractor to provide security services.

B. Existing Facilities:

1. If Owner will occupy existing building, reasonably accommodate use of existing facilities by Owner.

SECTION 01 3000 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate construction activities to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations that are dependent upon each other for proper installation, connection, and operation. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

SECTION 01 3100 PROJECT MANAGEMENT AND COORDINATION

A. Multiple Contract Coordination:

1. Contractor shall be responsible for coordination of Temporary Facilities and Controls, Construction Waste Management and Disposal services, and Final Cleaning for entire Project unless directed otherwise by Owner's Representative for those who perform work on Project from Notice to Proceed to date of Substantial Completion.

B. Preconstruction Conference:

1. Attend preconstruction conference and organizational meeting scheduled by Architect or Owner Representative at Project site or other convenient location.
2. Be prepared to discuss items of significance that could affect progress, including such topics as:
 - a. Construction schedule, equipment deliveries, general inspection of tests, preparation of record documents and O&M manuals, project cleanup, security, shop drawings, samples, use of premises, work restrictions, and working hours.

SECTION 01 3300 SUBMITTAL PROCEDURES

- A. Coordination preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently before performance of related construction activities to avoid delay.
- B. Allow sufficient review time so installation will not be delayed by time required to process submittals.
- C. Place permanent label or title block on each submittal for identification. Include name of entity that prepared each submittal on label or title block.
- D. Package each submittal appropriately for transmittal and handling.

SECTION 01 3500 SPECIAL PROCEDURES

A. Hot Work Permit (Available from Owner's Representative):

1. Required for doing hot work involving open flames or producing heat or sparks such as:
 - a. Brazing.
 - b. Cutting.
 - c. Grinding.
 - d. Soldering.
 - e. Thawing pipe.
 - f. Torch applied roofing.

- g. Welding.

SECTION 01 4000 QUALITY REQUIREMENTS

- A. Testing and inspecting services are used to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- B. Conflicting Requirements: If compliance with two or more standards is specified and standards establish different or conflicting requirements for minimum quantities or quality levels, comply with most stringent requirement.
- C. Minimum Quantity or Quality Levels: Quantity or quality level shown or specified shall be the minimum provided or performed. Actual installation may comply exactly with minimum quantity or quality specified, or it may exceed minimum within reasonable limits.
- D. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to verify compliance and guard against defects and deficiencies and substantiate that proposed construction will comply with requirements. Owner or Owner's designated representative(s) will perform quality assurance to verify compliance with Contract Documents.
- E. Quality Control Services: Quality Control will be sole responsibility of Contractor. 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 performed by Contractor. They do not include inspections, tests or related actions performed by Architect or Owner Representative, governing authorities or independent agencies hired by Owner or Architect. Quality assurance performed by Owner will be used to validate Quality Control performed by Contractor:
1. Where services are indicated as Contractor's responsibility, engage qualified Testing Agency to perform these quality control services:
 - a. Contractor will not employ same testing entity engaged by Owner, without Owner's written approval.
- F. Notify Owner immediately if asbestos-containing materials or other hazardous materials are encountered while performing the Work.
- G. Submit to Owner permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records establishing compliance with standards and regulations bearing upon performance of the Work.
- H. Repair And Protection:
1. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 2. Protect construction exposed by or for Quality Assurance and Quality Control activities.
 3. Repair and protection are Contractor's responsibility, regardless of assignment of responsibility for Quality Assurance and Quality Control Services.

SECTION 01 4301 QUALITY ASSURANCE - QUALIFICATIONS

- A. Qualifications: Qualifications in this Section establish minimum qualification levels required; individual Specification Sections specify additional requirements:
1. Fabricator / Supplier / Installer Qualifications:
 - a. Firm experienced in producing products similar to those indicated for this Project and with record of successful in-service performance, as well as sufficient production capacity to produce required units:
 - 1) Where heading '*VMR (Value Managed Relationship) Suppliers / Installers*' is used to identify list of specified suppliers or installers, Owner has established relationships that extend beyond requirements of this Project. No other suppliers / installers will be acceptable. Follow specified procedures to preserve relationships between Owner and specified suppliers / installers and advantages that accrue to Owner from those relationships.

- 2) Where heading 'Acceptable or Approved Suppliers / Installers / Fabricators' is used to identify list of specified suppliers / installers / fabricators, use only one of listed suppliers / installers / fabricators. No others will be acceptable.
2. Factory-Authorized Service Representative Qualifications:
 - a. 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.
3. 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 record of successful in-service performance.
4. Manufacturer Qualifications:
 - a. Firm experienced in manufacturing products or systems similar to those indicated for this Project and with record of successful in-service performance, as well as sufficient production capacity to produce required units.
5. Manufacturer's Field Services Qualifications:
 - a. Experienced authorized representative of manufacturer to inspect field-assembled components and equipment installation, including service connections.
6. 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 kind indicated:
 - 1) Engineering services are defined as those performed for installations of system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
7. Specialists:
 - a. Certain sections of Specifications require that specific construction activities will be performed by entities who are recognized experts in those operations:
 - 1) Specialists will satisfy qualification requirements indicated and will be engaged for activities indicated.
 - 2) Requirement for special will not supersede building codes and regulations governing the Work.
8. Testing Agency Qualifications:
 - a. Independent Testing Agency with experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - b. Testing Laboratory:
 - 1) AASHTO Materials Reference Laboratory (AMRL) Accreditation Program.
 - 2) Cement and Concrete Reference Laboratory (CCRL).
 - 3) Nationally Recognized Testing Laboratory (NRTL): Nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 4) National Voluntary Laboratory (NVLAP): Testing Agency accredited according to National Institute of Standards and Technology (NIST) Technology Administration, U. S. Department of Commerce Accreditation Program.

SECTION 01 4523 TESTING AND INSPECTION SERVICES

- A. Submittals:
 1. Certificates: Testing Agency will submit certified written report of each inspection, test, or similar service.
 2. Tests and Evaluation Reports:
 - a. Testing Agency or Agencies will prepare logs, test reports, and certificates applicable to specific tests and inspections and deliver copies to Owner's Representative and to each of following if involved on project: Architect, Consulting Engineers (Engineer of Record), General Contractor, Authorities Having Jurisdiction (if required).
 3. Testing Agency:
 - a. Qualifications of Testing Agency management, personnel, inspector and technicians designated to project.
 - b. Provide procedures for non-destructive testing, equipment calibration records, personnel training records, welding inspection, bolting inspection, shear connector stud inspection, and seismic connection inspections.
- B. Quality Assurance:

1. Owner or Owner's designated representative(s) will perform quality assurance. Owner's quality assurance procedures may include observations, inspections, testing, verification, monitoring and any other procedures deemed necessary by Owner to verify compliance with Contract Documents.
 2. Owner will employ independent Testing Agencies to perform certain specified testing, as Owner deems necessary.
 3. Certification:
 - a. Product producers and associations, which have instituted approved systems of quality control and which have been approved by document approval agencies, are not required to have further testing.
 - b. Concrete mixing plants, plants producing fabricated concrete and wood or plywood products certified by agency, lumber, plywood grade marked by approved associates, and materials or equipment bearing underwriters' laboratory labels require no further testing and inspection.
 4. Written Practice for Quality Assurance:
 - a. Testing Agency will maintain written practice for selection and administration of inspection personnel, describing training, experience, and examination requirements for qualification and certification of inspection personnel.
 - b. Written practice will describe testing agency procedures for determining acceptability of structure in accordance with applicable codes, standards, and specifications.
 - c. Written practice will describe Testing Agency inspection procedures, including general inspection, material controls, visual welding inspection, and bolting inspection.
- C. Quality Control:
1. Quality Control will be sole responsibility of Contractor. Contractor will be responsible for testing, coordination, start-up, operational checkout, and commissioning of all items of the Work included in Project. All costs for these services will be included in Contractor's cost of the Work.
 2. Notify results of all Testing and Inspection performed by Contractor's independent Testing Agencies to Architect and/or Owner's Representative within 24 hours of test or inspection having been performed:
 - a. Testing and Inspection Reports will be distributed as follows:
 - 1) 1 copy to Owner's Representative.
 - 2) 1 copy to Architect.
 - 3) 1 copy to Consulting Engineer(s) (Engineer of Record).
 - 4) 1 copy to Authorities Having Jurisdiction (if required).
 3. Contractor's Responsibility:
 - a. Owner's employment of an independent Testing Agency does not relieve Contractor of Contractor's obligation to perform the Work in strict accordance with requirements of Contract Documents.
 - b. Tests and inspections that are not explicitly assigned to Owner are responsibility of Contractor.
 - c. Cooperate with Testing Agency(s) performing required inspections, tests, and similar services and provide reasonable auxiliary services as requested. Notify Testing Agency before operations to allow assignment of personnel. Auxiliary services required include but are not limited to:
 - 1) Providing access to the Work and furnishing incidental labor, equipment, and facilities deemed necessary by Testing Agency to facilitate inspections and tests at no additional cost to Owner.
 - 2) Taking adequate quantities of representative samples of materials that require testing or helping Testing Agency in taking samples.
 - 3) Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
 - 4) Providing Testing Agency with preliminary design mix proposed for use for materials mixes that require control by Testing Agency.
 - d. For any requested inspection, Contractor will complete prior inspections to ensure that items are ready for inspection.
 - e. All Work is subject to testing and inspection and verification of correct operation.
 - f. Comply:
 - 1) Upon completion of Testing Agency's inspection, testing, sample-taking, and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
 - 2) Comply with Contract Documents in making such repairs.
 - g. Data:
 - 1) Furnish records, drawings, certificates, and similar data as may be required by testing and inspection personnel to assure compliance with Contract Documents.
 - h. Defective Work (Non-Conforming Work): Non-conforming Work as covered in General Conditions applies, but is not limited to following requirements Protection:

- 1) Where results of inspections, tests, or similar services show that the Work does not comply with Contract Document requirements, correct deficiencies in the Work promptly to avoid work delays.
 - 2) Where testing personnel take cores or cut-outs to verify compliance, repair prior to acceptance.
 - 3) Contractor will be responsible for any and all costs incurred resulting from inspection that was scheduled prematurely or retesting due to failed tests.
 - 4) Remove and replace any Work found defective or not complying with contract document requirements at no additional cost to Owner.
 - 5) Should test return unacceptable results, Contractor will bear all costs of retesting and re-inspection as well as cost of all material consumed by testing, and replacement of unsatisfactory material and/or workmanship.
- i. Protection:
- 1) Protect construction exposed by or for quality assurance and quality control service activities, and protect repaired construction.
- j. Scheduling: Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities:
- 1) Schedule testing and inspections in advance so as not to delay the Work and to eliminate any need to uncover the Work for testing or inspection.
 - 2) Notify Testing Agency and Architect or Owner as noted in Sections in Division 01 thru Division 50 prior to any time required for such services.
 - 3) Incorporate adequate time for performance of all inspections and correction of noted deficiencies.
 - 4) Schedule sequence of activities to accommodate required services with minimum of delay.
 - 5) Schedule sequence of activities to avoid necessity of removing and replacing construction to accommodate testing and inspections.
- k. Test and Inspection Log:
- 1) Provide system of tracking all field reports, describing items noted, and resolution of each item. Prepare record of tests and inspections. Include following requirements:
 - (a) Date test or inspection was conducted.
 - (b) Description of the Work tested or inspected.
 - (c) Date test or inspection results were transmitted to Architect or Owner Representative.
 - (d) Identification of Testing Agency or inspector conducting test or inspection.
 - 2) Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's or Owner's reference during normal working hours.
- D. Tests And Inspections - General:
1. Testing specifically identified to be conducted by Owner, will be performed by an independent entity and will be arranged and paid for by Owner.
 2. Individual Sections in Division 01 through Division 50 indicate if Owner will provide testing and inspection of the Work of that Section.
 3. Owner may engage additional consultants for testing, air balancing, commissioning, or other special services:
 - a. Activities of any such Owner consultants are in addition to Contractor testing of materials or systems necessary to prove that performance is in compliance with Contract requirements.
 - b. Contractor must cooperate with persons and firms engaged in these activities.
 4. Tests include but not limited to those described in detail in 'Field Quality Control' in Part 3 of Individual Sections in Divisions 01 through Division 50.
 5. Taking Specimens:
 - a. Only testing laboratory shall secure, handle, transport, or store any samples and specimens for testing.
 6. Scheduling Testing Agency:
 - a. Contractor will coordinate the Work and facilitate timeliness of such testing and inspecting services so as not to delay the Work.
 - b. Contractor will notify Testing Agency and Architect or Owner Representative to schedule tests and / or inspections.
- E. Testing Agency Services And Responsibility:
1. Testing Agency, including independent testing laboratories, will be licensed and authorized to operate in jurisdiction in which Project is located:
 - a. Approved Testing Agency Qualifications: Requirements of Section 01 4301 apply.
 2. Testing and Inspection Services:

- a. Testing Agency will not release, revoke, alter, or increase Contract Document requirements or approve or accept any portion of the Work.
 - b. Testing Agency will not give direction or instruction to Contractor.
 - c. Testing Agency will have full authority to see that the Work is performed in strict accordance with requirements of Contract Documents and directions of Owner's Representative and/or Architect.
 - d. Testing Agency will not provide additional testing and inspection services beyond scope of the Work without prior approval of Owner's Representative and/or Architect.
3. Testing Agency Duties:
- a. Independent Testing Agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual specification Sections will cooperate with Architect or Owner Representative and Contractor in performance of its duties and will provide qualified personnel to perform required inspections and tests.
 - b. Testing Agency will test or obtain certificates of tests of materials and methods of construction, as described herein or elsewhere in technical specification.
 - c. Testing Agency will provide management, personnel, equipment, and services necessary to perform testing functions as outlined in this section.
 - d. Testing Agency must have experience and capability to conduct testing and inspecting indicated by ASTM standards and that specializes in types of tests and inspections to be performed.
 - e. Testing Agency will comply with requirements of ASTM E329, ASTM E543, ASTM C1021, ASTM C1077, ASTM C1093, ASTM D3666, ASTM D3740, and other relevant ASTM standards.
 - f. Testing Agency must calibrate all testing equipment at reasonable intervals (minimum yearly) with accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.
 - g. Welding Procedure Review: Testing Agency will provide review and approval or rejection of all welding procedures to be used and verify compliance with all reference standard requirements.
4. Testing and Inspection Reports:
- a. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
 - b. Laboratory Reports: Testing Agency will furnish reports of materials and construction as required, including:
 - 1) Description of method of test.
 - 2) Identification of sample and portion of the Work tested:
 - (a) Description of location in the Work of sample.
 - (b) Time and date when sample was obtained.
 - (c) Weather and climatic conditions at time when sample was obtained.
 - 3) Evaluation of results of tests including recommendations for action.
 - c. Inspection Reports:
 - 1) Testing Agency will furnish "Inspection at Site" reports for each site visit documenting activities, observations, and inspections.
 - 2) Include notation of weather and climatic conditions, time and date conditions and status of the Work, actions taken, and recommendations or evaluation of the Work.
 - d. Reporting Testing and Inspection (Conforming Work):
 - 1) Submit testing and inspection reports as required within twenty four (24) hours of test or inspection having been performed.
 - e. Reporting Testing and Inspection Defective Work (Non-Conforming Work):
 - 1) Testing Agency, upon determination of irregularities, deficiencies observed or test failure(s) observed in the Work during performance of its services of test or inspection having been performed, will:
 - (a) Verbally notify results to Architect, Contractor, and Owner's Representative within one hour of test or inspection having been performed (if Defective Work (Non-Conforming Work) is incorporated into project).
 - (b) Submit written inspection report and test results as required within twenty four (24) hours of test or inspection having been performed.
 - f. Final Report:
 - 1) Submit final report of tests and inspections at Substantial Completion, which identify unresolved deficiencies.
- F. Architect's Responsibility:
1. Architect Duties:
 - a. Notify Owner's Representative before each test and/or inspection:
- G. Field Quality Control:

1. Field Tests And Inspections:
 - a. Field Test and Inspection requirements are described in detail in 'Field Quality Control' in Part 3 Execution' of individual Sections in Division 01 thru Division 49.

SECTION 01 5000 TEMPORARY FACILITIES AND CONTROLS

- A. Owner will provide electric power for construction activities within limits available at existing facility.
- B. Proprietary Camera Services: In its absolute discretion, and with or without notice to Contractor, Owner may provide from time to time, but is not obligated to provide, one or more cameras on or about Project site and/or signage or notices of the same:
 1. If provided by Owner, such camera(s) and/or signage and notices are solely for Owner's benefit and convenience and shall not be for benefit of Contractor, Subcontractor(s) or for any third person.
 2. Owner shall have no liability, obligation, or responsibility to Contractor, Subcontractors, or any third person relative to such camera(s), signage, or notices, or absence of camera(s), signage, or notices, including without limitation, installation, maintenance, operation, repair, testing, functionality, capacity, recording, monitoring, posting, etc., of the same (hereafter 'Proprietary Camera Services').
 3. Contractor, with Owner's prior consent (which shall not be unreasonably withheld), may relocate such camera(s), signage, or notices as necessary to not unreasonably, materially and physically interfere with work at Project Site.
 4. Contractor's obligations under Contract Documents, including but not limited to, Contractor's obligation for security of Project Site, are not modified by Owner's opportunity to provide, actually providing, or not providing Proprietary Camera Services and/or signage or notices regarding the same.
 5. This Specification Section does not preclude Contractor from providing its own camera(s), signage, or notices pursuant to terms and conditions of this Agreement. Neither does this Section reduce, expand or modify any other right or obligation of Owner pursuant to terms of this Agreement.
- C. Exercise caution to avoid fire damage: Do not build fires on site.
- D. Permanent mechanical system may be operated upon following conditions:
 1. Do not interfere with normal set-back temperature patterns except as approved by Project Manager.
 2. Do not operate system when the Work causing airborne dust is occurring or when dust caused by such Work is present without first installing temporary filtering system.
- E. Existing lighting system may be used by Contractor.
- F. Contractor will use existing water supply for construction purposes to extent of existing facilities.
- G. Existing restroom facilities may be used by Contractor. Clean restrooms and portions of existing building used in accessing restrooms daily. If existing facilities are not usable, provide and maintain temporary sanitary toilet.
- H. Erect adequate barricades, warning signs, and lights necessary to protect persons from injury or harm.
- I. Contractor is responsible for security of materials, tools, and equipment. Do not permit others to use building keys provided by Owner. Safeguard building and contents while the Work is being performed and secure building when the Work is finished for day.
- J. Protect existing trees and plants. Remove and replace vegetation that dies or is damaged beyond repair due to construction activities.
- K. Provide temporary enclosures at exterior building openings for security and protection from weather, theft, and vandalism. Erect and maintain dust-proof partitions and enclosures as required to prevent spread of dust and fumes to occupied portions of building.
- L. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and reduce possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result:
 1. Avoid use of tools and equipment that produce harmful noise.

2. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near site.
3. Protect the Work, materials, apparatus, and fixtures from injury due to weather, theft, and vandalism.

SECTION 01 6100 PRODUCT REQUIREMENTS

- A. Provide products that comply with Contract Documents, are undamaged, and, unless otherwise indicated, are new and unused at time of installation. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and for intended use and effect.

SECTION 01 6200 PRODUCT OPTIONS

- A. Product selection is governed by Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include:
1. Substitutions And Equal Products:
 - a. Generally speaking, substitutions for specified products and systems, as defined in Uniform Commercial Code, are not acceptable. However, equal products may be approved upon compliance with Contract Document requirements.
 - b. Approved Products / Manufacturers / Suppliers / Installers:
 - 1) Category One:
 - (a) Owner has established 'Value Managed Relationships' that extend beyond requirements of this Project. No substitutions or equal products will be allowed on this Project.
 - (b) Follow specified procedures to preserve relationships between Owner and specified manufacturers / suppliers and advantages that accrue to Owner from those relationships.
 - 2) Category Two:
 - (a) Owner has established National Contracts that contain provisions extending beyond requirements of this Project. No substitutions or equal products will be allowed on this Project.
 - (b) Follow specified procedures to preserve relationships between Owner and specified manufacturers / suppliers and advantages that accrue to Owner from those relationships.
 - 3) Category Three:
 - (a) Specified products are provided to Church Projects under a National Account Program. Use these products to preserve advantages that accrue to Owner from those programs. No substitutions or equal products will be allowed on this Project.
 - 4) Category Four:
 - (a) Provide only specified products available from manufacturers listed. No substitutions, private-labeled, or equal products, or mixing of manufacturers' products is allowed on this Project.
 - (b) In Sections where lists recapitulating Manufacturers previously mentioned in Section are included under heading '*Manufacturers*' or '*Approved Manufacturers*', this is intended as convenience to Contractor as listing of contact information only. It is not intended that all manufacturers in list may provide products where specific products and manufacturers are listed elsewhere in Section.
 - c. Acceptable Products / Manufacturers / Suppliers / Installers:
 - 1) Type One: Use specified products / manufacturers unless approval to use other products / manufacturers has been obtained from Architect or Owner Representative by Addendum.
 - 2) Type Two: Use specified products / manufacturers unless approval to use other products and manufacturers has been obtained from Architect or Owner Representative in writing before installing or applying unlisted or private-labeled products.
 - 3) Use 'Equal Product Approval Request Form' to request approval of equal products, manufacturers, or suppliers before bidding or before installation, as noted in individual Sections.
 - d. Quality / Performance Standard Products / Manufacturers:
 - 1) Class One: Use specified product / manufacturer or equal product from specified manufacturers only.
 - 2) Class Two: Use specified product / manufacturer or equal product from any manufacturer.
 - 3) Products / manufacturers used will conform to Contract Document requirements.

SECTION 01 6400 OWNER-FURNISHED PRODUCTS

- A. Install items furnished by Owner or receive and store in safe condition items purchased directly by Owner according to requirements of Contract Documents.

SECTION 01 6600 DELIVERY, STORAGE, AND HANDLING REQUIREMENTS

- A. Deliver, store, and handle products according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
- B. 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.
- C. Deliver products to site in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
- D. Inspect products upon delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.
- E. Store products at site in manner that will simplify inspection and measurement of quantity or counting of units.
- F. Store heavy materials away from Project structure so supporting construction will not be endangered.
- G. Store products subject to damage by elements above ground, under cover in weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

SECTION 01 7000 EXECUTION REQUIREMENTS

- A. Design, furnish, and install all shoring, bracing, and sheathing as required for safety and for proper execution of the Work and, unless otherwise required, remove same when the Work is completed.
- B. Require installer of each major component to inspect both substrate and conditions under which the Work is to be done:
1. Notify Owner in writing of unsatisfactory conditions.
 2. Do not proceed until unsatisfactory conditions have been corrected.
- C. Provide attachment and connection devices and methods necessary for securing the Work:
1. Secure the Work true to line and level.
 2. Allow for expansion and building movement.
- D. Recheck measurements and dimensions before starting each installation.
- E. Where mounting heights are not shown, install individual components at standard mounting heights recognized within industry or local codes for that application. Refer questionable mounting height decisions to Owner for final decision.
- F. Cover and protect furniture, equipment, and fixtures from soiling and damage when demolition the Work is performed in rooms and areas from which such items have not been removed.
- G. Completion Inspection:
1. Upon 100 percent completion of Project, Contractor will request Substantial Completion Inspection.
 2. Owner will conduct Substantial Completion Inspection in presence of Contractor and furnish list of items to be corrected.
 3. Contractor will notify Owner in writing when items have been corrected.

SECTION 01 7400 CLEANING AND WASTE MANAGEMENT

- A. Disposal Of Waste:
1. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in landfill or incinerator acceptable to authorities having jurisdiction:

- a. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - b. Remove and transport debris in manner that will prevent spillage on adjacent surfaces and areas.
 2. Burning: Do not burn waste materials.
 3. Disposal: Transport waste materials off Owner's property and legally dispose of them.
- B. Progress Cleaning:
1. Keep premises broom-clean during progress of the Work.
 2. During handling and installation, protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from soiling, damage, or deterioration until Substantial Completion.
 3. Clean and maintain completed construction as frequently as necessary throughout construction period.
 4. Remove waste materials and rubbish caused by employees, subcontractors, and contractors under separate contract with Owner and dispose of legally.
- C. Final Cleaning:
1. Clean each surface or unit to condition expected in normal, commercial-building cleaning and maintenance program. Comply with manufacturer's instructions. Remove all rubbish from under and about building and leave building clean and habitable.
 2. In addition to general cleaning noted above, perform cleaning for all trades at completion of the Work in areas where construction activities have occurred.
 3. If Contractor fails to clean up, Owner may do so and charge cost to Contractor.

SECTION 01 7700 CLOSEOUT PROCEDURES

- A. General:
1. Closeout process consists of three specific project closeout inspections. Contractor shall plan sufficient time in construction schedule to allow for required inspections before expiration of Contract Time.
 2. Contractor shall conduct his own inspections of The Work and shall not request closeout inspections until The Work of the contract is reasonably complete and correction of obvious defects or omissions are complete or imminent.
 3. Date of Substantial Completion shall not occur until completion of construction work, unless agreed to by Architect / Owner's Representative and included on Certificate of Substantial Completion.
- B. Preliminary Closeout Review:
1. When Architect, Owner and Contractor agree that project is ready for closeout, Pre-Substantial Inspection shall be scheduled. Preparation of floor substrate to receive carpeting and any work which could conceivably damage or stain carpet must be completed, as carpet installation will be scheduled immediately following this inspection.
 2. Prior to this inspection, completed test and evaluation reports for HVAC system and font, where one occurs, are to be provided to Project Manager, Architect, and applicable consultants.
 3. Architect, Owner and Contractor review completion of punch list items. When Owner and Architect confirm that Contractor has achieved Substantial Completion of The Work, Owner, Architect and Contractor will execute Certificate of Substantial Completion that contains:
 - a. Punch list of items requiring completion and correction will be created.
 - b. Time frame for completion of punch list items will be established, and date for Substantial Completion Inspection shall be set.
- C. Substantial Completion Inspection:
1. When Architect, Owner and Contractor agree that project is ready for Substantial Completion, an inspection is held. Punch list created at Pre-Substantial Inspection is to be substantially complete.
 2. Prior to this inspection, Contractor shall discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups and similar elements.
 3. Architect, Owner and Contractor review completion of punch list items. When Owner and Architect confirm that Contractor has achieved Substantial Completion of The Work, Owner, Architect and Contractor will execute Certificate of Substantial Completion that contains:
 - a. Date of Substantial Completion.
 - b. Punch List Work not yet completed, including seasonal and long lead items.
 - c. Amount to be withheld for completion of Punch List Work.
 - d. Time period for completion of Punch List Work.
 - e. Amount of liquidated damages set forth in Supplementary Conditions to be assessed if Contractor fails to complete Punch List Work within time set forth in Certificate.

4. Contractor shall present Closeout Submittals to Architect and place tools, spare parts, extra stock, and similar items required by Contract Documents in locations as directed by Facilities Manager.
- D. Final Acceptance Meeting:
1. When punch list items except for any seasonal items or long lead items which will not prohibit occupancy are completed, Final Acceptance Meeting is held.
 2. Owner, Architect and Contractor execute Owner's Project Closeout - Final Acceptance form, and verify:
 - a. All seasonal and long lead items not prohibiting occupancy, if any, are identified, with committed to completion date and amount to be withheld until completion.
 - b. Owner's maintenance personnel have been instructed on all system operation and maintenance as required by the Contract Documents.
 - c. Final cleaning requirements have been completed.
 3. If applicable, once any seasonal and long lead items are completed, Closeout Inspection is held where Owner and Architect verify that The Work has been satisfactorily completed, and Owner, Architect and Contractor execute Closeout portion of the Project Closeout - Final Acceptance form.
 4. When Owner and Architect confirm that The Work is satisfactorily completed, Architect will authorize final payment.

SECTION 01 7800 CLOSEOUT SUBMITTALS

- A. Operations And Maintenance Data: Operations And Maintenance Manual that include:
1. Project Manual:
 - a. Copy of complete Project Manual including Addenda, Modifications as defined in General Conditions, and other interpretations issued during construction:
 - (1) Mark these documents to show variations in actual Work performed in comparison with text of specifications and Modifications. Show substitutions, selection of options, and similar information, particularly on elements that are concealed or cannot otherwise be readily discerned later by direct observation.
 - (2) Note related record drawing information and Product Data.
 2. Soils Report:
 - a. Copy of Soils Report.
 3. Operations and Data:
 - a. Operations and maintenance submittals required by Contract Documents.
 4. Warranty Documentation:
 - a. Copies of warranties required by Contract Documents.
 5. Record Documentation:
 - a. Certifications required by Contract Documents.
 - b. Documentation submittals required by Contract Documents.
 - c. Testing and Inspection Reports required by Contract Documents.
 6. Landscape Management Plan (LMP):
 - a. Irrigation Section:
 - (1) Documentation required by Sections under 32 8000 Heading: Irrigation.
 - b. Landscaping Section:
 - (1) Documentation required by Sections under 32 8000 Heading: Irrigation.
- B. Warranties:
1. When written guarantees beyond one (1) year after substantial completion are required by Contract Documents, secure such guarantees and warranties properly addressed and signed in favor of Owner. Include these documents in Operations & Maintenance Manual(s) specified above.
 2. Delivery of guarantees and warranties will not relieve Contractor from obligations assumed under other provisions of Contract Documents.
- C. Project Record Documents:
1. Do not use record documents for construction purposes:
 - a. Protect from deterioration and loss in secure, fire-resistive location.
 - b. Provide access to record documents for reference during normal Working hours.
 2. Maintain clean, undamaged set of Drawings. Mark set to show actual installation where installation varies from the Work as originally shown. Give particular attention to concealed elements that would be difficult to measure and record at later date.
 - a. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.

- b. Mark new information that is important to Owner, but was not shown on Contract Drawings.
- c. Note related Change Order numbers where applicable.

END OF SECTION

SECTION 02 4119**SELECTIVE STRUCTURE DEMOLITION****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.

1.2 REFERENCES

- A. Reference Standards:
 - 1. National Fire Protection Association / American National Standards Institute:
 - a. NFPA 241, 'Standard for Safeguarding Construction, Alteration, and Demolition Operations', 2013 Edition.
 - 2. American Society of Safety Engineers:
 - a. ASSE A10.6-2006, 'Safety Requirements for Demolition Operations'.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Storage or sale of removed items or materials will not be permitted on-site.
- B. Pre-Installation Conference:
 - 1. Before beginning Selective Demolition work, in addition to requirements of Section 01 3100, meet on site to confirm work to be demolished, items to be salvaged or reused, and coordination with Owner.
- C. Scheduling:
 - 1. Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, on Schedule specified in Section 01 3200.

1.4 SUBMITTALS

- A. Informational Submittals:
 - 1. Special Procedure Submittals:
 - a. Inventory:
 - 1) After selective demolition is complete, submit list of items that have been removed and salvaged.

1.5 QUALITY ASSURANCE

- A. Regulatory Agency Sustainability Approvals:
 - 1. Comply with governing EPA notification regulations before beginning selective demolition.
 - 2. Comply with hauling and disposal regulations of authorities having jurisdiction.
 - 3. Standards: Comply with ANSI A10.6 and NFPA 241.

1.6 FIELD CONDITIONS

A. Existing Conditions:

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

PART 2 - PRODUCTS: Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification Of Conditions:

1. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
 - a. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

B. Evaluation And Assessment:

1. Hazardous Materials:
 - a. It is not expected that hazardous materials will be encountered in the Work. Identified hazardous materials will be removed by Owner before start of the Work.
 - b. If materials suspected of containing hazardous materials are encountered, do not disturb and immediately notify Architect.
2. Inventory and record condition of items to be removed and reinstalled and items to be removed and salvaged.
3. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure nature and extent of conflict. Promptly submit written report to Architect.
4. Engage a professional engineer to 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.
5. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 PREPARATION

A. Temporary Facilities:

1. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
2. Maintain fire-protection facilities in service during selective demolition operations.

B. Temporary Shoring:

1. 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.
2. Strengthen or add new supports when required during progress of selective demolition.

C. Utility Services:

1. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
2. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - a. Arrange to shut off indicated utilities with utility companies.

- b. 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.

3.3 SELECTIVE DEMOLITION

A. General:

1. Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
2. Demolish and remove existing construction only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - a. Neatly cut 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.
 - b. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - c. 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.
 - d. Maintain adequate ventilation when using cutting torches.
 - e. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - f. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - g. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - h. Dispose of demolished items and materials promptly.

B. Selective Demolition Procedures For Specific Materials:

1. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

C. Removed and Salvaged Items:

1. Relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
 - a. Clean salvaged items as directed by Owner.
 - b. Pack or crate items after cleaning. Identify contents of containers.
 - c. Store items in a secure area until delivery to Owner.
 - d. Transport items to Owner's storage area designated by Owner.
 - e. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain:

1. Protect construction indicated to remain against damage and soiling during selective demolition.

2. 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.

3.4 CLEANING

A. General:

1. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations.
2. Return adjacent areas to condition existing before selective demolition operations began.

B. Waste Management:

1. Disposal of Demolished Materials:
 - a. Remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill. Do not burn demolished materials.
 - 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 elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

END OF SECTION

SECTION 04 0121**UNIT MASONRY REPOINTING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Remove existing mortar to specified depth, clean joints, and tuck-point as described in Contract Documents.
 - 2. Remove, clean, and reinstall existing masonry units as described in Contract Documents.
 - 3. Remove existing masonry units and replace with new masonry units as described in Contract Documents.
- B. Related Requirements:
 - 1. Section 04 0513: 'Cement and Lime Masonry Mortaring'.

1.2 REFERENCES

- A. Reference Standards:
 - 1. ASTM International:
 - a. ASTM C150/C150M-16, 'Standard Specification for Portland Cement'.
 - b. ASTM C207-06(2011), 'Standard Specification for Hydrated Lime for Masonry Purposes'.

PART 2 - PRODUCTS**2.1 SYSTEM**

- A. Materials:
 - 1. Design Criteria:
 - a. Hydrated Lime: Meet requirements of ASTM C207, Type S.
 - b. Portland Cement: Meet requirements of ASTM C150/C150M-09, Type II, White (non-staining).
 - c. Aggregate:
 - 1) Match existing as much as possible.
 - 2) Generally, sand with rounded edges is preferred.
 - 2. Color:
 - a. Match existing mortar color unless otherwise agreed to.
 - b. This will generally require fresh mortar to be slightly darker than existing to compensate for natural bleaching with age.
 - 3. Water: Clean, drinkable.
- B. Mixes:
 - 1. Pointing mortar shall be softer or no harder than existing mortar. Unless agreed to otherwise, mix may be one part lime and 2 parts sand. Portland cement may be added up to 20 percent of total lime and sand. Use no admixtures.
 - 2. Mix dry ingredients, then add about half water and mix for five minutes. Add additional water slowly until proper consistency is reached. Use mortar within 30 minutes. Do not re-temper.

PART 3 - EXECUTION**3.1 PERFORMANCE**

- A. Interface With Other Work: Coordinate work of this Section with general masonry cleaning so all, except final pointing, is completed before general masonry cleaning, if any.
- B. Remove mortar from joint 2-1/2 times deeper than joint width or one inch, whichever is greater, with hammer and cold chisel or other suitable hand tools. Do not use power tools unless it can be demonstrated to Architect's satisfaction that masonry surfaces will not be damaged.
- C. Remove masonry from designated areas, if any, and clean mortar from salvageable removed units and from surrounding units in wall. Re-lay masonry units in wall leaving raked joint to approximate depth of existing joints prepared for repointing. Mortar for re-laying shall be as specified in Section 04 0513.
- D. Clean joints with combination of water flushing and brushing with bristle brush.
- E. Work fresh mortar from 'hawk' to joint with jointing tool. First fill recessed areas, which are deeper than standard chiseled depth, and then proceed to fill raked joint using several layers of mortar and working tool in one direction only. Each layer of mortar shall be thumbprint hard before succeeding layer is applied. Where corners of face brick have eroded, it may be necessary to recess mortar to some degree in order to maintain consistent visual width of joints.
- F. Perform final tooling when mortar is thumbprint hard.

3.2 CLEANING

- A. Clean face of masonry one to two hours after mortar has set.
 - 1. Use plain stiff bristle brush.
 - 2. If mortar has become too hard, use brush and plain water and wooden paddle or, if necessary, a chisel.
 - 3. If harsher cleaning methods are required, allow mortar to cure thirty (30) days before commencing.

END OF SECTION

SECTION 04 0131**UNIT MASONRY CLEANING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Clean exterior masonry surfaces as described in Contract Documents.
- B. Related Requirements:
 - 1. Sections under 09 9000 heading: Paints And Coatings.
 - 2. Section 07 1900: 'Water Repellent'.

1.2 QUALITY ASSURANCE

- A. Regulatory Agency Sustainability Approvals:
 - 1. Adhere to applicable City, State, and Federal EPA laws and requirements.
 - 2. Require applicators to observe applicable Federal and State Agency, industry, and Manufacturer recommended safety regulations and precautions. Applicators shall wear safety goggles, rubber gloves, and plastic or rubber rain suits so as to avoid splash to skin or eyes.
- B. Qualifications:
 - 1. Installers:
 - a. Applicators performing work of this section shall have five years minimum experience using specified restorative cleaning techniques.
- C. Field Samples:
 - 1. Fundamental consideration for selection of appropriate cleaning procedures shall be that materials and techniques adopted do minimal or no damage to masonry substrates while achieving desired degree of cleaning.
 - 2. Architect will approve location of test areas.
 - 3. Clean test areas with recommended specified cleaning material for inspection and approval of Architect.
 - 4. Conduct tests on each building exposure in unobtrusive locations on representative staining conditions.
 - 5. Tests shall employ cleansing operation and include evaluation of all surfaces to be cleaned.
 - 6. Test samples of adjacent non-masonry materials for possible reaction with cleaning materials.
 - 7. Test procedures shall include evaluation of materials and techniques proposed for protection of surrounding and adjacent non-masonry surfaces from cleaning solutions and rinse waters.
 - 8. Representative of Cleaning Materials Manufacturer shall be present during preparation and application of cleaning materials for all test areas.
 - 9. Do not begin full scale cleaning operations until Architect has approved cleaning results in test areas and application procedures.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Storage And Handling Requirements:
 - 1. Purchase and store on site in factory sealed containers sufficient cleaning materials to complete Project.
 - 2. Containers shall be available for inspection.

1.4 FIELD CONDITIONS

- A. Ambient Conditions:
1. Conduct cleaning operations at time of year when treated masonry surfaces will have adequate time to thoroughly dry without fear of freezing. Do not perform masonry cleaning at temperatures below 40 deg F (4 deg C), or when local Weather Service reports indicate temperatures below 40 deg F (4 deg C) during ensuing 24 hours are imminent, unless heated rinse water will be used and if approved in writing by Architect.
 2. Do not perform masonry cleaning during winds sufficiently strong to spread sprayed compound to adjacent unprotected surfaces.

PART 2 - PRODUCTS

2.1 SYSTEM

- A. Manufacturers:
1. Manufacturer Contact List:
 - a. Diedrich Technologies, Oak Creek, WI www.diedrichtechnologies.com.
 - b. Sure Klean Products by ProSoCo Inc, Kansas City, KS www.prosoco.com.
- B. Description:
1. This specification describes cleaning systems designed to effectively clean and restore exterior masonry surfaces.
 2. Selection of specific cleaners to be used shall be dependent on type of substrate, its condition, and results of tests conducted at job site as specified below.
 3. Sandblasting and use of non-proprietary acids, alkalis, powdered or liquid, is not permitted.
 4. Application shall be in accordance with Manufacturer's recommendations and as approved in writing by Owner.
- C. Materials:
1. Paint Stripper I:
 - a. Primarily for removal of graffiti, paint spills or drips, spray paints, inks and crayons. May be used for heavy-duty coatings, epoxies, urethanes, floor enamels and other chemically resistant coatings.
 - b. Type One Acceptable Products:
 - 1) Sure Klean 509 Paint Stripper.
 - 2) Diedrich 505 Special Coatings Stripper.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
 2. Paint Stripper II:
 - a. Formulated specifically for removal of certain types of latex and lacquer paints.
 - b. Type One Acceptable Products:
 - 1) Sure Klean 940 Paint Stripper.
 - 2) Diedrich 505, 505X.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
 3. Paint Stripper III:
 - a. For removing multiple layers of paint coatings and graffiti from exterior masonry surfaces.
 - b. Type One Acceptable Products:
 - 1) Sure Klean Heavy Duty Paint Stripper.
 - 2) Diedrich 606 Paint Remover.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
 4. Asphalt And Tar Remover:
 - a. For removal of asphalt / tar roofing spills, grease, hydraulic oil, motor oil, and other similar stains from masonry surfaces.
 - b. Type One Acceptable Products:
 - 1) Sure Klean Asphalt And Tar Remover.
 - 2) Diedrich 920 Asphalt And Tar Remover.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.

5. Prewash I:
 - a. Formulated for use with Restoration Cleaner I, Limestone Afterwash, and Restorer I.
 - b. Acts as 'carbon solubilizer' and assists in removing heavy carbon encrustations from brick, terra cotta, sandstone, limestone, and most other masonry.
 - c. Type One Acceptable Products:
 - 1) Sure Klean 766 Prewash.
 - 2) Diedrich 808 Limestone Prewash.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
6. Prewash II:
 - a. For use on difficult to clean masonry where restoration cleaner alone does not do an adequate job of cleaning masonry surface.
 - b. Type One Acceptable Products:
 - 1) Sure Klean 792 Masonry Prewash.
 - 2) Diedrich 707X, 808X.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
7. Restoration Cleaner I:
 - a. For removing atmospheric staining with heavy deposits of carbon and dirt, paint oxidation, embedded clay and mud stains, rust, smoke, and algae.
 - b. Effective on brick, granite, sandstone, unpolished marble, and most other types of masonry surfaces. Do not use on limestone surfaces.
 - c. Type One Acceptable Products:
 - 1) Sure Klean Restoration Cleaner.
 - 2) Diedrich 101G Restoration Cleaner.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
8. Restoration Cleaner II:
 - a. For removing atmospheric staining from heavy deposits of carbon and dirt, paint oxidations, embedded clay and mud stains, rust, smoke, and algae.
 - b. Effective on brick, granite, sandstone, unpolished marble, and most other types of masonry surfaces. Do not use on limestone surfaces.
 - c. Provides triple strength cleaning action and is designed for cleaning extremely dirty and heavily carboned masonry surfaces typically found in large cities or high pollution areas.
 - d. Type One Acceptable Products:
 - 1) Sure Klean Heavy Duty Restoration Cleaner.
 - 2) Diedrich 101 Masonry Restorer.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
9. Restorer:
 - a. For removing atmospheric and organic stains from high calcium based natural limestone, precast limestone, concrete, exposed aggregate, and similar masonry surfaces.
 - b. Type One Acceptable Products:
 - 1) Sure Klean Limestone Restorer.
 - 2) 202 New Masonry Detergent.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
10. Limestone Prewash And Limestone Afterwash:
 - a. For removing heavy carbon, dirt, and other atmospheric stains from porous limestone surfaces.
 - b. Most appropriate for cleaning extremely old limestone surfaces and limestone structures in high pollution areas.
 - c. Type One Acceptable Products:
 - 1) Sure Klean Limestone Prewash and Sure Klean Limestone Afterwash.
 - 2) Diedrich 707X Limestone Cleaner Pre-Rinse and 707N Limestone Neutralizer After-Rinse.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
11. Strippable Masking:
 - a. For protecting glass, non-porous metal, and polished stone surfaces from damaging effect of acidic cleaning materials. It is a liquid, film forming, strippable masking material.
 - b. Type One Acceptable Products:
 - 1) Sure Klean Strippable Masking.
 - 2) Diedrich Acid Guard.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.
12. Aluminum Cleaner:

- a. For removing aluminum oxidation, atmospheric dirt, carbon, and other related surface stains from architectural aluminum.
- b. Type One Acceptable Products:
 - 1) Sure Klean Aluminum Cleaner.
 - 2) Diedrich 970 Aluminum Cleaner.
 - 3) Equals as approved by Architect before bidding. See Section 01 6200.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protection Of In-Place Conditions:
 1. Provide covered access to building for public, employees, and service vehicles at all times.
 2. Protect, or avoid contact with, auto and pedestrian traffic.
 3. Protect aluminum, wood, and painted surfaces from exposure to cleaning solution. Also protect plants and shrubbery.
 4. Protect surrounding landscape and lawn areas from contact with cleaning solutions.
 - a. Landscape and lawn areas may be best protected by keeping them as wet as possible through use of lawn soaker hoses which provide a slow but steady mist of water to areas adjacent to masonry being cleaned.
 - b. Root systems of adjacent trees and shrubs exposed to cleaning rinse waters can be protected with use of neutralizing trenches.
 5. Protect non-masonry surfaces that are not to be replaced from contact with cleaning solution.
 - a. Protect wooden and painted surfaces with sheets of polyethylene or other proven protective materials, firmly fixed and sealed to surface.
 - b. Keep non-masonry surfaces, which are not protected, running-wet with clean water throughout cleaning process of adjacent masonries.
- B. Surface Preparation:
 1. Complete paint stripping and cleaning procedures before installation of new window glazing and paint finishes. Failure to do so will make it necessary to protect such finishes from contact with cleaning and paint stripping agents.
 2. Test surfaces not to be cleaned for possible detrimental effects of cleaning solutions and protect as determined necessary by test results.
 3. Temporarily calk or otherwise protect open joints to prevent intrusion of washing waters into wall structure or building interior.

3.2 APPLICATION

- A. General:
 1. Any dilution of cleaning materials will be with clean water in accordance with instructions on Manufacturer's printed container label.
 2. Surface Treatment:
 - a. Thoroughly pre-wet surfaces, which are to be treated with water soluble materials, with clean water before application of cleaning materials. Do not pre-wet surfaces to be cleaned with materials containing solvents, such as Paint Strippers I, II, and III, and Asphalt And Tar Remover.
 - b. Purpose of pre-wetting is to limit activity of cleaning solution to masonry surface and prevent cleaning solutions from being too readily absorbed by dry masonries. Failure to adequately pre-wet may result in streaking and other residual staining of treated masonries.
 3. Pressure Application:
 - a. Use high pressure rinsing equipment for pre-wetting and rinsing procedures described below. Pressures of 400 to 800 psi (2.76 to 5.52 MPa) and a flow rate of 4 to 6 gallons (18 to 27 liters) per minute have proved most effective.

- b. Use low-pressure spray application for cleaning materials. High pressure application may drive cleaning compounds deep into masonry surface making it impossible to rinse treated surfaces free of cleaning residues.
 - c. If spray application of cleaning solution is desired, apply cleaning agents with **50 psi (0.35 MPa)** maximum spray equipment.
 - d. Equipment that can apply hot water shall be controllable so water temperatures do not exceed **160 deg F (71 deg C)**.
4. In areas of high public traffic, perform cleaning operations at night.
 5. Rinse chemicals after appropriate dwell time using garden hose just before rinsing with high-pressure equipment.
 6. Avoid cleaning at times of extreme or excessive winds.
 7. When cleaning from scaffolding in traffic areas, drape scaffolding with plastic or burlap to reduce spray drift.
 8. When working in an area of public foot traffic, build shed over sidewalk to protect pedestrian traffic.
- B. Paint Stripper I:
1. Remove as much paint / stain matter as is practical with hand scrappers.
 2. Using a natural fibered cleaning brush, roller or large paint brush, apply a heavy, thick coating of paint stripper to painted / stained areas.
 3. Allow paint stripper to remain until paint / stain 'lifts' or shows signs of dissolving. Do not allow stripper to dry on surface.
 4. Rinse treated surfaces thoroughly with fresh water using pressure washing equipment to remove paint stripper and dissolved paint/stain material.
- C. Paint Stripper III:
1. Using synthetic fibered brush, roller, or appropriate spray equipment, apply a heavy, thick coating of paint stripper to painted surfaces. On surfaces that have multiple coats of paint, sufficient material should be applied to produce a **1/8 inch (3 mm)** buildup of stripper on surface.
 2. Allow paint stripper to remain on surface for 4 to 24 hours until paint is obviously dissolved. On surfaces that have received 15 to 20 coats of paint, second application of paint stripper directly over first application, before rinsing, will frequently improve efficiency of stripping operation.
 3. Rinse treated surfaces thoroughly with fresh water using pressure washing equipment to remove all paint stripper and solubilized paint material.
 4. Reapply as required to removal all traces of paint coatings.
 5. When all paint has been removed, use a restoration cleaner to remove all traces of stripper and to clean exposed masonry.
- D. Asphalt And Tar Remover:
1. Using densely packed masonry washing brush or low-pressure spray, apply Asphalt And Tar Remover liberally to dry masonry surface. When using spray application beware of drift and employ solvent resistant spraying devices.
 2. Allow cleaning solution to stay on wall for several minutes.
 3. Reapply cleaning solution to stained areas with vigorous scrubbing manner with a stiff fibered masonry washing brush.
 4. Rinse treated surfaces thoroughly with fresh water employing full city water pressure or pressure washing equipment removing all cleaning compounds and staining matter.
 5. Allow masonry surfaces to thoroughly dry before determining cleaning results.
 6. Reapply as necessary.
- E. Prewash:
1. Apply heavy coating of Prewash to masonry surface using synthetic fiber brush or roller.
 2. Allow material to remain on surface until carbon stains are dissolved. Do not allow prewash to dry on surface.
 3. Rinse treated surfaces thoroughly with fresh water, employing pressure equipment removing all cleaning compound, dirt, etc.
 4. Apply a Restoration Cleaner to area treated using a natural fiber masonry washing brush or low pressure spray.
 5. Allow solution to dwell on surface three to five minutes depending on drying conditions. Do not allow cleaning solution to dry in.

6. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compounds, dirt, stains, etc.
- F. Restoration Cleaner I:
1. Apply cleaning solution liberally to masonry surface using low-pressure spray or densely packed, soft fibered masonry washing brush.
 2. Allow cleaning solution to remain on wall for 3 to 5 minutes depending upon drying conditions. Do not allow cleaning solution to dry in.
 3. Reapply cleaning solution in a scrubbing manner.
 4. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compounds, dirt, etc.
 5. Reapply as necessary.
- G. Restoration Cleaner II:
1. Apply cleaning solution liberally to masonry surface using low-pressure spray or densely packed, soft fibered masonry washing brush.
 2. Allow cleaning solution to remain on wall for three to five minutes depending upon drying conditions. Do not allow cleaning solution to dry in.
 3. Reapply cleaning solution in a scrubbing manner.
 4. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compounds, dirt, etc.
 5. Reapply as necessary.
- H. Restorer:
1. Apply cleaning solution liberally to masonry surface using low-pressure spray or densely packed, soft fibered masonry washing brush.
 2. Allow cleaning solution to remain on wall for three to five minutes depending upon drying conditions. Do not allow cleaning solution to dry in.
 3. Reapply cleaning solution in a scrubbing manner.
 4. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compounds, dirt, etc.
 5. Reapply as necessary.
- I. Limestone Prewash / Afterwash:
1. Apply heavy coating of Limestone Prewash to masonry surface using synthetic fiber brush or roller.
 2. Allow material to remain on surface until carbon stains are dissolved. Do not allow cleaning solution to dry in.
 3. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compound, dirt, etc.
 4. Immediately apply solution of Afterwash as specified below.
 5. Apply prepared solution (diluted two parts water to one part concentrated cleaner) to area treated using natural fiber masonry washing brush or low pressure spray.
 6. Allow solution to dwell on surface 3 to 5 minutes depending on drying conditions. Do not allow cleaning solution to dry in.
 7. Rinse treated surfaces thoroughly with fresh water employing pressure washing equipment removing all cleaning compounds, dirt, stain, etc.
- J. Strippable Masking:
1. Test surfaces to be coated to verify ease of removal before general application. Surfaces should be clean and free of contaminants.
 2. Using brush or roller:
 - a. Apply masking material so as to provide a build-up of 2.0 dry mils of coating.
 3. Allow masking to dry before exposing coating to cleaning application.
 4. Remove within 15 days (exterior) to 60 days (interior) by pulling corner of coating free of surface and continue to pull coating from surface.
- K. Aluminum Cleaner:
1. Pre-wet surface to be cleaned.
 2. Apply cleaning solution liberally to aluminum surface to be cleaned.

3. Allow to remain on surface for approximately three minutes, then apply second coat in scrubbing manner.
4. Immediately rinse with fresh water. Do not clean hot surfaces or surfaces exposed to direct sunlight.

3.3 CLEANING

- A. Remove and dispose of masking materials following completion of cleaning operation. Leave windows and non-masonry areas clean.
- B. Sweep or flush residue washed from building surface away from surrounding sidewalk and service areas nightly. Premises shall be clean and neat at all times.

END OF SECTION

SECTION 04 0148**STONE CLEANING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Cleaning of exterior stone as described in Contract Documents.

1.2 SUBMITTALS

- A. Action Submittals:
 - 1. Product Data:
 - a. Manufacturer's technical data for application and use of products used.
 - b. Include test reports and certifications substantiating that products comply with requirements.
 - 2. Samples:
 - a. Detergent.
 - b. Spot cleaners.

1.3 QUALITY ASSURANCE

- A. Regulatory Agency Sustainability Approvals:
 - 1. Comply with requirements of EPA, State, and local governing agency for proper handling or disposal of cleaning materials and runoff solutions. Do not allow runoff solutions to remain on site or to enter City sewer system unless approval has been granted in advance.
- B. Qualifications:
 - 1. Installers:
 - a. Work shall be performed by a company having 10 years minimum of verified successful experience in at least ten comparable masonry cleaning projects.
 - b. Personnel shall be skilled and trained in restoration procedures and operations specified and have practical working knowledge of U.S. Department of Interior's 'Standards for Rehabilitation.'

1.4 FIELD CONDITIONS

- A. Ambient Conditions:
 - 1. Clean surfaces only when air temperature is above 40 deg F (4 deg C) and will remain so until masonry has dried, but for not less than 7 days after completion of cleaning.

PART 2 - PRODUCTS**2.1 SYSTEM**

- A. Materials:
 - 1. Water: Clean, potable, free of oils, acids, alkalis, salts and organic matter.
 - 2. Cleaning detergents, cleaning compounds, liquid solutions, and soap powders
 - a. Subject to approval of Owner.

- b. Do not use acidic, alkaline, and other ingredients, which independently or in combination in compound, fluid, or solution, will damage masonry.
- c. Mechanical cleaning by grit blasters, grinders, or sanding discs or other means using abrasives is not permitted.
3. Brushes: Natural fiber-bristle only. No nylon or metal bristle brushes.
4. Spot Cleaners:
 - a. Standard strength masonry restoration cleaners applied for use on specific stains by paste application:
 - 1) Organic Stains: (Wood, leaves, paper, bird droppings, etc.) pinkish brown stains by hydrogen peroxide (5 to 10 percent strength).
 - 2) Iron Stains: One part sodium citrates in six parts water, mixed with equal volume of glycerine.
 - 3) Copper Or Bronze Stains: One part ammonium chloride mixed dry with four parts powdered talc. Mild solution of ammonia may be added to form paste.
 - 4) New Oil Stains: Solution of benzol or unleaded gasoline mixed with hydrated lime or marble dust to make paste.
 - 5) Linseed Oil Stains: Paste compound of one part trisodium phosphate, one part sodium perborate and three parts powdered talc mixed with strong soap solution.
 - 6) Paints, Including Graffiti:
 - a) Benzol as **1/2 inch (13 mm)** thick poultice.
 - b) Lye, caustic soda, or methylene chloride.
 - 7) Proprietary preparations of paste recommended by stone industry in accordance with Manufacturer's published instructions.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protection Of In-Place Conditions:
 1. Protect persons, motor vehicles, adjacent surfaces, site, and surrounding buildings from injury, dust, spray, or noise resulting from masonry cleaning work.
 2. Prevent solutions from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be injured by contact.
 3. Do not clean masonry during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
 4. Erect adequate barrier and enclosure to protect pedestrians and landscaping from blowing water and cleaning solutions. Erect other temporary protection barriers as required by authorities having jurisdiction.
 5. Comply with recommendations of manufacturers of cleaners for protection against damage from exposure to their products.
 6. Protect glass, unpainted metal trim and wood from contact with cleaners by covering them with polyethylene film and waterproof masking tape.

3.2 APPLICATION

- A. Interface With Other Work: Perform stone cleaning after stone and concrete repair has been completed and after stone restoration and stone tuckpointing have been completed.
- B. Proceed with cleaning in orderly manner from top to bottom.
 1. Use only suitable combination of scrubbing, paste application, and water soaking / spray methods and those cleaning methods specified for masonry.
 2. Perform cleaning methods in manner which results in uniform coverage of surfaces, including corners, moldings, interstices and which produces even effect without streaking or damage to masonry surfaces.
 3. Rinse off residue and soil by working upwards from bottom to top of each treated area. Dirt and foreign material shall be washed away by water.

4. Workmanship:
 - a. Finished work shall show no signs of stains, scratches, streaks or runs of discoloration, mortar damage, or other like defects from use of cleaners.
 - b. Leave all surfaces neat and clean.
- C. Scrubbing:
 1. Scrubbing methods for cleaning dirt as approved by Owner includes following:
 - a. Scrubbing by hand, using suitable brushes and liquid coat solution or boiled soap powder, then rinsing stone with clean water.
 - b. Scrubbing with power-driven, rotating brushes of proper material and suitable cleaning compound or solution.
 2. Brushes shall be of stiff natural fiber bristles and be selected for efficiency in cleaning with least possible injury to surface.
 3. Cleaning shall commence at top and continue progressively down face.
- D. Paste Application:
 1. Apply paste for removal of stains and discolorations over entire stained surface and allow to dry.
 2. Commence cleaning at top and continue progressively down face.
 3. Paints, Including Graffiti:
 - a. Use razor blade to remove paint drips and remove paint staining by either of following methods:
 - 1) Apply benzol as 1/2 inch (13 mm) thick poultice.
 - a) Let dry and remove.
 - b) Bleach remaining color, rinse and repeat as required.
 - 2) Apply lye, caustic soda, or methylene chloride remover over stain.
 - a) Remove and scrub with bristle brush.
 - b) Bleach remaining color and use oil solvent for remaining oil stain.
 - c) Rinse with solvent for remaining oil stain.
 - d) Rinse with neutralizing wash to prevent buildup of salts.
 4. Repeat operation as necessary to remove stain.
- E. Water Soaking / Spray Method:
 1. Soak masonry surfaces by nebulization (low pressure, low volume) spraying continuously for minimum of 10 hours to soften and remove surface dirt, grease, soot, dust, carbon deposits, bird feces, and salt deposits.
 2. Direct spray heads at angle for efficiency cleaning.
 3. Rinse surfaces with 200 to 600 psi (1.38 to 4.2 MPa) spray so as not to damage joints.
 4. Monitor water spray for penetration into interior spaces.

3.3 CLEANING

- A. Waste Management: Dispose of runoff from cleaning operations by legal means and in manner which prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

END OF SECTION

SECTION 04 0513**CEMENT AND LIME MASONRY MORTARING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Quality of masonry mortar used on Project.
- B. Related Requirements:
 - 1. Section 01 0000: 'General Requirements':
 - a. Section 01 4000: 'Quality Requirements' for administrative and procedural requirements for quality assurance and quality control.
 - b. Section 01 4301: 'Quality Assurance – Qualifications' establishes minimum qualification levels required.
 - 2. Sections Under 04 2000 Heading: Furnish and install mortar.

1.2 REFERENCES

- A. Definitions:
 - 1. Mortar: Plastic mixture of cementitious materials, fine aggregate and water. See ASTM C270.
- B. Reference Standards:
 - 1. ASTM International:
 - a. ASTM C144-11, 'Standard Specification for Aggregate for Masonry Mortar'.
 - b. ASTM C150/C150M-16, 'Standard Specification for Portland Cement'.
 - c. ASTM C207-06(2011), 'Standard Specification for Hydrated Lime for Masonry Purposes'.
 - d. ASTM C270-14a, 'Standard Specification for Mortar for Unit Masonry'.

1.3 SUBMITTALS

- A. Informational Submittals:
 - 1. Source Quality Control Submittals:
 - a. If pre-mixed wet mortar or pre-blended dry mortar mix are to be used, provide certification from Manufacturer or Supplier verifying that mixes meet specification requirements.
 - b. If site mixed / blended mortar is to be used, provide written description of proposed method of measuring and mixing of materials.

PART 2 - PRODUCTS**2.1 SYSTEM**

- A. Performance:
 - 1. Minimum Compressive Strength at 28 Days:
 - a. Type S: 1800 psi (12.4 MPa).
- B. Materials:
 - 1. Portland Cement:
 - a. Meet requirements of ASTM C150/C150M, Type II Low Alkali unless approved otherwise in writing by Architect.

- 2. Hydrated Lime:
 - a. Meet requirements of ASTM C207, Type S.
- 3. Aggregate:
 - a. Standard Mortar:
 - 1) Natural or manufactured sand meeting requirements of ASTM C144 and following:
 - a) Fineness modulus: 1.6 to 2.5 percent.
 - b) Water demand, ratio by weight: 0.65 percent maximum.
 - c) Grading:

Sieve	Sieve	Percent Passing	
		Natural Sand	Manufactured Sand
No. 4	4.750 mm	100	100
No. 8	2.360 mm	95 to 100	95 to 100
No. 16	1.191 mm	70 to 100	70 to 100
No. 30	0.594 mm	40 to 75	40 to 75
No. 50	0.297 mm	10 to 35	20 to 40
No. 100	0.150 mm	2 to 15	10 to 25
No. 200	0.075 mm	none	0 to 10

- b. Stone Unit Masonry Mortar:
 - 1) White Mortar Aggregates:
 - a) Natural white sand or ground white stone.
 - 2) Colored Mortar Aggregates:
 - a) Ground marble, granite, or other sound stone, as required to match Architect's sample.
 - 3) Grading requirements for joints narrower than 1/4 inch (6 mm):

Sieve	Sieve	Percent Passing	
		Natural Sand	Manufactured Sand
No. 8	2.360 mm	100	100
No. 16	1.191 mm	95 to 100	95 to 100
No. 30	0.594 mm	40 to 75	40 to 75
No. 50	0.297 mm	10 to 35	20 to 40
No. 100	0.150 mm	2 to 15	10 to 25
No. 200	0.075 mm	none	0 to 10

- 4) Grading requirements for pointing mortar:

Sieve	Sieve	Percent Passing	
		Natural Sand	Manufactured Sand
No. 16	1.191 mm	100	100
No. 30	0.594 mm	40 to 75	40 to 75
No. 50	0.297 mm	10 to 35	20 to 40
No. 100	0.150 mm	2 to 15	10 to 25
No. 200	0.075 mm	none	0 to 10

- 4. Water:
 - a. Clean and free of acids, alkalis, and organic materials.
- 5. Admixtures:
 - a. Use no admixtures, except for color pigments specified below, without Architect's written permission. Use of any admixture to meet cold weather requirements and admixtures that increase air entrainment are expressly forbidden under all circumstances.
- 6. Mortar Color Pigment:

- a. High purity, chemically inert, unfading, alkali-fast mineral oxides, finely ground and especially prepared for mortar.
- b. Color Standard: As selected by Architect.
- c. Type One Acceptable Products:
 - 1) True Tone Mortar Colors by Davis Colors, Los Angeles, CA www.daviscolors.com.
 - 2) SGS Mortar Colors by Solomon Colors, Springfield, IL www.solomoncolors.com.
 - 3) Equal as approved by Architect before bidding. See Section 01 6200.

C. Mixes:

- 1. General:
 - a. Heat water and sand to 140 deg F (60 deg C) maximum if temperature is below 40 deg F (4.4 deg C).
- 2. Unit Masonry Mortar: Type 'N':
 - a. Parts by Volume:
 - Portland Cement 1
 - Hydrated Lime 1/2
 - Damp Loose Sand: 2-1/4 minimum to three maximum, times sum of volumes of cement and lime used. Maintain sand piles in damp, loose condition.
- 3. Unit Masonry Mortar: Type 'S':
 - a. Parts by Weight:

Portland Cement	94 lbs	43 kg
Hydrated Lime	20 lbs	9 kg
Dry Sand	360 lbs min. to 480 lbs max.	163 kg min. to 218 kg max.

- 4. Stonework Mortar:
 - a. One part Portland cement to three parts of sand.
 - b. Mix in water until it will retain its form when compressed in hand.

PART 3 - EXECUTION: Not Used

END OF SECTION

SECTION 07 6240**ALUMINUM FLASHING AND TRIM****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Furnish and install aluminum flashing, counterflashing, and hold-down clips as described in Contract Documents.
- B. Related Requirements:
 - 1. Sections under 07 3000 heading: 'Steep Slope Roofing' for installation of gravel stops, copings, scuppers, and miscellaneous roofing related flashing.
 - 2. Section 07 9213: 'Elastomeric Joint Sealant'.

PART 2 - PRODUCTS**2.1 SYSTEM**

- A. Manufacturers:
 - 1. Type Two Acceptable Manufacturers Of Metal:
 - a. ATAS International, Inc., Allentown PA www.ATAS.com.
 - b. Fabral, Lancaster, PA www.fabral.com.
 - c. Firestone Metal Products, Anoka, MN www.unaclad.com.
 - d. MBCI, Houston, TX www.mbc.com.
 - e. Metal Sales Manufacturing Corp, Sellersburg, IN www.mtlsales.com.
 - f. O'Neal Flat Rolled Metals (member of O'Neal Industries), Brighton, CO www.ofrmetals.com.
 - g. Petersen Aluminum Corp, Elk Grove, IL www.pac-clad.com.
 - h. Ryerson, Chicago, IL www.ryerson.com.
 - i. Equal as approved by Architect before installation. See Section 01 6200.
- B. Materials:
 - 1. Sheet Aluminum:
 - a. 3105-H25 alloy.
 - 1) Flashing And Counterflashing: 0.040 inch (one mm) thick minimum.
 - 2) Hold-Down Clips: 0.050 inch (1.27 mm) thick minimum.
 - b. Finish:
 - 1) Unexposed: Mill finish.
 - 2) Exposed To View:
 - a) Face coating of polyvinylidene Fluoride (PVF₂) Resin-base finish (Kynar 500 or Hylar 5000) containing 70 percent minimum PVF₂ in resin portion of formula. Thermo-cured two coat system consisting of corrosion inhibiting epoxy primer and top coat factory applied over properly pre-treated metal.
 - b) Color as selected by Architect from Manufacturer's standard colors (to match existing).
- C. Fabrication:
 - 1. Form accurately to details.
 - 2. Profiles, bends, and intersections shall be even and true to line.
 - 3. Fold exposed edges 1/2 inch (13 mm) to provide stiffness.

2.2 ACCESSORIES

- A. Screws, Bolts, Nails, And Accessory Fasteners: Of strength and type consistent with function.
- B. Step Flashing:
 - 1. Step flashing required for steep slope for roof to wall flashing.
 - 2. Size: 5 inch (125 mm) x 5 inch (125 mm) by 8 inch (200 mm) or 12 inches (300 mm) length.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Slope to provide positive drainage.
- B. Provide sufficient hold down clips to insure true alignment and security against wind.
- C. Install with 4 inch (100 mm) minimum overlap.
- D. Bed overlap joints in appropriate sealant specified in Section 07 9213.
- E. Form and lap step flashings.
- F. Allow sufficient tolerance for expansion and contraction.
- G. Insulate work to prevent electrolytic action.

3.2 CLEANING

- A. Leave metals clean and free of defects, stains, and damaged finish.

END OF SECTION

SECTION 07 6310**STEEP SLOPE ROOF FLASHING: Asphalt Shingles****PART 1 - GENERAL****1.1 SUMMARY**

- A. Products Furnished But Not Installed Under This Section:
1. Roof flashing including:
 - a. Miscellaneous flashing.

1.2 REFERENCES

- A. Definitions:
1. Base Flashing: That portion of flashing attached to or resting on roof deck to direct flow of water onto the roof covering.
 2. Cap Flashing: Material used to cover top edge of base flashings or other flashings to prevent water seepage behind base flashing. Cap flashing overlaps base flashing.
 3. Collar: Pre-formed flange placed over vent pipe to seal roof around vent pipe opening. Also called vent sleeve.
 4. Drip Edge: Non-corrosive, non-staining material used along eaves and rakes to allow water runoff to drip clear of underlying building.
 5. Flange: Metal pan extending up and down roof slope around flashing pieces. Usually at plumbing vents.
 6. Flashing: Components used to prevent seepage of water into a building around any intersection or projection in a roof such as vent pipes, adjoining walls, and valleys.
 7. Metal Flashing: Roof components made from sheet metal that are used to terminate roofing membrane or other material alongside roof perimeters as well as at roof penetrations.
 8. Penetration: Any object that pierces surface of roof.
 9. Pipe Boot: Prefabricated flashing piece used to flash around circular pipe penetrations. Also known as a Roof Jack.
 10. Roof Jack: Term used to describe a Pipe Boot or Flashing Collar.
 11. Valley: Internal angle formed by intersection of two sloping roof planes to provide water runoff.
 12. Vent: Any outlet for air that protrudes through roof deck such as pipe or stack. Any device installed on roof, gable or soffit for purpose of ventilating underside of roof deck.
 13. Vent Sleeve: See collar.
- B. Reference Standards:
1. ASTM International:
 - a. ASTM A653/A653M-15, 'Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process'.
 - b. ASTM A792/A792M-10(2015), 'Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process'.
 2. ASTM International: (specifically referenced for pipe flashing only):
 - a. ASTM B117-11, 'Standard Practice for Operating Salt Spray (Fog) Apparatus'.
 - b. ASTM E283-04(2012), 'Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen'.
 - c. ASTM E330/E330M-14, 'Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference'.
 - d. ASTM E331-00(2009), 'Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference'.
 - e. ASTM E2140-01(2009), 'Standard Practice for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head'.

1.3 SUBMITTALS

- A. Informational Submittals:
 - 1. Tests And Evaluation Reports:
 - a. Manufacturer's test reports:
 - b. ICC-ESR evaluation report.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Manufacturers:
 - 1. Type Two Acceptable Manufacturers:
 - a. CMG – Coated Metals Group, Denver, CO www.cmgmetals.com.
 - b. Drexel Metals, LLC, Ivyland, PA www.drexmet.com.
 - c. Fabral, Lancaster, PA www.fabral.com.
 - d. Firestone Metal Products, Anoka, MN www.unaclad.com.
 - e. MBCI, Houston, TX www.mbc.com.
 - f. Metal Sales Manufacturing Corp, Sellersburg, IN www.mtlsales.com.
 - g. O'Neal Flat Rolled Metals (member of O'Neal Industries), Brighton, CO www.ofrmetals.com.
 - h. Petersen Aluminum Corp, Elk Grove, IL www.pac-clad.com.
 - i. Ryerson, Chicago, IL www.ryerson.com.
 - j. Equal as approved by Architect before installation. See Section 01 6200.
- B. Fabrication:
 - 1. Profiles, bends, and intersections shall be even and true to line.
- C. Finishes:
 - 1. Face coating polyvinylidene Fluoride (PVF₂) Resin-base finish (Kynar 500 or Hylar 5000) for coil coating components containing seventy (70) percent minimum PVF₂ in resin portion of formula. Thermo-cured two coat system consisting of corrosion inhibiting epoxy primer and top coat factory applied over properly pre-treated metal.
 - 2. Reverse side coating of steel flashings to be thermo-cured system consisting of corrosion inhibiting epoxy primer applied over properly pre-treated metal.
 - 3. Color as selected by Architect from Manufacturer's standard colors.

END OF SECTION

SECTION 07 9213**ELASTOMERIC JOINT SEALANTS****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Furnish and install sealants not specified to be furnished and installed under other Sections.
 - 2. Quality of sealants to be used on Project not specified elsewhere, including submittal, material, and installation requirements.

- B. Related Requirements:
 - 1. Removing existing sealants specified in Sections where work required.
 - 2. Furnishing and installing of sealants is specified in Sections specifying work to receive new sealants.

1.2 REFERENCES

- A. Definitions:
 - 1. Sealant Types and Classifications:
 - a. ASTM Specifications:
 - 1) Type:
 - a) Type S: Single-component sealant.
 - b) Type M: Multi-component sealant.
 - 2) Grade:
 - a) Grade P: Pourable or self-leveling sealant used for horizontal traffic joints.
 - b) Grade NS: Non-sag or gunnable sealant used for vertical and non-traffic joints.
 - 3) Classes: Represent movement capability in percent of joint width.
 - a) Class 100/50: Sealant that, when tested for adhesion or cohesion under cyclic movement shall withstand of at least 100 percent increase and decrease of at least 50 percent of joint width as measured at time of application.
 - b) Class 50: Sealant that, when tested for adhesion or cohesion under cyclic movement shall withstand increase and decrease of at least 50 percent of joint width as measured at time of application.
 - c) Class 25: Sealant that, when tested for adhesion or cohesion under cyclic movement shall withstand increase and decrease of at least 25 percent of joint width as measured at time of application.
 - d) Class 12: Sealant that, when tested for adhesion and cohesion under cyclic movement shall withstand increase and decrease of at least 12 percent of joint width as measured at time of application.
 - 4) Use:
 - a) T (Traffic): Sealant designed for use in joints in pedestrian and vehicular traffic areas such as walkways, plazas, decks and parking garages.
 - b) NT (Non-Traffic): Sealant designed for use in joints in non-traffic areas.
 - c) I (Immersion): Sealant that meets bond requirements when tested by immersion (Immersion rated sealant applications require primer).
 - d) M (Mortar): Sealant that meets bond requirements when tested on mortar specimens.
 - e) G (Glass): Sealant that meets bond requirements when tested on glass specimens.
 - f) A (Aluminum): Sealant that meets bond requirements when tested on aluminum specimens.

- g) O (Other): Sealant that meets bond requirements when tested on substrates other than standard substrates, being glass, aluminum, mortar.
- b. Federal Specifications:
 - 1) Type:
 - a) Type I: Self-leveling, pour grade.
 - (1) Compound which has sufficient flow to give smooth level surface when applied in horizontal joint at 40 deg F (4.4 deg C).
 - b) Type II: Non-sag, gun grade
 - (1) Compound which permits application in joints on vertical surfaces without sagging (slumping) at temperatures 40 deg F (4.4 deg C) and 122 deg. F (50 deg. C).
 - c) Type NS: Non-sag, gun grade.
 - (1) Non-sag shall be a compound which permits application in joints on vertical surfaces without sagging (slumping) at temperatures between -20 deg F and 122 deg. F (- 29 and 50 deg. C).
 - 2) Class:
 - a) Class A: Compounds resistant to 50 percent total joint movement (includes Type I and Type II).
 - (1) Capable of resisting compression-extension cycling of plus and minus 25 percent of nominal half inch width.
 - b) Class B: Compounds resistant to 25 percent total joint movement (includes Type I and Type II).
 - (1) Capable of resisting compression-extension cycling of plus and minus 12 1/2 percent of nominal half inch width.
- 2. Silicone: Any member of family of polymeric products whose molecular backbone is made up of alternating silicon and oxygen atoms and which has pendant hydrocarbon groups attached to silicon atoms. Used primarily as a sealant. Offers excellent resistance to water and large variations in temperature (minus 100 deg F to + 600 deg F) (minus 73.3 deg C to + 316 deg C).

B. Reference Standards:

1. American Association of State and Highway Transportation Officials:
 - a. AASHTO T 132-87(2013), 'Standard Method of Test for Tensile Strength of Hydraulic Cement Mortars'.
2. ASTM International:
 - a. ASTM C639-15, 'Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants'.
 - b. ASTM C661-15, 'Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer'.
 - c. ASTM C679-15, 'Standard Test Method for Tack-Free Time of Elastomeric Sealants'.
 - d. ASTM C719-14, 'Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)'.
 - e. ASTM C793-05(2010), 'Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants'.
 - f. ASTM C794-15a, 'Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants'.
 - g. ASTM C920-14a, 'Standard Specification for Elastomeric Joint Sealants'.
 - h. ASTM C1135-15, 'Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants'.
 - i. ASTM C1184-14, 'Standard Specification for Structural Silicone Sealants'.
 - j. ASTM C1193-16, 'Standard Guide for Use of Joint Sealants'.
 - k. ASTM C1248-08(2012), 'Standard Test Method for Staining of Porous Substrate by Joint Sealants'.
 - l. ASTM C1330-02(2013), 'Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants'.
 - m. ASTM C1481-12 'Standard Guide for Use of Joint Sealants with Exterior Insulation & Finish Systems (EIFS)'.
 - n. ASTM D412-15a, 'Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension'.
 - o. ASTM D2202-00(2014), 'Standard Test Method for Slump of Sealants'.
 - p. ASTM D2240-15, 'Standard Test Method for Rubber Property-Durometer Hardness'.

- q. ASTM D5893-10, 'Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements'.
- r. ASTM E119-16a, 'Standard Test Methods for Fire Tests of Building Construction and Materials'.
- 3. Federal Specifications:
 - a. Federal Specification TT-S-001543A (CON-NBS), 'Sealing Compound: Silicone Rubber Base (for Calking, Sealing & Glazing in Buildings and Other Structures)' (9 Jun 1971).
 - b. TT-S-00230C (CON-NBS), 'Sealing compound: Elastomeric Type, Single Component (For Calking, Sealing, And Glazing In Buildings And Other Structures.' (2 Feb 1970).
- 4. Government Services Administration (GSA), Commercial Item Descriptions (CID):
 - a. GSA CID A-A-272A, 'Sealing Compound: Silicone Rubber Base (For Caulking, Sealing, and Glazing in Buildings and Other Structures)'.
 - b. GSA CID A-A-1556, 'Sealing Compound Elastomeric Type, Single Component (For Caulking, Sealing, and Glazing in Buildings and Other Structures)'.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Scheduling:
 - 1. Schedule work so waterproofing, water repellents and preservative finishes are installed after sealants, unless sealant manufacturer approves otherwise in writing.
 - 2. Ensure sealants are cured before covering with other materials.

1.4 SUBMITTALS

- A. Action Submittals:
 - 1. Product Data:
 - a. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - b. Manufacturer's literature for each Product.
 - c. Schedule showing joints requiring sealants. Show also backing and primer to be used.
- B. Informational Submittals:
 - 1. Certificates:
 - a. Manufacturer's Certificate:
 - 1) Certify products are suitable for intended use and products meet or exceed specified requirements.
 - 2) Certificate from Manufacturer indicating date of manufacture.
 - 2. Manufacturers' Instructions:
 - a. Manufacturer's installation recommendations for each Product.
 - b. Manufacturer's installation for completing sealant intersections when different materials are joined.
 - c. Manufacturer's installation for removing existing sealants and preparing joints for new sealant.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten (10) years documented experience.
 - 2. Applicator Qualifications:
 - a. Company specializing in performing work of this section.
 - b. Provide if requested, reference of projects with minimum three (3) years documented experience, minimum three (3) successfully completed projects of similar scope and complexity, and approved by manufacturer.
 - c. Designate one (1) individual as project foreman who shall be on site at all times during installation.

- B. Preconstruction Testing:
 - 1. Pre-construction testing is not required when sealant manufacturer can furnish data acceptable to Architect based on previous testing for materials matching those of the Work.
- C. Mockups:
 - 1. Provide mockups including sealant and joint accessories to illustrate installation quality and color if requested by Architect or Project Manager.
 - a. Incorporate accepted mockup as part of Work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver and keep in original containers until ready for use.
 - 2. Inspect for damage or deteriorated materials.
- B. Storage and Handling Requirements:
 - 1. Handle, store, and apply materials in compliance with applicable regulations and material safety data sheets (MSDS).
 - 2. Handle to prevent inclusion of foreign matter, damage by water, or breakage.
 - 3. Store in a cool dry location, but never under 40 deg F (4 deg C) or subjected to sustained temperatures exceeding 90 deg F (32 deg C) or as per Manufacturer's written recommendations.
 - 4. Do not use sealants that have exceeded shelf life of product.

1.7 FIELD CONDITIONS

- A. Ambient Conditions:
 - 1. Do not install sealant during inclement weather or when such conditions are expected. Allow wet surfaces to dry.
 - 2. Follow Manufacturer's temperature recommendations for installing sealants.

1.8 WARRANTY

- A. Manufacturer Warranty:
 - 1. Signed warranties against adhesive and cohesive failure of sealant and against infiltration of water and air through sealed joint for period of three (3) years from date of Substantial Completion.
 - a. Manufacturer's standard warranty covering sealant materials.
 - b. Applicator's standard warranty covering workmanship.

PART 2 - PRODUCTS

2.1 SYSTEMS

- A. Manufacturers:
 - 1. Manufacturer Contact List:
 - a. Dow Corning Corp., Midland, MI www.dowcorning.com.
 - b. Franklin International, Inc. Columbus, OH www.titebond.com.
 - c. GE Sealants & Adhesives (see Momentive Performance Materials Inc.).
 - d. Laticrete International Inc., Bethany, CT www.laticrete.com.
 - e. Momentive Performance Materials Inc. (formally GE Sealants & Adhesives), Huntersville, NC www.ge.com/silicones.
 - f. Sherwin-Williams, Cleveland, OH www.sherwin-williams.com.
 - g. Sika Corporation, Lyndhurst, NJ www.sikaconstruction.com or Sika Canada Inc, Pointe Claire, QC www.sika.ca.

- h. Tremco, Beachwood, OH www.tremcosealants.com or Tremco Ltd, Toronto, ON (800) 363-3213.

B. Materials:

1. Design Criteria:

- a. Compliance: Meet or exceed requirements of these standards:
- 1) ASTM C920: Elastomeric joint sealant performance standard.
 - 2) ASTM C639 or ASTM D2202: Flow (sag or slump).
 - 3) ASTM C661 or ASTM D2240: Durometer hardness (shore A).
 - 4) ASTM C679 or ASTM C794: Tack free time (peel strength).
 - 5) ASTM C719: Joint movement capability.
 - 6) ASTM C793: Effects of accelerated weathering.
 - 7) ASTM C1135 or ASTM D412: Tensile adhesion strength.
 - 8) ASTM C1184: Structural silicone sealants.
 - 9) ASTM C1248: Staining.
 - 10) ASTM D412: Modulus.
 - 11) ASTM D5893: Silicone Joint Sealant for Concrete Pavements.
 - 12) Federal Specification TT-S-001543A.
 - 13) Federal Specification TT-S-00230C.
 - 14) GSA CID A-A-272A.
 - 15) GSA CID A-A-1556.
- b. Comply with Manufacturer's ambient condition requirements.
- c. Sealants must meet Manufacturer's shelf-life requirements.
- d. Sealants must adhere to and be compatible with specified substrates.
- e. Sealants shall be stable when exposed to UV, joint movements, and particular environment prevailing at project location.
- f. Primers (Concrete, stone, masonry, and other nonporous surfaces typically do not require a primer. Aluminum and other nonporous surfaces except glass require use of a primer. Installer Option to use Adhesion Test to determine if primer is required or use primer called out in related sections):
- 1) Adhesion Test:
 - a) Apply silicone sealant to small area and perform adhesion test to determine if primer is required to achieve adequate adhesion. If necessary, apply primer at rate and in accordance with Manufacturer's instructions. See 'Field Quality Control' in Part 3 of this specification for Adhesive Test.
 - 2) If Primer required, shall not stain and shall be compatible with substrates.
 - 3) Allow primer to dry before applying sealant.

2. Sealants At Exterior Building Elements:

a. Description:

- 1) Weathersealing expansion, contraction, perimeter, and other movement joints which may include all or part of the following for project:
 - a) Columns.
 - b) Connections.
 - c) Door frames.
 - d) Joints and cracks around windows.
 - e) Masonry.
 - f) Wall penetrations.
 - g) Other joints necessary to seal off building from outside air and moisture.

b. Design Criteria:

- 1) Meet following standards for Sealant:
 - a) ASTM C920: Type S, Grade NS, Class 50 Use NT, M, G, A.
- 2) Limitations:
 - a) Do not use below-grade applications.
 - b) Do not use on surfaces that are continuously immersed or in contact with water.
 - c) Do not use on wet, damp, frozen or contaminated surfaces.
 - d) Do not use on building materials that bleed oils, plasticizers or solvents, green or partially vulcanized rubber gaskets or tapes.
- 3) Color:
 - a) Architect to select from Manufacturer's standard colors.

- b) Match building elements instead of window (do not use white that shows dirt easily).
 - c. Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - 1) Dow Corning:
 - a) Primer: 1200 Prime Coat.
 - b) Sealant: 791 Silicone Weatherproofing Sealant.
 - 2) Momentive Performance Materials (formerly, GE Sealants & Adhesives):
 - a) Primer: SS4044 Primer.
 - b) Sealant: GE SCS2000 SilPruf Silicone Sealant & Adhesive.
 - 3) Tremco:
 - a) Primer:
 - (1) Metal surface: No. 20 primer.
 - (2) Porous surfaces: No. 23 primer.
 - b) Sealant: Spectrum 1 Silicone Sealant.
- 3. Sealants At Exterior Sheet Metal And Miscellaneous:
 - a. Description:
 - 1) Weathersealing expansion, contraction, perimeter, and other movement joints which may include all or part of the following for project:
 - a) Flashings.
 - b) Gutters.
 - c) Penetrations in soffits and fascias.
 - d) Roof vents and flues.
 - e) Lightning protection components.
 - b. Design Criteria:
 - 1) Meet following standards for Sealant:
 - a) ASTM C920: Type S Grade NS, Class 25 (min) Use NT, M, G, A and O.
 - 2) Limitations:
 - a) Do not use below-grade applications.
 - b) Do not use on surfaces that are continuously immersed or in contact with water.
 - c) Do not use on wet, damp, frozen or contaminated surfaces.
 - d) Do not use on building materials that bleed oils, plasticizers or solvents, green or partially vulcanized rubber gaskets or tapes.
 - c. Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - 1) Dow Corning: 790 Silicone Building Sealant.
 - 2) Momentive Performance Materials (formerly, GE Sealants & Adhesives): GE SCS2350 Silicone Elastomeric Sealant.
 - 3) Tremco: Tremsil 600 Silicone Sealant.
- 4. Sealants At Expansion Joints in Exterior Concrete:
 - a. Expansion Joints:
 - 1) Design Criteria:
 - a) Meet following standards for Sealant:
 - (1) ASTM C920: Type S, Grade NS, Class 100/50 Use T, NT, M, G, A, and O.
 - 2) Sealant required at expansion for following areas:
 - a) Between entryway slabs and building foundations.
 - b) Between sidewalks and building foundations.
 - c) Miscellaneous vertical applications.
 - 3) Sealant NOT required at expansion joints for following areas:
 - a) Within aprons and where aprons abut building foundations and sidewalks.
 - b) Within mowstrips and where mowstrips abut building foundations and sidewalks.
 - c) Within sidewalks.
 - 4) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - a) Dow Corning:
 - (1) Primer: 1200 Prime Coat.
 - (2) Sealant: 790 Silicone Building Sealant.
 - b) Sika:
 - (1) Primer: Sikasil Primer-2100.
 - (2) Sealant: Sikasil-728 NS Non-Sag Silicone Sealant.
 - b. Penetrations thru Concrete Walls:
 - 1) Design Criteria:
 - a) Meet following standards for Sealant:

- (1) ASTM C920: Type S, Grade NS, Class 100/50 Use T, NT, M, G, A, and O.
- 2) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - a) Dow Corning:
 - (1) Primer: 1200 Prime Coat.
 - (2) Sealant: 790 Silicone Building Sealant.
 - b) Sika:
 - (1) Primer: Sikasil Primer-2100.
 - (2) Sealant: Sikasil-728 NS Non-Sag Silicone Sealant.
5. Sealants At Flat Drainage Exterior Concrete Structures:
 - a. Expansion Joints and Control Joints:
 - 1) Description:
 - a) One component (part) self-leveling silicon material that cures to ultra-low modulus silicone rubber upon exposure to atmospheric moisture.
 - b) Cured silicone rubber remains flexible over entire temperature range expected in pavement applications.
 - 2) Design Criteria:
 - a) Sealant is required at following areas:
 - (1) Within flat drainage structures and at joints between flat drainage structures and other concrete elements.
 - b) Meet following standards for Sealant: Self-leveling: ASTM D-5893; ASTM C-920, Type S, Grade P, Class 100/50; Use T, M, G, A, O.
 - 3) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - a) Dow Corning:
 - (1) Primer: 1200 Prime Coat.
 - (2) Sealant: 890-SL Silicone Building Sealant.
 - b) Sika:
 - (1) Primer: Primer: Sikasil Primer-2100.
 - (2) Sealant: Sikasil-728 SL Self-leveling Silicone Sealant.

2.2 ACCESSORIES

- A. Bond Breaker Tape:
 1. Pressure sensitive tape as by Sealant Manufacturer to suit application.
 2. Provide tape to prevent adhesion to joint fillers or joint surfaces at back of joint and allow sealant movement.
- B. Joint Backing:
 1. Comply with ASTM C1330.
 2. Flexible closed cell, non-gassing polyurethane or polyolefin rod or bond breaker tape as recommended by Sealant Manufacturer for joints being sealed.
 3. Oversized 25 to 50 percent larger than joint width.
- C. Joint Cleaner:
 1. Non-corrosive and non-staining type as recommended by Sealant Manufacturer, compatible with joint forming materials.
- D. Masking Tape:
 1. Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification Of Conditions:
 1. Examine substrate surfaces and joint openings are ready to receive Work.

- a. Verify each sealant is compatible for use with joint substrates.
- b. Verify joint surfaces are clean and dry.
- c. Ensure concrete surfaces are fully cured.
2. Sealants provided shall meet Manufacturer's shelf-life requirements.
3. Notify Architect of unsuitable conditions in writing.
 - a. Do not proceed until unsatisfactory conditions are corrected.
4. Commencement of Work by installer is considered acceptance of substrate.

3.2 PREPARATION

A. Surface Preparation:

1. Remove existing joint sealant materials where specified.
 - a. Clean joint surfaces of residual sealant and other contaminants capable of affecting sealant bond to joint surface using manufacturer's recommended joint preparation methods.
 - b. Repair deteriorated or damaged substrates as recommended by Sealant Manufacturer to provide suitable substrate. Allow patching materials to cure.
2. Surfaces shall be clean, dry, free of dust, oil, grease, dew, frost or incompatible sealers, paints or coatings that may interfere with adhesion. Prepare substrates in accordance with Manufacturer's instructions:
 - a. Porous surfaces: Clean by mechanical methods to expose sound surface free of contamination and laitance followed by blasting with oil-free compressed air.
 - b. Nonporous surfaces: Use two-cloth solvent wipe in accordance with ASTM C1193. Allow solvent to evaporate prior to sealant application.
 - c. High-pressure water cleaning: Exercise care that water does not enter through failed joints.
 - d. Primers:
 - 1) Primers enhance adhesion ability.
 - 2) Use of primers is not a substitution for poor joint preparation.
 - 3) Primers should be used always in horizontal application where there is ponding water.
3. Field test joints in inconspicuous location.
 - a. Verify joint preparation and primer required to obtain optimum adhesion of sealants to joint substrate.
 - b. When test indicates sealant adhesion failure, modify joint preparation primer, or both and retest until joint passes sealant adhesion test.
4. Masking: Apply masking tape as required to protect adjacent surfaces and to ensure straight bead line and facilitate cleaning.

B. Joints:

1. Prepare joints in accordance with ASTM C1193.
 - a. Clean joint surfaces of contaminants capable of affecting sealant bond to joint surface using Manufacturer's recommended instructions for joint preparation methods.
 - b. Remove dirt, dust, oils, wax, paints, and contamination capable of affecting primer and sealant bond.
 - c. Clean concrete joint surfaces to remove curing agents and form release agents.

C. Protection:

1. Protect elements surrounding the Work of this section from damage or disfiguration.

3.3 APPLICATION

A. General:

1. Apply silicone sealant in accordance with Manufacturer's instructions.
2. Do not use damaged or deteriorated materials.
3. Install primer and sealants in accordance with ASTM C1193 and Manufacturer's instructions.
4. Apply primer where required for sealant adhesion.
5. Install sealants immediately after joint preparation.
6. Do not use silicone sealant as per the following:
 - a. Apply caulking/sealant at temperatures below 40 deg F (4 deg C).

- b. Below-grade applications.
 - c. Brass and copper surfaces.
 - d. Materials bleeding oils, plasticizers, and solvents.
 - e. Structural glazing and adhesive.
 - f. Surfaces to be immersed in water for prolonged time.
- B. Joint Backing:
1. Install joint backing to maintain sealant joint ratios recommended by Manufacturer.
 2. Install without gaps, twisting, stretching, or puncturing backing material. Use gage to ensure uniform depth to achieve correct profile, coverage, and performance.
 3. Rod for open joints shall be at least 1-1/2 times width of open joint and of thickness to give solid backing. Backing shall fill up joint so depth of sealant bite is no more than **3/8 inch (9.5 mm)** deep.
- C. Bond Breaker:
1. Install bond breaker where joint backing is not used or where backing is not feasible.
 - a. Apply bond-breaker tape in shallow joints as recommended by Sealant Manufacturer.
- D. Sealant:
1. Apply sealant with hand-caulking gun with nozzle of proper size to fit joints. Use sufficient pressure to insure full contact to both sides of joint to full depth of joint. Apply sealants in vertical joints from bottom to top.
 2. Fill joint opening to full and proper configuration.
 3. Apply in continuous operation.
 4. Tool joints immediately after application of sealant if required to achieve full bedding to substrate or to achieve smooth sealant surface. Tool joints in opposite direction from application direction, i.e., in vertical joints, from the top down. Do not 'wet tool' sealants.
 5. Depth of sealant bite shall be **1/4 inch (6 mm)** minimum and **1/2 inch (12.7 mm)** maximum, but never more than one half or less than one fourth joint width.
- E. Caulk gaps between painted or coated substrates and unfinished or pre-finished substrates. Caulk gaps larger than **3/16 inch (5 mm)** between painted or coated substrates.

3.4 TOLERANCES

- A. Provide joint tolerances in accordance with Manufacturer's printed instructions.

3.5 FIELD QUALITY CONTROL

- A. Adhesion Test (Installer Option to use adhesion test to determine if primer is required).
1. Perform adhesion tests in accordance with Manufacturer's instructions and ASTM C1193, Method A, Field-Applied Sealant joint Hand-Pull Tab:
 - a. Perform five (5) tests for first **1,000 linear feet (300 meters)** of applied silicone sealant and one (1) test for each **1,000 linear feet (300 meters)** seal thereafter or perform one (1) test per floor per building elevation minimum.
 - b. For sealants applied between dissimilar materials, test both sides of joints.
 2. Sealants failing adhesion test shall be removed, substrates cleaned, sealants re-installed, and re-testing performed.
 3. Maintain test log and submit report to Architect indicating tests, locations, dates, results, and remedial actions.

3.6 CLEANING

- A. Remove masking tape and excess sealant.

- B. Clean adjacent materials, which have been soiled, immediately (before setting) as recommended by Manufacturer.
- C. Waste Management: Dispose of products in accordance with manufacturer's recommendation.

END OF SECTION

SECTION 09 9001

COMMON PAINTING AND COATING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Common procedures and requirements for field-applied painting and coating.
- B. Related Requirements:
 - 1. Section 07 9213: 'Elastomeric Joint Sealants' for quality of Elastomeric Joint Sealants.

1.2 REFERENCES

- A. Definitions:
 - 1. Damage Caused By Others: Damage caused by individuals other than those under direct control of Painting Applicator (MPI(a), PDCA P1.92).
 - 2. Gloss Levels:
 - a. Specified paint gloss level shall be defined as sheen rating of applied paint, in accordance with following terms and values, unless specified otherwise for a specific paint system.

Gloss Level '1'	Traditional matte finish - flat	0 to 5 units at 60 degrees to 10 units maximum at 85 degrees.
Gloss Level '2'	High side sheen flat - 'velvet-like' finish	10 units maximum at 60 degrees and 10 to 35 units at 85 degrees.
Gloss Level '3'	Traditional 'eggshell-like' finish	10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees.
Gloss Level '4'	'Satin-like' finish	20 to 35 units at 60 degrees and 35 units minimum at 85 degrees.
Gloss Level '5'	Traditional semi-gloss	35 to 70 units at 60 degrees.
Gloss Level '6'	Traditional gloss	70 to 85 units at 60 degrees.
Gloss Level "7"	High gloss	More than 85 units at 60 degrees.

- 3. Properly Painted Surface:
 - a. Surface that is uniform in appearance, color, and sheen and free of foreign material, lumps, skins, runs, sags, holidays, misses, strike-through, and insufficient coverage. Surface free of drips, spatters, spills, and overspray caused by Paint Applicator. Compliance will be determined when viewed without magnification at a distance of 5 feet (1.50 m) minimum under normal lighting conditions and from normal viewing position (MPI(a), PDCA P1.92).
- 4. Latent Damage: Damage or conditions beyond control of Painting Applicator caused by conditions not apparent at time of initial painting or coating work.
- B. Reference Standards:
 - 1. The latest edition of the following reference standard shall govern all painting work:
 - a. MPI(a), 'Architectural Painting Specification Manual' by Master Painters Institute (MPI), as issued by local MPI Accredited Quality Assurance Association having jurisdiction.
 - b. MPI(r), 'Maintenance Repainting Manual' by Master Painters Institute (MPI), as issued by local MPI Accredited Quality Assurance Association having jurisdiction.

1.3 SUBMITTALS

- A. Action Submittals:
1. Product Data:
 - a. Include following information for each painting product, arranged in same order as in Project Manual.
 - 1) Manufacturer's cut sheet for each product indicating ingredients and percentages by weight and by volume, environmental restrictions for application, and film thicknesses and spread rates.
 - 2) Provide one (1) copy of 'MPI Approved Products List' showing compliance for each MPI product specified.
 - a) MPI Information is available from MPI Approved Products List using the following link: <http://www.paintinfo.com/mpi/approved/index.shtml>.
 - 3) Confirmation of colors selected and that each area to be painted or coated has color selected for it.
 2. Samples: Provide two **4 inch by 6 inch (100 mm by 150 mm)** minimum draw-down cards for each paint or coating color selected for this Project.
 - B. Informational Submittals:
 1. Manufacturer Instructions:
 - a. Manufacturer's substrate preparation instructions and application instruction for each painting system used on Project.
 2. Qualification Statement:
 - a. Applicator:
 - 1) Provide Qualification documentation if requested by Architect or Owner.
 - C. Closeout Submittals:
 1. Include following in Operations And Maintenance Manual specified in Section 01 7800:
 - a. Record Documentation:
 - 1) Manufacturer's documentation:
 - a) Manufacturer's cut sheet for each component of each system.
 - b) Schedule showing rooms and surfaces where each system was used.

1.4 QUALITY ASSURANCE

- A. Regulatory Agency Sustainability Approval:
1. Conform to work place safety regulations and requirements of those authorities having jurisdiction for storage, mixing, application and disposal of all paint and related hazardous materials.
 2. Paint and painting materials shall be free of lead and mercury, and have VOC levels acceptable to local jurisdiction.
 3. Master Painters Institute (MPI) Standards:
 - a. Products: Comply with MPI standards indicated and listed in 'MPI Approved Products List'.
 - b. Preparation and Workmanship: Comply with requirements in 'MPI Architectural Painting Specification Manual' for products and coatings indicated.
- B. Qualifications:
1. Applicator: Requirements of Section 01 4301 applies, but not limited to following:
 - a. Minimum five (5) years experience in painting installations.
 - b. Minimum five (5) satisfactorily completed projects of comparable quality, similar size, and complexity in past three (3) years before bidding.
 - c. Maintain qualified crew of painters throughout duration of the Work.
 - d. Upon request, submit documentation.
- C. Field Samples:
1. Before application of any paint system, meet on Project site with Architect, Owner's representative, and Manufacturer's representative. Architect may select one (1) surface for application of each paint system specified. This process will include establishing acceptable substrate conditions required for Project before application of paints and coatings.

2. Apply paint systems to surfaces indicated by Architect following procedures outlined in Contract Documents and Product Data submission specified above.
3. After approval of samples, proceed with application of paint system throughout Project. Approved samples will serve as standard of acceptability.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery And Acceptance Requirements:

1. Deliver specified products in sealed, original containers with Manufacturer's original labels intact on each container.
2. Deliver amount of materials necessary to meet Project requirements in single shipment.

B. Storage And Handling Requirements:

1. Store materials in single place.
2. Keep storage area clean and rectify any damage to area at completion of work of this Section.
3. Maintain storage area at 55 deg F (13 deg C) minimum.

1.6 FIELD CONDITIONS

A. Ambient Conditions:

1. Perform painting operations at temperature and humidity conditions recommended by Manufacturer for each operation and for each product for both interior and exterior work.
2. Apply painting systems at lighting level of 540 Lux (50 foot candles) minimum on surfaces to be painted.
 - a. Inspection of painting work shall take place under same lighting conditions as application.
 - b. If painting and coating work is applied under temporary lighting, deficiencies discovered upon installation of permanent lighting will be considered latent damage as defined in MPI Manual, PDCA P1-92.

PART 2 - PRODUCTS

2.1 SYSTEMS

A. Performance:

1. Design Criteria:

- a. Provide materials for use within each coating 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.
- b. All materials, preparation and workmanship shall conform to requirements of 'Architectural Painting Specification Manual' by Master Painters Institute (MPI).
- c. All paint manufacturers and products used shall be as listed under Approved Product List section of MPI Painting Manual.
- d. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.
- e. Where specified paint system does not have Premium Grade, provide Budget Grade.
- f. Provide products of same manufacturer for each coat in coating system.
- g. Where required to meet LEED (Leadership in Energy and Environmental Design) program requirements, use only MPI listed materials having an "L" rating designation.

B. Materials:

1. Materials used for any painting system shall be from single manufacturer unless approved otherwise in writing by painting system manufacturers and by Architect. Include manufacturer approvals in Product Data submittal.
2. Linseed oil, shellac, turpentine, and other painting materials shall be pure, be compatible with other coating materials, bear identifying labels on containers, and be of highest quality of an

approved manufacturer listed in MPI manuals. Tinting color shall be best grade of type recommended by Manufacturer of paint or stain used on Project.

PART 3 - EXECUTION

3.1 APPLICATORS

- A. Approved Applicators:
1. Meet Quality Assurance Applicator Qualifications as specified in Part 1 of this specification.

3.2 EXAMINATION

- A. Verification Of Conditions:
1. Directing applicator to begin painting and coating work will indicate that substrates to receive painting and coating materials have been previously inspected as part of work of other Sections and are complete and ready for application of painting and coating systems as specified in those Sections.
- B. Pre-Installation Testing:
1. Before beginning work of this Section, examine, and test surfaces to be painted or coated for adhesion of painting and coating systems.
 2. Report in writing to Architect of conditions that will adversely affect adhesion of painting and coating work.
 3. Do not apply painting and coating systems until party responsible for adverse condition has corrected adverse condition.
- C. Evaluation And Assessment:
1. Report defects in substrates that become apparent after application of primer or first finish coat to Architect in writing and do not proceed with further work on defective substrate until such defects are corrected by party responsible for defect.

3.3 PREPARATION

- A. Protection Of In-Place Conditions:
1. Protect other finish work and adjacent materials during painting. Do not splatter, drip, or paint surfaces not intended to be painted. These items will not be spelled out in detail but pay special attention to the following:
 - a. Do not paint finish copper, bronze, chromium plate, nickel, stainless steel, anodized aluminum, or monel metal except as explicitly specified.
 - b. Keep cones of ceiling speakers completely free of paint. In all cases where painting of metal speaker grilles is required, paint without grilles mounted to speakers and without grilles on ceiling.
 - c. On existing work where ceiling is to be painted, speakers and grilles are already installed, and ceiling color is not being changed, mask off metal grilles installed on ceiling speakers. If ceiling color is being changed, remove metal grilles and paint, and mask off ceiling speakers.
- B. Surface Preparation:
1. Prepare surfaces in accordance with MPI requirements and requirements of Manufacturer for each painting system specified, unless instructed differently in Contract Documents. Bring conflicts to attention of Architect in writing.
 2. Fill minor holes and cracks in wood surfaces to receive paint or stain.
 3. Surfaces to be painted shall be clean and free of loose dirt. Clean and dust surfaces before painting or finishing.

4. Do no exterior painting while surface is damp, unless recommended by Manufacturer, nor during rainy or frosty weather. Interior surfaces shall be dry before painting. Moisture content of materials to be painted shall be within tolerances acceptable to Paint Manufacturer.
5. Sand woodwork smooth in direction of grain leaving no sanding marks. Clean surfaces before proceeding with stain or first coat application.

3.4 APPLICATION

- A. Interface With Other Work:
 1. Coordinate with other trades for materials and systems that require painting before installation.
 2. Schedule painting and coating work to begin when work upon which painting and coating work is dependent has been completed. Schedule installation of pre-finished and non-painted items, which are to be installed on painted surfaces, after application of final finishes.
- B. Paint or finish complete all surfaces to be painted or coated as described in Contract Documents, including but not limited to following items.
- C. Apply sealant in gaps **3/16 inch (5 mm)** and smaller between two substrates that are both to be painted or coated. Sealants in other gaps furnished and installed under Section 07 9213.
- D. In multiple coat paint work, tint each succeeding coat with slightly lighter color, but approximating shade of final coat, so it is possible to check application of specified number of coats. Tint final coat to required color.
- E. Spread materials smoothly and evenly. Apply coats to not less than wet and dry film thicknesses and at spreading rates for specified products as recommended by Manufacturer.
- F. Touch up suction spots after application of first finish coat.
- G. Paint shall be thoroughly dry and surfaces clean before applying succeeding coats.
- H. Use fine sandpaper between coats as necessary to produce even, smooth surfaces.
- I. Make edges of paint adjoining other materials or colors clean, sharp, and without overlapping.
- J. Finished work shall be a 'Properly Painted Surface' as defined in this Section.

3.5 FIELD QUALITY CONTROL

- A. Non-Conforming Work:
 1. Correct deficiencies in workmanship as required to leave surfaces in conformance with 'Properly Painted Surface,' as defined in this Section.
 2. Correction of 'Latent Damage' and 'Damage Caused By Others,' as defined in this Section, is not included in work of this Section.

3.6 CLEANING

- A. General:
 1. As work proceeds and upon completion of work of any painting Section, remove paint spots from floors, walls, glass, or other surfaces and leave work clean, orderly, and in acceptable condition.
- B. Waste Management:
 1. Remove rags and waste used in painting operations from building each night. Take every precaution to avoid danger of fire.

2. Paint, stain and wood preservative finishes and related materials (thinners, solvents, caulking, empty paint cans, cleaning rags, etc.) shall be disposed of subject to regulations of applicable authorities having jurisdiction.
3. Remove debris caused by work of paint Sections from premises and properly dispose.
4. Retain cleaning water and filter out and properly dispose of sediments.

END OF SECTION

SECTION 09 9115**EXTERIOR PAINTED WOOD****PART 1 - GENERAL****1.1 SUMMARY**

- A. Includes But Not Limited To:
 - 1. Preparing and painting existing exterior wood surfaces listed below as described in Contract Documents:
 - a. Door frame around the funeral door into the chapel.
- B. Related Requirements:
 - 1. Section 09 9001: 'Common Painting And Coating Requirements':
 - a. Pre-installation conference for Sections under 09 9000 heading 'Paints and Coatings'.

1.2 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Installation Conferences:
 - 1. Participate in pre-installation conference as specified in Section 09 9001.
 - a. 'Attachment: Paint Color Schedule' for O&M / R&I Projects.

PART 2 - PRODUCTS**2.1 SYSTEM**

- A. Manufacturers:
 - 1. Category Four Approved Products and Manufacturers. See Section 01 6200 for definitions of Categories:
 - a. Products listed in edition of MPI Approved Product List current at time of bidding and later are approved, providing they meet VOC requirements in force where Project is located.
- B. Description:
 - 1. New Surfaces: Use MPI(a) EXT 6.3A or 6.3L Latex Finish systems.
 - 2. Previously Finished Surfaces: Use MPI(r) REX 6.3A or 6.3L Latex Finish system.
- C. Performance:
 - 1. Design Criteria:
 - a. New Surfaces: MPI Premium Grade finish requirements.
 - b. Deteriorated Existing Surfaces: MPI Premium Grade finish requirements.
 - c. Sound Existing Surfaces: MPI Custom Grade finish requirements.
 - d. Gloss / Sheen Level Required: Gloss Level 5.
- D. Materials:
 - 1. Primers:
 - a. Alkyd Primer: MPI Product 5: 'Primer, Alkyd/Oil for Exterior Wood'.
 - b. Latex Primer: MPI Product 6: 'Primer, Latex for Exterior Wood'.
 - 2. Finish Coats: MPI Product 11: 'Latex, Exterior Semi-Gloss (MPI Gloss Level 5)'.

EXECUTION**2.2 APPLICATION**

- A. General: See appropriate paragraphs of Section 09 9001.
- B. New Surfaces: Prime and finish coat exterior woodwork within two weeks of installation, or prime exterior woodwork before installation if application of complete paint system cannot be accomplished within two weeks of installation of woodwork.
- C. Existing Painted Surfaces:
 - 1. Remove deteriorated and chalked existing paint down to sound substrate by scraping and sanding. Feather edges of existing paint by sanding to be smooth with adjacent surfaces. Spot prime bare wood areas.
 - 2. Remove loose and split existing caulking and putty. Spot prime these areas and replace caulking and putty.
 - 3. Clean existing sound painted surfaces as well as scraped and sanded existing painted surfaces as recommended by Paint Manufacturer.
 - 4. Prime scraped and sanded areas.
 - 5. Apply specified finish coats.

END OF SECTION