

PROJECT MANUAL

**Gregg County Courthouse
Window Sealant/Facade Repairs**

**101 East Methvin
Longview, Texas**



ISSUED FOR BIDDING

August 22, 2017

Prepared by:

WISS, JANNEY, ELSTNER ASSOCIATES, INC.
6363 N. State Highway 161, Suite 550
Irving, Texas 75038
WJE No. 2016.6796.1

This document is released for
bidding by:
Jeremy J. Bridwell, P.E.
(Texas P.E. No. 101951)
August 22, 2017
and is not to be used for
Construction or Permitting purposes.

TABLE OF CONTENTS

Section Number	Section Title
003000	Bid Form Attachment A - Bid Instructions Attachment B - Bid Signature Forms Attachment C - HB 1295 Vendor Requirements Attachment D - Gregg County Standard Terms and Conditions
003010	Bid Summary Table
011000	Summary of Work
020700	Selective Demolition
030105	Facade Cleaning
040121	Brick Masonry Removal and Replacement
040501	Masonry Mortar and Grout
076000	Flashing and Sheet Metal
076500	Flexible Flashing
079200	Joint Sealants

LIST OF DRAWINGS

Sheet Number	Sheet Title
A0.0	Cover Sheet
A0.1	General Notes
A1.0	Plan
A2.0	Elevations
A2.1	Elevations
A2.2	Elevations
A2.3	Enlarged Window Elevations
A3.0	Details
A3.1	Details
A3.2	Brick Flashing Details

SECTION 00300

BID FORM

PROJECT: Gregg County Courthouse
Window Sealant / Facade Repairs
101 East Methvin
Longview, Texas 75601

FIRST ADVERTISEMENT: August 31, 2017

PRE-BID MEETING: September 12, 2017, at 10:00 a.m. CDT at Gregg County Courthouse, Suite 110

BID DUE: September 19, 2017, at 2:00 p.m. CDT, Bids will not be accepted after this time

SUBMITTED TO: Wiss, Janney, Elstner Associates, Inc.
6363 N. State Highway 161, Suite 550, Irving, TX 75038
Phone: 972-550-7777
Attn: Jeremy Bridwell, P.E. (Engineer)
Email: jbridwell@wje.com

COPY TO OWNER: Gregg County
101 East Methvin
Longview, Texas 75601
Attn: Kelli Davis
Email: Kelli.Davis@co.gregg.tx.us

BIDDER: _____
(Bidder's Incorporated Name)

(Bidder's Address)

_____ (Date)
(Bidder's Address)

THE UNDERSIGNED:

1. Acknowledges Receipt of the Bid Documents, including:
 - A. Project Manual by WJE dated August 22, 2017.
 - B. Drawings by WJE, issued for bidding purposes on August 22, 2017.
 - C. Gregg County specific documents concerning bidding, vendor, and Terms and Conditions included as Attachments A-D to this bid form.
2. Has visited and examined the site of work and has examined the Bidding Documents for the work.

3. Agrees to:
 - A. Hold the Bid Proposal open for not less than 90 days after the scheduled Bid Opening Date.
 - B. Execute the Agreement, Performance Bond, Labor and Material Payment Bond, and provide proof of insurance coverage (Certificates of Insurance) with the Owner for the entire Work in accordance with the Contract Documents within ten (10) days after notice of award.
 - C. Obtain any and all building permits required to perform this Work.
 - D. Work at least five full working days per week, when weather permits.
 - E. Perform work within the hours of 8:00 AM to 5:00 PM, Monday through Friday, unless arrangements are made with the Owner.
 - F. Work on Federal Holidays or other holidays permitted with Owner approval.

CONTRACT CONDITIONS/DEFINITIONS

1. General Condition Costs
 - A. Costs on the project, such as permit fees, scaffolding costs, fixed cost rentals, or fixed costs shall be considered General Conditions Costs, and shall be included in all unit and lump sum prices, unless specifically requested otherwise.
 - B. Mobilization/demobilization shall be presented as a separate line item.
2. Unit Prices
 - A. Definition -- "Unit Price" is hereby defined as a fixed price, including all overhead, profit and all other costs of whatever nature and character, for providing a specified unit of work. Unit prices in the Bid Form, when accepted and incorporated into the contract, shall be the same for additional, deducted, or omitted units of work.
 - B. Unit Prices as defined in this section shall be used to determine adjustments to the Contract Amount when changes are made in the quantity of work, regardless of the magnitude of the change. If, however, in the opinion of the Architect/Engineer, a significant increase or decrease in quantity for any unit price work item is justifiable cause for a reduction in the original unit price, then the Owner reserves its right to re-negotiate the unit price with the contractor.
 - C. Bidder must state a Unit Price and Total Amount of Bid for each item. In filling out the bid form, the Total Amount of bid in Dollars for each item must be the product of the estimated quantity and the Unit Price. The "GRAND TOTAL" must be the sum of the total amounts bid for the respective individual items.
 - D. Should the final quantities for each item vary from the estimated quantity in the bid form, the difference between the actual and estimated quantity shall be multiplied by the Unit Price. If the quantity difference is positive, the dollar amount will be considered as an additional cost

for which the contractor is entitled full compensation via an approved change order. If the quantity difference is negative, the dollar amount will be considered a credit to the Owner via an approved change order.

- E. Prior to beginning any work on a Unit Price basis, the Contractor shall notify the Architect/Engineer sufficiently in advance to permit measurements to be verified. Only quantities which have been verified and approved by the Architect/Engineer shall be used to determine adjustments to the Contract Amount. Performance of any work not required by the Contract Documents, not verified by the Architect/Engineer, or authorized by signed Change Order shall not be considered for payment under the terms of Unit Prices. The Contractor shall be solely responsible for all unauthorized work.

3. Change in the Work

A. To address changes in the work, either an addition or deletion, not indicated under unit costs by the Contract Documents and Specifications, and upon written instructions of the Owner, the following prices shall prevail in accordance with the General Conditions of AIA 201.

1. Labor - including all profit and overhead as defined in Article 7 of the General Conditions. All trades at their prevailing hourly rate plus 5% for overhead and 5% for profit.
2. Material costs at cost plus 5% for overhead and 5% for profit.

4. Taxes

A. The undersigned agrees that the Base Bid price includes all taxes applicable to the work, of whatever character or description, which is levied by federal, state or municipal governments.

5. Rights Reserved

A. In submitting this Proposal, the undersigned understands that the Owner reserves the right to reject any or all proposals submitted, in whole or in part, to waive any information therein, and to accept any proposal, as the Owner may consider to be in his best interests.

6. Contract

A. Determination of Successful Bidder will be based upon all pertinent data contained in this Proposal.

B. If Undersigned is notified of acceptance of this Proposal within ninety (90) calendar days after date of the Bid Opening date, he shall execute a Contract for the above work for the stated compensation.

7. Complete Cost Breakdown

A. If awarded the Contract, the undersigned agrees within ten (10) calendar days to deliver to Owner through Architect, a complete and correct cost breakdown for purpose of establishing monthly payments to Contractor based on progress of work. A complete breakdown will be furnished in addition to any partial breakdown, if necessary, to satisfy Owner and Architect as to content, distribution of costs, and form.

BID DOCUMENTATION:

1. Base Bid

A. For all Work Items the Contractor bids (include the sum of the Lump Sum Grand Total):

BASE BID GRAND TOTAL \$ _____

This bid includes all labor, materials, services and equipment necessary for completion of the work specified.

1. The Contractor assures that he will substantially complete all the Work Items for this project in _____ calendar days. Contractor has assumed _____ lost days due to inclement weather in this schedule.
2. If payment and performance bonds are required, the cost of the work will be increased by \$_____.

2. Alternates

A. For Alternate 1: Power wash all building facades following sealant joint replacement, the Contractor bids.

ALTERNATE 1 BID _____

C. For Alternate 2: Clean existing windows at all facades, the Contractor bids:

ALTERNATE 2 BID _____

SUBCONTRACTORS:

1. Bidder's Subcontractors:

A. The Contractor submits for consideration the following subcontractors as appropriate, who are incorporated into the Bid Proposal and the Contractor intends to subcontract to complete this project. List no more than three potential subcontractors for each work item.

Work	Subcontractors
_____	_____
_____	_____
_____	_____, _____, _____
_____	_____, _____, _____

2. BIDDER'S RESUME

List a minimum of three jobs of similar type, scope and vintage performed in the last five years with a major emphasis on EIFS, precast panels, and sealant replacement. (If necessary, include a second resume for subcontractors):

Client: _____

Building: _____

Address: _____

Contact / Phone: _____

Scope of Work: _____

Approximate Cost of Repairs: _____

Client: _____

Building: _____

Address: _____

Contact / Phone: _____

Scope of Work: _____

Approximate Cost of Repairs: _____

Client: _____

Building: _____

Address: _____

Contact / Phone: _____

Scope of Work: _____

Approximate Cost of Repairs: _____

PHASING PLAN:

1. Submit a general description of anticipated work phasing and project approach.

AFFIRMATION:

1. Signature of Bidder:

A. Firm Name:

B. Address:

C. Signatory:

D. Title:

E. Date:

END OF SECTION 00300

Owner Provided Documents

Attachment A - Bid Instructions

BID INSTRUCTIONS/REQUIREMENTS

- ❖ ***SUBMISSION OF BIDS/BIDS: Two (2) complete sets*** of all bid documents (original and one (1) copy) shall be sealed and **marked** BID#2018-803 Window Sealant/Facade Repairs.

Gregg County Purchasing
Kelli Davis, CPPB, Purchasing Agent
101 East Methvin, St. 205
Longview, Texas 75601

- ❖ Questions concerning this bid/Bid and process shall be directed to Gregg County Purchasing Director by email to purchasing@co.gregg.tx.us; Kelli Davis. Failure to comply with this guideline could result in disqualification from the bid process.
- ❖ **All bids must be sealed** when returned to Gregg County.
- ❖ The bid must be signed and dated by a representative of the vendor's company who is authorized. It should be sealed, and received by Gregg County Purchasing Agent, 101 East Methvin, St. 205, Longview, TX, 75601 by the closing date and time specified. A facsimile transmission is **not** an acceptable response to this Bid.
- ❖ All questions/checklists/blanks must be included in your response on the forms provided. Failure to include any of the requested information within your bid may result in rejection/disqualification.
- ❖ BIDS WILL BE received and publicly acknowledged at the Gregg County Purchasing Department located at the address listed above. Vendors, their representatives and interested persons may be present. All submissions shall be open for public inspection except for trade secrets, financial information, and other confidential information contained in the Bid/bid and identified as such by vendor.
- ❖ **It is the bidders' sole responsibility to print and review all pages of the bid document, attachments, questions and their answers, addenda and special notices. The Bid Signature Form, Certification of eligibility and contract must be signed and returned. Failure to provide signatures on these forms could render bid non-responsive.**
- ❖ **All documents relating to this bid including but not limited to, the bid document, questions and their responses, addenda and special notices will be posted under the Bid number on the Gregg County Purchasing Department website and available for download by bidders and other interested parties. It is the bidders'/respondents' sole responsibility to review this site and retrieve all related documents prior to the Bid due date.**

- ❖ **Any bid received after the date and/or hour set for bid opening will not be accepted. Bidder will be notified and will advise Gregg County Purchasing as to the disposition by either pick up, return at bidder's expense, or destroyed with written authorization of the bidder.** If bids/Bids are sent by mail to the Purchasing Department, the bidder shall be responsible for actual delivery of the bid to the Purchasing Department before the advertised date and hour for opening of bids. If mail is delayed either in the postal service or in the internal mail system of Gregg County beyond the date and hour set for the bid opening, bids thus delayed will not be considered and will be disposed of as authorized.

Bid Submission Requirements

- ✓ **Completed and signed Bid Forms including *Certification of Eligibility, Bid Signature Form, Certificate of Interested Parties (HB 1295 Form), Bid Contract, Official Bid Sheet and Vendor References.* Vendor shall submit original forms with original signatures,**
- ✓ **Insurance Certificates – Bidder must submit all Insurance Certificates with bid.**
- ✓ **List of Sub-Contractors (If applicable) – Bidder must submit a list of sub-contractors that will be used to complete bid guidelines.**
- ✓ **Information regarding any pending or past lawsuits within 10 years.**

Any bid received after the date and/or hour set for bid opening will not be accepted. Bidder will be notified and will advise Gregg County Purchasing as to the disposition by either pick up, return at Bidder's expense, or destroyed with written authorization of the Bidder.

If bids are sent by mail to the Purchasing Department, the Bidder shall be responsible for actual delivery of the bid to the Purchasing Department before the advertised date and hour for opening of bids. If mail is delayed either in the postal service or in the internal mail system of Gregg County beyond the date and hour set for the bid opening, bids thus delayed will not be considered and will be disposed of as authorized.

Attachment B - Bid Signature Forms

CERTIFICATION OF ELIGIBILITY

By submitting a bid or Bid in response to this solicitation, the bidder/proposer certifies that at the time of submission, he/she is ***not*** on the Federal Government's list of suspended, ineligible, or debarred contractors.

In the event of placement on the list between the time of bid/Bid submission and time of award, the bidder/proposer will notify the Gregg County Purchasing Agent. Failure to do so may result in terminating this contract for default.

Signature: _____ **Date:** _____

Printed Name: _____

To: Vendors of Gregg County, Texas
From: Kelli L. Davis, CPPB, Purchasing Agent
Re: ***Conflict of Interest Form (CIQ)***

Vendor;

Attached, please find link below to a Conflict of Interest Questionnaire. Please complete this form if you have a conflict of interest with any Gregg County Official, Employee, or Department. The questionnaire should reflect the name of the individual with whom the conflict of interest occurs. If you have any questions regarding compliance with Chapter 176 of the Texas Local Government Code, please consult your legal representative. Compliance is the responsibility of each individual, business, agent or representative who is subject to the law's filing requirements.

<http://www.ethics.state.tx.us/forms/CIQ.pdf>

Original completed forms should be filed with the County Clerk's Office and a copy sent to the Gregg County Purchasing Department either through bid return, fax, or email. Please see contact information below.

Gregg County Clerk
Gregg County Courthouse
101 East Methvin, St. 200
Longview, Texas 75601
Ph; 903-236-8430

Gregg County Purchasing Department
Email: purchasing@co.gregg.tx.us
Ph: 903-237-2684
Fx: 903-237-2682

Applicable Law

Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the records administrator of Gregg County (County Clerk) no later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Texas Local Government Code.

Attachment C - HB 1295 Vendor Requirements

Certificate of Interested Parties (Form 1295)

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 of the Government Code. The law states that a government entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the government entity. The disclosure of interested parties will be submitted online via Form 1295 and must be submitted to the governmental entity prior to any signed contract and/or vote by the governing authority.

The Filing Process:

1. Prior to award by Commissioners Court, your firm will be required to log in to the Texas Ethics Commission, https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm and fill out the Electronic Filing Application.
2. Once submitted, the system will generate an electronic Form 1295 displaying a "Certificate Number." Your firm must print, sign and notarize Form 1295.
3. **Within ten (10) business days** from notification of pending award by the Gregg County Purchasing Agent, the completed Form 1295 **must** be submitted to Gregg County.
4. Your firm will need to repeat this process and obtain a separate Form 1295 each time you enter into a new contract, renew a contract or make modification and/or amendments to a Gregg County contract.

Instructions and information are available at <https://www/ethics.state.tx.us/tec/1295-Info.htm> or you may call the Texas Ethics Commission at (512) 463-5800.

Attachment D - Gregg County Standard Terms and Conditions



STANDARD TERMS AND CONDITIONS
Gregg County, Texas

Awarded vendor certifies and agrees to the following:

1. Non-performance or non-compliance of the Standard Terms & Conditions, or non-performance or non-compliance with the Specifications shall be basis for termination by Gregg County of the bid or final executed contract. Termination in whole, or in part, by the County may be made solely at the County's option and without prejudice to any other remedy to which Gregg County may be entitled by law or in equity, or elsewhere under this Bid or the agreement, by giving thirty (30) days written notice to the vendor with the understanding that all work being performed under this agreement shall cease upon the date specified in such notice. Gregg County shall not pay for work, equipment, services or supplies, which are unsatisfactory. The Respondent may be given reasonable opportunity prior to termination to correct any deficiency. This however shall in no way be construed as negating the basis for termination for non-performance or non-compliance.
2. Respondent shall make all inquiries necessary to be thoroughly informed as to the specifications and all other requirements proposed in the Bid. Any apparent omission or silence of detail in the description concerning any point in the specifications shall be interpreted on the basis of best commercial practices, and best commercial practices shall prevail.
3. Invoices shall be sent to the Gregg County Purchasing Department, 101 East Methvin, St. 205, Longview, TX, 75601. Invoices must detail the materials/equipment/services delivered and **must reference the Gregg County Purchase Order Number.** Payments are processed after the Purchasing Department has verified that the material or equipment and/or services have been delivered in good condition and that no unauthorized substitutions have been made according to specifications. Neither a signed receipt nor payments shall be construed as an acceptance of any defective work, improper materials, or release of any claim for damage.
4. Only the Commissioners Court of Gregg County, Texas acting as a body may enter into any type of agreement or contract on behalf of Gregg County. Department heads, other elected or appointed officials, are not authorized to enter into any type of agreement or contract on behalf of Gregg County, or to agree to any type of supplemental agreements or contracts for goods or services. Contracts are subject to review by the County's attorney prior to signature by the authorized County official.

5. The Respondent shall be considered an independent Contractor and not an agent, servant, employee or representative of the County in the performance of the work. No term or provision, hereof, or act of the Respondent shall be construed as changing that status.
6. The Respondent shall defend, indemnify, and shall save whole and harmless the County and all its officers, agents, employees from and against all suits, actions, or claims of the character, name and description brought for or on account of any injuries or damages (including but not restricted to death) received or sustained by any person(s) or property on account of, arising out of, or in connection with the performance of the work, including without limiting the generality of the foregoing, any negligent act or omission of the Respondent on the execution or performance of the Contract.
7. The Respondent agrees, during the performance of the work, to comply with all applicable codes and ordinances of the City of Longview, Gregg County, or State of Texas as they may apply, as these laws may now read or as they may hereafter be changed or amended.
8. The awarded vendor shall obtain from the appropriate City, Gregg County, or State of Texas the necessary permit(s) required by the ordinances of the City, County, or State, for performance of the work.
9. The awarded contractor shall not sell, assign, transfer or convey the agreement in whole or in part, without the prior written consent of the County.
10. The parties herein agree that the agreement shall be enforceable in Gregg County, Texas, and if legal action is necessary to enforce it, exclusive venue shall lie in Gregg County, Texas.
11. The agreement shall be governed by, and construed in accordance with, the Laws of the State of Texas and all applicable Federal Laws.
12. Funding Clause - Payments required to be made by Gregg County under the terms of the agreement shall be contingent upon and subject to the initial and continuing appropriation of funding for the agreement by and through the Commissioners Court of Gregg County, Texas. In the event appropriations for funding of the agreement are not approved by and through the Commissioners Court, the contract shall terminate. Gregg County shall, submit written notice to Respondent thirty (30) days prior to such termination. Upon notice of termination, as provided in this paragraph, the Respondent may submit a final invoice to the County and coordinate with the Purchasing Agent to remove all property belonging to said Respondent as soon as possible. Payment for final invoice will be subject to verification and approval by the purchasing agent. Thereupon, Gregg County will be released from its obligation to make further payments.
13. Gregg County is exempt from federal excise and sales taxes, ad valorem taxes and personal property taxes; therefore, tax must not be included in proposals tendered. Proposals offered must be complete and all inclusive. Gregg County will not pay additional taxes, surcharges or other fees not included in bid prices.

14. In case any one or more of the provisions contained in the agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and the agreement shall be considered as if such had never been contained herein.
15. The agreement embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties and relating to matters herein, and except as otherwise provided herein cannot be modified without written agreement of the parties. A contract will be executed after determination of the award.
16. Awarded Respondent must provide a certificate of insurance conforming to the above listed requirements or a statement of Respondent's insurance carrier certifying that the required coverage shall be obtained by Respondent within ten (10) days of formal award of the Contract. In the case where a certification letter from an insurance carrier is attached to the bid in lieu of an insurance certificate, any formal award of a contract shall be contingent upon required coverage being put into force **prior** to any performance required by subject agreement.
17. Gregg County reserves the right to terminate an agreement/contract at any time, without cause, upon thirty (30) days written notice to awarded contractor. Upon termination, Gregg County shall pay Respondent for those costs directly attributable to work done or supplies obtained in preparation for completion or compliance with the Contract, except no payment shall be made for costs recoverable by Respondent in the normal course of doing business or which can be mitigated through the sale of supplies or materials obtained for use under this Contract. It is further agreed by Respondent that Gregg County shall not be liable for loss or reduction in any anticipated profit.
18. Gregg County is wholly committed to developing, establishing, maintaining, and enhancing minority business involvement in the total procurement process. The County, its contractors, their suppliers and sub-contractors, vendors of goods, equipment, services, and professional services, shall not discriminate on the basis of race, color, religion, national origin, age, handicap, or sex in the award and/or performance of contracts. However, competition and quality of work remain the ultimate standards in contractor, sub-contractor, vendor service, professional service, and supplier utilization. All vendors, suppliers, professionals and contractors doing business or anticipating doing business with Gregg County shall support, encourage and implement steps toward our common goal of establishing equal opportunity for all citizens of Gregg County.
19. The awarded contractor agrees that Gregg County assumes no responsibility for any costs associated with any administrative or judicial proceedings resulting from the solicitation process.
20. The awarding Respondent shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the work for at least two (2)

years after completion of the contract resulting from this request for proposal. Gregg County shall have access to all records, documents and information collected and/or maintained by others in the course of the administration of this agreement.

21. Contractor understands and agrees that in returning a response to this proposal/bid that it is neither an "offer" nor an "acceptance" until such time a formal contract is authorized/awarded by the Gregg County Commissioners Court; if any.
22. Gratuities— Gregg County may, by written notice to the Seller, cancel this contract without liability to Seller if it is determined by Gregg County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the Seller, or any agent or representative of the Seller, to any officer or employee of Gregg County with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such a contract. In the event this contract is canceled by Gregg County pursuant to this provision, Gregg County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by Seller in providing such gratuities.
23. Termination - The performance of work under this order may be terminated in whole or in part by the Buyer in accordance with this provision. Termination of work hereunder shall be effected by the delivery to the Seller of a "Notice of Termination" specifying the extent to which performance of work under the order is terminated and the date upon which such termination becomes effective. Such right of termination is in addition to and not in lieu of rights of Buyer.
24. Force Majeure - If, by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and full particulars of such Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term Force Majeure as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemies, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquake, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty.

25. Assignment Delegation - No right or interest in this contract shall be assigned or delegation of any obligation made by Seller without the written permission of the Buyer. Any attempted assignment or delegation by Seller shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.
26. Waivers - No claim or right arising out of a breach of this contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.
27. Modification - Contract can be modified or rescinded only by a written and signed agreement by both of the parties duly authorized agents.
28. Applicable Law - This agreement shall be governed by the Uniform Commercial Code. Wherever the term "Uniform Commercial Code" is used, it shall be construed as meaning the Uniform Commercial Code as adopted in the State of Texas as effective and in force on the date of this agreement.
29. Advertising - Seller shall not advertise or publish, without Buyer's prior consent, the fact that Buyer has entered into this contract, except to the extent necessary to comply with proper requests for information from an authorized representative of the federal, state, or local government.
30. Right to Assurance - Whenever one party to this contract in good faith has reason to question the other party's intent to perform, he may demand that the other party give written assurance of his intent to perform. In the event a demand is made and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.
31. Venue - Both parties agree that venue for any litigation arising from this contract shall be in Longview, Gregg County, Texas.
32. No negotiations, decisions, or actions shall be executed by the vendor as a result of any discussions with any public service official, employee and/or consultant. Only those transactions provided in written form may be considered binding.
33. The contents of each vendor's bid, including specifications shall remain valid for a minimum of 60 calendar days from the Bid due date.
34. Subcontracting: The Vendor must function as the single point of responsibility for the Agency. No vendor shall submit a proposal comprised of separate software packages from multiple subcontractors.

35. Conflict of Interest: No public official shall have interest in this contract except in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitle C, Chapter 171. State Law (CHAPTER 176 of the Local Government Code) requires the filing of a CONFLICT OF INTEREST QUESTIONNAIRE by certain individuals and businesses.
36. Design, Strength, Quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practice.
37. All Hardware of any other item offered in this bid must be new and unused, unless otherwise specified, in first-class condition and of current manufacture.
38. Descriptions: Whenever an article or material is defined or used in the BID specifications by describing a proprietary product or by using the name of a manufacturer, model number, or make, the term "or equal" if not inserted, shall be implied. Any reference to specified article or material shall be understood as descriptive, NOT restrictive, and is used to indicate type and quality level desired for comparison purposes unless otherwise noted. Bids must be submitted on units of quantity specified, extended, and totaled. In the event of discrepancies in extension, the unit prices shall govern.
39. Addendum: Any interpretations, corrections or changes to this Bid and Specifications will be made by addendum, unless otherwise stated. Issuing authority of addendum shall be the Commissioners' Court of Gregg County, Texas. Addendum will be mailed, emailed, or faxed to all that are known to have received a copy of the Bid. Vendors shall acknowledge receipt of all addenda and include receipt and response to addenda with submission.
40. Patents/Copyrights: The successful vendor agrees to protect Gregg County from claims involving infringements of patents and/or copyrights.
41. Contract Administrator: The Contract Administrator will serve as sole liaison between the Gregg County Commissioners Court and affected Gregg County Departments and the successful vendor. Unless directly outlined in this specification the vendor shall consider no one but the Contract Administrator authorized to communicate, by any means, information or suggestions regarding or resembling this bid throughout the proposal process. The Contract Administrator has been designated the responsibility to ensure compliance with contract requirements, such as but not limited to, acceptance, inspection and delivery. The County will not pay for work, equipment or supplies, which it deems unsatisfactory. Vendors will be given a reasonable opportunity to correct deficiencies before termination. This however, shall in no way be construed as negating the basis for termination for non-performance.
42. Packing slips or other suitable shipping documents shall accompany each special order shipment and shall include:

- (a) Name and address of successful vendor;
 - (b) Name and address of receiving department and/or location;
 - (c) Gregg County Purchase Order number; and,
 - (d) Descriptive information of the materials shipped or services rendered, including item numbers, serial numbers, quantities, number of containers and package numbers, address/location of services rendered, as applicable.
43. Unless otherwise indicated, items will be new, unused, and in first class condition in containers suitable for damage-free shipment and storage.
44. Invoices must show all information as stated above, and will be issued for each purchase order.
45. Equipment/Good/Services supplied under this contract shall be subject to the County's approval. Item(s) found defective or not meeting specifications shall be picked up and replaced by the successful vendor within one (1) week after notification at no expense to the County. If item(s) is not picked up within one (1) week after notification, the item(s) will become a donation to the County for disposition.
46. Warranty: Successful vendor shall warrant that all equipment/goods/services shall conform to the proposed specifications and/or all warranties stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.
47. Remedies: The successful vendor and Gregg County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
48. Silence of Specification: The apparent silence of specifications as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.
49. The Contractor shall procure and maintain at its sole cost and expense for the duration of this Agreement insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, volunteers, employees or subcontractors. The Contractor's insurance coverage shall be primary insurance with respect to the County, its officials, employees and volunteers. Any insurance or self-insurance maintained by the County, its officials, employees or volunteers shall be considered in excess of the Contractor's insurance and shall not contribute to it. Further, the Contractor shall include all subcontractors as additional insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein. **All Certificates of Insurance and endorsements shall be furnished to the County's Purchasing Agent and approved by the County *before* work commences.**

50. ***Standard Insurance Policies Required:***

- a. Commercial General Liability Policy
- b. Automobile Liability Policy
- c. Worker's Compensation Policy

General Requirements applicable to all policies:

- a. Only insurance carriers licensed and admitted to do business in the State of Texas will be accepted.
- b. Deductibles shall be listed on the Certificate of Insurance and are acceptable only on a per occurrence basis for property damage only.
- c. "Claims Made" policies will not be accepted.
- d. Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to Gregg County.
- e. All insurance policies shall be furnished to Gregg County upon request.

Commercial General Liability

- a. General Liability insurance shall be written by carrier with an A:VIII or better rating in accordance with the current Best Key Rating guide.
- b. Minimum Combined Single Limit of \$1,000,000.00 per occurrence for bodily injury and property damage with Gregg County named as an additional insured.
- c. No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.

Automobile Liability

- a. General Liability Insurance shall be written by a carrier with an A:VIII or better rating in accordance with the current Best Key Rating Guide.
- b. Minimum Combined Single Limit of \$600,000.00 per occurrence for bodily injury and property damage.

51. ***Workers Compensation Insurance*** - Pursuant to the requirements set forth in Title 28, Section 110.110 of the Texas compensation insurance policy; either directly through their employer's policy (the Contractor's or subcontractor's policy) or through an executed coverage agreement on an approved TWCC form. Accordingly, if a subcontractor does not have his or her own policy and a coverage agreement is used, Contractors and subcontractors must use that portion of the form whereby the hiring contractor agrees to provide coverage to the employees of the subcontractor. The portion of the form that would otherwise allow them not to provide coverage for the employees of an independent contractor may not be used.

The worker's compensation insurance shall include the following terms:

- a. Employer's Liability limits of \$500,000.00 for each accident is required.

- b. "Texas Waiver of Our Right to Recover from Others Endorsement" shall be included in this policy. (Waiver of Subrogation)

Pursuant to the explicit terms of Title 28, Section 110.110 (c) (7) of the Texas Administrative Code, the Proposal specifications, this Agreement, and all subcontracts on this Project must include the following terms and conditions in the following language, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

Definitions:

Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Worker's Compensation Commission, or a coverage agreement (TWCC-81), TWCC-83, or TWCC-84), showing statutory worker's compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractors" in section 406.096 {of the Texas Labor Code}) - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the project, regardless of whether that person has employees. This includes, without limitation, independent Contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage respondents, office supply deliveries, and delivery of portable toilets.

- The Contractor shall provide coverage, based on the proper reporting of classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all employees of the Contractor providing services on the project, for the duration of the project.
- The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

- (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file providing services on the project, and certificates of coverage showing coverage for all person; and
- (2) no later than seven calendar days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- (3) The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the Contractor knew or should have known, or any change that materially affects the provision of coverage of any person providing services on the project.

The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

The Contractor shall contractually require each person with whom it contracts to provide services on a project, to:

- (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreement, that meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all of its employees providing services on the project, for the duration of the project;
- (2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
- (3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- (4) obtain from each other person with whom it contracts, and provide to the Contractor:
 - (a) a certificate of coverage, prior to the other person beginning work on the project; and
 - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (6) notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

- (7) Contractually require each person with whom it contracts, to perform as required; with the certificates of coverage to be provided to the person for whom they are providing services.

By signing a contract with Gregg County, or providing, or causing to be provided a certificate of coverage, the Contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier, or, in the case of a self-insured, with the commission's Division of Self-Insurance regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

CERTIFICATES OF INSURANCE shall be prepared and executed by the insurance company or its authorized agent, and shall contain the following provisions and warranties:

- a. The company is licensed and admitted to do business in the State of Texas.
- b. The insurance policies provided by the insurance company are underwritten on forms that have been provided by the Texas State Board of Insurance or ISO.
- c. All endorsements and insurance coverage according to requirements and instructions contained herein.
- d. The form of the notice of cancellation, termination, or change in coverage provisions to Gregg County.
- e. Original endorsements affecting coverage required by the section shall be furnished with the certificates of insurance.

BONDING REQUIREMENTS

If applicable, a Bid Bond shall be required. Pursuant to the provisions of Section 262.032 (a) of the Texas Local Government Code, if the contract contemplated by this request is a bid for the construction of public works, or will be under a contract exceeding \$100,000.00, Gregg County may require the vendor to execute a good and sufficient bid bond in the amount of five percent (5%) of the total contract price. Said bond shall be executed with a surety company authorized to do business in the State of Texas.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 262.032 (b) of the Texas Local Government Code, within thirty (30) days of the date of the signing of a contract or issuance of a purchase order following the acceptance of a bid by Gregg County Commissioners Court and prior to commencement of the actual work, the successful vendor shall furnish a performance bond to Gregg County for the full amount of the contract if the contract exceeds \$50,000.00. Said bond shall be for the purpose of insuring the faithful performance of the work in accordance with the plans, specifications and contract documents associated with the contract.

If applicable, a Payment Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$25,000.00, the successful vendor shall execute a payment bond in the amount of the contract. Said bond is solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the prime contractor or a subcontractor to supply public work labor or material. This bond must be issued to the County within ten (10) days of the award of the contract and before vendor begins the work.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$100,000.00, the successful vendor shall execute a performance bond in the amount of the contract. Said performance bond is solely for the protection of Gregg County and is conditioned on the faithful performance of the work in accordance with the plans, specifications, and contract documents. This bond must be issued to the County within ten (10) days of the award of the contract and before the vendor begins the work.

BID SUMMARY TABLE

Gregg County Courthouse - Window Sealant / Facade Repairs

Facade Remediation

Work Item No.	Description	Estimated Quantity	Bid Amount	
Lump Sum Work Items				
1	Remove/replace sealant at masonry, cast stone, and other cladding joints			
	1932 Courthouse		LF	\$ Lump Sum
	1958 Addition		LF	\$ Lump Sum
	1982 Addition		LF	\$ Lump Sum
2	Remove/replace sealant at window perimeters.			
	1932 Courthouse		LF	\$ Lump Sum
	1958 Addition		LF	\$ Lump Sum
	1982 Addition		LF	\$ Lump Sum
3	Wet seal windows with silicone sealant/precured silicone strip (ribbon windows only) per details.			
	1932 Courthouse		LF	\$ Lump Sum
	1958 Addition		LF	\$ Lump Sum
	1982 Addition (Include Precured silicone strip at ribbon windows)		LF	\$ Lump Sum
4	Seal metal-to-metal joinery with precured silicone strip			
	1932 Courthouse	NA	\$	Lump Sum
	1958 Addition	NA	\$	Lump Sum
	1982 Addition (Incl. sill repairs at ribbon windows)	NA	\$	Lump Sum
5	Perform flashing repairs at fountain curtain wall including removal and replacement of masonry		LF	\$ Lump Sum
Lump Sum Subtotal				\$
Unit Price Work Items				
1	Masonry Pointing/Repair	N/A	\$	/LF
Unit Price Subtotal				\$

*PLEASE PROVIDE A LUMP SUM PRICE FOR THE ESTIMATED TOTAL QUANTITY AS WELL AS A PRICE FOR EACH ADDITIONAL LF OR SF.

GENERAL CONDITIONS COSTS

Mobilization/De-mobilization (To include access costs such as staging and lifts)	LUMP SUM	\$
Cost for 20 year sealant manufacturer's warranty	LUMP SUM	\$
Cost for 3 year Installer's labor warranty	LUMP SUM	\$
Building Permits and Fees	LUMP SUM	\$
BASE BID GRAND TOTAL		\$
Payment and Performance Bonds (Owner's Option)	LUMP SUM	\$
ESTIMATED TIME FOR COMPLETION OF BASE BID WORK	CALENDAR DAYS	
ALTERNATES		COST
A.1 Power wash all building facades		\$
A.2 Clean existing windows at all building facades		\$

SECTION 01100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Project consists of exterior sealant replacement and flashing installation at the Gregg County Courthouse, located at 101 East Methvin, Longview, Texas 75601:

1.3 PROJECT CONDITIONS

- A. Description of Existing Structure:
 - 1. Gregg County Courthouse consists of the original courthouse building built in 1932, an addition on the east side constructed in 1958, and an addition on the west side constructed in 1982. The buildings are primarily clad with clay brick with a combination of natural stone and cast stone window sills, copings, and other accents. Fenestration consists primarily of aluminum framed punched windows on the 1938 and 1958 buildings, and a combination of aluminum framed ribbon and curtain wall window systems on the 1982 building.
 - 2. Scaffolds, lifts, and swing stages will be required for access.
 - 3. Building will remain in use during repair work and overhead protection must be provided by the Contractor when working over pedestrian areas.

1.4 WORK SCOPE

- A. Work includes the following activities:
 - 1. Remove existing sealant at all exterior cladding joints including brick masonry, stone, cast stone, and sheet metal components. Clean and prepare substrates to receive new sealant. Install new backer rod and silicone sealant.
 - 2. Remove and replace perimeter sealant at existing windows and provide new backer rod and sealant joints.
 - 3. Trim existing gaskets as necessary and wet seal all glazing perimeters.
 - 4. Apply bridge seals or precured silicone seals at all window joinery, weeps, or other discontinuities in the window frame.

5. Remove brick from above the curtain wall on the south side of the building (fountain entrance) in a leg and leg manner. Leg and leg includes removal of portions of the brick cladding in an alternating pattern (no more than 4 foot sections at a time).
6. Install new through wall flashing and drip edge with end dams.
7. Reinstall brick, allow mortar to harden sufficiently to support cladding, and remove second leg of brick cladding. Perform similar repairs, integrating adjacent sections of through wall flashing.
8. Alternate 1: Power wash all building facades.
9. Alternate 2: Clean existing windows.

1.5 CONTRACTOR'S DUTIES

- A. Except as specifically noted, provide and pay for:
 1. Labor, materials and equipment.
 2. Tools, construction equipment, and machinery.
 3. Other facilities and services necessary for proper execution and completion of work.
- B. Owner is exempt from sales tax on products permanently incorporated in work.
 1. Since the Owner is a governmental entity or an organization which is exempted from the sales and use taxes on certain tangible personal property, the Contractor shall be responsible for:
 - a. Determining whether such governmental entity or organization is exempt from such taxes under the Contract Documents.
 - b. Determining whether your purchase of any tangible personal property for use in the performance of this contract is exempt.
 - c. Obtaining any sales tax exemption certificate from the Owner.
 - d. Properly issuing any sales tax exemption certificate to a seller or supplier that the sale of any item of tangible personal property qualifies for an exemption.
 - e. Maintaining any records required by the laws of the State of Texas or by any valid rules and/or regulations of the Comptroller of Public Accounts of the State of Texas.
 - f. Payment of any legally assessed penalties or fines for improper use of any exemption certificate.
 2. Obtain sales tax exemption certificate from Owner.
 - a. Place exemption certificate number on invoices for materials incorporated in work.
 - b. Upon completion of work, file with Owner notarized statement that all purchases made under exemption certificate were entitled to be exempt.
 - c. Pay legally assessed penalties for improper use of exemption certificate number.
- C. Secure and pay for, as necessary for proper execution and completion of Work, and as applicable at time of receipt of bids:
 1. Government Fees (including inspection fees).
 2. Licenses.

- D. Give required notices.
- E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of Work, including all provisions of the Occupational Safety and Health Administration, and including Article 1926.21 (Safety Training and Education) and Texas Accessibility Standards.
- F. Promptly submit written notice to Architect of observed variance of Contract Documents from legal requirements. Assume responsibility for Work known to be contrary to such requirements, without notice.

1.6 WORK SEQUENCE AND SPECIAL REQUIREMENTS

- A. The Work shall be conducted in various phases to accommodate continued occupancy by the Owner of adjacent spaces and buildings.
- B. Secure individual permits and inspections for each separate portion of the work, as necessary to allow for completion of separate portions of the work.
- C. Assume responsibility for protection of work and provide and maintain protections required. Protect existing surfaces of the building and equipment, both interior and exterior, as required during the construction period. Provide necessary dust screens, drop cloths, and temporary walls, coverings, and overhead protection as may be required for protection. Patch or replace to original condition existing surfaces that are damaged due to construction.

1.7 USE OF PREMISES

- A. General: Contractor shall have full use of designated portions of the building for construction operations, including limited use of Project site, during the construction period.
- B. Make each entity engaged in work on the project aware that the present facility houses an operating institution that must continue in operation during the construction period, except as the Architect and Owner may otherwise direct. Continue function of plumbing, heating, ventilating, electrical, fire alarm, and telephone systems with a minimum of interruptions in service. Do not block any required fire exits.

1.8 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 02 07 00
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish all labor, materials, tools and equipment and perform all Work necessary for and incidental to the selective demolition as shown on the Drawings and specified herein and completely coordinated with the Work of all other trades.

1.02 SUBMITTALS

- A. Submit the following:
 - 1. Logistic plan and permits for transport and disposal of debris.
 - 2. Demolition Schedule (proposed sequence of demolition and removal operations).
 - 3. Proposed means of fire safety precautions and practices during welding and cutting operations.
 - 4. Emergency contacts for cleaning of tenant spaces in the event work results in damage or soiling of tenant spaces or goods.

1.03 QUALITY ASSURANCE

- A. Conform to codes and requirements of governing authority.
- B. Obtain and pay for all permits for demolition; protection of the public and property; transportation and disposal of debris.

1.04 SITE CONDITIONS

- A. Occupancy: The building is to remain fully occupied.
- B. Condition of Structures: The Owner assumes no responsibility for the actual condition of portions to be demolished.

PART 2 - PRODUCTS

(NOT APPLICABLE)

PART 3 - EXECUTION

3.01 SALVAGE

- A. Items of salvageable value to the Contractor may be removed from the structure as the Work progresses.
- B. Salvaged items must be transported from the site as they are removed. Storage or sale of removed items on the site will not be permitted.

3.02 TRAFFIC

- A. Conduct demolition operations and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

3.03 PROTECTION

- A. Owner has the right to review and approve all temporary protection, bracing.
- B. Design and provide temporary canopies, walls, and signage to ensure the safe passage of persons in and around the area of demolition. Conduct operations to prevent injury to persons, the structure, and other facilities.
- C. Provide interior and exterior shoring, bracing, or support to prevent movement or settlement or collapse of structures during demolition or conveyance of materials and of structures and facilities to remain. Contractor to incur cost of shoring design.
- D. When exits are temporarily blocked an alternate evacuation plan shall be prepared, approved by the Owner and posted.
- E. Provide temporary protection of existing construction from the weather until removed portions are completely replaced with new construction.
- F. Maintain existing utilities, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by Owner. Provide temporary services during interruptions to existing utilities.
- F. Provide temporary electrical and or other services to replace those that will be interrupted during planned demolition activities that will remain interrupted more than one day.

3.04 POLLUTION CONTROL

- A. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
 - 1. Do not use water when it may create hazardous or objectionable conditions such as Icing, flooding, or pollution.
 - 2. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations.
 - 3. Provide temporary covers or enclosures for fresh air intake vents and louvers during dusty or odorous demolition activities.

3.05 DEMOLITION

- A. Demolish indicated items completely and remove from the site. Use such methods as required to complete the Work within the limitations of governing regulations.
 - 1. Proceed with demolition in a systematic manner.
 - 2. Demolish materials in small sections to facilitate removal.

3. Remove overhead materials and lower to the ground by means of hoists, derricks, or other suitable methods.
4. Locate demolition equipment throughout the structure and remove materials so as to not impose excessive loads to supporting walls, floors or framing.
5. Remove additional material as necessary to allow inspection and repair of the underlying substrate at the direction of the Engineer.

3.06 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove from the site debris, rubbish, and other materials resulting from demolition operations. Burning of removed materials is not permitted on the site.
- B. Transport materials removed from demolished portions in accordance with codes and requirements of governing authority.
- C. Dispose of materials removed from demolished portions off site at a location where specific permission for disposal has been obtained.

3.07 REPAIRS

- A. Repair any areas of demolition in excess of that required and any damage to adjoining construction. Repairs must, as a minimum standard, restore the condition which existed prior to the start of demolition.

3.08 CLEANING

- A. At the end of each work day or work period perform a site inspection on the interior and exterior of the building to remove any debris resulting from the work.
- B. Coordinate with building cleaning staff if dust, debris, or damage occurs within tenant spaces.

END OF SECTION

SECTION 03 01 05
FACADE CLEANING (Alternate 1)

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes cleaning of brick masonry, stone, and cast stone facade elements as follows:
 - 1. Apply cleaning trial samples of all specified cleaning systems to all substrates, as outlined in this section.
 - 2. Cleaning of the exterior facades by chemical and water cleaning methods, as determined by cleaning trial samples.
 - 3. Removal of localized severe soiling or staining from exterior facade elements.
 - 4. Provide access to all work areas during cleaning project for inspection by Architect/Engineer.

1.2 DEFINITIONS

- A. Very Low-Pressure Water: Less than 100 psi; 4 to 6 gpm.
- B. Low-Pressure Water: 100 to 400 psi; 4 to 6 gpm.
- C. Medium-Pressure Water: 400 to 800 psi; 4 to 6 gpm.
- D. High-Pressure Water: 800 to 1200 psi; 4 to 6 gpm. High pressure water cleaning may not be appropriate for cladding systems other than concrete, and can result in damage to the substrate.

1.3 SUBMITTALS

- A. Product Data: submit manufacturer's product literature, application instructions, and Manufacturer's Safety Data Sheets (MSDS) for all products used in cleaning before the work begins.
- B. Samples for Verification: Before erecting mock-up, submit samples of the following:
 - 1. Samples of cleaning chemicals for testing and verification.
- C. Qualification Data: For cleaning contractor or subcontractor and personnel:
 - 1. Submit to the Owner and the Architect/Engineer with the Bid Form a list of similar cleaning projects performed in the previous five years. For each project, include project address, description of cleaning scope of work, list of cleaning materials and systems used, and Owner contact information.

- D. Protection Plan: Submit to Owner a written plan describing all protection measures and systems proposed by Contractor for use during the work.
- E. Collection and Disposal Plan: Submit to Owner a written plan describing methods for collection and control of runoff during cleaning operations.

1.4 QUALITY ASSURANCE

- A. Cleaning Contractor Qualifications:
 - 1. Firm shall have completed work similar to that indicated for this Project with a record of successful in-service performance.
 - 2. Contractor performing this work shall have at least five years' experience in the cleaning of architectural precast, EIFS, and stucco facades.
- B. Cleaning Worker Qualifications: Persons who are experienced and specialize in exterior facade and architectural precast cleaning work of types they will be performing.
 - 1. Supervisory personnel shall have not less than three years' experience in supervising this type of work. All apprentices shall be under the direct supervision of an experienced supervisor.
 - 2. Cleaners performing the work shall be experienced in the use of chemical and water cleaning systems.
 - 3. Keep at the project site, during the period when work is being performed, a competent superintendent/working foreman satisfactory to the Owner.
 - 4. The approved working foreman shall not be removed from the project without cause or without prior notification of the Owner. If removal is for cause, Contractor shall submit justification in writing within 24 hours of the removal. All work will cease until a new working foreman is on site.
- C. Cleaning System Manufacturer Qualifications: Cleaning system shall be provided by a firm regularly engaged in producing architectural precast, EIFS, stucco and exterior facade cleaners that have been used for similar applications with successful results, and with technical representatives who are available for consultation and project site inspection and assistance at no additional cost.
- D. Trial samples and mock-ups: Prepare trial samples and mock-ups of cleaning as follows to demonstrate effects and qualities of materials and execution. Prepare mock-ups on existing walls under same weather conditions to be expected during remainder of the Work.
 - 1. Prepare a trial of every protection system or device proposed for the protection of adjacent facades and elements. Protection trial may be installed as part of cleaning mock-up areas. The protection trial shall be tested to determine its vulnerability to weather and effectiveness. The Owner may require that the Contractor conduct tests of the protection system before the cleaning work begins.
 - 2. Execute a trial sample using the materials and techniques for each specified cleaning system.

- a. Area(s) where trial samples are to be applied shall be selected by the Architect/Engineer in consultation with the Contractor, and shall be approved by the Owner.
 - b. Area of each trial sample shall be 15 square feet in area for each type of cladding and surface condition.
 - c. Additional trial samples shall be made until an acceptable result is achieved on each material. Minor adjustments to methods of application, dilutions, and dwell times of products shall be made in accordance with limits defined in manufacturer's recommendations.
3. Prior to proceeding with samples, test cleaners and methods for adverse reactions on adjacent materials or other materials that may be affected by the cleaning process, if those materials are to remain unprotected. Test areas shall be small and in unobtrusive location. Protect against known deleterious effects of cleaners and methods during testing.
 4. Do not proceed with work prior to approval of cleaning sample(s) by the Architect/Engineer and Owner.
 5. Allow a waiting period of not less than **fourteen days** after completion of sample cleaning to permit a study of sample area for effectiveness of cleaner and for negative reactions.
 6. Protect trial samples during the work. Upon completion of the work and with prior approval by the Architect/Engineer, trial samples may be incorporated into the overall work.
 7. Approved trial samples shall be the standard of work for all facade cleaning on the project.
 8. Cleaning samples are not to be directly adjacent to each other. Samples are to be separated with untouched surfaces for a comparison of before and after.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. All cleaning materials stored and used on the site shall be clearly labeled with proper warning to prevent any accidental use of the products by unauthorized persons. Store cleaning materials and equipment at location approved by Owner.
- C. Maintain MSDS for cleaning materials with materials in storage area and available for ready reference on project site.

1.6 PROJECT CONDITIONS

- A. Confine operations at site to areas permitted by laws, permits, contract, and the Owner.
- B. Assume full responsibility for protection and safekeeping of products stored on premises, and for their proper use.
- C. Clean facade surfaces only when air temperature is 40 deg Fahrenheit and above and is predicted to remain so for at least 7 days after completion of cleaning.
 1. No chemical cleaning shall be performed when the air temperature is less than 40 degrees Fahrenheit or greater than 90 degrees Fahrenheit.
 2. No micro-abrasive cleaning shall be performed when the air temperature is less than 40 degrees Fahrenheit.

- D. Protect building and site features and personnel against wind-driven spread of cleaning materials. No cleaning shall be performed when winds are sufficiently strong to spread cleaning materials to unprotected areas.
- E. Clean surfaces only during hours approved by Owner and in accordance with local codes and ordinances.
- F. Provide the Owner and Architect/Engineer with access to the building during the work at locations designated by the Owner and Architect/Engineer. Access shall be provided for periodic review of the work to assess quality, perform tests, and quantify repairs.
- G. Notify the Architect/Engineer and Owner immediately if conditions are uncovered that are not anticipated by the Construction Documents.
- H. The Owner retains the right to hire an industrial hygienist to monitor the runoff and cleaning procedure. The Contractor shall provide the Owner's Industrial Hygienist with access to the building during the work at locations designated by the Owner and Architect/Engineer. Access shall be provided for periodic review of the cleaning procedures.

1.7 SEQUENCING AND SCHEDULING

- A. Perform cleaning work in the following sequence relative to other work:
 1. Inspect for open sealant joints, cracks, facade deterioration, displacement spalls or similar anomalies. Repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall. Notify architect/engineer of any unusual conditions.
 2. Perform cleaning prior to facade repairs and perform sealant replacement as required after cleaning.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS

- A. Water for Prewetting, Cleaning, and Rinsing:
 1. Clean, potable water, with iron content of less than two (2) parts per million, or 0.0002 percent (by weight).
 2. Notify Architect/Engineer and Owner of any conditions of local water that may make it unsuitable for facade cleaning, including but not limited to the presence of additives, water softeners, or other agents.
 3. Provide test results to confirm the local water is suitable for use in cleaning project.
 4. Where hot water is used in cleaning, heat water to a temperature of 120 degrees Fahrenheit.
- F. Water misting or soaking:
 1. Clean, potable water, meeting all requirements specified for water used in prewetting, cleaning, or rinsing.

PART 3 EXECUTION

3.1 PROTECTION

- A. Comply with all applicable safety codes and regulations that govern the work, including city, state, water department, OSHA and Federal regulations covering protection and waste water disposal.
- B. Take any precautions necessary to insure the safety of pedestrians and those working in the building.
- C. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of cleaning work.
- D. Comply with chemical cleaner manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
 - 1. Prevent chemical cleaning solutions from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
 - 2. Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
 - 3. Keep wall wet below area being cleaned to prevent streaking from runoff.
 - 4. Do not clean during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
 - 5. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
 - 6. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- E. Exercise caution in performing the work so as not to damage adjacent building elements. Protect the adjacent building features from mechanical damage due to scaffolding and other equipment.
- F. Protect windows and doors, joints, and other openings from chemicals and water infiltration.
- G. Protect all decorative features including, but not limited to bronze plaques, entrances, planters, signs, awnings, canopies and standards from the deleterious effects of the cleaning process.
- H. Protect materials being cleaned from cleaners not designated for use on these substrates.
- I. Protection from cleaning systems shall be by one of the following methods:
 - 1. Polyethylene sheets, no less than 6 mil thick, taped around the entire opening to provide an impervious barrier to the chemical cleaning process. Backing for the polyethylene sheets may be necessary to secure the sheets and provide a wind-proof, watertight system.
 - 2. An approved strippable mask of sufficient thickness and applied without bubbles, holes, or defects to adequately protect the surface underneath.
 - 3. Other protection as proposed by the Contractor and approved by the Architect/Engineer and Owner to provide an impervious barrier.

- J. Repair any building materials that have been damaged, where paint has been removed, glass that has been etched, or materials otherwise damaged by the cleaning work to the satisfaction of the Architect/Engineer without additional cost to the Owner.
- K. Remove all protection materials carefully and thoroughly. Protection materials shall not damage or leave residue on surfaces. Materials to which protection was attached shall be left in the same condition as that previous to the cleaning operations.
- L. Protect paving and sidewalk from staining or damage by the cleaning operations. Protect the joints to prevent water from penetrating the basement. Repair damaged paving or sidewalk without any additional cost to the Owner.
- M. Exercise caution in performing the work so as not to damage building elements from mechanical damage due to the scaffolding, other equipment, and the cleaning operation. If any building elements are damaged by the execution of the work, repair the damaged elements at no additional cost to the Owner.
- N. Protect Workers, Pedestrians, Animals, Plants, Automobiles, Other Property, Etc.
 - 1. The work required herein includes the use of caustic and acidic chemicals that can harm workers and pedestrians, animals, plants, and damage other automobiles, other buildings, street furniture, etc.
 - 2. Protect workers, pedestrians, animals, plants, adjacent buildings, parked or moving automobiles, other buildings, street furniture, and other persons and objects that are vulnerable to damage by the cleaning operations.
 - 3. Any damage to adjacent buildings, automobiles, etc., caused by the cleaning operation shall be the responsibility of the Contractor and shall result in no additional cost to the Owner.

3.2 CLEANING FACADES, GENERAL

- A. The purpose of the cleaning process is to remove atmospheric deposits, soil, staining, grease, oil, and other contaminants without damage to or disintegration of the facade surface.
- B. The result of the cleaning is not expected to return the facade to a 100 percent clean or new appearance. The level of cleaning shall be as approved in the trial samples as specified herein.
- C. The cleaning system shall not damage, etch, burn, bleach, streak, or discolor the facade surface or glaze.
- D. It is recognized that variations of the cleaning materials and their application may be required as the job proceeds. However, no variation will be acceptable without written approval of the Architect/Engineer.
- E. Notify Architect/Engineer if any conflict is encountered between the specifications and the manufacturer's recommendations for the cleaning product or system.
- F. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other.
- G. Use only those cleaning methods and materials indicated for each architectural precast material and location.

1. Do not use wire brushes or scrapers. For chemical cleaning, use only brushes that are resistant to chemical cleaners being used.
 2. Use spray equipment that provides controlled application at volume and pressure indicated, measured at spray tip. All pressure applicators shall be equipped with pressure gauges at the compressor and at the spray nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage facades.
 3. For chemical cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with cone-shaped spray tip, or other pump as recommended by manufacturer of cleaner. Control wind drift of chemical cleaners if spray application is used.
 4. For heated water spray application, use equipment capable of maintaining temperature at 120 degrees Fahrenheit at flow rates indicated.
- H. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging facade surfaces.
- I. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to cleaning methods being used, as determined by test samples. Extraneous substances include sealant, asphalt, and tar.
1. Carefully remove heavy accumulations of material from surface of facade with a wood scraper. Do not scratch or chip surfaces.
 2. Remove asphalt and tar with specified coating removal system.
- J. Chemical Cleaner Application Methods: Apply chemical cleaners to facade surfaces to comply with chemical cleaner manufacturer's written instructions; use brush or spray application methods, at Contractor's option. Do not spray apply at pressures exceeding 50 psi, or less as determined by trial samples. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended by manufacturer.
- K. Water Spray Applications: Unless otherwise indicated, hold spray nozzle at least 12 inches from surface of facade and apply water in horizontal back and forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- L. Prewetting and Rinsing Procedures:
1. Prewetting shall be performed at very low water pressures (measured at the tip), and rinsing shall be performed at low pressures (measured at the tip), using warm water at a flow rate of not less than four gallons per minute. Hot water may be used to improve effectiveness of cleaning and rinsing. Do not use higher prewetting or rinsing pressures, or lower flow rates, unless indicated by approved trial samples and mock-ups.
 2. For prewetting, only apply cleaning chemicals to area that remains wet immediately at beginning of cleaner application. On hot days or in direct sunlight, it may be necessary to proceed with prewetting and cleaner application to small areas of surface, or to prewet the surface several times during the cleaner application.
 3. For prewetting and rinsing, use a stainless steel spray tip giving a 45 degree fan spray, held at least 12 inches from the wall surface.
 4. Rinse off chemical and soil residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting.

5. Continue rinsing until pH of wall has returned to neutral (6.5 to 7.5).
 - a. Maintain pH paper on site to check pH of rinsed surface.
 - b. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
 - c. Repeat application of neutralizing afterwash (if specified) and rinsing as necessary to produce tested neutral pH (6.5 to 7.5).
 6. Recheck pH of wall 48 hours after cleaning has been completed, when wall is dry.
- M. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.
- O. Apply cleaning materials in strict compliance with the manufacturer's written instructions and as specified.

3.3 CHEMICAL CLEANING PROCEDURES

- A. TSP cleaning:
1. Prewet wall surface with very low pressure water.
 2. Scrub on cleaning solution with soft, natural bristle brush. Allow to dwell for approximately 15 minutes. Dwell time to be confirmed by approved test samples. Keep surface moist by misting if necessary during dwell.
 3. Rinse thoroughly with low pressure warm water. Agitate with scrubbing brush during rinsing. Rinse the wall with clean water until the pH of the surface has returned to neutral.
- B. EnviroKlean 2010 cleaning:
1. Prewet wall surface with very low pressure water.
 2. Liberally apply diluted EnviroKlean 2010 All Surface Cleaner to the surface using a soft-bristled nylon brush, being careful to completely cover surface of area, including crevices. Allow to dwell for 15 minutes. Dwell time to be confirmed by approved test samples.
 3. On areas of cleaning exposed to wind or sunlight, monitor areas of work during dwell time to insure that applied cleaners do not dry on the surface. Areas that begin to dry should be lightly misted with water.
 4. Just prior to rinsing, agitate surface again by scrubbing gently and thoroughly with a nylon bristle brush.
 5. Rinse thoroughly with low pressure warm water. Rinse the wall with clean water until the pH of the surface has returned to neutral.
 6. Repeat cleaning sequence described above as necessary until cleaning standard established by approved samples is met.
 7. The wall should be rinsed until the pH of the surface has returned to neutral. This may take a minimum of 5 minutes. A second rinse within an hour of the first for at least 2 additional minutes shall be performed to remove any cleaner residue. This second rinsing shall be performed with very low pressure water.
 8. The pH of the wall surface shall be tested after final rinsing of cleaning solutions to confirm the pH of the surface has returned to neutral.

C. Dumond Chemicals Safe 'n Easy Architectural Cleaner/Restorer:

1. Prewet wall surface with very low pressure.
2. Scrub on cleaning solution with soft, natural bristle brush. Allow to dwell for approximately 15 minutes. Dwell time to be confirmed by approved test samples.
3. Rinse thoroughly with low pressure water. Agitate with scrubbing brush during rinsing.
4. Rinse the wall with clean water until the pH of the surface has returned to neutral.
5. Repeat cleaning sequence described above as necessary until cleaning standard established by approved samples is met.
6. The wall should be rinsed until the pH of the surface has returned to neutral. This may take a minimum of 5 minutes. A second rinse within an hour of the first for at least 2 additional minutes shall be performed to remove any cleaner residue. This second rinsing shall be performed with very low pressure water.
7. The pH of the wall surface shall be tested after final rinsing of cleaning solutions to confirm the pH of the surface has returned to neutral.

D. Prosoco SureKlean Limestone Afterwash:

1. Pre-wet wall surface with very low pressure water.
2. Immediately apply diluted Afterwash to wet surface, using a natural dense-fibered brush. Allow to dwell for 5 minutes. Dwell time to be confirmed by approved test samples.
3. Rinse thoroughly with low pressure warm water.
4. The pH of the architectural precast surface shall be tested after final rinsing to confirm the pH has returned to neutral.

E. Light Duty Concrete Cleaner

1. Prewet surface with very low pressure water.
2. Dilute Light Duty Concrete Cleaner 1 part cleaner to 2 to 3 parts water, and in accordance with manufacturer's recommendations.
3. Apply cleaner to prewet surface and allow to dwell for 3 to 5 minutes. Do not allow cleaner to dry on surface. Dwell time to be confirmed by approved test samples.
4. Reapply cleaning solution and gently scrub surface with soft brush, as recommended by the manufacturer.
5. Rinse thoroughly with low pressure warm water. Continue rinsing until neutral pH is achieved at wall surface. Repeat application of cleaner and rinsing as necessary to achieve acceptable level of cleanliness in accordance with approved samples. Repeat rinsing as necessary to reach acceptable pH.

3.4 WATER CLEANING PROCEDURES

A. Cold-Water Wash: Use cold water applied by low pressure spray.

B. Cold Water Mist and Soak:

1. Apply cold water by intermittent soaking.
2. Use spray rack or perforated hoses or other means that will apply a fine water mist to entire surface being cleaned.
3. Apply water in cycles with at least 30 minutes between cycles. Duration of application will be as determined by test samples.

4. Continue water application until surface encrustation has softened sufficiently to permit its removal by water wash, as indicated by cleaning tests.
 5. Remove soil and softened surface encrustation from facade with cold water applied by low-pressure spray.
- C. Hot-Water Wash: Use hot water applied by low pressure spray.

3.5 CLEAN-UP

- A. The premises shall be kept in clean and orderly condition at all times during the progress of the work. Rubbish, barriers, dirt, debris, tools, equipment, and unused materials shall be removed from the site each day.
- B. The sidewalk shall be thoroughly rinsed of all chemicals, dirt, pollutants, and other materials washed off the building each day.
- C. Remove all empty drums, cleaning materials, and related supplies from the site.
- D. After cleaning has been completed, remove any protection.

3.6 FIELD QUALITY CONTROL

- A. Architect/Engineer's Project Representatives: Architect/Engineer will assign Project representatives to help carry out Architect/Engineer's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect/Engineer's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Architect/Engineer in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect/Engineer has had reasonable opportunity to make observations of work areas at lift device or scaffold location.
- C. Work in place shall be subject to inspection including field microscopy and pH testing. Work found to be unacceptable shall be corrected without additional cost to the Owner.
- D. Cleaning materials
 1. Permit the Architect/Engineer to collect samples of cleaning materials, if determined to be necessary by the Architect/Engineer. These samples may be laboratory tested to insure that the products used in the cleaning process are the same as the materials, concentrations, and solutions approved.
 2. Provide the Architect/Engineer with access to the mixed solutions of the cleaning products at the site when so requested by the Architect/Engineer.
 3. Failure to maintain the chemicals, solutions, concentrations, etc., approved shall be reason for the immediate termination of the Contract Agreement.
- E. Cleaning process
 1. Permit the Architect/Engineer to conduct tests on the cleaned and rinsed architectural precast surface, if deemed necessary by the Architect/Engineer. Tests will be performed to

determine if the Contractor is thoroughly rinsing the surface and removing all traces of the acidic and alkaline products. The pH value will be recorded before and after.

2. Re-rinse the affected area without any additional cost to the Owner if the Architect/Engineer determines that the architectural precast surfaces are not being sufficiently rinsed.
3. Re-clean the affected area without any additional cost to the Owner if the Architect/Engineer determines that the cleaning has not been satisfactorily implemented.

END OF SECTION

SECTION 04 01 21

BRICK MASONRY REMOVAL AND REPLACEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Replacement of brick masonry to perform work at underlying weather barrier and flashing. This work includes necessary bracing at removal openings.
- B. Products Installed But Not Supplied Under This Section:
 - 1. Masonry mortar and grout: Section 04 05 01.
- C. Related Sections:
 - 1. Section 02 07 00 - Selective Demolition.
 - 2. Section 04 05 01 - Masonry Mortar and Grout.
 - 3. Section 07 60 00 - Flashing and Sheet Metal.
 - 4. Section 07 65 00 - Flexible Flashing.
 - 5. Section 07 92 00 - Joint Sealants.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International:
 - a. C67: Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - b. C216: Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
 - c. C1314: Standard Test Method for Compressive Strength of Masonry Prisms.
 - d. D1056: Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
 - 2. International Building Code (IBC).
 - 3. The Masonry Society (TMS)/American Concrete Institute (ACI)/Structural Engineering Institute of American Society of Civil Engineers (ASCE):
 - TMS 602/ACI 530.1/ASCE 6: Specification for Masonry Structures.

1.3 SEQUENCING

- A. Order materials at earliest possible date, to avoid delaying completion of Work.
- B. Perform masonry work before associated work whenever possible to avoid damaging newly installed roofing.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's product description and technical data:
 - 1. Brick masonry units: Include description of allowable cleaning products.
 - 2. Veneer anchors.
 - 3. Weep vents.

4. Expansion joint filler.
 5. Cleaning solution: Include written instructions for evaluating and preparing substrate; technical data including solution components and VOC content of components; and application instructions.
- B. Shop Drawings: Provide detailed removal and replacement schedule:
1. Provide method for support of brick masonry to remain.
 2. If methods other than those included in 3.3. below are used, provide necessary structural calculations.
 3. Calculations provided for this project shall be performed and sealed by a Professional Engineer licensed in the State of Texas.
- C. Samples: Submit samples upon request.
- D. Material Certificates: Statement of material properties indicating compliance with requirements, including statement that no coatings have been applied to units during manufacture. Provide for each type and size of unit.
- E. Test Reports for Brick Masonry Units: Test units from same run of brick that will be used on Project, or on similar brick run, in opinion of Architect/Engineer, with tests performed in last year.
1. Brick size variation data, confirming that actual range of sizes satisfies specified tolerances.
 2. Test reports from independent testing laboratory showing following test results:
 - a. Compressive strength.
 - b. 24-hour cold-water absorption.
 - c. 5-hour boil absorption
 - d. Saturation coefficient.
 - e. Initial rate of absorption.
 - f. Efflorescence.
 - g. Freeze-thaw testing, if required to verify conformance with requirements.
- F. Contractor Qualifications: Evidence that Contractor has minimum 5 years of continuous experience in similar repair work; list of at least 5 representative, successfully-completed projects of similar scope and size, including:
1. Project name.
 2. Owner's name.
 3. Owner's Representative name, address, and telephone number.
 4. Description of brick masonry repair work.
 5. Project supervisor.
 6. Total cost of brick masonry repair work and total cost of project.
 7. Completion date.

1.5 QUALITY ASSURANCE

- A. Contractor Qualifications: Experienced firm that has successfully completed repair work similar in material, design, and extent to that indicated for Project. Must have successful construction with specified materials in local area in use for minimum of 5 years.
1. Employ foreman with minimum 5 years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during Work. Do not change foremen during

- course of Project except for reasons beyond control of Contractor; inform Architect/Engineer in advance of any changes.
2. Employ masons with minimum 2 years of experience in similar repair work. Fully supervise apprentices with experienced masons.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials in such manner to prevent damage to materials and structure.
- B. Deliver materials to Site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing.
 1. Deliver brick units to Site strapped together in suitable packs or pallets, or in heavy-duty cartons.
- C. Keep materials dry and do not allow materials to be exposed to moisture, including condensation, during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or that have been exposed to moisture to their detriment.
 1. If brick units become wet, do not install until they are surface dry.
- D. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by material manufacturers.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of repair Work. Notify Architect/Engineer of conditions found to be different than those indicated in Contract Documents. Architect/Engineer will review situation and inform Contractor of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install repairs only when air temperature is between 40 degrees F and 90 degrees F and is forecast to remain so for at least 7 days after completion of Work, unless precautions acceptable to Architect/Engineer are taken.
- D. Handle and install materials in strict accordance with safety requirements required by material manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site. Do not exceed 20 pounds per square foot of load on the roof deck during construction unless higher capacities are provided in writing from the Owner's Engineer.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with Contract Documents. Such conditions may interfere with Work and may consist of damage or deterioration of substrate or surrounding materials that could jeopardize integrity or performance of Work.
 - 1. Notify Architect/Engineer of conditions that may interfere with proper execution of Work or jeopardize performance of Work prior to proceeding with Work.

PART 2 PRODUCTS

2.1 GENERAL

- A. Source Limitations: Obtain each type of material from 1 source with resources to provide materials of consistent quality in appearance and physical properties.
- B. For units that will be exposed in completed Work, use units with uniform texture and color, within accepted ranges for these characteristics.
- C. Defective Units: Referenced brick masonry unit standards may allow certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in standards. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in completed Work or will impair quality of completed brick masonry.

2.2 BRICK MASONRY UNITS

- A. Face Brick: ASTM C216, grade and type to match existing; ASTM C67; use where brick is exposed, unless otherwise indicated.
 - 1. Unit Compressive Strength: Minimum average compressive strength of 3000 pounds per square inch, based on net area.
 - 2. Initial Rate of Absorption: Less than 25 grams per 30 square inches of surface area per minute. Individual units shall not vary by more than 5 percent.
 - 3. Efflorescence: Rated “not effloresced.”
 - 4. Match color range, texture, and size of existing adjacent brickwork.
 - 5. Coatings: Units shall not have coatings or clear water repellants without written approval of Architect/Engineer.
 - 6. Provide shapes indicated and as follows:
 - a. For ends of sills, corners, and caps, and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs, with exposed surfaces finished.
 - b. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

2.3 MORTAR

- A. Mortar: Type N; Section 04 05 01.

2.4 VENEER ANCHORS

- A. Joint Reinforcement:
 - 1. Match existing.

2.5 AUXILIARY MATERIALS

- A. Weep Vents: QV - Quadro-Vents supplied by Hohmann & Barnard, Inc., or approved equal.
- B. Expansion Joint Filler: ASTM D1056; preformed, closed-cell, expanded neoprene. Use 1 of following or approved equal.
 - 1. NS - Closed Cell Neoprene Sponge, supplied by Hohmann & Barnard, Inc.
 - 2. Closed Cell Neoprene, supplied by Sandell Manufacturing.
- C. Cleaning Materials and Equipment:
 - 1. Cleaning Solutions:
 - a. Use Enviro Klean Safety Klean manufactured by Prosoco, Inc.; Mix 1 part cleaner with 3 parts water by volume; or approved equal.
 - 1) Do not use products containing hydrochloric (muriatic) acid, hydrofluoric acid, or ammonium bifluoride.
 - b. For removing localized ferrous staining: Use oxalic acid or phosphoric acid; mix 1 part acid with 10 parts water by volume. Higher concentrations may be used for local application.
 - 2. Clean, potable water
 - 3. For acidic cleaners, use soft, nylon-bristle brush or roller. For neutral or alkaline cleaners, use soft, natural-bristle brush or roller.
 - 4. Pressure rinsing equipment that can provide controlled application of heated water.
 - a. Allowable pressure: 400 to 600 pounds per square inch, or as approved by mockups.
 - b. Water flow rate: 4 to 8 gallons per minute.
 - c. Water may be heated to 120 degrees F to assist in cleaning.
 - d. Use stainless steel nozzle with 15-to-40-degree fan spray.
 - e. Equipment shall have no ferrous parts.
 - f. Comply with all water reclaim requirements of the local AHJ.
 - 5. Do not use wire brushes or metal scrapers.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of repair Work.
 - 1. Ensure that work done by other trades is complete and ready for repair Work.
 - 2. Verify that areas and conditions under which repair Work is to be performed permit proper and timely completion of Work.
 - 3. Notify Architect/Engineer in writing of conditions which may adversely affect installation or performance of repair Work and recommend corrections.
 - 4. Do not proceed with repair Work until adverse conditions have been corrected and reviewed by Architect/Engineer.
 - 5. Commencing repair Work constitutes acceptance of Work surfaces and conditions.

- B. Remove and discard brick units that are chipped, broken, stained, or otherwise damaged beyond specified tolerances, or that do not match submitted sample.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.
- G. Prevent mortar from staining face of surrounding brick masonry and other surfaces.
 - 1. Cover sills, ledges, and projections to protect from mortar droppings.
 - 2. Keep wall area below Work area wet to discourage mortar from adhering.
 - 3. Immediately remove mortar in contact with exposed brick masonry and other surfaces.

3.3 BRICK REMOVAL AND REPLACEMENT

- A. Remove bricks at locations indicated on Drawings.
 - 1. Prior to beginning Work, notify Architect/Engineer and Owner's Representative of locations of damaged or deteriorated brick that are not indicated for repair in Contract Documents.
 - 2. Adequately support brick masonry to remain to prevent collapse or shifting that could cause distress to the brick masonry.
- B. Carefully demolish and remove entire units and mortar from joint to joint, without damaging surrounding brick masonry, in manner that permits replacement with full-size units. Remove and replace sound bricks that are damaged during Work at no cost to Owner.
- C. Support and protect brick masonry and other construction in and around removal areas.
 - 1. For removal areas larger than 3 feet long or adjacent to a vertical control joint, or end wall, support brick masonry above with temporary bracing.
 - 2. Maintain flashings, reinforcement, lintels, and adjoining construction in undamaged condition.
- D. Notify Architect/Engineer of detrimental conditions including voids, cracks, bulges, displacements, and loose units in masonry backup, rotted wood, corroded metal, and other deteriorated conditions.

- E. Cover openings and partially completed Work with strong waterproof material at end of day, if precipitation is imminent, or when Work is not in progress. Extend material at least 2 feet beyond edges of opening and secure in place.
- F. Clean brick masonry surrounding removal areas by removing mortar, dust, and loose particles.
- G. Brick Installation:
 - 1. Install brick to match existing bonding and coursing pattern.
 - 2. If cutting is required, use motor-driven saw designed to cut brick masonry with clean, sharp, unchipped edges.
 - 3. If necessary, wet replacement and surrounding existing bricks to saturated, surface dry condition, with no moisture visible on surface.
 - 4. Lay replacement brick as plumb and true to line as adjacent surfaces will permit; new brickwork shall be installed with similar corbeling to those removed.
 - 5. Lay replacement brick with completely filled bed, head, and collar joints. Do not furrow bed joints. Butter ends with sufficient mortar to fill head joints, and shove into place.
 - 6. Maintain joint width to match existing joints.
 - a. When mortar is thumbprint hard, tool exposed mortar joints in repair areas with round jointer slightly larger than width of joint. Tool joints to match adjacent existing joints.
 - b. Slight modification of bed joint sizes may be necessary to achieve replacement of brick. Maintain consistent bed joint size between stoppages of brick (end to end) and between successive courses of brick.
 - 7. Do not pound corners and jambs to fit stretcher units after they are set in position. Where adjustment must be made after brick has been placed, remove and replace mortar.
 - 8. Install mortar at top and ends of repair by packing layers of mortar into joints with tuckpointer's tool.
 - 9. Install weep vents 24 inches maximum on center, in head joints in first course immediately above flashing. Keep weep vents free of mortar droppings.
 - 10. Keep wall cavity (collar joint) free of mortar. Back bevel bed joints down toward cavity to prevent mortar from extruding into cavity when units are placed. As Work progresses, trowel mortar fins against veneer face.
 - 11. If brick placement is stopped while in progress, either at end of day or for some other reason, stop horizontal runs by raking back mortar in each course one half unit length; do not terminate in vertical tooth pattern.
 - 12. Provide minimum 2/3 brick bearing on support structure.
- H. Hot- and Cold-Weather Requirements: When ambient air temperature is below 40 degrees F, exceeds 100 degrees F, or exceeds 90 degrees F with wind velocity greater than 8 miles per hour, suspend Work or comply with requirements of TMS 602/ACI 530.1/ASCE 6 and governing codes with approval of Architect/Engineer.

3.4 EXPANSION JOINTS

- A. At locations shown on Drawings and where existing joints occur, construct expansion joints for full length indicated, through full wythe thickness.
 - 1. Match mortar joint width.
- B. Remove mortar and debris from joint, and install joint filler.

- C. Install sealant as specified in Section 07 92 00.

3.5 FIELD QUALITY CONTROL

- A. Notify Architect/Engineer:
 - 1. Of field conditions that deviate from repair details.
 - 2. At least 24 hours in advance of when lift device or scaffolding will be relocated. Do not relocate lift device or scaffolding until Architect/Engineer has observed completed Work at lift device or scaffold location.
- B. Allow Architect/Engineer use of lift device or scaffolding to observe progress and quality of Work.
- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1

3.6 CLEANING

- A. Clean repair areas 24 to 48 hours after completion of Work.
 - 1. Remove large particles of mortar from exposed brick masonry surfaces with wood paddles or scrapers. Do not use metal scrapers or brushes unless approved by Architect/Engineer.
 - 2. Clean surfaces with Enviro Klean Safety Klean.
 - a. Saturate brick masonry with water and flush off loose mortar and dirt.
 - b. Liberally apply cleaning solution.
 - c. Allow to dwell for 3 to 5 minutes. Keep surface moist by misting as necessary during dwell time.
 - d. Reapply cleaning solution and gently scrub surface with soft brush.
 - e. Rinse thoroughly with low-pressure water, from bottom to top of wall. Keep wall below wet and rinsed free of cleaner and residue.
 - 3. Remove rust stains:
 - a. Prewet surface.
 - b. Liberally apply oxalic or phosphoric acid solution with soft, natural-bristle brush, being careful to completely cover surface of area, including crevices.
 - c. Allow to dwell for 15 minutes. Keep surface moist by misting as necessary during dwell time.
 - d. Immediately prior to rinsing, gently scrub surface with brush.
 - e. Rinse thoroughly to return pH to neutral.
 - f. Test pH of surface to confirm surface has returned to neutral.
 - g. Repeat cleaning sequence as necessary until cleaning standard is achieved.
 - h. Within 1 hour after first rinse, rinse second time with water at 150 psi pressure or less for at least 2 minutes to remove cleaner residue.
- B. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean masonry debris from roofs, gutters, and downspouts; rinse off roof; and flush gutters and downspouts.
- D. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt, and stains.

3.7 BRICK MASONRY SALVAGE AND WASTE DISPOSAL

- A. Unless otherwise indicated, excess brick units are Owner's property. At completion of masonry repair Work, store units in location approved by Owner.
- B. Remove scaffolding, equipment, surplus materials, debris, and refuse from Site and dispose of legally.

END OF SECTION

SECTION 04 05 01

MASONRY MORTAR AND GROUT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Supply and preparation of mortar and grout for brick masonry.
- B. Related Sections:
 - 1. Section 04 01 21 – Brick Masonry Removal and Replacement.

1.2 REFERENCES

- A. Definitions:
 - 1. Original Mortar: Mortar used in existing construction.
 - 2. Repointing: Process of raking out mortar joint to specified depth and placing new mortar. Also called tuckpointing.
- B. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International
 - a. C94/C94M: Standard Specification for Ready-Mixed Concrete.
 - b. C143/C143M: Standard Test Method for Slump of Hydraulic-Cement Concrete.
 - c. C144: Standard Specification for Masonry Mortar.
 - d. C150/C150M: Standard Specification for Portland Cement.
 - e. C207: Standard Specification for Hydrated Lime for Masonry Purposes.
 - f. C270: Standard Specification for Mortar for Unit Masonry.
 - g. C404: Standard Specification for Aggregates for Masonry Grout.
 - h. C476: Standard Specification for Grout for Masonry.
 - 2. The Masonry Society (TMS)/American Concrete Institute (ACI)/Structural Engineering Institute of American Society of Civil Engineers (ASCE).
 - a. TMS 402/ACI 530/ASCE 5: Building Code Requirements for Masonry Structures.

1.3 UNIT PRICES

- A. Unit Price 1: Provide all labor, materials, and equipment necessary to perform tuckpointing of deteriorated or missing mortar joints on the exterior facade. This unit price is not specifically included as part of the scope. Upon identification of areas in need of tuckpointing; contractor shall notify Owner, provide photographs of areas in need of repair, provide quantities, and overall cost for repairs. Following approval by Owner, work shall be performed, completed work documented with photographs, and an invoice for the agreed amount submitted to the Owner for payment.

1.4 SUBMITTALS

- A. Product Data: Supplier's literature indicating compliance with specified requirements.
 - 1. Color admixtures: Product name and type, and name of manufacturer
 - 2. Dry, preblended mortar mix: Types and proportions of ingredients.
 - 3. Include Material Safety Data Sheets for information only.

- B. Certificates: Indicating compliance with specified requirements.
 - 1. Portland cement: Product name and type, and name of manufacturer.
 - 2. Hydrated lime: Product name and type, and name of manufacturer
- C. Test Reports: For aggregates, indicating type, gradation, impurities, and source.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such a manner as to prevent damage to materials and structure.
- B. Deliver materials to Site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, and lot number.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight.
 - 1. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cementitious Materials:
 - 1. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 - 2. Hydrated Lime: ASTM C207, Type S.
 - 3. Do not use masonry cement.
 - 4. Mortar: ASTM C144: washed aggregate consisting of natural sand or crushed stone.
 - 5. Grout: ASTM C404.
 - 6. Aggregate shall contain no more than 50 parts per million of chloride ions and shall be free of organic contaminants.
- B. Water: Clean and potable; free from deleterious amounts of acids, alkalis, or organic materials.
- C. Admixtures: Do not use admixtures without written approval, unless otherwise specified, including:
 - 1. Calcium chloride or admixtures containing calcium chloride.

2. Air-entraining admixtures or material containing air-entraining admixtures.
 3. Antifreeze compounds.
- D. Mortar Pigment: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortar.
1. Use one of the following, or an approved equal:
 - a. Bayferrox iron oxide pigments manufactured by Lanxess Corporation.
 - b. True Tone Sweet 16 Mortar Colors manufactured by Davis Colors, Inc.
 - c. SGS Mortar Colors manufactured by Solomon Colors, Inc.

2.2 MORTAR AND GROUT MIXES

- A. Mortar: ASTM C270; proportioned by volume as follows:
1. Portland Cement: 1 part.
 2. Hydrated Lime:
 - a. Type N: Over 1/2 to 1 1/4 parts.
 3. Aggregate: Not less than 2 1/4 and not more than 3 times sum of volumes of portland cement and hydrated lime.
 4. Water: Maximum amount consistent with optimum workability.
 5. Color: Match color of mortar to existing adjacent mortar joints, unless specified otherwise.
- B. Dry, Preblended Mortar Mix: Preblended mortar mix is not allowed.

PART 3 EXECUTION

3.1 SITE MIXING

- A. Develop batching and mixing operations so that quality control is assured.
- B. Designate 1 or 2 individuals to batch and mix mortar and grout. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix mortar or grout without prior notification to Architect/Engineer.
- C. Maintain accurate mix proportions. Batch materials by volume with containers of known volume. Do not measure materials by shovels.
- D. Combine and mix materials in appropriate drum-type batch machine mixer to uniform consistency.
1. Mix mortar for 3 to 5 minutes after materials are in mixer.
 2. Provide sufficient number of mixers, including reserve mixers, so that mortar and grout placement operations will proceed uninterrupted.

3.2 REPOINTING MORTAR MIXING

- A. Pre-hydrate mortar:
1. Thoroughly mix ingredients except water.
 2. Continue mixing, adding only enough water to produce damp unworkable mix which will retain its form when pressed into ball.
 3. Maintain mortar in dampened condition for 1 to 1 1/2 hours.

- B. Add sufficient water to bring mortar to proper consistency; that is, somewhat drier than conventional masonry mortars.
- C. Mortar shall be allowed to cure for a minimum of 7 days prior to loading. In order to expedite loading, contractor may engage a certified testing laboratory to perform compressive strength testing of masonry to ensure sufficient strength to support masonry.

3.3 LIMITATIONS

- A. Mortar, including repointing mortar:
 - 1. If mortar begins to stiffen, it may be retempered one time only.
 - 2. Discard mortar not placed within 2 1/2 hours after initial mixing.

3.4 FIELD QUALITY CONTROL

- A. Mortar Testing: ASTM C780:
 - 1. One set of 9 cubes will be made at random time each week during Work.
 - 2. Three cubes from each set will be tested in compression at 3, 7, and 28 days.
 - 3. Field test results should approximate or exceed results from preconstruction testing.

END OF SECTION

SECTION 07 60 00

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all materials, labor, tools, and equipment necessary to perform the Work, as shown on the Drawings and specified herein.
- B. Work included but not limited to:
 - 1. New thru-wall flashing
 - 2. New miscellaneous flashings
 - 3. Miscellaneous accessories.
- C. Related work specified elsewhere:
 - 1. Section 02 07 00 – Selective Demolition

1.02 REFERENCES

- A. Reference Standards: Except as modified by the Drawings and Specifications, the following documents, or applicable portions thereof, govern the work.
 - 1. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) "Architectural Sheet Metal Manual - Seventh Edition."
- B. Contractor's Qualifications: Have successful installations of the specified materials for a minimum period of five years.

1.03 SUBMITTALS

- A. Required prior to the commencement of work:
 - 1. Detailed shop drawings
 - 2. Full-sized mockups, 12-in.-wide minimum, of all new sheet metal shapes to be reviewed on-site prior to fabrication.
 - 3. Prefinished metal color chart.

1.04 QUALITY ASSURANCE

- A. Required after the completion of work:
 - 1. Contractor's guarantee per Section 07 60 0-1.07-A.

1.05 PROJECT CONDITIONS

- A. Conduct all work under temperature and climatic conditions as recommended by standard practice.

1.06 WORK SEQUENCE

- A. Do not install new sheet metal when precipitation is imminent.
- B. Installation of new sheet metal shall be coordinated with new membrane installation defined in Section 07 65 00.

1.07 GUARANTEE

- A. Contractor's Guarantee:
 - 1. By the sheet metal contractor
 - 2. Time Period: Two (2) years after the date of completion and acceptance by the Owner.
 - 3. Terms: All materials, labor, tools and equipment necessary for repair, restoration, or replacement of all new work damaged as a result of:
 - a. Defects, imperfections, or faults in:
 - 1) Materials
 - 2) Workmanship.
 - b. Contractors correcting defects, imperfections, or faults in materials and/or workmanship.
 - 4. Corrections of defects, imperfections, and faults shall not relieve the Contractor from his responsibility for additional corrective work during the remaining time period.

PART 2 - PRODUCTS

- A. Thru-wall Flashing
 - 1. 24-gauge stainless steel, Type 304-2B finish.
- B. Miscellaneous flashing:
 - 1. 24-gauge stainless steel, Type 304 -2B finish.
 - 2. 24-gauge TPO coated sheet metal.
- C. Fasteners:
 - 1. Metal to sound Masonry or Concrete: "Rawl Zamac Nailin" fasteners, 1-1/2 in. long (minimum) with mushroom head, as manufactured by The Rawlplug Company, Inc., New Rochelle, New York or equal.
 - 2. Metal to unsound or questionable Masonry: "Rawl Zamac Screw Ins" fasteners, 1-1/2 in. long (minimum) with mushroom head, as manufactured by the Rawplug Company, Inc., New Rochelle, New York or equal.
 - 3. Pre-finished Metal (exposed) to Wood: "TruGrip" fasteners, 10-16 x 2 in (minimum) HWH with factory prepainted "Maxiseal" integral head and EPDM sealing washer as manufactured by ITW Buildex, Itasca, Illinois or equal. Color to match pre-finished metal

4. Metal (concealed) to Wood: Large diameter head roofing nails, one (1) in. long (minimum).
5. Metal to Metal: "Traxx" fasteners, 10 - 16 x 1/2 in. HWH Traxx/1 with integral head and "Maxiseal" EPDM sealing washer, as manufactured by ITW Buildex, Itasca, Illinois or equal.

D. Miscellaneous Accessories:

1. Sealant:
 - a. Gun Grade Butyl at all metal-to-metal joints
2. Self Adhered Flashing Sheets: Ultra ® as manufactured by W. R. Grace (or equal).
3. Solder: ASTM B32, 50 percent tin and 50 percent lead.

E. Expanding Foam Insulation (miscellaneous uses):

1. Specifications - Material shall be made of a polymeric di-isocyanate with a polyol resin and hydrocarbon gas mixture. The material shall contain no urea formaldehyde, and shall be UL classified having a flame spread no greater than 20 and smoke developed shall not exceed a UL rating of 20.
2. Manufacturers - Acceptable manufacturers are Insta-Foam Products, Inc., a Division of Flexible Products Company, 1500 Cedarwood Drive, Joliet, IL 60435-3187, or other approved equals.

2.02 FABRICATION

- A. Field document the required configuration and measurements of all new flashings prior to fabrication.
- B. Shop fabricate new sheet metal shapes in 8 to 10-ft-long sections, or as long as practical.
- C. Shop fabricate mitered corners of new copings. Lap, blind seal, pop rivet and lap seal seams. Sealant color to match metal color.
- D. Form all sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- E. Field modification or shaping of sheet metal shall be kept at a minimum; when performed use tongs and other tools specifically designed for bending sheet metal and make all bends and breaks straight, true and without unnecessary deflection of the sheet metal.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine the surface condition of the substrate under which sheet metal is to be installed. Do not proceed with the new installation until unsatisfactory conditions have been corrected in a manner approved by the Architect/Engineer.
- B. Clean the substrate of obstructions and substances detrimental to the work.

- C. Proceeding with the work shall signify the Contractor's acceptance of the substrate being covered by the new sheet metal installation.
- D. Provide 4 in. sealed lap at joints in coping and flashings in running lengths.
- E. Provide provision for expansion and contraction at no more than 40 feet lengths in any continuous running direction.

3.02 SHEET METAL INSTALLATION

- A. General:
 - 1. Install new sheet metal fabrications and accessories as shown on the Drawings.
 - 2. Install new sheet metal fabrications true to lines and levels.

3.03 CLEANUP

- A. Remove trash, debris, and equipment from the jobsite.
- B. Repair all damage caused by the work. Completely remove stains caused by the work.
- C. Minimize Disruption - Disconnection of units shall be coordinated with the owner and tenants to provide minimum inconvenience and disruption to normal operations.
- D. Clean Bitumen - All asphalt or bitumen shall be cleaned from all pipes, flashings, and equipment flanges upon completion of the work. Painting to cover bitumen blemishes is not acceptable.

END OF SECTION

SECTION 07 65 00
FLEXIBLE FLASHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Preparation, supply, and installation of self-adhering, rubberized-asphalt, flexible flashing, including bonding cement, primers, and other components; at through-wall flashings.
- B. Related Sections:
 - 1. Section 02 07 00 - Selective Demolition.
 - 2. Section 04 01 27 - Brick Masonry Removal and Replacement.
 - 3. Section 07 60 00 - Flashing and Sheet Metal.
 - 4. Section 07 92 00 - Joint Sealants.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that new flexible-flashing materials and building interior are kept continuously dry; that continuous, watertight, new flexible-flashing system is provided; and that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner's Representative.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for flexible-flashing Work.
 - b. To avoid or minimize work on, or in immediate vicinity of, flexible-flashing Work in progress.
 - c. To ensure that subsequent work will not adversely affect completed flexible flashings.
- B. Pre-installation Meeting:
 - 1. Attend meeting at Site.
 - 2. Review requirements for flashing system, including:
 - a. Site use, access, staging, and set-up location limitations.
 - b. Forecast weather conditions.
 - c. Approved mockup procedures.
 - d. Surface preparation and substrate condition and pretreatment.
 - e. Installation procedures, including minimum cure period.
 - f. Special details and waterproofing/membrane interfaces.
 - g. Testing and inspection requirements.
 - h. Temporary protection and repair of flashing system.
 - 3. Contractor's Site superintendent, flexible-flashing manufacturer's technical representative, flashing system Installer, Owner's Representative, and Architect/Engineer shall attend.

1.4 SUBMITTALS

- A. Product Data: Flexible-flashing manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and installation instructions.
 - 1. Provide for flashing material, primer, and sealant.
 - 2. Include temperature ranges for storage and application of materials, and special cold/hot-weather application requirements or limitations.
 - 3. Included Material Safety Data Sheets for information only.
- B. Shop Drawings: Include sections, details, and attachments to other work; for details and fabrications not shown on Drawings.
 - 1. Termination and tie-in conditions.
 - 2. Substrate joints and cracks.
 - 3. Inside and outside corners.
- C. Samples: 3-inch-by-4-inch section of flexible flashing.
- D. Manufacturer's Certificates:
 - 1. Signed by flexible-flashing manufacturer, certifying that flexible flashing is appropriate for intended use and is compatible with substrates and adjacent materials, including joint sealant.
 - 2. Signed by joint sealant manufacturer, certifying that joint sealant is appropriate for intended use and is compatible with substrates and adjacent materials.
 - 3. Signed by flexible-flashing manufacturer, certifying that completed installation complies with manufacturer's requirements and recommendations.
- E. Field Quality Control: Reports for site visits of flexible-flashing manufacturer's technical representative.
- F. Installer Qualifications:
 - 1. Certificate signed by flexible-flashing manufacturer, certifying that Installer complies with manufacturer's requirements to install specified products.
 - 2. Evidence that Installer's *existing company* has minimum 5 years of continuous experience in similar flexible-flashing work; list of at least 5 representative, successfully-completed projects of similar scope and size, including:
 - a. Project name.
 - b. Owner's name.
 - c. Owner's Representative name, address, and telephone number.
 - d. Description of work.
 - e. Flexible-flashing materials used.
 - f. Project supervisor.
 - g. Total cost of flexible-flashing work and total cost of project.
 - h. Completion date

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that has successfully completed flexible-flashing work similar in material, design, and extent to that indicated for Project; and that is approved,

authorized, or licensed by flexible-flashing manufacturer to install flexible flashing. Must have successful installations of specified materials in local area in use for minimum of 5 years.

1. Employ foreman with minimum 5 years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during Work. Do not change foremen during course of Project except for reasons beyond control of Installer; inform Architect/Engineer in advance of any changes.
- B. Mockups: Install mockup of flashing system, as indicated on Drawings, to demonstrate surface preparation and execution quality. Architect/Engineer may watertest mockup immediately after installation.
1. After flexible-flashing pieces have fully cured, cut along sides of loose tails of flexible-flashing pieces down to substrate, and pull tails until they lift up to demonstrate adhesion of flexible flashing to substrate.
 2. If Architect/Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 3. Approved mockups may become part of completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials and structure.
- B. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application or which have been exposed to moisture.
- D. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer's standard packaging and covering is not considered adequate weather protection.
- E. Store rolled materials on ends only, unless otherwise required by manufacturer's written instructions. Discard rolls that have been flattened, creased, or otherwise damaged.
- F. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- G. Conspicuously mark wet or damaged materials and remove from Site as soon as possible.
- H. Remove and replace materials that cannot be applied within stated shelf life.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of flexible-flashing Work. Notify Architect/Engineer of conditions found to be different than those indicated in Contract

Documents. Architect/Engineer will review situation and inform Contractor and Installer of changes.

- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Protect adjacent areas from damage from construction activities. Repair damage to adjacent areas from construction activities.
- D. Environmental Limitations: Install flexible flashing when existing and forecast weather conditions permit flashing system to be installed according to flexible-flashing manufacturer's written instructions.
 - 1. Observe cold/hot-weather precautions and guidelines recommended by flexible-flashing manufacturer when applying flashing materials below 40 degrees F and above 90 degrees F.
 - 2. Do not proceed with installation during inclement weather except for temporary work necessary to protect building interior and installed materials. Remove temporary work and Work that becomes moisture damaged.
- E. Handle and install materials in strict accordance with safety requirements required by flexible-flashing manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference at Site.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with Contract Documents. Such conditions may interfere with Work and may consist of damage or deterioration of substrate or surrounding materials that could jeopardize integrity or performance of Work.
 - 1. Notify Architect/Engineer of conditions that may interfere with proper execution of Work or jeopardize performance of Work prior to proceeding with Work.

PART 2 PRODUCTS

2.1 FLEXIBLE FLASHINGS

- A. Wall flashing applications: Self-adhering, rubberized-asphalt, flexible flashing:
 - 1. Perm-A-Barrier Wall Flashing manufactured by Grace Construction Products.
 - 2. CCW-705-TWF manufactured by Carlisle Coatings & Waterproofing Inc.
 - 3. Approved equal

2.2 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by flexible-flashing manufacturer for intended use and compatible with flexible flashing.
 - 1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.
- B. Primer: Liquid primer recommended for substrate.

- C. Surface Conditioner: Liquid, waterborne, surface conditioner recommended for substrate.
- D. Sheet Strips: Self-adhering, rubberized-asphalt composite sheet strips of same material and thickness as flexible flashing.
- E. Liquid Membrane: Elastomeric, as recommended for substrate.
- F. Adhesives, and Tape: Adhesives, and adhesive tapes.
- G. Metal Termination Bar: Manufacturer's standard; Type-304-stainless-steel or aluminum; approximately 1-inch wide by 1/8-inch thick; with predrilled holes 8 inches on center.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM Global Class Number 4470 and acceptable to flexible-flashing manufacturer.
 - 1. Designed for fastening flexible-flashing components to substrate.
 - 2. Concrete Substrate: Stainless steel with hex washer head.
 - a. 410 Stainless Steel Tapcon Anchors manufactured by ITW Red Head, Inc.
 - b. 304 Stainless Steel Tapper, 1/4-inch diameter with hex washer head, manufactured by Powers Fasteners.
 - c. 1 3/4 inch minimum length, or as noted on details.
 - 3. Metal substrate: No. 12 x 1 1/2 inch, 410 stainless steel, self-drilling pan head screws with 1-inch, stainless steel washers.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer and flexible-flashing manufacturer's representative for compliance with requirements and for other conditions affecting installation or performance of flexible flashings.
 - 1. Ensure that work done by other trades is complete and ready for flexible-flashing Work.
 - 2. Verify that areas and conditions under which flexible-flashing Work is to be performed permit proper and timely completion of Work.
 - 3. Notify Architect/Engineer in writing of conditions which may adversely affect flexible installation or performance of flexible flashings and recommend corrections.
 - 4. Do not proceed with flexible-flashing Work until adverse conditions have been corrected and reviewed by Architect/Engineer.
 - 5. Commencing flexible-flashing Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

- C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 SURFACE PREPARATION

- A. Remove existing masonry and other materials to expose substrate.
 - 1. Remove only as much of existing flashing as can be prepared and new flexible-flashing system installed in 1 day, unless provisions are implemented to maintain watertightness in interim or larger removal areas are approved by Owner's Representative.
 - 2. Provide temporary protection as needed if watertightness is compromised.
 - 3. Do not begin removal of existing flashing system when weather conditions are not conducive to maintaining watertightness or for application of new construction.
- B. Clean, prepare, and treat substrates according to flexible-flashing manufacturer's written instructions. Provide clean, sound, dust-free, and dry substrate.
 - 1. Repair or replace deteriorated sections of substrate.
 - 2. Fill divots, chips, spalls, and other irregularities in substrate. Fill in or cover gaps, joints, and cracks to provide continuous substrate for flexible flashing. Remove sharp projections.
 - 3. Remove grease, oil, and other surface contaminants and foreign materials.
- C. Installer and flexible-flashing manufacturer's representative shall examine substrate to ensure that it is properly prepared and ready to receive flashing system. Flexible-flashing manufacturer's representative shall report in writing to Installer and Architect/Engineer conditions which will adversely affect flashing system installation or performance. Do not proceed with flashing system installation until these conditions have been corrected and reviewed by Architect/Engineer.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Commencing installation constitutes acceptance of Work surfaces and conditions.

3.4 FLEXIBLE FLASHING INSTALLATION

- A. General:
 - 1. Install flashing system according to flexible-flashing manufacturer's written instructions.
 - 2. Install materials in strict accordance with safety requirements required by flexible-flashing manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations.
 - a. Follow safety procedures of OSHA and other applicable governing agencies. Assume responsibility for Work area safety at all times.
 - b. Provide dry-chemical or CO₂ fire extinguishers in Work area.
 - c. Do not permit smoking in Work area.
 - d. Store solvents in safety cans. Do not permit open solvent containers.

- e. Store cleaning rags and waste materials in metal containers with tight covers, or remove from Site each night.
3. Maintain adequate ventilation during installation of flexible-flashing materials. Notify Owner's Representative at least 1 week in advance of Work with materials with noxious vapors. Review application schedule and venting precautions with Owner's Representative prior to beginning application.

B. Installation of Through-Wall Flashings:

1. Supply and install sheet metal flashings.
2. Prime surfaces by brush or roller, with primer at rate recommended by flexible-flashing manufacturer. Allow primer to dry 1 hour or until flashed. Reprime surfaces not covered within 24 hours.
3. Fully adhere flexible flashing to substrate.
 - a. Remove release paper.
 - b. Carefully position and install sheets over top of sheet metal flashing and extend in shingle-like manner from lower points to high points, with 3-inch minimum laps between sheets. Roll sheets, including lapped seams.
4. At flashing terminations, turn up ends at least 2 inches and make careful folds to form end dam, with seams sealed. Do not cut membrane at end dams.
5. Tie flexible flashing into adjacent waterproofing.
6. Apply bead or trowel coat of mastic/sealant at top edge, seams, cuts, and penetrations.
7. Install termination bar at upper edge of flexible flashing and mechanically fasten 8 inches on center and within 2 inches of end of bar.
8. Inspect each layer of flexible flashing, with manufacturer's representative if required by flexible-flashing manufacturer, for tears, holes, debonding, and misaligned- or inadequately-lapped seams.
9. Repair or remove and replace flexible flashing that does not comply with requirements. Patch holes in flexible flashing with minimum overlap of 6 inches, in accordance with flexible-flashing manufacturer's instructions.
10. Exercise care to prevent damage to flexible flashing.
11. Cover newly-installed flexible flashing immediately to prevent exposure to UV degradation longer than indicated by flexible-flashing manufacturer.

C. Installation of Coping Underlayment:

1. Prime surfaces by brush or roller, with primer at rate recommended by flexible-flashing manufacturer. Allow primer to dry 1 hour or until flashed. Reprime surfaces not covered within 24 hours.
2. Fully adhere flexible flashing to substrate.
 - a. Remove release paper.
 - b. Carefully position and install sheets over top of sheet metal flashing and extend in shingle-like manner from lower points to high points, with 3-inch minimum laps between sheets. Roll sheets, including lapped seams.
3. Do not extend flexible flashing beyond coverage by sheetmetal flashing.
4. Tie flexible flashing into adjacent waterproofing.
5. Apply bead or trowel coat of mastic/sealant at top edge, seams, cuts, and penetrations.
6. Inspect each layer of flexible flashing, with manufacturer's representative if required by flexible-flashing manufacturer, for tears, holes, debonding, and misaligned- or inadequately-lapped seams.

7. Repair or remove and replace flexible flashing that does not comply with requirements. Patch holes in flexible flashing with minimum overlap of 6 inches, in accordance with flexible-flashing manufacturer's instructions.
8. Exercise care to prevent damage to flexible flashing.
9. Cover newly-installed flexible flashing immediately to prevent exposure to UV degradation longer than indicated by flexible-flashing manufacturer.

3.5 FIELD QUALITY CONTROL

- A. Architect/Engineer will inspect flashing installation at various stages of construction.
- B. Site Visits by Flexible-Flashing Manufacturer's Technical Representative: Arrange for flexible-flashing manufacturer's technical representative to periodically inspect flexible-flashing installation and submit reports to Architect/Engineer.
- C. Repair or remove and replace flexible flashing where test results or inspections indicate that it does not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.6 CLEANING

- A. At end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- B. After completing flexible-flashing Work:
 1. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
 2. Repair surfaces stained, marred, or otherwise damaged during roofing Work.
 3. Clean up debris and surplus materials and remove from Site.

END OF SECTION

SECTION 07920

JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Surface preparation and installation of sealant in joints at brick masonry, stone, and cast stone substrates, as well as new wet seals at existing window glazing, new sealant joints around window perimeters and over frame joinery.
- B. Related Sections:
 - 1. 03 01 05 - Facade Cleaning

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International:
 - a. C920: Standard Specification for Elastomeric Joint Sealants.
 - b. C1193: Standard Guide for Use of Sealants
 - c. C1248: Standard Test Method for Staining of Porous Substrate by Joint Sealants.
 - d. C1481: Standard Guide for Use of Joints Sealants with Exterior Insulation and Finish Systems
 - e. C1521: Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that new materials and building interior are kept continuously dry and that continuous, watertight, new sealant installation is provided. Coordinate:
 - 1. With Owner's Representative.
- B. Pre-installation Meeting:
 - 1. Attend meeting at Project site. Pre-installation meeting to occur following approval of all submittals. Owner's Representative to coordinate.
 - 2. Review requirements for sealant Work, including:
 - a. Construction schedule, proposed sequence of work, availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Site use, access, staging, and set-up location limitations.
 - c. Forecast weather conditions.
 - d. Surface preparation and substrate condition and pretreatment.
 - e. Installation procedures.
 - f. Special details and condition of other construction that will affect sealant Work.
 - g. Testing and inspection requirements.
 - h. Temporary protection and repairs of sealant Work.
 - 3. Contractor's site superintendent, sealant manufacturer's technical representative, Owner's Representative, and Architect/Engineer shall attend.

1.4 SUBMITTALS

- A. Product Data: Sealant and backer rod manufacturers' literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and installation instructions.
 - 1. Include temperature ranges for storage and application of materials, and special hot or cold-weather application requirements or limitations.
 - 2. SpecData sheet for substrate cleaner and substrate primer recommended by sealant manufacturer for specific substrate surface and conditions. Submit information for each type of substrate including precast and aluminum with aged bronze anodized finish.
 - 3. Substrate preparation requirements for each type of substrate.
- B. Samples:
 - 1. Sealant manufacturer's color sample card, either printed or with thin sealant beads, showing range of colors available for each product exposed to view.
- C. Manufacturer's Reports and Certifications:
 - 1. Prior to sealant installation, submit report from sealant manufacturer with results of sealant compatibility, and field mock-up adhesion tests.
 - a. Report shall state that materials which come into contact with or in close proximity to sealant have been tested.
 - b. Report shall include sealant manufacturer's interpretation of test results relative to material performance, potential staining of sealant and substrates.
 - c. Report shall include sealant manufacturer's recommendations for substrate preparation and primer needed to obtain durable adhesion and installation procedures successfully used in mockups and field tests.
 - d. Product Certificates: For each sealant product, accessory, related products, joint type, and substrate, provide sealant manufacturers' written approval of their products' use for specified conditions; based on mockups and field tests.
- D. Installer Qualifications:
 - 1. Certificate signed by sealant manufacturer, certifying that Installer complies with requirements.
 - 2. Submit evidence that Installer's *existing company* has minimum of 5 years continuous experience in application of specified materials and two stage joint profile. Submit list of at least three completed projects of similar scope and size, including:
 - a. Project name.
 - b. Owner's name.
 - c. Owner's Representative name, address, and telephone number.
 - d. Description of work.
 - e. Sealant used.
 - f. Project supervisor.
 - g. Total cost of sealant work and total cost of project.
 - h. Completion date.
- E. Sample Warranty: Copy of sealant manufacturer's warranty, stating obligations, remedies, limitations, and exclusions. Submitted with bid.
- F. Following completion of Work, submit sealant manufacturer's inspection report of completed sealant installation and completed warranty; submit completed Installer warranty.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that is approved, authorized, or licensed by sealant manufacturer to install sealant and that is eligible to receive sealant manufacturer's warranty. Must have installations of specified materials in local area in use for minimum of five years.
 - 1. Employ foreman with minimum of 5-years experience as foreman on similar projects, to be on site at all times during Work.

- B. Mockups: Install 6 feet of sealant in each type of joint to verify and set quality standards for materials and installation procedures, and to demonstrate aesthetic effects.
 - 1. Include each type of backing materials, sealants, primers and other related products. Install the following mock-ups:
 - a. Brick to Brick joint.
 - b. Natural Stone to Brick joint.
 - c. Cast Stone to Cast Stone joint.
 - d. Brick to window frame.
 - e. Cast Stone to window frame
 - f. Glazing wet seal.
 - g. Window frame joinery seals and preformed silicone bridge seal at corners.
 - 2. Mockups shall be accessible or located as indicated by Owner's Representative.
 - 3. Notify Owner's Representative and Architect/Engineer seven days in advance of date when mockups will be constructed.
 - 4. Field-Adhesion Testing: After sealants have cured, perform field-adhesion tests according to ASTM C1521.
 - a. Conduct tests for each type of sealant and joint substrate, with and without primer.
 - b. Arrange for tests to take place with sealant manufacturer's technical representative present.
 - c. Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Use alternate materials or modify installation procedure, or both, for sealants that fail to adhere to substrates.
 - 5. If Architect/Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 6. Mock-ups, when approved by Owner's Representative and Architect/Engineer, will become standard for Work.
 - 7. Approved mockups may become part of completed Work if undisturbed at time of Substantial Completion.
 - 8. Do not begin joint sealant Work until mock-up is accepted by Owner's Representative and Architect/Engineer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original packages with seals unbroken, labeled with sealant manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.

- B. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application or which have been exposed to moisture.

- C. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by sealant manufacturer. Protect stored materials from direct sunlight. Sealant manufacturer's standard packaging and covering is *not* considered adequate weather protection.
- D. Limit stored materials on structures to safe loading of structure at time materials are stored, and to avoid permanent deck deflection.
- E. Handle materials to avoid damage.
- F. Conspicuously mark wet or damaged materials and remove from site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to installation of materials. Notify Architect/Engineer of conditions found to be different than those indicated in Contract Documents. Architect/Engineer will review situation and inform Contractor of changes.
- B. Comply with Owner's limitations and restrictions for site use and accessibility.
- C. Environmental Limitations: Install sealant when existing and forecast weather conditions permit sealant to be installed according to sealant manufacturer's written instructions and warranty requirements.
 - 1. Do not install sealant when ambient or substrate temperatures are below 40 degrees Fahrenheit or are expected to fall below 40 degrees Fahrenheit in the next 12 hours.
 - 2. Do not install sealant when ambient or substrate temperatures are above 122 degrees Fahrenheit or are expected to rise above 122 degrees Fahrenheit in the next 12 hours.
 - 3. Do not proceed with installation during inclement weather except for temporary work necessary to protect building interior and installed materials. Remove temporary work and Work that becomes moisture damaged.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or vary from the drawings and specifications. Such conditions may interfere with Work and may consist of damage or deterioration of substrate or surrounding materials or components that could jeopardize integrity or performance of new sealant.
- B. Notify Architect/Engineer of conditions that may interfere with proper execution of Work or jeopardize integrity of new sealant prior to proceeding with Work.

1.9 WARRANTY

- A. Manufacturer's Warranty:
 - 1. Written warranty, signed by sealant manufacturer, including
 - a. Repair or replace sealant that does not comply with requirements; that does not remain watertight; that fails in adhesion, cohesion, or general durability; or that deteriorates in manner not clearly specified by submitted sealant manufacturer's data as inherent quality of material for application indicated.
 - b. Removal and replacement with new bond breaker materials.

- c. Labor and materials to perform warranty work.
- d. Warranty does not include sealant deterioration or failure due to following:
 - 1) Excessive joint movement caused by structural settlement or errors attributable to design or construction, resulting in stresses in sealant exceeding sealant manufacturer's written specifications for sealant elongation or compression.
 - 2) Deterioration or failure of sealant due to failure of substrate prepared according to requirements.
 - 3) Mechanical damage caused by individuals, tools, or other outside agents.
 - 4) Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.
- 2. Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 ELASTOMERIC JOINT SEALANTS

- A. General:
 - 1. Comply with ASTM C920 and other requirements indicated.
 - 2. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing on similar projects, mockups and preconstruction testing for this project, and field experience.
 - 3. Select products based on mockups, preconstruction testing, and sealant manufacturer's previous testing and experience.
 - 4. Source Limitations: Obtain each type of joint sealant through one source from single manufacturer.
 - 5. Colors of Exposed Joint Sealants: As indicated below, subject to final approval by Owner's Representative.
- B. Brick-to-Brick, Natural stone-to-Natural stone, Cast stone-to-Cast stone, and window perimeter joints: Single-component, Non-sag, Silicone Sealants:
 - 1. Basis of Design: 795 Silicone Building Sealant, manufactured by Dow Corning Corporation.
 - a. Color: Manufacturer's standard color selection by Owner
 - b. Primer P
 - 2. Pecora 864NST, manufactured by Pecora.
 - 3. Spectrem 3, manufactured by Tremco.
- C. Glazing system wet seal: Single-component, Non-sag, Silicone Sealants:
 - 1. Basis of Design: 795 Silicone Building Sealant, manufactured by Dow Corning Corporation.
 - a. Color: Black.
 - 2. Pecora 864NST, manufactured by Pecora.
 - 3. Spectrem 3, manufactured by Tremco.
- D. Bridge Seal: Preformed Silicone Elastomer Extrusion:
 - 1. Basis of Design: 123 Silicone Tape, manufactured by Dow Corning Corporation. Bed in silicone sealant as recommended by Manufacturer, including fillet seal at edges of tape.
 - a. Color: Manufacturer's standard color selection by Owner.
 - 2. Sil-Span, manufactured by Pecora.

3. Spectrem Simple Seal, manufactured by Tremco.

2.2 AUXILIARY MATERIALS

- A. General: Sealant-backer materials, bond-breaker tape, primers, surface cleaners, masking tape, and other materials recommended by sealant manufacturer, that are non-staining and compatible with substrates; based on mockups, preconstruction testing, and sealant manufacturer's previous testing and experience.
- B. Primer: Provide primer recommended by sealant manufacturer and verified during adhesion testing.
- C. Backer Rod:
 1. Provide bi-cellular backer rod.
 - a. SOF Rod, manufactured by Nomaco.

PART 3 EXECUTION

3.1 REMOVAL OF EXISTING CONDITIONS

- A. Cut out and fully remove sealant at all locations where new sealant will be installed.
 1. Grind or otherwise clean substrate to fully remove existing polyurethane sealant. Remove existing backer material. Clean substrate of dust and other surface contaminants prior to primer installation.
 2. Trim gaskets at glazing systems flush with the exposed edge of the window frame. Installer to use care when cutting gaskets to not mark, cut, scar, or impact the glass in any way. Broken or damaged glazing to be replaced at Contractor's expense. Clean substrates.

3.2 EXAMINATION

- A. Examine substrates and conditions with Installer and sealant manufacturer's representative for compliance with requirements and for other conditions affecting sealant performance.
 1. Verify dimensions of sealant joints at the project site by field measurement so that all proper sealant profiles will be accurately maintained.
 2. Verify that areas and conditions under which Work is to be performed permit proper and timely completion of Work.
 3. Notify Architect/Engineer in writing of conditions which may adversely affect sealant installation or performance, including joints with widths less than those allowed by sealant manufacturer for applications indicated. Do not proceed with sealant installation until these conditions have been corrected and reviewed by Architect/Engineer.
 4. Repair substrates damaged during removal of existing sealant prior to new sealant installation.
 5. Installation of sealant system indicates acceptance of surfaces and conditions.

3.3 SURFACE PREPARATION

- A. Repair damaged or deteriorated substrate surfaces according to sealant manufacturer's written instructions and as approved by Architect/Engineer.
- B. Clean joint substrates immediately before installing sealant, to comply with sealant manufacturer's written instructions based on mockups and preconstruction testing.

1. Remove from substrate foreign material that could interfere with adhesion of sealant, including dirt, dust, existing sealant, oil, grease, and surface coatings.
2. Provide dry substrate; prevent wetting of substrate prior to sealant installation.
3. Clean porous substrates, such as concrete, masonry, stone, wood, by brushing, grinding, blast-cleaning, mechanical-abrading, or combination of methods to produce clean, sound substrate capable of developing optimum bond with sealant. Remove laitance and form-release agents from concrete. Remove loose particles remaining after cleaning operations by vacuuming or blowing out joints with oil-free, compressed air.
4. Clean nonporous surfaces, such as metal, with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of sealant.
5. Joints with silicone sealant should generally be masked as subsequent cleanup of spillage and smears may be very difficult.
 - a. Mask with tape at wet seal metal-to-glass locations.

3.4 INSTALLATION OF JOINT SEALANT

- A. General: Comply with sealant manufacturer's written installation instructions for products and applications indicated, based on mockups and preconstruction testing.
- B. Joint Priming: Prime joint substrates. Apply primer to comply with sealant manufacturer's written instructions.
 1. Confine primer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.
 2. Limit priming to areas that will be covered with sealant in same day. Unless recommended otherwise by sealant manufacturer, reprime areas exposed for more than 24 hours.
- C. After priming, install sealant backer and position to produce cross-sectional shape and proper depth of installed sealant.
 1. Use properly-sized backer. Do not use multiple-backer units or braided-backer units to accommodate wide joints.
 2. Install backer with device that will provide consistent depth between substrate surface and outer surface of backer.
 3. Do not leave gaps between ends of sealant backers.
 4. Do not stretch, twist, puncture, or tear sealant backers.
 5. Remove wet backers and replace with dry materials.
- D. Cladding Joints: Prime substrate prior to installation of backer rod. Install sealant immediately after installing backer material; to produce uniform, cross-sectional shape and depth; to directly contact and fully wet joint sides and backer material; and to completely fill recesses in joint configuration.
 1. Install sealant as shown. Tool to provide concave profile. Immediately after sealant application and before skinning or curing begins, tool joint to compress sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.
 2. Remove excess sealant from surfaces of adjacent joints.
- E. Wet Seal at Glazing to Metal Frame Intersection: Trim existing gaskets flush with edge of window frame and mask extent of sealant with tape prior to sealant installation. Do not cut or mark glass. Install sealant to produce uniform, cross-sectional shape and depth; to directly contact and fully wet joint sides; and to completely fill recesses in joint configuration.

1. Install sealant to create a fillet bead along the glazing to frame intersection, achieving minimum bond of 1/4 inch to each substrate.
 2. Immediately after sealant application and before skinning or curing begins, tool joint with concave profile, compressing sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.
 3. Remove masking tape, as well as any excess sealant from surfaces adjacent to joints.
- F. Metal Frame Bridge Joints: Prime substrate prior to the installation of sealant. Install bonding sealant to widths and thicknesses recommended by the manufacturer.
1. Install bonding sealant so outer edge of bonding sealant will align with outer edge of preformed silicone sealant tape.
 2. Install tape within 10 minutes of bonding sealant installation.
 3. Roll sealant tape at bridge joints to ensure full adhesion.
 4. Remove excess sealant from surfaces adjacent to joints.

3.5 FIELD QUALITY CONTROL

- A. At completion of project, observe installed sealant for damage or deterioration. If damage or deterioration occurs, neatly cut out and remove damaged or deteriorated sealant, prepare and prime surfaces, and install new sealant. Replace sealant immediately so new sealant is indistinguishable from original Work.
- B. Field-Adhesion Testing: Architect/Engineer or sealant manufacturer's technical representative will perform non-destructive and destructive field adhesion tests on sealant in accordance with ASTM C1521.
1. Non-destructive testing:
 - a. Depress center of sealant bead with probing tool to depth of 50 percent of bead width, or depress sealant bead near substrate bond-line until it appears visually that sealant is about to fail.
 - b. Record if sealant failed and, if so, if failure was adhesive or cohesive and maximum surface depression as percent of joint width.
 - c. Perform test every 12 inches for first 10 linear feet of joint; if no test failure is observed, test every 48 inches thereafter.
 2. Destructive testing:
 - a. Cut 6-inch-long tail of sealant loose from substrate.
 - b. Mark tail 1 inch from adhesive bond.
 - c. Grasp tail 1 inch from adhesive bond and pull until tail extends to two times published movement capability of sealant. If sealant has not failed, continue pulling to failure.
 - d. Record elongation at failure and if failure was adhesive or cohesive.
 - e. Observe sealant for complete filling of joint with absence of voids, and for joint configuration in compliance with requirements. Record observations and sealant dimensions
 - f. Perform test every 100 feet for first 1,000 linear feet of joint; if no test failure at two times movement capability occurs, test every 1,000 feet thereafter or approximately once per floor per elevation, whichever is more frequent.
 3. Test reports shall include date when sealant was installed, name of person who installed sealant, test date, test location, and whether primer was used.
 4. Immediately after testing, Contractor shall replace failed sealant in test areas. Neatly cut out and remove failed sealant, prepare and prime surfaces, and install new sealant. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

5. Sealant not evidencing adhesive failure from testing or noncompliance with requirements will be considered satisfactory.
6. Where Architect/Engineer determines that sealant has failed adhesively from testing or does not comply with requirements, additional testing will be performed to determine extent of non-conforming sealant. Neatly cut out and remove non-conforming sealant, prepare and prime surfaces, and install new sealant. Perform field adhesion tests on new sealant. Additional testing and replacement of non-conforming sealant shall be at Contractor's expense.

3.6 CLEANING

- A. Clean off excess sealant or sealant smears as Work progresses by methods and with cleaning materials approved in writing by sealant manufacturers and manufacturers of products in which joints occur. Exercise care to avoid scratching or damage to surfaces. Repair surfaces stained, marred, or otherwise damaged during repair work.
- B. At end of each workday, clean site and work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- C. At conclusion of sealant Work, clean up debris and surplus materials and remove from site.

3.7 PROTECTION

- A. Protect sealant during and after curing period from contact with contaminating substances and from damage, so sealants are without deterioration or damage at time of Substantial Completion.

END OF SECTION