Date Due: March 25, 2020 DUE NO LATER THAN 11:00 A.M. LOCAL TIME IN HOUSTON, TEXAS Proposals received later than the above date and time will not be considered. YES Prep Public Schools REQUEST FOR PROPOSAL Cover Sheet

REQUEST FOR PROPOSAL: Brays Oaks Exterior Restoration and Repairs

NOTE TO PROPOSERS!!! Carefully read all instructions, requirements, and specifications. Fill out all forms properly and completely. Submit your proposal with all appropriate supplements and/or samples and return as instructed in Special Requirements/Instructions.

RETURN PROPOSAL TO: Cheris Kotalik Construction Manager 5515 S Loop E, Suite B Houston, Texas 77033

For additional information, contact Cheris Kotalik, cheris.kotalik@yesprep.org or 346-235-5776.

You must sign below in INK; failure to sign WILL disqualify the proposal. All prices must be typewritten or printed in ink.

Vendor Name:	
Vendor Address:	
City, State, Zip Code:	
Taxpayer Identification Number (T.I.N.):	
Telephone No.:	Fax No.:
Email:	
Print Name:	_ Signature:

[Your signature attests to your proposal to provide the goods and/or services in this proposal according to the published provisions of this Request for Proposal unless modifications or alterations are clearly noted in your proposal submission.]

TABLE OF CONTENTS – REQUEST FOR PROPOSAL PACKAGE

The items below represent components which comprise this Request for Proposal (hereinafter "RFP") package. Suppliers are asked to review the package to be sure that all applicable parts are included. If any portion of the package is missing, please notify Cheris Kotalik, Construction Manager immediately at <u>cheris.kotalik@yesprep.org</u> or 346-235-5776.

It is the Vendor's responsibility to be thoroughly familiar with all Requirements and Specifications. Be sure you understand the following before you return your proposal packet.

1. Cover Sheet

Your company name, address, and your signature (IN INK) should appear on this page.

2. Table of Contents

This page is the Table of Contents.

3. General Requirements

You should be familiar with all of the General Requirements.

4. Special Requirements/Instructions

This section provides information you must know in order to make a complete and proper proposal.

5. Specifications

This section contains the detailed description of the products/services sought.

6. Attachments

- A. Submittals 1 4
- B. Questionnaire
- C. Workers' Compensation Certification
- D. Insurance Coverage Requirements
- E. Proposed Exceptions, Alterations, Additions, or Modifications to RFP (if any)
- F. Scoring Rubric

INTRODUCTION

YES Prep Public Schools is a free, open-enrollment public school system that serves 15,000 students across nineteen (19) schools in the Houston area. YES Prep has been ranked as among the top 100 public high schools in the nation by Newsweek and U.S. News & World Report. Every year, 100 percent of YES Prep's graduating seniors have been accepted into four-year colleges, including Harvard, Yale, Columbia, Rice, and Stanford. YES Prep combines a highly successful 6th-12th grade model along with high standards for student achievement.

GENERAL REQUIREMENTS

Proposals will be accepted by Yes Prep Public Schools no later than 11:00 a.m. (local time), **March 25, 2020**. Every proposal must be enclosed in a envelope clearly marked "Brays Oaks Exterior Restoration and Repairs" and shall include three copies.

All questions, requests, responses, and proposals shall be submitted to: **Cheris Kotalik, Construction Manager YES Prep Public Schools 5515 S Loop E, Suite B Houston, TX 77033** Cheris.kotalik@yesprep.org

Questions and responses regarding this RFP will be posted to the YES Prep Public Schools web site during the RFP phase so all interested parties will have access to the same information. Web site is located at: <u>http://www.yesprep.org/notices</u>

The appropriate committee shall review all timely responses, and if necessary, the full Board of Trustees prior to acceptance/bid award. Responses may be hand delivered. Any response or proposal received after the above deadline shall be considered late, and will not be opened or considered.

Time Frame

The timeframe for all responses must be complete and in possession of YES Prep Public Schools by 11:00 a.m. (local time) on **March 25, 2020.** Each submission/proposal must be complete. Any incomplete responses may be rejected. All respondents will comply with this RFP as a basis for the award of the proposal.

Approval

The actual acceptance of any proposal may be delayed. Therefore, all responses must remain valid for a period of no less than one hundred and twenty (120) days. It is intended that proposals will be recommended to the Board of Trustees at an upcoming board meeting. The Board of Trustees reserves the right to reject any and all proposals.

ACCESS TO RECORDS

Proposer (hereinafter "Vendor") may be required to allow duly authorized representatives of YES Prep Public Schools (hereinafter "YES"), and local, state, and federal governments, access to contracts, books, documents, and records necessary to verify the nature, extent, and cost of services provided by the Vendor.

AWARD

YES reserves the right to reject any and all proposals, and reserves the sole right at its discretion to accept any proposal(s) it considers most favorable to the interest of YES and waive any and all minor irregularities in any proposal(s). YES further reserves the right to reject any proposal(s) and seek new proposals through the issuance of a new or amended Request for Proposal (hereinafter "RFP") if such action is deemed in the best interest of YES.

OFFER COMPLETION

Fill out and return to Cheris Kotalik, Construction Manager, one complete proposal form, and two copies, as instructed under the Special Requirements section of this document. An authorized Vendor representative should sign the Cover Sheet. Completion of these forms is intended to verify that the Vendor has submitted the proposal, is familiar with its contents, and has submitted the material in accordance with all requirements.

The submission of a response shall be prima facie evidence that the Vendor has full knowledge of the scope, nature, quantity, and quality of work to be performed, the detailed requirements of the project, and the conditions under which the work is to be performed. All terms, conditions, specifications, stipulations, and Vendor requirements stated in the RFP, any attached Appendices to the RFP, and any and all Addenda issued shall become part of the contract entered into between YES and the Vendor.

OFFER RETURNS

Vendors must return all completed proposals to the office of Cheris Kotalik as indicated on the Cover Sheet of this package. Late proposals will not be accepted. It is the responsibility of the responding Vendor to assure that the response is received prior to the date and time indicated on the Cover Sheet of this package.

DIGITAL FORMAT

If Vendor obtained the proposal specifications in digital format in order to prepare a response, *the proposal must be submitted in hard copy* according to the instructions contained in this package. If, in its response, Vendor makes any changes whatsoever to the YES published RFP specifications, the RFP specifications *as published* by YES shall control. Furthermore, if an alteration of any kind to the RFP specifications as published is discovered after the contract is executed, the contract is subject to immediate cancellation at the sole option of YES.

DISQUALIFICATION OF VENDOR

Upon signing this RFP, Vendor certifies that the proposal has not violated the antitrust laws of this state codified in §15.01, *et seq.*, Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the proposal made to any competitor or any other person engaged in such line of business. Any or all proposals may be rejected if YES believes that collusion exists among the Vendors. Proposals in which the prices are obviously unbalanced may be rejected.

EVALUATION

In evaluating the proposals submitted, YES will apply the "Best Value" process in selecting the Vendor to be awarded a contract for this project. **Purchase price is not the only criteria that will be used in the evaluation process**. The selection process will include, but not be limited to, the following considerations:

- 1. The quality and range of goods and/or services the Vendor proposes to provide;
- 2. The extent to which the goods and/or services meet YES needs;
- 3. The Vendor's overall experience, reputation, expertise, stability, and financial responsibility;
- 4. The Vendor's past relationship, if any, with YES;
- The experience and qualifications of the Vendor staff (i.e. drivers, supervisors, dispatchers, mechanics, etc.) that will be assigned to service the YES account;
- 6. The ability to provide service in a safe, reliable, expedient, and efficient manner;
- 7. Facilities and business processes and practices (computerized information systems, access to industry facilities, quality and range of management reports, etc.) that will be used in servicing the YES account;
- 8. The Vendor's financial terms offered to YES;
- 9. The total long-term cost to YES to acquire the Vendor's goods or services; and/or
- 10. Any other relevant factor(s) specifically listed in the RFP.

YES reserves the right to contact references from the Vendor's client list, or any other persons considered relevant by YES. YES reserves the right to conduct personal interviews of any or all potential Vendors prior to selection.

YES will not be liable for any costs incurred by the Vendor in connection with such interviews or with the submission of any response.

DOCUMENT INTERPRETATION

In the event of any conflict of interpretation of any part of this overall document, the interpretation of YES shall govern.

GOVERNING LAW

Any agreements resulting from this RFP shall be governed by, construed, and enforced in accordance with the laws of the State of Texas applicable to contracts made and wholly performed within such state (without regard to the conflicts or choice of law principles thereof). The parties irrevocably consent to the jurisdiction of the State of Texas, and agree that any court of competent jurisdiction sitting in the County of Harris, State of Texas, shall be an appropriate and convenient place of venue, and shall be the sole and exclusive place of venue, to resolve any dispute with respect to any such agreements.

HOLD HARMLESS AGREEMENT

The successful Vendor(s) shall indemnify, hold harmless, and defend YES, its directors,

officers, and employees (paid or volunteer) from and against any and all claims, demands, and causes of action of whatever kind or nature arising out of error, omission, misrepresentation, negligent act, conduct, or misconduct of the Vendor and its subcontractors, agents, and employees (paid or volunteer) in the provision of goods or the performance of services arising out of the preparation of this proposal and execution and performance of any contracts resulting therefrom. Such indemnification shall also include reasonable attorneys' fees, court costs, and expenses.

INSPECTIONS

YES reserves the right to inspect any item(s) or service location for compliance with specifications, requirements, and needs of YES. If a Vendor cannot furnish a sample of a proposed item, where applicable, for review, or fails to satisfactorily show an ability to perform, YES can reject the Vendor as inadequate.

TESTING

YES reserves the right to test equipment, supplies, materials, and goods proposed for quality, compliance with specifications, and ability to meet the needs of YES. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the proposal is subject to rejection.

INVOICES AND PAYMENTS

YES standard payment terms are Net 30 days after receipt of invoice.

Invoices should be provided to YES in a timely manner. Vendors are requested to invoice YES within 30 days of providing goods and/or services to YES. Vendors who continuously invoice YES in a manner that is outside of generally accepted business practices may affect their continuing relationship with YES.

In the event a Vendor presents YES with invoices, statements, reports, etc. that are incomplete or inaccurate, YES may be required to perform substantial research which could result in delay of payment. YES will not be responsible for any interest charges and/or late fees as a result of delayed payment due to time delays caused by inadequate, incomplete, or inaccurate information provided in invoices by Vendor.

PRICING

Prices for all goods and/or services shall be negotiated to a firm amount for the duration of this contract or as agreed to in terms of time frame and/or method of determining price escalations, if any, by Vendor. All prices and methods of determining prices must be written in ink or typewritten. Where unit pricing and extended pricing differ, unit pricing prevails.

SCANNED OR RE-TYPED RESPONSE

If in its response, Vendor either electronically scans, re-types, or in some way reproduces the YES-published RFP package, then in the event of any conflict between the terms and provisions of the published RFP package, or any portion thereof, and the terms and provisions of the response made by the Vendor, the RFP package *as published* by YES shall control. Furthermore, if an alteration of any kind to the YES-published RFP package is only discovered after the contract is executed, the contract is subject to immediate cancellation at the sole option of YES.

SEVERABILITY

If any section, subsection, paragraph, sentence, clause, phrase, or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications, and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

SUPPLEMENTAL MATERIALS

Vendors are responsible for including all pertinent product data in the returned offer package. Literature, brochures, data sheets, specification information, completed forms requested as part of the offer package, and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the Vendor wishes to include as a condition of the proposal, must also be in the returned proposal package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire proposal.

TAXES

YES is exempt from federal, state, and local taxes. In the event that taxes are imposed on the goods or services purchased, YES will not be responsible for payment of the taxes. The Vendor shall absorb the taxes entirely. Texas Limited Sales Tax Exemption Certificates will be furnished to Vendors upon written request to YES.

TERM CONTRACTS

The successful Vendor, as determined by YES, shall be required to execute a contract to furnish all goods and/or services and other deliverables required for successful completion of the proposed project. No Vendor shall obtain any interest or right in any award until YES has executed a contract, and any such interest and rights shall be subject to the terms and conditions as contained in such contract.

The successful Vendor may not assign, sell, or otherwise transfer its interest in the contract award, or any part thereof, without prior written consent from the YES.

QUANTITY

There is no guaranteed amount of business, expressed or implied, to be purchased or contracted for by YES. However, the Vendor(s) awarded the contract shall furnish all required goods and/or services to YES at the stated price, when and if required.

CONTRACT TYPE

The preferred contract type to be awarded is a fixed fee contract. However, if a Vendor has reason to believe a better (more cost effective) method is practical, then the Vendor is encouraged to offer that better pricing option as an alternative in its submitted proposal. YES will consider that type of contract as it compares with other recommended contract options.

TERMINATION

YES reserves the right to terminate the contract without cause with 60 days prior written notice for convenience and with 30 days prior written notice for cause if Vendor breaches any of the terms therein, including warranties of Vendor or if the Vendor becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which YES may have in law or equity. Cause may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to

properly perform any and all services required to YES's satisfaction, and/or to meet all other obligations and requirements.

If the Vendor breaches any provision of the proposal stipulations, becomes insolvent, enters voluntary or involuntary bankruptcy, or receivership proceedings, or makes an assignment for the benefit of creditors, YES will have the right (without limiting any other rights or remedies that it may have in the contract or by law) to terminate any contract with 30 days prior written notice to the Vendor.

YES will then be relieved of all obligations, except to pay the reasonable value of the Vendor's prior performance (at a cost not exceeding the contract rate). The Vendor will be liable to YES for all costs exceeding the contract price that YES incurs in completing or procuring the service as described in the proposal. YES's right to require strict performance of any obligation in this contract will not be affected by any previous waiver, forbearance, or course of dealing.

FUNDING OUT OPTION

Any contract resulting from this RFP is contingent upon the continued availability of budget appropriations and is subject to cancellation, without penalty to YES, either in whole or in part, if funds are not appropriated by the YES Board of Directors or otherwise not made available to YES.

WARRANTIES

Vendors shall furnish all data pertinent to warranties or guarantees which may apply to items in the proposal. Vendors may not limit or exclude any implied warranties.

ASSOCIATION

Vendors may not use the YES official logo(s), or any phrase associated with YES, without written permission from YES.

DISCLOSURE

All information and documentation related to this RFP submitted by Vendors may be subject to public disclosure under the Texas Public Information Act (Texas Government Code Section 552.001, et seq.).

EXCEPTIONS, ALTERATIONS, ADDITIONS, and MODIFICATIONS

If any exceptions, alterations, additions, or modifications are submitted by Vendor to any portion of this RFP, the Vendor must clearly indicate the exceptions, alterations, additions, and modifications and include a full explanation as a separate attachment to the proposal. The failure to identify exceptions, alterations, additions, or modifications will constitute acceptance by the Vendor of the RFP as proposed by YES. YES reserves the right to reject a proposal containing exceptions, alterations, additions, or modifications.

PROPOSAL PREPARATION COSTS

All costs related to the preparation and submission of this proposal shall be paid by the Vendor. Issuance of this RFP does not commit YES, in any way, to pay any costs in the preparation and submission of the proposal, nor does the issuance of the RFP obligate YES to award a contract or purchase any goods and services stated in the RFP.

RETENTION OF PROPOSAL DOCUMENTATION

All proposal materials and supporting documentation that is submitted in response to this proposal becomes the permanent property of YES.

MODIFICATION/WITHDRAWL OF PROPOSAL

Proposals may be modified in writing at any time prior to the due date. Proposals may be withdrawn in writing, by facsimile written transmission or in person, before the response date.

PAYMENT TERMS

Invoices that are submitted by the awarded contractor are required to provide accurate and current addresses including any discounts for early payment. Payment of undisputed invoices will be paid monthly provided that the invoices are received by dates provided to the winning bid. Disputed portions of invoices will be held until the dispute is resolved.

PROPOSAL REQUIREMENTS

- Vendor is required to provide evidence of a valid State of Texas Business License
- Vendor is required to provide an insurance certificate with YES Prep named as an additional insured.

The entity legally responsible for fulfilling this agreement shall be identified in the proposal response.

Right to Seek a New Proposal

YES Prep Public Schools reserves the right to receive, accept, or reject any and all proposals for any or all reasons.

Proposals will be awarded to the best overall respondent as determined to be in the best interests of Yes Prep. In comparing the responses to this RFP and making awards, Yes Prep may consider such factors as quality and thoroughness of a proposal, the record of experience, the references of the respondents, and the integrity, performance and assurances in the proposal in addition to that of the proposal price.

It is the responsibility of the vendor to ensure that the equipment proposed is fully functional with existing two-way radio equipment: handheld radios, base stations and school bus radios.

Applicable Law

The successful Contractor(s) agrees that they shall comply with all local, state and federal laws, statutes, rules, and regulations including, but not limited to, the Rehabilitation Act of 1973 and the Americans with Disabilities Act. In the event that any claims should arise with regards to this contract, for a violation of any such local, state, or federal law, statues, rules, or regulations, the provider will indemnify and hold Huntington County Community School Corporation harmless for any damages, including court costs or attorney fees which might be incurred.

Dispute resolution

It is expected that any conflicts or disagreements can be settled through face-to-face meetings. Unresolved disputes will require mediation before filing litigation. Both parties will split the cost of mediation.

SPECIAL REQUIREMENTS/INSTRUCTIONS

EVALUATION AND AWARD

This RFP in no manner obligates YES to the eventual rental, lease, or purchase of any equipment or service described, implied, or which may be proposed, until confirmed by a written contract. Progress toward this end is solely at the discretion of YES and may be terminated at any time prior to the signing of the contract.

YES may initiate discussions with Vendor personnel authorized to contractually obligate the Vendor. Discussions will develop into negotiating sessions with the successful Vendor(s). If YES is unable to agree to contract terms, YES reserves the right to terminate contract negotiations with a Vendor and initiate negotiations with another Vendor. YES reserves the right to select services and products from any number of Vendors if, in its sole discretion, it is in the best interest of YES to do so.

Evaluation will consider the Vendor(s) best meeting the needs and requirements of YES and such evaluation and determination of best value shall be solely at the discretion of YES. **Purchase price is not the only criteria that will be used in the evaluation process.**

Submission of qualifications implies the Vendor's acceptance of the evaluation criteria and Vendor's recognition that subjective judgments can and will be made by those individuals evaluating qualifications.

References, site visits, and product inspections may be used to make judgments directly affecting the award of this contract.

NON-PERFORMANCE BY VENDOR

Performance, before and during the contract term, will be a major consideration of current contract award, renewals, and future award considerations. Failure to perform, in any sense relative to this contract, may result in the probation and/or termination of this agreement by YES on the basis of nonperformance. Non-performance shall be determined as follows:

- 1. Failure to meet and maintain all qualifications required in this RFQ/RFP;
- 2. Failure to meet required personnel standards and operating performance standards;
- 3. Failure to maintain appropriate and/or necessary personnel licenses and certifications;
- 4. Failure to meet all vehicle inspections and certifications which are needed to comply with federal, state, and/or local requirements;
- 5. Failure to keep and maintain all required insurance coverage; and/or
- 6. Failure to cure deficiencies within a reasonable amount of time as stated herein.

INSURANCE

All Vendors must provide evidence of insurance or insurability and a Workers' Compensation Certificate (see Attachments C and D).

GOVERNMENT VIOLATIONS

Vendor shall notify YES of all health and safety violations, OSHA violations, wage and hour violations, or labor violations assessed by any city, state, or federal government department or agency.

NON-COMPLIANCE NOTIFICATION

In the event a Vendor is determined by YES to have failed to perform services in accordance with the requirements listed herein, YES will forward a written notification specifying the violation or the area of non-compliance to the Vendor. The Vendor in non-compliance shall immediately remedy all violations as determined by YES. Any violations not so remedied shall be grounds for termination of the contract, in whole or in part.

OWNERSHIP

YES shall retain ownership rights to all materials or any other product produced in conjunction with the work described herein.

SPECIAL CONDITIONS AND PROJECT INFORMATION

YES Prep Public Schools is a free, open-enrollment public school system that currently serves 15,000 students across nineteen (19) schools in the Houston area. In August 2020, YES Prep will open 2 new elementary schools in the Houston area. YES Prep has been ranked as among the top 100 public high schools in the nation by Newsweek and U.S. News & World Report. Every year, 100 percent of YES Prep's graduating seniors have been accepted into four-year colleges, including Harvard, Yale, Columbia, Rice, and Stanford. YES Prep combines a highly successful 6th-12th grade model along with high standards for student achievement.

ONE-TIME MANDATORY BID WALK WILL TAKE PLACE ON WEDNESDAY, MARCH 18TH AT 9:00AM AT 9000 W BELLFORT.

- This campus will be operational during the construction process. Contractor is responsible for creating a safety barrier to keep students/staff out of the construction area.
- Onsite workers will be required to pass a named based background check before working on the site.
- Contractor is required to provide full-time supervision when workers are present.
- Contractor is responsible for drawings and specifications provided by Walter P Moore, dated March 4, 2020.
- Contractor to provide portable toilet for workers that includes a lock on it to prevent student/staff usage.
- Contractor to provide dumpster onsite for trash removal.
- Contractor to provide alternate for performance and payment bond expense.
- Bid form is included in the Specifications provided by Walter P Moore.

REQUIRED SUBMITTALS (Attachment A)

Submittal 1

Experience in Structural Restoration Vendor will complete the Questionnaire provided in the Specifications by Walter P Moore.

Submittal 2

Staffing Plan Vendor shall submit a staffing plan that provides the qualifications of your employees.

Submittal 3

References

Vendor shall supply a list of three (3) references for which Vendor has experience in the scope of work that the proposal is submitted for.

Submittal 4

Customer Feedback

Vendor shall provide a description of its formal customer feedback system, provide sample tools used to gather data, and describe how results were shared with customers and used to improve service.

All submittals must be included in the RFP package returned on March 25, 2020 by 11:00 AM. It is recommended that each submittal be typed on a separate sheet of paper with the heading "Response to Submittal #____ for YES RFP" at the top and the name of the Vendor underneath.

QUESTIONNAIRE (Attachment B)

All Vendor must provide answers to the following questions, typed on 8 $\frac{1}{2}$ x 11 inch paper, in the order below. Attachments to the questionnaire answers should reference the question number.

- 1. Provide the full name and address of your organization.
- 2. Provide contact person(s) for information concerning this offer: name, title, phone, fax, email address.
- 3. What form of business is your organization (e.g. proprietorship, partnership, corporation) and is your organization local only, statewide, or nationwide?
- 4. List all the names under which this Vendor has operated in the last ten (10) years in the State of Texas.
- 5. Provide a copy of your insurance coverage.
- 6. Multi-part question:
 - a. Do you currently have any investigations pending by or on behalf of a government entity or other licensing entity?
 - b. Have you had investigations by or on behalf of a government entity or other licensing entity in the past?
 - 1. If the answer to either question is yes, please provide copies of relevant paperwork.
- 7. Do you have any relevant experience or projects in the past with education institutions? If so, please provide a high-level overview of these projects.

WORKERS' COMPENSATION CERTIFICATE (Attachment C)

YES requires Vendor to provide workers' compensation as per state law requirements. The Vendor shall sign and submit the following certificate with the written proposal:

- Minimum Workers' Compensation and Employer's Liability Limits
 - o Each Accident \$1,000,000
 - Disease Each Employee \$1,000,000
 - Disease Policy Limit \$1,000,000

Vendor Name

Signature of Authorized Agent

Date Signed

Note: Vendor may attach current certificate of coverage with a signed statement that if awarded the contract, they will obtain said aforementioned coverage if the current coverage does not meet the stated minimum requirements.

INSURANCE COVERAGE REQUIREMENTS (Attachment D)

General and Excess Liability Minimum Coverages

- General Liability: \$1,000,000
- Umbrella Liability: \$1,000,000

Vendor Name

Signature of Authorized Agent

Date Signed

YES will be named as Additional Insured on the Certificate of Insurance if the Vendor is awarded a contract.

Proposed Exceptions, Alterations, Additions, or Modifications to RFP (Attachment E)

Vendor should submit as Attachment E, any and all proposed exceptions, alterations, additions, or modifications to the YES RFP for Brays Oaks Exterior Restoration and Repairs.

SCORING RUBRIC (ATTACHMENT F)

YES will utilize the following RFP Evaluation Rubric for evaluation of all Southeast Campus Entry/Exit Driveway Proposals:

1. Charges/Cost to YES PREP: 30 Points.

- a. Favorable = 30 Points. Unfavorable = 0 points.
- b. Evaluate the Overall Value of proposed materials and services to be provided.

2. Structural Restoration and Education Experience: 25 Points.

- a. Favorable = 25 Points. Unfavorable = 0 points.
- b. Proposal demonstrates the Vendor's ability to deliver quality services to schools.
- c. Includes references, Vendor staff, and/or Vendor's or certifications, qualifications, experience, expertise, and resumes.

3. Proposed Operational Delivery: 20 Points.

- a. Favorable = 20 Points. Unfavorable = 0 points.
- b. Proposal defines services and scope in enough detail that YES can confidently determine that the proposed services will be met.

4. Project Understanding and Methodology: 25 Points.

- a. Favorable = 25 Points. Unfavorable = 0 points.
- b. Proposal addresses the project in terms of the scope of work and substantive issues essential to proper service and care of YES facilities. Proposal includes a detailed description of services to be provided and any constraints as to procedure, time, personnel, or equipment that needs to be communicated to YES for use during contract negotiations.

END OF YES RFP PACKAGE FOR Brays Oaks Exterior Restoration and Repairs.

YES PREP 9000 W BELFORT FACADE REPAIRS HOUSTON, TEXAS





	SHEET LIST
SHEET NUMBER	SHEET N
S0.0	COVER SHEET
S0.1	GENERAL NOTES
S1.0	SOUTH ELEVATION
S1.1	NORTH ELEVATION
S1.2	WEST ELEVATION
S1.3	EAST ELEVATION
S2.0	DETAILS
S2.1	DETAILS



BUILDING OVERVIEW PHOTO - SOUTH ELEVATION

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YES PREP 9000 W BELFORT FACADE REPAIRS

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Walter P Moore and Associates, Inc. 1301 McKinney Street, Suite 1100 Houston, TX 77010

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Issues/Revisions

Project Status

No.	Date	Description	
	01/22/20	ISSUE FOR OWNER REVIEW	
	02/25/20	ISSUE FOR OWNER REVIEW	
	03/04/20	ISSUE FOR CONSTRUCTION	
Proje	ct Number :	Drawn By :	
D03.	18006.01	AZ	
Appro AVB/	Dved By : MW	Checked By : MB	
Certif TO T	Certification Statement : TO THE BEST OF THE ENGINEER'S KNOWLEDGE,		
THE THE	THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.		

Seal and Signature : Walter P. Moore and Associates, Inc. TBPE Firm Registration No. 1856



Copyright (c) 2020 by Walter P. Moore and Associates, Inc

This document and the information herein is the property of Walter P. Moore and Associates, Inc. No part hereof shall be copied, duplicated, distributed, disclosed or used to any extent whatsoever except as expressly authorized by Walter P. Moore and Associates, Inc. Any person, firm, or corporation receiving this document, however obtained, shall by virtue hereof, be deemed to have agreed to the forgoing restrictions and that this document will be held in trust and confidence subject only to the private use expressly authorized by Walter P. Moore and Associates, Inc.

Drawing Title:

COVER SHEET

Filename Sheet No. :

S0.0

PART I - DESIGN CRITERIA

A. GENERAL BUILDING CODE

The Repair Documents are based on the requirements of the International Building Code 2012 with Houston Amendments.

PART II - SCOPE OF WORK

- A. Scope of Work includes the drawings and general provisions of Contract, including conditions provided by Owner.
- B. Contractor shall furnish all material, labor, tools, supplies, permits, equipment, transportation, superintendence, barricades, shoring, bracing, temporary construction of every nature, insurance, taxes, contributions and all services and facilities, unless specifically excepted, and install/remove all materials, items, and equipment required to complete the demolition and construction of the Project, as set forth in the Contract Documents.
- C. Cooperate with the Owner's Representative in all construction operations to minimize conflict and to facilitate Owner usage.
- D. Contractor acknowledges by submitting a Bid or Proposal to perform the specified Work, that he has visited and inspected the Project Site in which the Work is to be performed, that he has satisfied himself as to the nature and location of the Work, including any obstructions, amount of work, actual levels, the equipment and facilities needed preliminary to and during the execution of the Work, and all other matters which can in any way affect the Work or the cost thereof under this Contract.
- E. Failure by Contractor to have acquainted himself with available information concerning site conditions, including factors affecting costs and liabilities, shall not relieve Contractor of responsibility for performance of Work in accordance with requirements of the Contract Documents, and for amount of consideration named or otherwise determined.
- F. When Contractor encounters a condition requiring further information or a clarification, Contractor shall submit to Engineer a written Request For Information (R.F.I.) numbered sequentially. Engineer will respond in writing to all R.F.I.'s.

PART III - SELECTIVE DEMOLITION

- A. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE STRUCTURE DURING DECONSTRUCTION / DEMOLITION
 - 1. It is the responsibility of the Contractor to provide all required bracing during demolition to maintain the stability and safety of all structural elements during the demolition process. Contractor shall engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

B. DEFINITIONS

- . Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- 2. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse. Owner to identify items to be reused or salvaged.
- 3. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
- C. MATERIAL OWNERSHIP
 - Except for items or materials indicated to be reused, salvaged, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site. The materials removed shall be disposed in a proper and legal manner per federal/state or local ordinances.

D. QUALITY ASSURANCE

- Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- 2. Professional Qualifications of Engineer Engaged by Contractor: Current registration in the State where the project is located.
- Regulatory Requirements: Comply with governing Owner, Local, State, Federal, and EPA notifications and regulations before beginning selective deconstruction / demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- Photo documentation of existing conditions of the building and adjoining properties shall be performed by Contractor prior to demolition. Photos shall be submitted to Owner and Engineer of Record.
- 5. Pre-demolition Conference: Conduct conference at Project site to address the following:
 - a. Inspect and discuss condition of construction to be selectively demolished.
 b. Review structural load limitations of existing structure as appropriate for the proposed means and methods.
- c. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

E. PROJECT CONDITIONS

- 1. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72-hour notice to Owner of activities that will affect Owner's operations.
- 2. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- Owner assumes no responsibility for condition of areas to be selectively demolished.
 a. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- b. Before selective demolition, Owner will remove items within space as needed.4. If materials suspected of containing hazardous materials are encountered, do not disturb;
- immediately notify Engineer and Owner. These materials shall be removed as disposed as approved by governing agency.
- 5. Storage or sale of removed items or materials on-site will not be permitted.
- 6. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations. Maintain fire-protection facilities in service during selective demolition operations.
- 7. Protect adjacent paving (asphalt or cement roadways, sewers, etc.),and drainage ditches as needed.
- 8. All areas outside of demolition scope to be protected from damage by contractor. Restore areas subject to incidental damage to their pre-demolition condition.
- F. UTILITY SERVICES
 - 1. Maintain existing utilities in service. Contractor shall coordinate with Owner if any interruption of existing utilities are required. Contractor shall not commence work which may impact existing utilities unless the Owner approves in writing a planned interruption of existing utilities.

PART III - SELECTIVE DEMOLITION

G. PREPARATION

- Contractor to maintain access to exits and exit stairs at detection system shall remain operational at all times. F conformance to local codes and local authorities
- Temporary Facilities: Provide temporary barricades and injury to people and damage to adjacent buildings and f a. Provide protection to ensure safe passage of p to and from occupied portions of adjacent facili
- 3. Contractor to provide all necessary traffic control and p
- 4. Contractor to co-ordinate with owner if any removal of
- Temporary Partitions: Erect and maintain dustproof par dust and dirt migration and to separate areas from fume
- Temporary Shoring: Provide and maintain interior and e support to preserve stability and to prevent unexpected construction being demolished. Strengthen or add temp progress of selective demolition.
- POLLUTION CONTROLS
- Conduct demolition waste disposal operations in compl Comply fully with federal and local environmental and a
- EXECUTION OF SELECTIVE DEMOLITION
- General: Demolish existing construction as indicated. U Work within limitations of governing regulations and as

 Use cutting methods least likely to damage cor
 Do not use cutting torches until work area is clesspaces verify condition and contents of hidden operations. Maintain fire watch and portable fire operations.
 - Maintain adequate ventilation when using cuttin
 Remove decayed, vermin-infested, or otherwis promptly dispose of off-site.
- e. Locate selective demolition equipment and rem impose excessive loads on supporting walls, s
- f. Dispose of demolished items and materials pro
- 2. Existing Facilities: Comply with Owner's requirements facilities during selective demolition operations.
- 3. Existing Items to Remain: Contractor to coordinate with that are to remain and hence be protected during the de Owner, items may be removed to a suitable and/or prote
- DISPOSAL OF WASTE AND DEMOLISHED MATERIALS
- Provide a plan for the collection and disposal of waste r for trash and waste receptacles and establish a collection for ultimate disposal of waste in accordance with applications safety regulations. Make special provisions for the collection or hazardous materials.
- 2. General: Promptly dispose of demolished materials. Do accumulate on-site.
- 3. Burning: Do not burn demolished materials.
- Keep receptacles and other waste collection areas nea overflow its container or accumulate for excessively lor points where they will least likely be affected by storm wasted.
- 5. Disposal: Transport demolished materials off Owner's

PART IV - SUBMITTALS

- A. SUBMITTAL LIST AND SCHEDULE
 - 1. The Contractor shall prepare a detailed list and schedul Structural Engineer prior to the start of construction. Th current as the job progresses. The submittal list shall be a. Shop Drawings
 - b. Manufactures Literature for Products, Assembl
 c. Product Data, Certificates, Reports, and Other
 - d. Product and Contractor Warranties
- B. SHOP DRAWINGS
 - 1. The General Contractor shall submit for Engineer review a. Sheet Metal Flashing & Detailing
- C. Submittal Requirements:
 - 1. All shop drawings must be reviewed and electronically submittal.
 - 2. Contractor shall provide the submittal in electronic porta Specifications.
 - The omission from the shop drawings of any materials r furnished shall not relieve the Contractor of the responsi materials, regardless of whether the shop drawings have
- D. REPRODUCTION
 - The use of electronic files or reproductions of these com subcontractor, erector, fabricator, or material supplier in signifies their acceptance of all information shown herec any job expense, real or implied, arising due to any error

PART V - MISCELLANEOUS

A. CONTRACT DOCUMENTS

- It is the responsibility of the Contractor to obtain all Cont submit such documents to all subcontractors and mater drawings, fabrication of any structural members, and ere
- 2. Contractor shall fully and properly implement the engine respiratory protection against toxic and hazardous subs according to Occupational Safety and Health Administra does not have control over, charge of, or responsibility techniques, sequences or procedures, or for safety pre-Work, nor shall Walter P Moore be responsible for the C accordance with the requirements of the Contract Docu

GENERAL STRUCTURAL NOTES

N (CONTINUED)	PART V - MISCELLANEOUS (CONTINUED)	PART VI - DRAWING
t all times. Fire alarms and smoke Protect smoke detectors as required and in	3. The contract structural drawings and specifications represent the repaired structure, and, except where specifically shown, do not indicate the method or means of construction. The Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, and sequence.	 A. DRAWING VIEWS LABELED AS 1. Partial plans, elevations their title shall apply to a
d other protection required to prevent	B. EXISTING CONDITIONS	specifically shown. The determined from the title each location. Decisions Structural Engineer
people around selective demolition area and lities.	general notes, and specifications, the strictest requirements, as indicated by the Engineer, shall govern.	B. STRUCTURAL ABBREVIATION
pedestrian control measures as required.	C. EXISTING CONDITIONS	@ At
landscape is required	1. The Contractor shall verify all dimensions and conditions of the existing building at the job site and	& And
rtitions and temporary enclosures to limit es and noise.	fabrication and erection of any members. Existing dimensions shown on the drawings to Engineer prior to the general reference only and should not be used for final construction or detailing.	# Number
exterior shoring, bracing, or structural	 Work shown on drawings is existing unless noted as new. 	ACI American Concrete Institute
d or uncontrolled movement or collapse of porary supports when required during	3. Existing construction shown on the drawings was obtained from existing construction documents	ASTM American Society for Testing and
	and limited site observation. These drawings of existing construction are available for contractor use and shall be referenced for familiarization with existing conditions. However, the available drawings of existing construction are not necessarily complete. The contractor is responsible for being	CFMF Cold Formed Metal Framing
liance with local laws and ordinances.	knowledgeable on information presented in available drawings and shall field verify all pertinent information.	COL Column
anti-pollution regulations.	4. Demolition, cutting, drilling, etc. of existing work shall be performed with great care so as not to	CONT Continuous
Jse methods required to complete the	members not designated for removal interfere with the new work, the Owner shall be notified immediately and approval obtained prior to removal of those members.	DIM Dimension
follows: nstruction to remain or adjoining construction.	5. The contractor shall safely shore existing construction wherever existing supports are removed to	EA Each
leared of flammable materials. At concealed a space before starting flame-cutting	allow the installation of new work. All shoring methods and sequencing of demolition shall be the responsibility of the contractor and his engineer.	ELEV Elevation
re-suppression devices during flame-cutting	6. The contractor shall perform a survey to locate all existing utilities (including underground utilities)	ENGR Engineer
se dangerous or unsuitable materials and	Existing civil, mechanical, electrical, plumbing, and emergency protection system servicing any areas outside the work area are to be maintained in operable condition throughout the duration of	EXIST Existing
move debris and materials so as not to slabs, or framing.	repairs. Contractor shall make necessary temporary connections to maintain existing utilities in service during the work. Temporary, localized interruption of these systems shall require approval	GEN General
omptly.	by the Owner.	GYP Gypsum
for using and protecting other building	7. I he contractor shall provide dust, odor, and noise protection, and safety measures as necessary for the duration of repairs. Provide all measures necessary to protect the existing structure, building interior, vehicles, facility patrons, and other persons during construction. Such measures shall	HORZ Horizontal
n Owner (prior to beginning work) on items emolition process. When permitted by	include, but not limited to temporary bracing, shoring, formwork, protective enclosures, and traffic controls.	ICC International Code Council
tected location.	8. The contractor shall perform a pre-construction condition survey to document site conditions prior	INFO Information
	to start of work. Submit survey to Owner and the Engineer. Document location and condition of any construction designated for removal and re-installation.	L Length
materials on the site. Designate locations ion schedule. Specify and carry out methods cable local. State and Federal health and	9. The contractor shall repair all damage caused during construction with similar materials and workmapship to restore conditions to levels acceptable to the Owner.	MAX Maximum
ection and disposal of liquid wastes and toxic	D. ADJACENT BUILDINGS AND PROPERTY	MISC Miscellaneous
o not allow demolished materials to	1. The Contractor shall ensure that all construction methods used will not cause damage to the	NTS Not To Scale
	adjacent buildings and property. This shall include all foundation installation.	OC On Center
at and orderly. Do not allow waste to	adjacent buildings before the start of and during construction.	QTY Quantity
ng periods of time. Locate trash collection water runoff.	E. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE STRUCTURE DURING CONSTRUCTION	R Radius
property and legally dispose of them.	1. It is the responsibility of the Contractor to maintain the stability and safety of all structural elements	REINF Reinforcement
	bracing to maintain the stability and safety of all elements during repair operations until the roof system installation is completed	REF Reference
	F. RESPONSIBILITY OF THE CONTRACTOR FOR CONSTRUCTION LOADS	SIM Similar
	1. The Contractor shall be responsible for checking the adequacy of the structure to support any	SS Stainless Steel
le of all submittal items to be sent to the	applied construction loads, including those due to construction vehicles or equipment, material handling or storage, shoring or reshoring, or any other construction activity. The Contractor shall submit calculations signed and sealed by an engineer licensed in the state of Texas verifying the	STD Standard
his list shall be updated and revised and kept be organized as shown below:	adequacy of the structure for any proposed construction loads that are in excess of the stated design loads. The Engineer is not responsible to design or check the structure for loads applied to	TI Task Item
olies, and Hardware r Literature	the structure for any construction activity.	TYP Typical
	G. CONTRACTOR SUBSTITUTIONS	VERT Vertical
uu ah an daawiin na fan Ah a fallawiin n itanaa.	specified in the structural contract documents will be considered for approval only if the following criteria are satisfied:	TASK ITEM KEY NOTE
ew shop drawings for the following items:	 a. A cost savings to the Owner is documented and submitted with the request. b. The material or product has been approved by the International Code Council (ICC) and the ICC report is submitted with the request. 1) The ICC ESR that is submitted must reference the building code under which the 	
stamped by the Contractor prior to	 Project is permitted. ICC reports that have been discontinued at the time of product installation will not be accepted. 	
able document format (PDF) per the	2. Submittals not satisfying the above criteria will not be considered.	
required by the Contract Documents to be	H. THE ENGINEER'S ROLE DURING CONSTRUCTION	
ve been reviewed and approved.	1. The Engineer shall not have control nor charge of, and shall not be responsible for, construction means, methods, techniques, sequences, or procedures, for safety precautions and programs in connection with the work, for the acts or omission of the Contractor, Subcontractor, or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.	
ntract documents by any contractor, n lieu of preparation of shop drawings oon as correct, and obligates themselves to ors that may occur hereon.	2. Periodic site observation by field representatives of Walter P. Moore and Associates is solely for the purpose of becoming generally familiar with the progress and quality of the Work completed and determining, in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the repair contract documents. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the Owner against defects or deficiencies in the work of the Contractor.	
	H. MAINTENANCE STATEMENT	
ntract Documents and latest addenda and to	1. All structures require periodic maintenance to extend lifespan and to ensure structural integrity from exposure to the environment. A planned program of maintenance shall be established by the	
erial suppliers prior to the submittal of shop rection in the field.	building owner. This program shall include such items such as but not limited to painting of structural steel, protective coating for concrete, sealants, caulked joints, expansion joints, control	
eering controls, work practices, and stances including respirable crystalline silica	joints, spails and cracks in concrete, and pressure washing of exposed structural elements exposed to a salt environment or other harsh chemicals.	
for the construction means, methods, ecautions and programs in connection with the Contractor's failure to perform the Work in uments.		

NG INTERPRETATION

D AS "TYPICAL"

ations, sections, details, or schedules labeled with "Typical" at the beginning of y to all situations occurring on the project that are the same or similar to those The applicability of the content of these views to locations on the plan can be he title of the views. Such views shall apply whether or not they are keyed in at isions regarding applicability of these "Typical" views shall be determined by the

FIONS, SYMBOLS, AND NOTATIONS

and Materials

Project :

YES PREP 9000 W BELFORT FACADE REPAIRS

Client :



713.630.7300

Consultants / Discipline



Walter P Moore and Associates, Inc. 1301 McKinney Street, Suite 1100 Houston, TX 77010

Keyplan :



Issues/Revisions

Project Status

No.	Date	Description
	01/22/20	ISSUE FOR OWNER REVIEW
	02/25/20	ISSUE FOR OWNER REVIEW
	03/04/20	ISSUE FOR CONSTRUCTION
Proje	ct Number :	Drawn By : 47
Appro AVB/	oved By : MW	Checked By : MB
Certif TO T THE THE	ication State HE BEST C PLANS ANI APPLICABL	ement : OF THE ENGINEER'S KNOWLEDGE, O SPECIFICATIONS COMPLY WITH LE MINIMUM BUILDING CODES.
Seal	and Signatu v	ITE: Valter P. Moore and Associates, Inc. TBPE Firm Registration No. 1856
		AMEY V. BAPAT
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Сору	right (c) 202	20 by Walter P. Moore and Associates, In
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Drawing Title:

GENERAL NOTES

Filename : Sheet No. :



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Keyplan



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No.	Date	Description
	01/22/20	ISSUE FOR OWNER REVIEW
	02/25/20	ISSUE FOR OWNER REVIEW
	03/04/20	ISSUE FOR CONSTRUCTION
Proje	ct Number : 18006 01	Drawn By : A7
Appro AVB/	oved By : MW	Checked By : MB
Certif	ication State	ement :
TO T	HE BEST C	F THE ENGINEER'S KNOWLEDGE,
THE	APPLICABL	E MINIMUM BUILDING CODES.
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		AMEY V. BAPAT

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Project Status

No.	Date	Description
	01/22/20	ISSUE FOR OWNER REVIEW
	02/25/20	ISSUE FOR OWNER REVIEW
	03/04/20	ISSUE FOR CONSTRUCTION
Proje	ct Number : 18006 01	Drawn By : AZ
Appro AVB/	oved By : MW	Checked By : MB
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		TBPE Firm Registration No. 1856
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Project Status

No.	Date	Description
	01/22/20	ISSUE FOR OWNER REVIEW
	02/25/20	ISSUE FOR OWNER REVIEW
	03/04/20	ISSUE FOR CONSTRUCTION
Project Number : D03.18006.01 Approved By : AVB/MW		Drawn By : AZ Checked By : MB
Certification Statement :		

TO THE BEST OF THE ENGINEER'S KNOWLEDGE. THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

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Filename :





NO SCALE

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	03/04/20	ISSUE FOR CONSTRUCTION
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EAST ELEVATION

Filename :





NO SCALE

NO SCALE

Project :
YES PREP 9000 W BELFORT FACADE REPAIRS
Client :
YES PREP
Consultants / Discipline : Walter P Moore and Associates, Inc. 1301 McKinney Street, Suite 1100 Houston, TX 77010
pmoore 713.630.7300
Keyplan :
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Project Status
No. Date Description
01/22/20 ISSUE FOR OWNER REVIEW
02/25/20 ISSUE FOR OWNER REVIEW
03/04/20 ISSUE FOR CONSTRUCTION
Project Number : Drawn By :
D03.18006.01 AZ Approved By : Checked By :
AVB/MW MB
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AMEY V BAPAT
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Filename :
5Z.U





NOTES: 1. REMOVE AND DISCARD EXISTING COPING STONE AND SHEET METAL FLASHING AT TOP OF PARAPET. PERFORM WORK IN A PHASED MANNER TO MAINTAIN THE DRIED-IN CONDITION OF THE EXTERIOR WALL CAVITY, PARTICULARLY WITHIN THE CAVITY SPACE BEHIND THE BRICK MASONRY. 2. DETAIL IS BASED ON LIMITED SITE REVIEW AND MAY REQUIRE MODIFICATION.



NEW COPING STONE TO MATCH EXISTING

- NEW COPING STONE ATTACHMENT TO MATCH NEW SHEET METAL

EXIST CFMF EXISTING FASTENER

EXISTING CFMF BACKUP

EXISTING METAL PANEL TO

ALTERNATE: STONE COPING AT PARAPET

Project :

YES PREP 9000 W BELFORT FACADE REPAIRS

Client :

	·	YES PREP
Cons	ultants / Dis	Scipline : Walter P Moore and Associates, Inc. 1301 McKinney Street, Suite 1100 Houston, TX 77010
Кеур	lan :	P13.630.7300
Issue	es/Revisions	oject Status
No.	Date	Description
	01/22/20	ISSUE FOR OWNER REVIEW
	02/25/20	ISSUE FOR OWNER REVIEW
	03/04/20	ISSUE FOR CONSTRUCTION

Drawn By : Project Number : D03.18006.01 AZ Approved By : Checked By : AVB/MW MB Certification Statement : TO THE BEST OF THE ENGINEER'S KNOWLEDGE. THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES. Seal and Signature : Walter P. Moore and Associates, Inc. TBPE Firm Registration No. 1856 TE OF TEX * AMEY V. BAPAT 127759 ICENSE! 03/04/2020 Copyright (c) 2020 by Walter P. Moore and Associates, Inc.

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DETAILS

Filename :

TECHNICAL SPECIFICATIONS AND DRAWINGS

FOR

YES PREP 9000 W BELFORT FAÇADE REPAIRS

HOUSTON, TEXAS

WALTER P MOORE PROJECT NUMBER D03.18006.01 March 4, 2020

TECHNICAL SPECIFICATIONS AND DRAWINGS

FOR

YES PREP 9000 W BELFORT FAÇADE REPAIRS HOUSTON, TEXAS

WALTER P. MOORE AND ASSOCIATES, INC.

1301 McKinney St, Suite 1100 Houston, Texas 77010 713.630.7300

D03.18006.01

SECTION 000105 - TITLE/CERTIFICATION PAGE

PROJECT:	YES Prep 9000 W Belfort Façade Repairs 9000 West Belfort Houston, Texas
PROJECT NUMBER:	Walter P Moore Project No. D03.18006.01
ENGINEER:	Walter P. Moore and Associates, Inc. 1301 McKinney St, Suite 1100 Houston, Texas 77010 Phone: 713.630.7300
	Principal in Charge Mark Williams, Ph.D., P.E., S.E. Walter P. Moore and Associates, Inc. mwilliams@walterpmoore.com
	Project Manager Amey Bapat, Ph.D., P.E. Walter P. Moore and Associates, Inc. abapat@walterpmoore.com
	Project Engineer Mallory Buckley Walter P. Moore and Associates, Inc. mbuckley@walterpmoore.com

END OF SECTION 000105

SECTION 00 01 07 – Seals page

I HEREBY CERTIFY THAT THESE PLANS AND TECHNICAL SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.



Amey Bapat, P.E. 127759 Insert Firm License Number 1856

END OF SECTION 00 01 07

SECTION 00 01 10 - TABLE OF CONTENTS

SPECIFICATIONS

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Section 00 01 07 – Seals Page

Section 00 01 10 – Table of Contents

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Section 00 11 53 – Contractor's Qualifications

Section 00 41 43 – Bid Form

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Section 01 10 00 - Task Items

Section 01 11 00 - Summary of Work

Section 01 25 13 - Project Substitutions Procedures

Section 01 29 00 – Payment Procedures

Section 01 31 00 – Project Management and Coordination

Section 01 33 00 – Submittal Procedures

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DIVISION 04 - MASONRY

Section 04 01 20 - Masonry Restoration

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

Section 06 10 00 - Rough Capentry

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

Section 07 19 00 – Masonry Coatings

Section 07 62 00 - Sheet Metal Flashing and Trim

Section 07 92 00 - Joint Sealants

END OF SECTION 00 01 10

SECTION 00 11 16 - INVITATION TO BID & INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1. PROJECT IDENTIFICATION AND DEFINITIONS

- A. Engineer will receive sealed Bids for: YES Prep 9000 W Belfort Façade Repairs
- B. Owner is: YES Prep Public Schools
- C. Engineer is: Walter P. Moore and Associates, Inc.

1301 McKinney, Suite 1100,

Houston Texas 77010

- D. Project consists of:
 - 1. Project consists of providing all materials, labor, equipment, supervision, permits and services required to perform repairs in the YES Prep Façade Repairs at 9000 W Belfort Houston, Texas in accordance with the Contract Documents.
- E. Pre-bid meeting: TBD
- F. Bids will be due on: TBD
- G. In the office of: TBD

1.2. DOCUMENTS

- A. Contract between Owner and Contractor: Contract Documents listed in the Agreement.
- B. Complete electronic sets of Contract Documents may be obtained by emailing the Engineer.
- C. Complete sets of Bidding Documents shall be used in preparing Bids. Neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from use of incomplete sets of Bidding Documents.
- D. Owner and Engineer in making the Bidding Documents available on above terms do so only for purpose of obtaining Bids on Work and do not confer license or grant any other use.

1.3. QUALIFICATIONS OF BIDDERS

A. Owner may make such investigation as the Owner deems necessary to determine ability of Bidder to perform Work, and Bidder shall furnish to Owner all such information and data for this purpose as Owner may request. Owner reserves the right to reject any Bid if evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out obligations of Contract and to complete Work contemplated therein. Conditional Bids and voluntary alternates will not be accepted.

- B. Bidding firms will not be considered qualified if:
 - 1. Firm, or principals thereof, have defaulted on any contract, bid or bond within preceding 36 months, or;
 - 2. Firm has had no previous experience in performance of Work being bid, or;
 - 3. Firm, as name entitled, has not been in operation in this type of Work for period of 24 months prior to this bid date, or;
 - 4. Firm has not been awarded any prior contracts of similar amount and kind, or;
 - 5. Firm, or principals thereof, have failed in faithful performance during warranty or guarantee period on previous Work.
 - 6. Firm is found to have misstated or omitted any material fact in this prequalification statement.
- C. Each Bidder may be called upon to provide Owner with following information:
 - 1. Comprehensive financial statement showing current balance of unencumbered net worth equal to at least 10% of value of anticipated bid price.
 - 2. Comprehensive list of personnel and equipment available for performance of Work to be bid.
 - 3. Complete list of all contract work performed, or under construction if contract(s) awarded within previous 5 year period prior to bidding.

1.4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. Bidders shall carefully examine contract documents and site to obtain first-hand knowledge of existing conditions. No change orders will be allowed due to any claim of lack of knowledge for conditions, which can be determined by examining site and contract documents.
- B. Extent of repairs is approximately represented on Drawings. <u>Actual locations and extent of</u> repair may deviate from that represented on Drawings based on field conditions.
- C. Submission of Bid shall constitute warranty that:
 - 1. Bidder and all Subcontractors they intend to use have carefully and thoroughly reviewed Contract Documents and have found them complete and free from ambiguities and sufficient for purposes intended; further that,
 - 2. Bidder and all Workers, Employees and Subcontractors they intend to use, are skilled and experienced in the type of construction represented by Contract Documents bid upon; further that,
 - 3. Neither Bidder nor any of its Employees, Agents, Suppliers or Subcontractors have relied on any verbal representations from Owner, Engineer, or any of their Employees, Agents, or Consultant, in assembling Bid figure; and further that,
 - 4. Bid figure is based solely on Contract Documents, including properly issued written addenda, and not upon any other written representation.
- D. Bidder shall identify, prior to bid, all errors and/or discrepancies in Contract Documents that would be apparent to reasonably diligent Bidder. In no case shall Bidder, if selected as

Contractor, be permitted any extra amount of time or money to complete project, or expenses incurred as result of such errors or discrepancies.

1.5. RESOLUTION OF DISCREPANCIES AND AMBIGUITIES

- A. All questions about meaning or intent of Contract Documents shall be submitted electronically to the Engineer in writing. Address written inquiries to: Amey Bapat, Project Manager, abapat@walterpmoore.com, 1301 McKinney, Suite 1100, Houston, TX 77010 Tel. 713-630-7300.
- B. Replies will be issued by Addenda sent to all parties recorded by Engineer as having received Contract Documents for Bidding. Questions received less than 5 days prior to the date for opening of Bids will not be answered. Only answers contained in formal written email Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- C. Any Addendum issued during the pre-bid period shall be included in Bid, shall become part of Contract Documents, and shall be acknowledged on Bid Form.

1.6. SUBSTITUTED MATERIAL AND EQUIPMENT

A. Contract, if awarded, will be on basis of material and equipment described in Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after "effective date of Agreement."

1.7. BASIS FOR BIDS

A. Bids are based on lump sum contract derived from unit prices.

1.8. PREPARATION OF BIDS

- A. Bid Form is bound herewith. Bid Forms must be completed in typed text. Engineer will make the Bid Form available to the Bidder as an electronic file upon email request by the Bidder.
- B. Bids must be made in form given in this Project Manual. No oral or telephonic Bids will be considered. Bids shall be signed by Bidder giving full name and business address, and state whether Bidder is an individual, a partnership or a corporation.
- C. Each Bidder shall fill in all blanks on Bid Forms and quote on all alternates required. State all quotations in words and figures. In case of discrepancy between amount stated in words and amount stated in figures, amount stated in words shall govern. Entire Bid shall be without interlineation, alteration or erasure.
- D. Bids by corporations shall be executed in the corporate name by the president, vice-president or other corporate officer (accompanied by evidence of authority to sign) and corporate seal shall be affixed and attested by secretary or assistant secretary. Corporate address and state/province of incorporation shall be shown below signature.

- E. Bids by partnerships shall be executed in the partnership name and signed by partner. Partner's title must appear under partner's signature and official address of partnership must be shown below signature.
- F. Bids not signed by individuals making them shall have attached thereto power of attorney evidencing authority to sign Bid in name of person for whom it is signed.
- G. All names must be typed or printed legibly below signature.

1.9. SUBCONTRACTOR LISTING

- A. If Supplementary Conditions require identity of certain Subcontractors and other persons and organizations to be submitted to Owner in advance of Notice of Award, apparent successful Bidder, and any other Bidder so requested, shall within seven days after day of Bid opening submit to Owner list of all Subcontractors and other persons and organizations (including those who are to furnish principal items of material and equipment) proposed for those portions of Work as to which such identification is so required. Such list shall be accompanied by experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization if requested by Owner.
- B. If Owner or Engineer after due investigation has reasonable objection to any proposed Subcontractor, other person or organization, either may request apparent Successful Bidder to submit acceptable substitute before giving Notice of Award. If apparent successful Bidder declines to make any such substitution, contract shall not be awarded to such Bidder, but Bidder's declining to make any such substitution will not constitute grounds for sacrificing its Bid Security. Any Subcontractor, other person or organization so listed and to whom Owner or Engineer does not make written objection prior to the giving of Notice of Award will be deemed acceptable to Owner and Engineer.
- C. In contracts where Contract Price is on basis of Cost-of-the-Work Plus a Fee, apparent Successful Bidder, prior to Notice of Award, shall identify in writing to Owner those portions of Work that such Bidder proposes to subcontract and after Notice of Award may only subcontract other portions of Work with Owner's written consent.
- D. No Contractor shall be required to employ any Subcontractor, other person or organization against whom it has reasonable objection.

1.10. IDENTIFICATION AND SUBMISSION OF BIDS

- A. Bids shall be submitted in electronically at time and place indicated in Invitation to Bid and shall be clearly identified with the Project title, and name and address of Bidder, and accompanied by Bid Security and other required documents.
- 1.11. MODIFICATION OR WITHDRAWAL OF BIDS
 - A. Bids may be withdrawn by written or email request dispatched by Bidder in time for delivery, in normal course of business, prior to time fixed for opening of Bids, provided that written confirmation withdrawal, over signature of Bidder, is placed in mail and postmarked prior to time set for opening Bids.

B.
1.12. GOVERNING LAWS AND REGULATIONS

- A. No Contractor shall discriminate against any employee or applicant for employment, to be employed in performance of contract, with respect to their hire, tenure, terms, conditions or privileges of employment, because of their race, color, religion, gender, national origin or age pursuant to requirements of all applicable federal and state/provincial statutes.
- B. Each Bidder shall make affidavit that its Bid is genuine and not sham or collusive or made in interests or on behalf of any person not therein named and that Bidder has not directly or indirectly induced or solicited any Bidder to put in a sham Bid or any other person or corporation to refrain from Bidding, and that Bidder has not in any manner sought by collusion to secure itself an advantage over other Bidders.

1.13. CONTRACT TIME

A. Time is critical in performance of Work under this Contract. Please indicate time to complete this project in the Bid Form. Consideration will be given to time in evaluating Bids.

1.14. DISQUALIFICATION OF BIDDERS

- A. Prior to opening of Bids Owner reserves right to conduct investigations into qualifications and experience of any or all persons or organizations wishing to submit Bid for Project.
- B. Based upon findings of such investigations, Owner reserves right to deny any or all persons or organizations opportunity to submit Bid for Project.
- C. In evaluating Bids after Bids are opened and prior to Award of Contract, Owner shall consider qualifications of Bidders, whether or not Bids comply with prescribed requirements, and alternates and unit prices if requested in Bid Forms.
- D. Owner may consider qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish principal items of material or equipment) proposed for those portions of Work as to which identity of Subcontractors and other persons and organizations must be submitted as provided in Section "Contractor's Qualifications"/ Operating costs, and maintenance considerations, performance data and guarantees of materials and equipment may also be considered by Owner.
- E. Owner may conduct such investigations as it deems necessary to assist in evaluation of any Bid and to establish responsibility, qualifications and financial ability of Bidders, proposed Subcontractors and other persons and organizations to do Work in accordance with Contract Documents to Owner's satisfaction within prescribed time.
- F. Owner reserves right to reject Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.
- G. Owner reserves right to disqualify Bids before or after opening, upon evidence of collusion with intent to defraud or other illegal practices upon part of Bidder.

1.15. BIDS TO REMAIN OPEN

A. All Bids shall remain open for TBD days after Bid opening.

1.16. AWARD OF CONTRACT

- A. Owner reserves right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with Successful Bidder, and the right to disregard all nonconforming, nonresponsive or conditional Bids and to make award in any manner deemed in the best interest of Owner. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between indicated sum of any column of figures and correct sum thereof will be resolved in favor of the correct sum.
- B. In evaluating Bids, Owner shall consider qualifications of Bidders, whether or not Bids comply with prescribed requirements, and alternates and unit prices if requested in Bid Forms.
- C. It is Owner's intent to accept alternates (if any are accepted) in order in which they are listed in Bid Form but Owner may accept them in any order or combination.
- D. If contract is to be awarded it will be awarded to Bidder whose evaluation by Owner indicates to Owner that award will be in best interests of Project.
- E. If contract is to be awarded, Owner will give Successful Bidder Notice of Award within 60 days after day of Bid opening.

1.17. EXECUTION OF CONTRACT

A. When Owner gives Notice of Award to Successful Bidder, it will be accompanied by at least 3 unsigned counterparts of Agreement and all other Contract Documents. Within 15 days thereafter Contractor shall sign and deliver at least 3 counterparts of Agreement to Owner with all other Contract Documents attached. Within 10 days thereafter Owner will deliver all fully signed counterparts to Contractor. Engineer will identify those portions of Contract Documents not fully signed by Owner and Contractor and such identification shall be binding on all parties.

1.18. CONTRACT PRICE

A. Proposals are solicited on basis of unit prices and/or lump sum prices which are to be clearly set forth in Bid Form. Final Contract price on accepted Proposal will be determined by multiplying number, or fraction thereof, units of Work actually performed, or labor, material or appliances actually supplied, by price designated for such item in Proposal. Total Bid figure on Proposal Form is merely for purposes of estimating and comparing costs and under no circumstances on unit price contracts does it constitute or imply total Contract price.

END OF SECTION 00 11 16

SECTION 00 11 53 – CONTRACTOR'S QUALIFICATIONS

This statement is required in advance of consideration of application to bid or as a qualification statement in advance of a restoration contract.

SUBMITTED TO:	YES Prep Public Schools Attn: Cheris Kotalik 9000 W Belfort Houston, Texas
SUBMITTED BY:	
ADDRESS:	
PHONE:	()
CONTACT:	
Corporation Partnership Individual Joint Venture Other (Explain)	

STRUCTURAL RESTORATION CONTRACTOR'S QUALIFICATION QUESTIONNAIRE

- 1. How many years has your organization been in business as a structural restoration contractor?
- 2. How many years has your organization been in business as a general contractor?
- 3. How many years has your organization been in business under its present business name?
- 4. List states/provinces in which your organization is legally qualified to do business.
- 5. What percentage of the work do you normally perform with your own work forces?
- 6. List on Table I the last five façade restoration projects your firm has completed.
- 7. List on Table II the façade restoration projects your organization has in progress at this time.
- 8. Have you ever failed to complete any work awarded to you? If so, attach a separate sheet of explanation.
- 9. Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a construction contract? If so, attach a separate sheet of explanation.
- 10. List on Table III the construction experience of the principals and superintendents of your company.
- 11. What is your present bonding capacity? \$
- 12. Who is your bonding agent?

	NAME:	
	ADDRESS:	
	PHONE: ()	
	CONTACT:	
13	List on Table IV the equipment you own that is available for restoration work.	
14	Are there any liens against the above? If so, total amount \$	
15	Attach your company's most recent audited Balance Sheet, prepared in accordance with accepted accounting principles.	generally
	Date of Balance Sheet:	
	Name of firm Balance Sheet:	
	DATED AT THIS DAY OF, 20	

YES Prep 9000 W Belfort Façade Repairs Houston, Texas

Name of Organization:	
By:	
TITLE:	
STATE/PROVINCE OF:	
COUNTY OF:	
Being duly sworn, deposes and says that he/she is of the above and that the answers to the questions in the foregoing questionnaire and all statements ther are true and correct.	organization rein contained
SUBSCRIBING AND SWORN TO BEFORE ME THIS DAY OF	20
NOTARY PUBLIC:	
MY COMMISSION EXPIRES:	

TABLE I - LAST FIVE FAÇADE RESTORATION PROJECTS COMPLETED				
Name and Address of Contractor			Date:	
Name and Address of Owner	Type of Restoration Work	Contract Amount	Date Completed	

TABLE II - LIST OF FAÇADE RESTORATION PROJECTS IN PROGRESS					
Name and Address of Contractor			Date:		
Name and Address of Owner	Type of Work	Contract Amount	Scheduled Completion Date		

Name and address of Contractor:				Date:	
Name	Position	Years of Experien	Years of Experience		Contract Amount
		Construction	Restoration		

TABLE IV - LIST OF EQUIPMENT				
Name and address of Contractor:			Date:	
Description of Equipment	Quantity	Years of Service	Current Book Value	

PLEASE PROVIDE A LISTING OF ALL CERTIFICATIONS FOR EXTERIOR COATING SYSTEMS.

END OF SECTION 00 11 53

SECTION 00 41 43 – BID FORM

PROJECT IDENTIFICATION:	YES Prep Façade Repair
THIS BID IS SUBMITTED TO:	Ms. Cheris Kotalik
	6201 Bonhomme Rd, Suite 168N, Houston, TX 77036

- 1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
- 2. This Bid shall remain subject to acceptance for sixty (60) days after the day of Bid opening.
- 3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - 3.1 BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date Number

- 3.2 Bidder has familiarized itself with the nature and extent of the Contract Documents proposed Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- 3.3 BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- 3.4 This Bid is genuine and not made in the interest of, or on behalf of, any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. POSSIBLE CHANGES IN QUANTITY OF WORK

4.1 BIDDER understands that the quantities specified herein for the repairs are approximate and that actual quantities in the field may increase or decrease from the quantities estimated. BIDDER herby agrees to perform all quantities of Work as either increased or decreased, as required by the Engineer in accordance with the provisions of the Construction Documents. The final payment to the BIDDER shall be based on the Lump Sum/Unit Prices bid and the actual quantities completed (for items that are not lump sum).

BASE BID					
TASK ITEM	DESCRIPTION	UNITS	QUANTITY (1)	UNIT PRICE (2)	EXTENSION (1) x (2) =
1	Flashing at First Floor Windows	L.S.	1	\$	\$
2	Wet Sealing at Glazing	L.S.	1	\$	\$
	Parapet Flashing				
3	a) Parapet Flashing – Metal Coping Cap	L.S.	1	\$	\$
	b) Parapet Flashing – Coping Stone	L.S.	1	\$	\$
4	Seal Façade Penetrations	EA	15	\$	\$
5	Repointing at Precast Cast Stone Window Header Joints	L.F.	3,000	\$	\$
6	Spall Repairs at Precast Window Headers	S.F.	70	\$	\$
7	Replace Cracked Masonry Units	EA	20	\$	\$
8	Mortar Repointing	L.F.	100	\$	\$
9	Perimeter Slab Repair	S.F.	10	\$	\$
10	Dislodged Brick Repair	EA	15	\$	\$
11	Gasket Repair/Replacement	L.F.	100	\$	\$
12	Masonry Coating	L.S.	1	\$	\$
13	Perimeter Sealant Replacement at Windows	L.S.	1	\$	\$
	Project Mobilization & Demobilization			· ·	*
14	(excluding staging access)	L.S.	1	\$	\$
	a) Boom Lift Staging Access	L.S.	1	\$	\$
	b) Scaffolding Staging Access	L.S.	1	\$	\$
	BASE BID TOTAL (with Options 3a and	14a)			\$
	BASE BID TOTAL (with Options 3a and	14b)			\$
	BASE BID TOTAL (with Options 3b and	14a)			\$
	BASE BID TOTAL (with Options 3b and 14b) \$				

5. Approximate quantities for the items of repair shown on the drawings are as follows:

	.:		
TOTAL BA	SE BID (with Options 3a	and 14a)	
			(Use wor
	\$	(Use figures)	
TOTAL BA	SE BID (with Options 3a	and 14b)	
			(Use wor
	\$	(Use figures)	
TOTAL BA	SE BID (with Options 3b	and 14a)	
			(Use wor
	\$	(Use figures)	
TOTAL BA	SE BID (with Options 3b	and 14b)	
			(Use wor
	\$	(Use figures)	
BIDDER ag	grees that the Work on this	s building will be complete within	calendar
after receivi repair proje	ng the notice to proceed. ' ct at the time of bid subm	The contractor should submit a scl ission.	hedule for th
	ations concerning this Bid	shall be addressed to (Contractor)	
Communics	tions concerning this Did	shan be addressed to (contractor)	
Communica			

Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions provided by the Owner.

9. We plan to sub-contract the following items of work (please list):

Description Sub-contractor Value

YES Prep 9000 W Belfort Façade Repairs Houston, Texas	WPM PROJECT NO. D03.18006.01
If BIDDER is:	
An Individual	
By	(SEAL)
(Individual's Name)	
doing business as	
Business Address:	
Phone No.:	
<u>A Partnership</u>	
By	(SEAL)
(Firm Name)	
(General Partner)	
Business Address:	
Phone No.:	
<u>A Corporation</u>	
By(Corporation Name)	(Corporate Seal)
(State of Incorporation)	
By (Name of Person Authorized to Sign)	
(Title)	
Attest(Secretary)	
Business Address:	
Phone No.:	
END OF DOCUMENT 00 41 43	

SECTION 00 10 15 - TASK ITEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 TASK ITEM (T.I.) DESCRIPTION

T.I. 1 FLASHING AT FIRST FLOOR WINDOWS

- A. Scope of work
 - 1. Work consists of coordinating, scheduling, obtaining and assembling all labor, materials, and incidentals necessary for removal and installation of new windowsill flashing at level 1 windows.
 - 2. Remove existing flashing and sealant at windowsill.
 - 3. Clean and substrate surfaces as needed.
 - 4. Install new sloped cant (1/4 inch per foot), embedded in sealant along the top of the horizontal substrate on the exterior of the window sill.
 - 5. Install new sheet metal flashing, embedded in three lines of sealant that run parallel with the plane of the wall. Fasten leading edge of flashing at vertical surface of windowsill.
 - 6. Install new sealant bead along leading edge and all side terminations of sheet metal flashing.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Sections "Joint Sealnts" and "Sheet Metal Flashing and Trim" for work requirements, materials, and procedures.

T.I. 2 WET SEALING AT GLAZING

- A. Scope of Work
 - 1. Work consists of coordinating, scheduling, obtaining and assembling all labor, materials, and incidentals necessary for removal of existing joint sealant (if applicable), visual inspection of gaskets, and installation of silicone sealant joints.
 - 2. Remove existing sealant from metal-to-glazing joints (if applicable).

- 3. Observe condition of existing gasket between the glass and frame. If gasket is loose, deteriorated, cracked or dislodged, gasket replacement will be required. (See T.I. 11)
- 4. Contractor shall perform a hand push test to determine if each window is fully engaged. If window is not fully engaged, notify engineer. (See T.I. 11)
- 5. If the existing gasket is adequate, it shall remain in place. If the existing gasket is not adequate, it shall be replaced.
- 6. Joint shall be air blasted to remove remaining debris without damaging window assembly.
- 7. Prime joint surfaces as needed.
- 8. Install new silicone wet window sealant with overall dimensions to conform with manufacturer's recommendations for best practice for sealant installation.
- 9. Do not allow sealant to ooze or sag.

B. Drawings and Specifications

- 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
- 2. Refer to Specification Section "Joint Sealants" for work requirements, materials, and procedures.

T.I. 3A PARAPET FLASHING – METAL COPING CAP

- A. Scope of work
 - 1. Where indicated or appropriate, work consists of furnishing all labor, material, equipment, staging, supervision, and incidentals necessary to remove existing coping stone and install new parapet coping cap.
 - 2. New coping cap shall include wood blocking to matching height of existing coping stone, high-temp sheet-applied air/water barrier, continuous cleat and stainless-steel coping cap, with respective attachments.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Sections "Joint Sealants" and "Sheet Metal Flashing and Trim" for work requirements, materials, and procedures.

T.I. 3B PARAPET FLASHING - COPING STONE

- A. Scope of work
 - 1. Work consists of furnishing all labor, material, equipment, staging, supervision, and incidentals necessary to remove existing coping stone and replace in kind.

- 2. New coping through-wall flashing shall include new sheet metal flashing. Coping stone to match existing, with respective attachments.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Sections "Joint Sealants" and "Sheet Metal Flashing and Trim" for work requirements, materials, and procedures.

T.I. 4 SEAL FAÇADE PENETRATIONS

- A. Scope of work
 - 1. Work consists of coordinating, scheduling, obtaining and assembling all labor, materials, and incidentals necessary to remove and replace sealant joints at pipe penetrations and masonry mounted plates.
 - 2. Remove existing sealant from joints, if present.
 - 3. Prime joint surfaces as needed.
 - 4. Install backer rod at wide joints in strict with manufacturer's instructions.
 - 5. Install sealant and tool with metal spatula to a concave profile and overall dimensions to conform with manufacturer's recommendations for best practice for sealant installation.
 - 6. Do not allow sealant to ooze or sag.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Section "Joint Sealants" for work requirements, materials, and procedures.

T.I. 5 REPOINTING AT PRECAST CAST STONE WINDOW HEADER JOINTS

A. Scope of Work

- 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to repoint perimeter joints at precast window headers.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Sections "Joint Sealants" and "Masonry Restoration" for materials and installation.

T.I.6SPALL REPAIRS AT PRECAST WINDOW HEADERS

- A. Scope of work
 - 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to locate and remove full depth delaminated precast concrete surfaces, prepare, form and install precast concrete to original condition and appearance.
 - 2. Concrete surface to which the repair material is to be applied shall be exposed and free of loose and unsound materials. Preparation of cavity and exposed reinforcing to receive new repair material shall be in accordance to manufacturer's instructions.

B. Drawings and Specifications

- 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
- 2. Refer to Specification Sections "Concrete Repair Materials" and "Surface Preparation for Patching" for work requirements, materials, and procedures.

T.I.7REPLACE CRACKED MASONRY UNITS

- A. Scope of Work
 - 1. Work consists of furnishing all labor, materials, equipment, staging, supervision, and incidentals necessary for local brick removal and replacement due to fractures, cracks, and broken brick work.
- B. Repair Drawings and Specifications
 - 1. Refer to Sheet R3.1 for installation details. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Section "Masonry Restoration" for work requirements, materials, and procedures.

T.I. 8 MORTAR REPOINTING

- A. Scope of Work
 - 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to repoint defective, cracked, broken or eroded joints in existing brick work.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.

2. Refer to Specification Section "Masonry Restoration" for work requirements, materials, and procedures.

T.I. 9 PERIMETER SLAB REPAIR

- A. Scope of Work
 - 1. Work consists of furnishing all labor, materials, equipment, staging, formwork, supervision, and incidentals necessary to remove delaminated and unsound concrete from existing slab, prepare cavity, and install repair materials to restore concrete slab edge to original condition and appearance.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Sections "Concrete Repair Materials" and "Surface Preparation for Patching" for work requirements, materials, and procedures.

T.I. 10 DISLODGED BRICK REPAIR

- A. Scope of Work
 - 1. Work consists of furnishing all labor, materials, equipment, staging, supervision, and incidentals necessary for local brick removal and replacement due to brick dislodging.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Section "Masonry Restoration" for work requirements, materials, and procedures.

T.I. 11 GASKET REPAIR/REPLACEMENT

- A. Scope of work
 - 1. Work consists of coordinating, scheduling, obtaining and assembling all labor, materials, and incidentals necessary to remove and replace dislodged or loose gaskets in kind with manufacturer recommended headless wedge gasket.
 - 2. Observe condition of existing gasket between the glass and frame. If gasket is loose, deteriorated, cracked or dislodged, gasket replacement will be required.
- B. Drawings and Specifications

- 1. Refer to Elevation Sheets for location of work.
- 2. Refer to Specification Section "Joint Sealants" for work requirements, materials, and procedures.

T.I. 12 MASONRY COATING

A. Scope of Work

- 1. Work consists of application of a coating on the brick masonry façade and removing sealant from existing masonry weep holes/vents.
- 2. Remove sealant and debris from existing weep holes and vents.
- 3. Ensure masonry surfaces are dry, clean, and free of efflorescence, oil or other matter detrimental to application of coating.
- 4. Apply coating in accordance with manufacturer's instructions, using procedures and application methods recommended by the manufacturer as producing the best results.
- B. Repair drawings and specifications
 - 1. Refer to Elevation Sheets for location of work.
 - 2. Refer to Specification Section "Masonry Coating" for work requirements, materials, and procedures.

T.I. 13 PERIMETER SEALANT REPLACEMENT AT WINDOWS

A. Scope of work

- 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary for removal and installation of sealant joints between metal window frame and adjacent brick masonry.
- 2. Remove existing sealant from joints.
- 3. Prime joint surfaces as needed.
- 4. Install backer rod where appropriate and sealant. Tool sealant with metal spatula to produce concave profile and overall dimensions to conform with manufacturer's recommendations for best practice for sealant installation.
- 5. Do not allow sealant to ooze or sag.
- 6. Where double sealant joints are indicated, allow the inner sealant joint to fully cure before installation of the outer sealant joint.
- B. Drawings and Specifications
 - 1. Refer to Elevation Sheets for location of work and Detail Sheets for installation details.
 - 2. Refer to Specification Section "Joint Selants" for work requirements, materials, and procedures.

T.I. 14 PROJECT MOBILIZATION

- A. Scope of Work
 - 2. Work consists of coordinating, scheduling, obtaining and assembling at construction site all equipment, materials, permits, supplies, manpower and other essentials and incidentals necessary to perform Work defined in this Contract.
 - 3. Coordinate all aspects of work with Owner and all trades.
 - 4. Provide protective measures in and around the building as directed by the Owner prior to beginning of work. The Contractor shall take measures as necessary to keep access to the building free and clear of all hazards.
 - 5. Provide overhead protection at all exterior sidewalk areas below area of construction work. Coordinate this item with the Owner.
 - 6. Coordinate, schedule, obtain and assemble all labor, materials, and incidentals necessary to protect the existing building structure, finishes, and project site during work.
 - 7. Perform disruptive or noisy work during times indicated by Owner.
 - 8. Salvage existing material which has been indicated for reinstallation according to work items below. Store salvaged materials in clean, dry locations and protect from moisture, extreme temperatures, and direct sunlight.
 - 9. Façade shall be accessible by Scaffolding or Boom Lift as decided by Owner. Contactor shall include a bid for each option on the Bid Form.
 - 10. Properly dispose of all debris and waste construction materials in accordance with all applicable laws and regulations.
 - 11. Coordinate with Owner on project demobilization efforts.
- B. Drawings and Specifications
 - 1. See General Notes and Plan Sheets for additional requirements.

END OF SECTION 00 10 15

SECTION 01 11 00 – SUMMARY OF WORK

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
 - A. Drawings and general provisions of Contract, including conditions included by Owner.
- 1.2 GENERAL DESCRIPTION OF WORK:
 - A. The Work of this Contract will be performed in the facility as shown on Drawings.
 - B. Contractor shall furnish all material, labor, tools, supplies, permits, equipment, transportation, superintendence, barricades, temporary protection, bracing, shoring, temporary construction of every nature, insurance, taxes, contributions and all services and facilities, unless specifically excepted, and install all materials, items, and equipment required to complete the construction of the Project, as set forth in the Contract Documents.
 - C. Refer to Section "Task Items" for a description of work. Task Item specifications, details, and drawings shall govern all repair operations. Locations where Task Items apply are shown on Drawings as symbols.
 - D. Final Payment shall be made on basis of actual approved Work performed as measured in place.

1.3 MEASUREMENTS:

- A. Before ordering any material or doing any Work, Contractor shall verify all measurements at the Project Site and shall be responsible for correctness of same.
- B. Before proceeding with each Task Item, Contractor shall locate, mark, and measure quantity of each item and report quantities to Engineer. If measured quantities exceed those indicated on the bid form, Contractor shall obtain written authorization to proceed from Owner before executing Work required for that Task Item.
- C. Cost of Work included in each Task Item for quantities as indicated in the Contract Documents shall be included in Base Bid without substitution of materials, construction sequence, or limitations on construction means where indicated.

1.4 WORK SEQUENCE:

- A. Prior to commencement of Work, meet with Engineer and Owner representatives to establish sequence and schedule of Work. Contractor shall give Owner notice of areas to be cleared at least 7 working days in advance of actual Work.
- B. Contractor shall notify Owner's representative at least 24 hours prior to commencing any abrasive blasting such as sandblasting, etc. operations.
- C. Work will be conducted in phases to provide least possible interference to activities of Owner's personnel and facility users.

- 1. Contractor's work hours shall be limited to comply with noise ordinances. Contractor is allowed to work as necessary to complete work within Owner's time schedule and conditions conducive to temperature sensitive materials.
- D. Contractor shall remove debris from Work Area on daily basis and dispose of same at authorized sites.
- E. Contractor shall remove dust and air transported material from remainder of facility at conclusion of operations in Work area.
- 1.5 CONTRACTOR'S USE OF PREMISES:
 - A. Contractor shall limit their use of adjacent premises for Work, construction operations and storage to allow for:
 - 1. Public use, including parking.
 - 2. Owner Occupancy:
 - a. Where it is necessary for the Contractor to use portions of existing buildings and/or grounds for operations, such use shall be strictly in accordance with requirements and approval of the Owner.
 - b. Contractor shall organize the work in order that inconvenience to the building occupants is minimized.
 - c. Keep driveways and entrances serving the premises clear and available to the Owner and building occupants at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
 - d. Unless otherwise indicated or specified, or unless otherwise directed by Owner; water, gas, lighting, power and telephone conduits and wires, sewer lines, and other surface and subsurface structures and lines, shall be maintained by Contractor and shall not be disturbed, disconnected or damaged by the Contractor during progress of Work. Should the Contractor in performance of Work disturb, disconnect or damage any of above, expenses arising from the disturbance replacement or repair shall be borne by Contractor.
 - e. Elevators shall not be used for transfer of materials or equipment unless approved by the Owner's Representative in writing. When permitted by the Owner's Representative the Contractor shall take care not to overload or damage the elevator.
 - 3. Contractor shall:
 - a. Not unreasonably encumber Site with materials and equipment.
 - b. Not load structure with weight that will endanger the structure.
 - c. Assume full responsibility for protection and safekeeping of stored products.

- d. Move or remove stored products which interfere with operations of Owner.
- e. Obtain and pay for use of additional storage and work areas needed for operations.
- 4. Contractor Parking:
 - a. Contractor's personal vehicles shall park outside of construction area. Only vehicles equipment or delivering materials should be in the construction area. Coordinate with owner's representative.
- 1.6 OWNER OCCUPANCY:
 - A. Cooperate with the Owner's Representative in all construction operations to minimize conflict and to facilitate Owner usage.
 - B. Contractor shall at all times conduct operations to ensure the least inconvenience to the general public.
- 1.7 SURVEY OF EXISTING CONDITIONS:
 - A. Contractors acknowledges by submitting a Bid, that they have visited and inspected the Project Site in which the Work is to be performed, that they have satisfied themselve as to the nature and location of the Work, including any obstructions, amount of work, actual levels, the equipment and facilities needed preliminary to and during the prosecution of the Work, and all other matters which can in any way affect the Work or the cost thereof under this Contract.
 - B. Failure by Contractors to have acquainted themselve with available information concerning Site conditions, including factors affecting costs and liabilities, shall not relieve Contractor of responsibility for performance of Work in accordance with requirements of Contract Documents, and for amount of consideration named or otherwise determined.

END OF SECTION 01 11 00

SECTION 01 25 13 – PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
 - A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.
 - B. Contractor's Construction Schedule and Schedule of Submittals are included under Section "Submittal Procedures."

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of Contract.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify meaning of other terms used in Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by Contractor after award of Contract are considered requests for "substitutions." Following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by Owner or Engineer.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within 15 days after commencement of Work. Requests received more than 15 days after commencement of Work may be considered or rejected at discretion of Engineer.
 - 1. Submit electronic copies of each request for substitution for consideration. Submit requests on forms included at end of this Section and in accordance with procedures required for Change Order proposals. Engineer will make the Substitution Request Form at the end of this Section available to the Contractor as an electronic file upon request by the Contractor.
 - 2. Identify product, fabrication, and/or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with requirements for substitutions, and the following information, as appropriate:

- a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
- b. Samples, where applicable or requested.
- c. Detailed comparison of significant qualities of proposed substitution with those of Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
- d. Coordination information, including list of changes or modifications needed to other parts of Work and to construction performed by Owner and separate Contractors that will become necessary to accommodate proposed substitution.
- e. Statement indicating substitution's effect on Contractor's Construction Schedule compared to schedule without approval of substitution. Indicate effect of proposed substitution on overall Contract Time.
- f. Cost information, including proposal of net change, if any in Contract Sum.
- g. Certification by Contractor that substitution proposed is equal to or better in every significant respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of substitution to perform adequately.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Contractor shall investigate and document compatibility of proposed substitution with related products and materials.
- B. For proposed substitution system, products, the Engineer may request the Contractor engage a qualified testing agency to perform compatibility tests recommended by manufacturers, durability test recommended by the Engineer, additional quality assurance testing, and/or additional quality control testing. Additional cost associated with the proposed substitution request shall be paid for by the Contractor.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: Contractor's substitution request will be received and considered by Engineer when one or more of following conditions are satisfied, as determined by Engineer; otherwise requests will be returned without action except to record noncompliance with these requirements.
 - 1. Specified products or methods of construction cannot be provided within Contract Time. Specified products or methods of construction cannot receive necessary approval by governing authority, and requested substitution can be approved.
 - 2. Substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities Owner may be

required to bear. Additional responsibilities for Owner may include additional compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner or separate Contractors, and similar considerations.

- 3. Specified products or methods of construction cannot be provided in manner that is compatible with other materials, and where Contractor certifies that substitution will overcome incompatibility.
- 4. Specified products or methods of construction cannot be coordinated with other materials, and where Contractor certifies that proposed substitution can be coordinated.
- 5. Specified products or methods of construction cannot provide warranty required by Contract Documents and where Contractor certifies that proposed substitution provide required warranty.
- B. Contractor's submittal and Engineer's review of Shop Drawings, Product Data and/or Samples that relate to construction activities not complying with Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

END OF SECTION 01 25 13

REQUEST FOR SUBSTITUTION

REQUESTION	SUBSTITUTION
To:	WALTER P MOORE
Attention:	Amey Bapat
From:	
	Name of Company
	Address
	City, State\Province, Zip Code
	Phone
	Email
Fully answer all i for substitution. financial stability Only first produc	nformation requested below. Failure to answer any item may cause rejection of request If requested by Engineer, submit information about manufacturer and vendor history, , distribution and support systems. Use one form for each product/assembly requested. t/assembly listed will be considered on forms with more than one product listed.
Specification Sec	tion Number: Drawing Number:
Para Number:	Detail Number:
Specified Produc	t/Assembly:
Proposed Substitu	ution:
Please answer the required.	e following questions. Attach an explanation sheet on your company's letterhead when
Does the propose	d substitution affect dimensions indicated on Drawings?
No	Yes (If yes, explain below).
Does the propose	d substitution require changes in Drawings and/or design or installation changes?
No	Yes

If yes, is the cost of these changes included in the proposed amount? No _____ Yes _____

PRODUCT SUBSTITUTION PROCEDURES

YES Prep 9000 W Belfort Façade Repairs Houston, Texas	WPM PROJECT NO. D03.18006.01
Does the proposed substitution affect other trades? No	Yes
(If yes, explain who and how)	
If the proposed product does affect the work of other trades, h included in the price of the proposed substitution?	as the cost impact on their work been
No Yes	
Does the proposed product's guarantee differ from that of the	specified product's?
No Yes(If yes, explain below	w).
Why is this proposal for substitution being submitted? List re	easons below.
Attach a listing of 3 projects using the proposed substitution, to the geographic and climatic region of the Project. At least service for at least 3 years.	completed within the past 5 years in similar one of the applications shall have been in
Attach product data/brochures and this Request for Substitution proposed substitute product.	on Form for the specified products and
Undersigned has examined Construction Documents, is famili indicated application of product, and understands design inten proposed substitution complies with Construction Documents specified product within limitations stated above. Undersigne application and installation of proposed substitution and waiv from incorporation of proposed substitution into Project or its	iar with specified product, understands at of Engineer. Undersigned states that and will perform at least equally to ed accepts responsibility for coordinating es all claims for additional costs resulting subsequent failure to perform according to

Submitted By: _____ Typed Name

specified requirements.

Signature

Date: _____

SECTION 01 29 00 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

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

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - 2. Submit the Schedule of Values to Engineer at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual Bid Form Task Items as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Engineer.
 - c. Engineer's project number.

- d. Contractor's name and address.
- e. Date of submittal.
- 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Task Item, Specification Section or Division.
 - b. Description of the Work.
 - c. Unit price of the Work
 - d. Name of subcontractor.
 - e. Name of manufacturer or fabricator.
 - f. Name of supplier.
 - g. Change Orders (numbers) that affect value.
 - h. Dollar value as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
- 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 5. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
- 6. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
 - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is the TBD of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 15days before the date for each progress payment.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment or Owner's approved forms.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

- 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
- 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at the time of Application for Payment.
- 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Stored Materials: Where applicable, include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 - 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 - 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 - 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Electronically submit signed and notarized scans of each Application for Payment to Engineer. Include waivers of lien and similar attachments if required by the Owner's Representative.
 - 1. Include a cover page listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 - 1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item, if applicable.
 - 2. When an application shows completion of an item, submit final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

- 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- 5. Waiver Delays: Submit each Application for Payment with Contractor's waiver of mechanic's lien for construction period covered by the application.
 - a. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- 6. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule (preliminary if not final).
 - 4. Products list.
 - 5. Schedule of unit prices.
 - 6. Submittals Schedule (preliminary if not final).
 - 7. List of Contractor's staff assignments.
 - 8. List of Contractor's principal consultants.
 - 9. Copies of building permits.
 - 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 11. Initial progress report.
 - 12. Report of preconstruction conference.
 - 13. Certificates of insurance and insurance policies.
 - 14. Performance and payment bonds.
 - 15. Initial settlement survey and damage report if required.
- I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing final percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements.
 - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

- 3. Updated final statement, accounting for final changes to the Contract Sum.
- 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
- 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
- 6. Evidence that claims have been settled.
- 7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
- 8. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Coordination Submittals.
 - 3. Requests for Information (RFIs).
 - 4. Administrative and supervisory personnel.
 - 5. Project meetings.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 01 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Pre-installation conferences.
 - 6. Project closeout activities.

1.4 COORDINATION SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 - 1. Indicate relationship of components shown on separate Shop Drawings.
 - 2. Indicate required installation sequences.
- B. Staff Names: Within 15 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.5 REQUESTS FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
 - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project Name.
 - 2. WPM Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Engineer.
- 6. RFI number, numbered sequentially.
- 7. RFI subject.
- 8. Specification Section number and title and related paragraphs, as appropriate.
- 9. Drawing number and detail references, as appropriate.
- 10. Field dimensions and conditions, as appropriate.
- 11. Where applicable, contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
- 12. Contractor's signature.
- 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Email the RFI to the Engineer.
 - 1. Title the subject line of the email with: WPM Project number Project Name RFI number
 - 2. Attachments shall be electronic files in PDF format.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven 7 working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
 - 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Engineer's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 - 2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
 - 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following in the FRI Log:
 - 1. Project name.

- 2. Name of Contractor.
- 3. Name of Engineer.
- 4. RFI number including RFIs that were returned without action or withdrawn.
- 5. RFI summary description.
- 6. Date the RFI was submitted.
- 7. Date Engineer's response was received.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven 7 days if Contractor disagrees with response.
 - 1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

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

1.7 **PROJECT MEETINGS**

- A. General: Coordinate with the Engineer and Owner's Representatives in the scheduling and participation in meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform the Owner's Representative, Engineer, and Contractor of the date and time of each meeting. Contractor and Owner's Representative shall inform others involved, and individuals whose presence is required, of date and time of each meeting.
 - 2. Agenda: Engineer or Owner's Representative will prepare the meeting agenda and distribute the agenda to all invited attendees.
 - 3. Minutes: Engineer will record significant discussions and agreements achieved. Minutes will be distributed to everyone concerned, including Owner, Engineer, and Contractor.
- B. Preconstruction Conference: Coordinate with the Engineer and Owner's Representatives in the scheduling of a preconstruction conference before starting construction, at a time acceptable to the Contractor and convenient to Owner and Engineer but no later than 15 days after execution of the Agreement. Hold the conference at the Project site or another convenient location. The Engineer or Owner's Representative will conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, may include the following:

- a. Tentative construction schedule.
- b. Phasing.
- c. Critical work sequencing.
- d. Designation of responsible personnel.
- e. Procedures for processing field decisions and Change Orders.
- f. Procedures for processing Applications for Payment.
- g. Distribution of the Contract Documents.
- h. Submittal procedures.
- i. Preparation of Record Documents.
- j. Use of the premises.
- k. Responsibility for temporary facilities and controls.
- 1. Parking availability.
- m. Office, work, and storage areas.
- n. Equipment deliveries and priorities.
- o. First aid.
- p. Security.
- q. Progress cleaning.
- r. Working hours.
- C. Progress Meetings: Engineer or Owner's Representative will conduct progress meetings at TBD intervals. Contractor shall coordinate preparation of payment requests with dates of meetings.
 - 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Sequence of operations.
 - 2) Status of submittals.
 - 3) Access.
 - 4) Site utilization.
 - 5) Temporary facilities and controls.
 - 6) Work hours.
 - 7) Hazards and risks.
 - 8) Progress cleaning.
 - 9) Quality and work standards.
 - 10) Change Orders.

- 11) Documentation of information for payment requests.
- 3. Reporting: Engineer or Owner's Representative will distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

END OF SECTION 01 31 00

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures."
 - 2. Division 01 Section "Project Management and Coordination" for submitting Coordination Drawings.
 - 3. Division 01 Section "Quality Requirements" for submitting test and inspection reports and Delegated-Design Submittals.
 - 4. Division 01 Section "Closeout Procedures" for submitting warranties.
 - 5. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. Resubmittals: Engineer will review each of Contractor's shop drawings and/or submittal data the initial time and, should resubmittal be required, one additional time to verify that reasons for resubmittal have been addressed by Contractor and corrections made. Resubmittal changes/revisions/corrections shall be circled. Engineer will review only circled items and will not be responsible for non-circled changes/revisions/corrections and additions. Should additional resubmittals be required, Contractor shall reimburse Owner for all costs incurred, including the cost of Engineer's services made necessary to review such additional resubmittals. Owner will in turn reimburse Engineer.
- B. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals.

- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
 - 1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
- E. Identification: Precede each submittal with a cover page for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on the cover page.
 - 2. Provide a blank space approximately 4 by 5 inches on cover page to record Contractor's review and approval markings. Provide an additional 5 by 5 inches on the cover page for the Engineer's review.
 - 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of Subcontractor.
 - f. Name and address of Supplier.
 - g. Name of Manufacturer.
 - h. Unique identifier, including revision number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review, received from sources other than Contractor.
 - 1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents,

including minor variations and limitations. Include the same label information as the related submittal.

- 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
- 3. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and electronically submit Action Submittals required by individual Specification Sections. Engineer will return submittal via email. Reviewed submittal will be stamp and may contain commentary and or redlines thought the submittal where warranted. Engineers review stamps are:
 - 1. No Exceptions Taken: No commentary by the Engineer. No further resubmittal is required.
 - 2. Exception Noted: Commentary are contained throughout the submittal. No further resubmittal is required as long as the Engineer's comments are addressed.
 - 3. Revise and Resubmit: Commentary are contained throughout the submittal. Revise the submittal to account for the commentary. Additionally summit additional submittal parts or products not included in the original submittal where noted.
 - 4. Submit Specified Item(s): One or more submitted products, assemblies, or information does not comply with the project documents. Additionally, commentary may be contained throughout the submittal. Resubmit an acceptable product(s), assemblies, or information. Revise the acceptable portions of the submittal to account for the commentary. Provide additional submittal parts or products not included in the original submittal where noted.

- 5. Acknowledge Receipt for Records Only: Only acknowledges receipt of information requested by the Contract Documents and does not indicate that the information contained in the submittal has been reviewed for accuracy. The Contractor is responsible for confirming information on the submittal is coordinated and consistent with the Contract Documents.
- 6. Reviewed for Reference and Information Only: Reviewed information requested by the Contract Documents but does not indicate that the information contained in the submittal has been reviewed for accuracy. The Contractor is responsible for confirming information on the submittal is coordinated and consistent with the Contract Documents.
- 7. Reviewed for Impact to Structure Only: Reviewed information requested by the Contract Documents and whether it has an impact on the existing construction or the Engineer's design but does not indicate that the information contained in the submittal has been reviewed for accuracy. The Contractor is responsible for confirming information on the submittal is coordinated and consistent with the Contract Documents.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - 1. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.

- f. Shopwork manufacturing instructions.
- g. Templates and patterns.
- h. Schedules.
- i. Design calculations.
- j. Compliance with specified standards.
- k. Notation of coordination requirements.
- 1. Notation of dimensions established by field measurement.
- D. Coordination Drawings: Comply with requirements in Division 1 Section "Project Management and Coordination."

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Electronically submit copies of each submittal, unless otherwise indicated.
 - 2. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Engineer will not return copies.
 - 3. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 4. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Provide Level 3 Schedule with progress monitoring and project control level unless Owner has more stringent scheduling requirements.
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- N. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.

- 2. Required substrate tolerances.
- 3. Sequence of installation or erection.
- 4. Required installation tolerances.
- 5. Required adjustments.
- 6. Recommendations for cleaning and protection.
- R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 6. Statement whether conditions, products, and installation will affect warranty.
 - 7. Other required items indicated in individual Specification Sections.

2.3 REQUESTS FOR INFORMATION

A. Engineer reserves the right to reject, unprocessed, any RFI that the Engineer, at its sole discretion, deems already answered in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Quality-assurance services and quality-control services include inspections, tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by Engineer.
- C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other qualityassurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner or authorities having jurisdiction are not limited by provisions of this Section.
- D. Related Requirements:
 - 1. Division 01 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
 - 2. Division 01 Section "Submittal Procedures" specifies requirements for development of a schedule of required tests and inspections.
 - 3. Division 01 Section "Building Envelope Testing and Inspections" specifies required work product testing and inspection for building envelope assemblies.
 - 4. Technical Specification Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the

minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5 **RESPONSIBILITIES**

- A. Contractor Responsibilities:
 - 1. Retesting: Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
 - a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
 - 2. Associated Services: Cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:
 - a. Provide access to the Work.
 - b. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
 - c. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
 - d. Provide facilities for storage and curing of test samples.
 - e. Deliver samples to testing laboratories.
 - f. Provide the agency with a preliminary design mix proposed for use for material mixes that require control by the testing agency.
 - g. Provide security and protection of samples and test equipment at the Project Site.
- B. Owner Responsibilities: Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.
 - 1. Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility.
- C. Coordination: Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
 - 1. Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Contractor's quality-control personnel.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.7 ACTION SUBMITTALS

- A. Concrete Shop Drawings: Provide plans, sections, elevations, and details indicating materials, reinforcement, and attachment for the fabrication of new concrete reinforcement.
- B. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.8 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than 5 days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as a Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

- 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
- 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
- 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.9 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals performing tests and inspections.
 - 6. Description of the Work and test and inspection methods.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting when relevant.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and re-inspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

- 6. Statement whether conditions, products, and installation will affect warranty.
- 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement that equipment complies with requirements.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 4. Statement whether conditions, products, and installation will affect warranty.
 - 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- E. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

1.10 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

- 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an A2LA, an AAP, an NVLAP, a CMET, a CWI, a CWB Inspector, a PTI Level 2, an AAMA, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. General Requirements:
 - a. Each independent testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State\Province in which the Project is located.
 - b. The Testing Laboratory shall be an Approved Agency by the Building Official to perform Special Inspections and other tests and inspections as outlined in the applicable building code.
 - 2. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 3. A2LA: A testing agency accredited according to the American Association for Laboratory Accreditation.
 - 4. AAP: A testing agency accredited according to the AASHTO (American Association of State Highway and Transportation Officials) Accreditation Program.
 - 5. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
 - 6. CMET: A Construction Materials, Engineering & Testing agency which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
 - 7. Laboratories accredited by Standards Council of Canada (SCC).
 - 8. Laboratories accredited by the National Research Council of Canada (NRC) Canadian Construction Materials Centre (CCMC).
 - 9. CWI: A weld inspector certified by the American Welding Society (AWS) as an AWS Certified Welding Inspector (CWI).
 - 10. CWB Inspector: A weld inspector certified by the Canadian Welding Bureau (CWB) as an CWB Certified Welding Inspector.
 - 11. PTI Level 2: A post-tensioning inspector certified by the Post-Tensioning Institute (PTI) as a PTI Level 2 Post-Tensioning Inspector.
 - 12. AAMA: A testing agency accredited according to the American Architectural Manufacturers Association.

- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies and mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to the Owner, Engineer, and Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer or Owner.
 - 2. Notify Engineer and Owner 7 days in advance of dates and times when mockups will be constructed.
 - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Obtain Engineer's and Owner's approval of mockups before starting work, fabrication, or construction.
 - a. Allow 7 days for initial review and each re-review of each mockup.

- 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
- 7. Approved Mockup's may be integrated into final work. Demolish and remove nonapproved mockups when directed unless otherwise indicated by the Owner or Engineer.
- L. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

1.11 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and

conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

- E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar qualitycontrol services required by the Contract Documents as a component of Contractor's qualitycontrol plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to Owner, Engineer testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.12 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

- A. PSI
- B. Ninyo and Moore
- C. Tolunay Engineering Group

3.2 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Engineer.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.3 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for Section "Cutting and Patching" as well as other the technical specification sections.
- C. Protect construction exposed by or for quality-control service activities.
- D. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Divisions 02 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption or permanent services and systems.
 - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.

7. Engineer's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

CUTTING AND PATCHING

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.

- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION 01 73 29

SECTION 01 74 23 - PERIODIC AND FINAL CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.
 - 1. Special cleaning requirements for specific elements of Work are included in appropriate Sections of Divisions 02 through 16.
- B. General Project closeout requirements are included in Section "Closeout Procedures."
- C. Environmental Requirements: Conduct cleaning and waste disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
 - 1. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
 - 2. Burning or burying of debris, rubbish or other waste material on the premises will not be permitted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.

PART 3 - EXECUTION

1.1 PERIODIC CLEANING

- A. General: Provide periodic cleaning operations at the following intervals.
 - 1. Publicly Accessible Areas: Clean all surfaces at least daily at the completion of work in each area before returning the area to service.

- 2. Secured Construction Areas: Clean all surfaces weekly to maintain a clean and safe construction site.
- B. Protection: Provide the following temporary protective measures during construction.
 - 1. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion
 - 2. Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period
 - 3. Contractor shall utilize temporary containment measures to prevent the spread of contaminated air. Contractor shall coordinate all temporary containment measures with the Owner's representative.
- C. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Clean Project site in areas disturbed by construction activities, including landscape areas affected by construction. Remove all waste materials, litter, demolition debris, abrasive blasting agents, and foreign substances. Sweep paved areas broom clean. Remove chemical spills, stains, and other foreign deposits.
 - a. Comply with requirements of NFPA 241 for removal of combustible waste materials and debris.
 - b. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - c. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
 - 2. Remove tools, construction equipment, machinery and surplus material from the publicly accessible areas.
 - 3. Clean exposed exterior and interior hard-surfaced finishes affected by construction activities to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - 4. Broom clean concrete floors in occupiable spaces. Broom clean concrete floors in unoccupied spaces if requested by the Owner.
 - 5. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - 6. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials.

Polish mirrors and glass, taking care not to scratch surfaces. Schedule chipped or broken glass and other damaged transparent materials to be replace in a timely manner.

- 7. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
- 8. Inspect disposable and permanent air filters. Replace disposable filters and cleans permanent air filters if they are contaminated with construction debris beyond a usable limit. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.
- 9. Inspect light fixtures, lamps, globes and reflectors. Clean these elements if they are contaminated with construction debris beyond a usable limit.
- 10. Leave publicly accessible areas of the Project Site clean and ready for occupancy.

3.2 FINAL CLEANING

- A. General: Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Clean Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
 - 2. Remove tools, construction equipment, machinery and surplus material from the site.
 - 3. Remove snow and ice to provide safe access to the building.
 - 4. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - 5. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
 - 6. Broom clean concrete floors in all construction spaces.
 - 7. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap, clean according to manufacturer's recommendation is visible soil or stains remain.
 - 8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - 9. Remove labels that are not permanent labels.
 - 10. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.

- 11. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
- 12. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- 13. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.
- 14. Clean food service equipment to a sanitary condition, ready and acceptable for its intended use.
- 15. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.
- 16. Leave Project clean and ready for occupancy.
- B. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during remainder of construction period.
- C. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of in a lawful manner.
 - 1. Where extra materials of value remain after completion of associated construction, that have become Owner's property, relocate or dispose of these materials as directed by the Owner.

END OF SECTION 01 74 23

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
 - A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Submittal of warranties.
 - 3. Final cleaning.
- B. Related Sections:
 - 1. Division 01 Section "Payment Procedures"
 - 2. Division 01 Section "Periodic and Final Cleaning".
 - 3. Division 01 Section "Project Record Documents"
 - 4. Closeout requirements for specific construction activities are included in appropriate Sections 02 through 16.

1.3 SUBSTANTIAL COMPLETION

- A. Submittals for Substantial Completion: Complete the following a minimum of [ten] days prior to requesting field review for of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals referenced in this and other Sections.
 - 3. Submit as-built drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
 - 4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

- 5. Obtain and submit releases enabling Owner unrestricted use of Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
- 6. Submit an Application for Payment that coincides with, or first follows, date Substantial Completion is claimed, show 100% completion for portion of Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and statement showing an accounting of changes to Contract Sum.
 - a. If 100% completion cannot be shown, include list of incomplete items, value of incomplete construction, and reasons Work is not complete.
- B. Procedures for Substantial Completion: Before requesting field review for Certification of Substantial Completion, complete the following. List exceptions in request.
 - 1. Advise Owner of pending insurance change-over requirements.
 - 2. Deliver tools, spare parts, extra stock, and similar items.
 - 3. Make final change-over of permanent locks and transmit keys to Owner. Advise Owner's personnel of change-over in security provisions.
 - 4. Complete start-up testing of systems, and instruction of Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from site, along with construction tools, mock-ups, and similar elements.
 - 5. Advise Owner of changeover of utilities if applicable.
 - 6. Participate with Owner in conducting inspection and walkthrough.
 - 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 8. Complete final cleaning requirements, including coating touchups.
 - 9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- C. Field Review Procedures: On receipt of request for field review, Engineer will either proceed with the review of work or advise Contractor of unfilled requirements. Engineer will prepare Certificate of Substantial Completion following inspection, or advice Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Engineer will repeat field review when requested and assured that Work has been substantially completed.
 - 2. Engineer will provide one repeat inspection under its contract with Owner. Subsequent field reviews shall be at Contractor's expense.
 - 3. Results of completed field reviews will form basis of requirements for final acceptance.

1.4 FINAL COMPLETION PROCEDURES

- A. Submittals for Final Completion: Before requesting final field review for certification of final acceptance and final payment, complete the following. List exceptions in request.
 - 1. Submit final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

- 2. Submit an updated final statement, accounting for final additional changes to Contract Sum.
- 3. Submit certified copy of Engineer's final field review list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and list has been endorsed and dated by Engineer.
- 4. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- 5. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of date of Substantial Completion, or when Owner took possession of and responsibility for corresponding elements of Work.
- 6. Submit consent of surety to final payment.
- 7. Submit final liquidated damages settlement statement.
- 8. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

PART 2 - PRODUCTS (NOT APPLICABLE).

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment or materials that require regular maintenance to meet with Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives.

END OF SECTION 01 77 00

SECTION 01 78 36 - PRODUCT WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties required by Contract Documents, including manufacturers' standard warranties on products and special warranties.
 - 1. Refer to General Conditions for terms of Contractor's period for correction of Work.
- B. Related Sections: Following Sections contain requirements that relate to this Section:
 - 1. Division 01 Section "Submittal Procedures" specifies procedures for submitting warranties.
 - 2. Division 01 Section "Closeout Procedures" specifies contract closeout procedures.
 - 3. Divisions 02 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in Contract Documents.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of warranty on Work that incorporates products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by warranty has failed and been corrected by replacement or rebuilding, reinstate warranty by written endorsement. Reinstated warranty shall be equal to original warranty with equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by warranty has failed replace or rebuild Work to an acceptable condition complying with requirements of Contract Documents.

Contractor is responsible for cost of replacing or rebuilding defective Work regardless of whether Owner has benefited from use of Work through portion of its anticipated useful service life.

- D. Owner's Recourse: Expressed warranties made to Owner are in addition to implied warranties, and shall not limit duties, obligations, rights and remedies otherwise available under law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: Owner reserves right to reject warranties and to limit selection to products with warranties not in conflict with requirements of Contract Documents.
- E. Where Contract Documents require a special warranty, or similar commitment on Work or part of Work, Owner reserves the right to refuse to accept Work, until Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.4 SUBMITTALS

- A. Submit written warranties to Engineer prior to date certified for Substantial Completion. If Engineer's Certificate of Substantial Completion designates commencement date for warranties other than date of Substantial Completion for Work, or designated portion of Work, submit written warranties upon request of Engineer.
- B. When designated portion of Work is completed and occupied or used by Owner, by separate agreement with Contractor during construction period, submit properly executed warranties to Engineer within 15 days of completion of that designated portion of Work.
 - 1. When Contract Documents require Contractor, or Contractor and subcontractor, supplier or manufacturer to execute a special warranty, prepare written document that contains appropriate terms and identification, ready for execution by required parties. Submit draft to Owner through Engineer for approval prior to final execution.
- C. Prepare written document utilizing appropriate form, ready for execution by Contractor, or by Contractor and subcontractor, supplier or manufacturer. Submit draft to Owner through Engineer for approval prior to final execution.
 - 1. Refer to Divisions 02 through 16 Sections for specific content requirements and particular requirements for submittal of special warranties
- D. Electronically bind warranties, bonds, and operation and maintenance manuals in a PDF documents and electronically submit documents to the Owner's Representative and Engineer.
- E. Hard Copy: If requested by the Owner's Representative bind warranties, bonds, and operation and maintenance manuals in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8.5 inch by 11inch paper. Hard copy submittal shall be limited to one copy.
 - 1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark tab to identify product or installation. Provide typed description of product or

installation, including name of product, and name, address, and telephone number of Installer.

2. Identify binder on front and spine with typed or printed title "WARRANTIES," Project title or name, and name of Contractor.

END OF SECTION 01 78 36
SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section describes the administrative and procedural requirements of the Contractor for preparation of Project Record Documents.
- B. Store record documents and samples in the field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry, legible condition. Make documents and samples available at all times for inspection by the Engineer.

1.3 RECORD DRAWINGS

- A. During the construction period, maintain a set of Contract Drawings and Shop drawings for Project Record Document purposes. Mark with red erasable colored pencil all deviations from the original drawings. Electronic PDF record documents may be maintained instead of a hardcopy.
- B. Upon Substantial Completion of the project, incorporate all changes into the documents and stamped them "As-Built". Engineer will make original electronic documents available to Contractor. Contractor shall email electronic "As-Built's" to the Owner's Representative and Engineer.

1.4 RECORD SPECIFICATIONS

- A. During the construction period, maintain one copy of the project specifications, including addenda and modifications issued, for Project Record Document purposes. Mark any changes or modifications to the Specifications. Electronic PDF record documents may be maintained instead of a hardcopy.
- B. Upon completion of the Project mark-up, and email record specifications to the Owner's Representative and Engineer for their own records.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 RECORDING

A. Post changes and modifications to the documents as they occur. Do not wait until the end of the project. The Engineer or Owner's Representative may periodically review record documents to assure compliance with this requirement.

END OF SECTION 01 78 39

SECTION 03 01 01 - SURFACE PREPARATION FOR PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the provisions of all labor, materials, supervision and incidentals required to locate and remove all delaminated and unsound concrete, including preparation of cavities created by removal to receive patching material and preparation of existing surface spalls and preparation of exposed reinforcement to receive patching material.
- B. Related Sections include the following:
 - 1. Division 03 Section "Concrete Repair Materials."
- C. Contractor shall become fully acquainted with the existing job site conditions and discuss the accessibility of the work areas with the Owner.
- D. Provide barricades around the work area with appropriate signage to keep non-construction people from entering work area.
- E. Contractor shall provide all traffic cones or barriers to direct traffic during the repair of the facility. This work shall be done in consultation with the Owner.

1.3 REFERENCES

- A. Applicable Standards:
 - 1. American Concrete Institute (ACI), latest version:
 - a. ACI 301 Specifications for Structural Concrete
 - b. ACI 546.1R Guide for Repair of Concrete Bridge Structures
 - c. ACI 546R Concrete Repair Guide
 - 2. International Concrete Repair Institute (ICRI):
 - a. ICRI 310.1R Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
 b. ICRI 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
 c. ICRI 320.2R Guide for Selecting and Specifying Materials for Repair of Concrete Surfaces

PART 2 - PRODUCTS AND MANUFACTURERS

2.1 PRODUCTS

- A. Cementitious epoxy coating for existing exposed non-prestressed steel reinforcement:
 - 1. BASF: MasterEmaco P 124
 - 2. Sika Chemical Corporation: Armatec 110 EpoCem
 - 3. Euclid Chemical: Duralprep A.C.
 - 4. MAPEI Corporation: Planibond 3C

2.2 SUBSTITUTIONS

- A. Substitutions may be considered provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.
- B. Changes in products required to suit temperature and environmental conditions at the time of material application shall be specified as separate line items by the Contractor showing credit or additions to the price for the various tasks.
- C. In using the selected products, follow strictly the manufacturer's specifications and directions for mixing and application. Also heed all label warnings by manufacturer. Make application in accordance with applicable safety laws.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Vertical Surfaces
 - 1. Contractor shall sound only vertical surfaces in designated areas that show evidence of cracking and/or staining. Cracks, usually horizontal in orientation along beam faces, and vertical in orientation near column corners are indicators of delaminated concrete.
- B. Delaminated areas: Once located by Contractor, Contractor shall further sound and mark the concrete to define limits.
- C. Spalls: Contractor shall locate spalls by visual inspection, and mark boundaries.
- D. Engineer may mark additional unsound concrete for removal.
- E. Areas to be removed shall be rectangular to provide adequate appearance.
- F. Contractor shall locate and determine the depth of all embedded reinforcement, electrical conduit, post-tensioned tendons, in repair area and mark these locations for reference during concrete removal. Do not cut any embeds unless approved by Engineer.

3.2 REPAIR PREPARATION

- A. Contractor shall review all marked removal and preparation areas and request clarification by Engineer of shoring requirements in questionable areas. Shores shall be in place prior to concrete removal and cavity preparation in any area requiring shores.
- B. All delaminated, spalled and unsound concrete shall be removed from within marked boundary to minimum depth of 3/4 inch (19mm) using 15 lb (65N) to 30 lb (130N) air hammers equipped with chisel point bits. When directed by Engineer, chipping hammers less than 15 lb (65 N) shall be used to minimize damage to sound concrete. If delaminations exist beyond minimum removal depth, chipping shall continue until all unsound and delaminated concrete has been removed from cavity.
- C. Where embedded reinforcement, anchorages, or electrical conduit is exposed by concrete removal, proceed with caution to avoid damaging it during removal of unsound concrete. Contractor shall perform additional removal around and beyond perimeter of reinforcement for minimum of 3/4 inch (19mm) along entire length affected at no cost to Owner.
- D. If rust is present on embedded reinforcement where it enters sound concrete, additional removal of concrete along and beneath reinforcement will be required. Additional removal shall continue until non-rusted reinforcement is exposed, or may be terminated per Engineer's instructions.
- E. Removal of concrete for repair requires saw cutting 3/4 inch (19mm) into horizontal floor slab of the perimeter of the area marked for removal, unless a more stringent criteria applies. For vertical and overhead surfaces, marked areas shall be saw-cut, ground, or chipped to depth of 1/2 inch (12 mm) into existing concrete, measured from original surface.
- F. Edges of patch areas shall be dressed perpendicular to member face to eliminate feather edges. All edges shall be straight and patch areas square or rectangular-shaped. Do not overcut patch corners during sawcutting, chipping, or grinding.
- G. Contractor shall exercise extra caution during saw cutting to avoid damaging existing reinforcement particularly post-tensioned tendons, sheathing, electrical conduit and any other embedded items near surface of concrete. Any damage to existing embedded items shall be repaired by Contractor with Engineer's approved methods at no additional cost to Owner.

3.3 INSPECTION OF REPAIR PREPARATION

- A. After removals are complete, but prior to final cleaning, cavity and exposed reinforcement shall be inspected by Contractor and subject to verification by Engineer for compliance with requirements of this Section.
- B. Contractor shall inspect embedded reinforcement and conduits exposed within cavity for defects due to corrosion or damage resulting from removal operations. Contractor shall notify Engineer of all defective and damaged reinforcement or conduits. Replacement of damaged or defective reinforcement/conduits shall be performed in accordance to the requirements of this Section.

3.4 CLEANING OF REINFORCEMENT

- A. All exposed reinforcing steel shall be cleaned and free of rust and other contaminants. Cleaning shall be accomplished by abrasive methods. Cleaning shall be completed immediately before patch placement to ensure that base metal is not exposed to elements and further rusting for extended periods of time. Use powered wire brushes in locations where reinforcing steel cannot be cleaned by abrasive-blasting or water-blasting.
- B. All exposed reinforcing steel shall be coated with a corrosion inhibiting product specified in the Section "Products" in this specification prior to mortar application. Protect prepared surfaces from damage prior to and during patch placement.

3.5 REINFORCEMENT IN REPAIR AREAS

- A. All embedded reinforcement exposed during surface preparation that has lost more than 10% of original cross-sectional area due to corrosion shall be considered defective. Defective reinforcement shall be supplemented in accordance to Engineer's instructions and shall be paid for by Owner.
- B. Damaged reinforcement caused during removals made by Contractor shall be supplemented in accordance to Engineer's instructions and shall be paid for by Contractor.
- C. Supplement defective or damaged embedded reinforcement of equal diameter with a Class B splice in accordance to ACI–318 beyond damaged portion of reinforcement. Secure new reinforcement to existing reinforcement with approved anchors. Supplemental steel shall be A615 Grade 60 steel except where more stringent requirements apply in drawings and/or details.
- D. Loose reinforcement exposed during surface preparation shall be securely anchored prior to patch placement. Loose reinforcement shall be adequately secured with wire ties to bonded reinforcement or with drilled-in anchors. Drilled-in anchors shall be TW-1400 anchors by ITW Ramset/Red Head, Tie-Wire Wedge-All anchors by Simpson Strong-Tie, or approved equal. Engineer will determine adequacy of wire ties and anchors. Securing loose reinforcement is incidental to surface preparation.
- E. Minimum of 1-1/2 inch (38 mm) concrete cover shall be provided over all new/existing reinforcement except where more stringent requirements apply in drawings and/or details.

3.6 PREPARATION OF CAVITY FOR PATCH PLACEMENT

- A. Cavities will be examined prior to commencement of patching operations. Sounding surface shall be part of examination. Delaminations noted during sounding shall be removed as specified in this Section.
- B. All debris shall be removed from site prior to commencement of patching.

END OF SECTION 03 01 01

SECTION 03 01 05 – CONCRETE REPAIR MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the provisions of all labor, materials, supervision and incidentals required to prepare deteriorated or damaged concrete surfaces and install patching materials to restore original surface condition and integrity.
- B. Section includes all labor, materials, services, equipment, and hardware required in conjunction with or related to the forming, delivery, and placement of all concrete work.
- C. Related Sections include the following:
 - 1. Division 01 Section "Structural Testing and Inspections."
 - 2. Division 03 Section "Surface Preparation for Patching."
- D. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.

1.3 REFERENCES

- A. Applicable Standards:
 - 1. American Concrete Institute (ACI):
 - a. ACI 301R Specifications for Structural Concrete
 - b. ACI 305R Hot Weather Concreting
 - c. ACI 306R Cold Weather Concreting
 - d. ACI 308R Guide to Curing Concrete
 - e. ACI 318R Building Code Requirements for Structural Concrete
 - f. ACI 548.1R Guide for Use of Polymers in Concrete
 - 2. International Concrete Repair Institute (ICRI):
 - a. ICRI 310.1R Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
 b. ICRI 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
 c. ICRI 320.2R Guide for Selecting and Specifying Materials for Repair of Concrete Surfaces

- 3. American Society for Testing and Materials (ASTM):
 - a. ASTM C109 Test Method for Compressive Strength of Hydraulic Cement Mortars
 - b. ASTM C39 Test Method for Compressive Strength of Cylindrical Concrete Specimens
 - c. ASTM C 1583 Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension

1.4 INFORMATION SUBMITTALS

- A. Make submittals in accordance with requirements of Division 01 and as specified in this Section.
- B. Product Data: Product data sheets, Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS), and installation instructions for each product selected.
- C. Material Certificates:
 - 1. Where product data does not indicate material compatibility of independent products that form a system assembly; provide a written statement of material compatibility from the system assembly manufacturer. System assembly shall include:
 - a. Concrete Repair Materials
 - b. Epoxy Bonding Agents
 - c. Epoxy Coatings for Reinforcement

1.5 ACTION SUBMITTALS

- A. Proposed Means and Methods:
 - 1. Contractor shall submit procedures to protect fresh resurfacing, patches, and concrete from weather and traffic.

1.6 QUALITY ASSURANCE

- A. Work shall conform to requirements of the American Concrete Institute (ACI) and International Concrete Repair Institute (ICRI) as applicable except where more stringent requirements are shown on Drawings or specified in this Section.
- B. Source Limitations: For each independent repair location, use concrete repair materials, epoxy bonding agents, epoxy coatings for reinforcement, galvanic anodes, and repair material admixtures of a single manufacturer.
- C. Qualifications
 - 1. Manufacturer's Qualifications: Companies furnishing the repair materials shall have a proven track record of at least five years. Furthermore, they shall have in existence a

program of training, certifying, and supporting a nationally organized program of approved contractors. Evidence of this shall be made available to the Engineer/Owner upon request.

- 2. Contractor's Qualifications: Contractor performing the work shall be an approved contractor by the manufacturer furnishing the repair materials and shall have no less than five years of experience in the various types of concrete repair work required in this project. Upon request by the Engineer, a notarized certification from the manufacturer attesting to the training shall be submitted to the Engineer/Owner.
- 3. Applicator's Qualifications:
 - a. Concrete repair work shall only be performed by contractors who have successfully used this process on at least three similar structural repairs of equal scope which have performed successfully for a minimum period of five years.
 - b. Only adequately trained and experienced personnel shall be used on the job.

PART 2 - PRODUCTS

2.1 CONCRETE REPAIR MATERIALS

- A. Polymer Modified Mortar for Vertical Repairs:
 - 1. BASF Construction Chemicals; MasterEmaco N 425
 - 2. Sika Corporation; SikaTop 123 Plus
- B. Non-Polymer Modified Form And Pour Materials:
 - 1. BASF Construction Chemicals; MasterEmaco S 440 or MasterEmaco S 466 CI
 - 2. Sika Corporation; Sikacrete 211 or Sikacrete 321 FS

2.2 ACCESSORY PRODUCTS

- A. Bonding Agent:
 - 1. Three-component, cementitious, epoxy-modified bonding agent for bonding new concrete to existing concrete.
 - a. BASF Construction Chemicals; MasterEmaco P 124
 - b. Sika Corporation; Armatec 110 EpoCem

2.3 SUBSTITUTIONS

A. Product substitutions may be considered, provided, complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.

YES Prep 9000 W Belfort Façade Repairs Houston, Texas

B. Changes in products required to suit temperature, environmental conditions, and local VOC regulations at the time of material application shall be specified as separate line items by the Contractor showing credit or additions to the price for the various tasks.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Application Planning
 - 1. In using the specified products of this Section, follow strictly the Manufacturer's specifications and written instructions for mixing and application.

3.2 SURFACE PREPARATION

- A. Concrete surface to which the repair material is to be applied shall be exposed parent concrete, free of loose and unsound materials. Preparation of cavity to receive new repair material shall be in accordance to Section "Surface Preparation for Patching" and manufacturer's instructions.
- B. Concrete Surface Inspection: Ensure that the surface and ambient temperature is at least 45°F (7°C) and rising at the time of application.

3.3 PATCHING WITH REPAIR MORTAR

- A. Bonding Agent
 - 1. Apply a scrub coat of the repair mortar in strict accordance with manufacturer's recommendations. Alternatively, a bonding agent may be applied on the prepared surface prior to placement of the repair mortar.
 - 2. If bonding agent dries, cavity shall not be patched until it has been re-cleaned and prepared as indicated in Section "Surface Preparation for Patching." Bonding agent shall not be applied to more cavities than can be patched within 15 minutes by available manpower.
 - 3. Patching materials shall be placed immediately following bonding agent application in strict accordance with manufacturer's instructions.
- B. Mortar Application
 - 1. Condition repair mortar material to 65°F-80°F (18°C-26°C) unless otherwise recommended by the manufacturer. Materials beyond this range of temperature shall not be used.
 - 2. Mix the components in a clean container free of contaminants as recommended by the manufacturer.

- 3. Thoroughly blend components and aggregates with portable mixers to a uniform and homogenous mixture. Small batches of one quart or less may be mixed by spatulas, palette knives or similar devices.
- 4. Mixing should be accomplished within three minutes when using Jiffy mixer or five minutes when mixed by hand.
- 5. Apply mortar by means suitable for the consistency of the mortar mix and the size of the repair.
- 6. Use appropriate forms as required for retaining mortar if mixed to a flowable consistency.
- 7. Consolidate the mortar thoroughly to remove entrapped air.
- 8. Supplemental wire mesh shall be required for delamination and spall repairs greater than 4 square feet (0.4 square meter) in area and greater than 2 inch (50 mm) depth. Fresh bonding grout is required between successive lifts of patching material.
- 9. Finish surface of mortar to match the texture and contours of existing concrete.

3.4 CURING

- A. Immediately after finishing, keep patch material continually moist for at least 24 hours. Continue curing for first 7 days after patch placement. During initial and final curing periods maintain patch material above 50°F.
- B. Prevent rapid drying at end of curing period.
- C. Provide additional curing as required by manufacturer's recommendations.

3.5 CLEANUP

- A. Protect surfaces surrounding the work areas against spillage.
- B. Material spillage shall be cleaned before it sets and becomes difficult to remove.
- C. Cleanup all portions of the existing structure that are soiled or stained in the process of concrete repair work.

3.6 FIELD QUALITY CONTROL

- A. Responsibilities
 - 1. Contractors Responsibility: Contractor is responsible for performing continuous field quality control during the progress of work.
- B. Minimum Quality Control Requirements

- 1. Ensure edges of resurfacing and repairs are saw cut to prevent feather edges. Ensure corners of the repair are not overcut.
- 2. Ensure repair material is placed within the epoxy bonding agent open items.
- 3. Review material expiration dates and remove expired materials from the project site.
- 4. Accurately measure and monitor the addition of water and aggregate extension when mixing repair mortar or concrete.
- 5. Monitor repair material working times and dispose of all materials that have exceeded the manufacturer's published working time.
- 6. Patched areas shall be sounded by the Contractor after curing for 72 hours. Contractor shall repair all hollowness detected by removing and replacing patch or affected area at no cost to Owner.
- 7. If shrinkage cracks appear in patch area after the initial curing period is concluded, the patch in question shall be considered unacceptable, and it shall be removed and replaced by Contractor at no cost to Owner.
- C. Acceptance of Work
 - 1. Acceptance of completed concrete repair will be in accordance to ACI 301.

END OF SECTION 03 01 05

SECTION 04 01 20 - MASONRY RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes restoration and cleaning of brick masonry as follows:
 - 1. Repairing brick masonry, including replacing damaged units.
 - 2. Repairing cracks in brick masonry.
 - 3. Repointing mortar joints.
- B. Related Sections include the following:
 - 1. Division 7 Section "Sheet Metal Flashing and Trim."
 - 2. Division 7 Section "Joint Sealants."
 - 3. Division 7 Section "Masonry Coating."
- C. Allowances: Quantity allowances for brick masonry restoration are specified in Division 1 Section "Allowances" and may be indicated on the Bid Form or in Division 1 Section "Task Items."
 - 1. Perform brick masonry restoration work included in quantity allowances only as authorized. Authorized work includes work indicated by project drawings and specifications or as indicated by Engineer in writing.
 - 2. Notify Engineer weekly of extent of work performed that is attributable to quantity allowances. Provide detailed notification in writing for specific work items and units completed.
 - 3. Perform work that exceeds quantity allowances only as authorized by Change Orders. Work performed in excess of allowed quantities without prior approval from Engineer is subject to rejection for payment.
 - 4. See Division 1 Section "Unit Prices" for additional requirements.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include recommendations for application and use. Include test data substantiating that products comply with requirements.
- B. Shop Drawings: Submit shop drawings for specific work items as indicated by contract documents or Engineer.
- C. Samples for Verification: Before erecting mockup, submit samples of the following:

- 1. Each type of exposed masonry unit to be used for replacing existing units.
 - a. For each brick type, provide straps or panels containing at least four bricks. Submit sufficient samples to show the full range of size, color, and/or finish variations that will occur in the final product.
- 2. Each type of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Include with each sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.
- D. Qualification Data: For restoration specialists and chemical cleaner manufacturer, if requested.
- E. Restoration Program: For each phase of restoration process, provide detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials on building and Project site.
 - 1. Include methods for keeping pointing mortar damp during curing period.
 - 2. If materials and methods other than those indicated are proposed for any phase of restoration work, provide a written description, including evidence of successful use on comparable projects, and a testing program to demonstrate their effectiveness for this Project.

1.4 QUALITY ASSURANCE

- A. Restoration Specialist Qualifications: Engage an experienced, preapproved masonry restoration firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance for a minimum of ten (10) years.
 - 1. Field Supervision: Restoration specialist firms shall maintain experienced fulltime supervisors on Project site during times that brick masonry restoration and cleaning are in progress. Supervisors shall not be changed during Project except for causes beyond the control of restoration specialist firm.
- 2. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.
- B. Brick Manufacturer Qualifications: A firm regularly engaged in manufacturing brick masonry units of similar size and complexity as those required for the Work.
- C. Source Limitations: Obtain each type of material for masonry restoration (face brick, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties for duration of project.

- D. Mockups: Prepare mockups of restoration and cleaning as follows to demonstrate aesthetic effects and qualities of materials and execution. Prepare mockups on existing walls under same weather conditions to be expected during remainder of the Work. Do not proceed with work until mockups have been observed and approved by Engineer.
 - 1. <u>Repointing</u>: Rake out joints in two separate areas approximately 48 inches (1200 mm) high by 48 inches (1200 mm) wide for each type of repointing required. Repoint only one of two areas.
 - a. The raked out area will be to demonstrate material removal and surface preparation for repointing and for demonstrating the worker's ability to use power-operated grinding tools for mortar removal without damaging masonry surfaces.
 - b. The repointed area will be to demonstrate the completed repointing, including aesthetic qualities and craftsmanship
 - 2. <u>Removing and Resetting Brick Masonry</u>: Remove and reset brick masonry in an area 36 inches by 36 inches to demonstrate the completed work including aesthetic qualities and craftsmanship.

Approval of mockups is for other material and construction qualities specifically approved by Engineer in writing.

Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Engineer in writing.

Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons.
- B. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store all cementitious and mortar materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Follow all manufacturer's recommendations for product storage, protection, and handling.

1.6 PROJECT CONDITIONS

A. Repoint mortar joints and repair masonry only when air temperature is between and 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least 7 days after completion of work.

- B. Cold-Weather Requirements: Comply with the following procedures for masonry repair and mortar-joint pointing:
 - 1. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 7 days after repair and pointing.
- C. Hot-Weather Requirements: Protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above.
- D. Clean masonry surfaces only when air temperature is 50 deg F (10 deg C) and above and is predicted to remain so for at least 7 days after completion of cleaning.

1.7 SEQUENCING AND SCHEDULING

- A. Order replacement materials at earliest possible date, to avoid delaying completion of the Work. Provide written notification along with bid information if delays because of material lead times are anticipated. Requests for extensions of project completion date due to delays in material deliveries will not be considered.
- B. Phase brick masonry work in a logical and organized manner to prevent moisture infiltration from weather, cleaning, and other work activities. The general sequence of restoration work shall be:
 - 1. Pre-clean surfaces if needed.
 - 2. Perform masonry repairs.
 - 3. Perform other repair work.
 - 4. Repoint mortar joints.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 MASONRY MATERIALS

A. Face Brick:

BRICK MASONRY RESTORATION

- 1. General: Comply with referenced standards and other requirements indicated below applicable to each form of brick required.
- 2. Size: To match existing size at brick veneer.
- 3. Special Shapes: Provide special molded shapes where indicated and for application requiring brick of form, size and finish on exposed surfaces which cannot be produced from standard brick sizes by sawing. The Contractor shall furnish all required sizes and shapes as required to complete the work.
- 4. Facing Brick: ASTM C 216, and as follows:
 - a. Grade SW.
 - b. Type FBS (normal size and color variations).
 - c. Compressive Strength: 8,000 psi, average of five tests per ASTM C 67.
 - d. Application: Use where brick is exposed, unless otherwise indicated.
 - e. Texture and Color: Provide brick similar in color, texture, and physical properties to match existing.
 - f. Wherever shown to "match existing", provide face brick of matching color, texture and size as existing adjacent brickwork.

2.3 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type II.
 - 1. Provide white cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
 - 2. Products containing "Masonry Cement" or "Mortar Cement" in lieu of Portland cement, in whole or in part, will not be allowable.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Mortar Sand: ASTM C 144, unless otherwise indicated.
 - 1. Color: Provide natural sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.
 - 2. For pointing mortar, provide sand with rounded edges.
 - 3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.
- D. Water: Potable.

2.4 MISCELLANEOUS MATERIALS

A. Helical Ties: Type 304 stainless-steel spiral rods with axial stiffener rib designed to anchor to backing and veneer. Anchors are flexible in plane of veneer but rigid perpendicular to it.

- B. Through-Wall Flashing (Metal and Membrane): See Division 7 Section "Sheet Metal Flashing and Trim" and Division 7 Section "Self-Adhering Membrane Flashing" for specifications for through wall flashing materials and installation.
 - 1. Flashing shall be non-corrosive and dimensionally stable.
 - 2. Field measure window openings and cavity dimensions prior to fabrication and installation.

2.5 MORTAR MIXES

- A. Measurement and Mixing: Dry mortar materials shall be mixed in a controlled environment by volume or equivalent weight by a known measure. Field mixing of dry materials shall not be allowed. Mix materials in a clean, mechanical batch mixer. Pre-bagged mortar mixes are preferred.
 - 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using selected ingredients. Do not alter specified proportions without Engineer's approval.
- C. Do not use admixtures of any kind in mortar, unless otherwise indicated.
- D. Mortar Proportions: Mix mortar materials in the following proportions:
 - 1. Pointing Mortar for Brick: Comply with ASTM C 270, Proportion Specification, **<u>Type N</u>**, (1 part portland cement, 1 part lime, and 6 parts sand).
 - 2. Rebuilding (Setting) Mortar for Brick: Same as pointing mortar.
 - 3. Mortars containing "Masonry Cement" or "Mortar Cement" in addition to or in lieu of Portland Cement are <u>not</u> permitted.

PART 3 - EXECUTION

3.1 **PROTECTION**

- A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work.
 - 1. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.

- B. Prevent mortar from staining face of surrounding masonry and other surfaces.
 - 1. Cover sills, ledges, and projections to protect from mortar droppings.
 - 2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
 - 3. Immediately remove mortar in contact with exposed masonry and other surfaces.
 - 4. Clean mortar splatters from scaffolding at end of each day.
- C. If required, remove gutters and downspouts adjacent to masonry and store where indicated by Owner during masonry restoration and cleaning. Reinstall when masonry restoration and cleaning is complete.
 - 1. Provide temporary rain protection and drainage during work to direct water away from building.

3.2 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
 - 1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- C. Notify Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- D. Remove in an undamaged condition as many whole bricks as possible.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 - 2. Store brick for reuse, as indicated.
 - 3. Deliver cleaned brick not required for reuse to Owner, unless otherwise directed.
- E. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.
- F. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
- G. Lay replacement brick with completely filled bed and head joints, and collar joints where appropriate. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid. Maintain joint width for replacement units to match existing joints.

- 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
- 2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry, and at same time as repointing of surrounding area.

3.3 BRICK CRACK REPAIR

- A. Remove any cracked, spalled, or otherwise deteriorated brick masonry at crack. Remove also any brick masonry displaced more than 1/4-inch from the plane of the wall.
- B. Provide temporary stabilization to support adjacent masonry during work.
- C. Install new brick units.
- D. Repoint to matching existing.
- E. Install new supplementary helical wall ties on either side of crack, with spacing as directed by contract documents.

3.4 REANCHORING VENEERS WITH HELICAL TIES

- A. Install masonry repair anchors in horizontal mortar joints and according to manufacturer's written instructions. Install at not more than 16 inches (400 mm) o.c. vertically and 16 inches (400 mm) o.c horizontally, unless otherwise indicated. Do not penetrate new flashing.
- B.

3.5 REPOINTING MASONRY

- A. Rake out and repoint mortar joints to the following extent:
 - 1. All cracked, deteriorated, or weathered joints in areas indicated on project drawings:
 - a. Joints where mortar is missing or where they contain holes.
 - b. Cracked joints where cracks can be penetrated at least 1/4 inch (6 mm) by a knife blade 0.027 inch (0.7 mm) thick.
 - c. Cracked joints where cracks are 1/8 inch (3 mm) or more in width and of any depth.
 - d. Joints where they are worn back 1/4 inch (6 mm) or more from surface.
 - e. Joints where they are deteriorated to point that mortar can be easily removed by hand.
 - 2. Joints, other than those indicated as sealant-filled joints, where they have been filled with substances other than mortar.
- B. Do not rake out and repoint joints where not required.

- C. Rake out joints as follows:
 - 1. Remove mortar from joints to depth 2-1/2 times joint width, but not less than 3/4 inch (20 mm) or not less than that required to expose sound, unweathered mortar.
 - 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 - 3. Do not over-cut joints. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Engineer.
 - a. Contractor shall remove existing mortar by hand using mallet and chisels. Based on the repointing mockup, the Engineer may approve the use of power-operated grinders for mortar removal.

The use of power-operated grinders to remove existing mortar shall be authorized with the Engineer's written consent only, based on submission by Contractor of a satisfactory mockup and continued, demonstrated ability of operators to use tools without damaging masonry.

Engineer reserves the right to withdraw this consent <u>at any point</u> in the project if Contractor demonstrates an inability to maintain the mortar removal quality established by the mockup.

Masonry cut or otherwise damaged during mortar removal will be repaired or replaced at the Contractor's expense.

- D. Notify Engineer of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. Point joints as follows:
 - 1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen masonry-joint surfaces before pointing.
 - 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 1/4 inch until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
 - 3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 1/4 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer.
 - 4. Where existing bricks have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
 - 5. When mortar is thumbprint hard, tool joints to match original appearance of joints. Remove excess mortar from edge of joint by brushing.
 - a. Mortar joints shall be finished with a concave profile to match existing.

- F. Cure mortar by maintaining in thoroughly damp condition for at least 72 hours including weekends and holidays.
 - 1. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
 - 2. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
- G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.6 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or fiber brushes, and clean water, spray applied at low pressure.
 - 1. Do not use metal scrapers or brushes.
 - 2. Do not use acidic or alkaline cleaners.
- B. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean masonry debris from roof; remove debris from 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 FIELD QUALITY CONTROL

- A. Special Inspectors: Contractor will engage qualified independent inspectors as indicated to perform inspections and prepare test reports. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.
- B. Engineer's Project Representatives: Engineer will assign Project representatives to help carry out Engineer's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Engineer's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- C. Notify Engineer minimum <u>one week in advance</u> of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Engineer has had reasonable opportunity to make observations of work areas at lift device or scaffold location.

END OF SECTION 04 01 20

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

- A. Definition: Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated. Types of work in this section include rough carpentry for:
 - 1. Wood grounds, nailers, blocking, and sleepers.

1.3 QUALITY ASSURANCE

The Contractor is responsible for quality control, including workmanship and materials furnished by his subcontractors and suppliers.

- A. Lumber Standards: Comply with PS 20 and with applicable rules of the respective grading and inspecting agencies for species and products indicated.
- B. Source Inspection: Lumber of the specified species furnished under this section shall be inspected and comply with the grading rules of the appropriate following associations:
 - 1. Northeastern Lumber Manufacturer's Association, Inc. (NELMA).
 - 2. Southern Pine Inspection Bureau (SPIB).
 - 3. West Coast Lumber55 Inspection Bureau (WCLIB).
 - 4. Western Wood Products Association (WWPA).
 - 5. Redwood Inspection Service (RIS).
- C. Factory-mark each piece of lumber with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications and installation instructions for materials listed below:
 - 1. Wood grounds, nailers, blocking and sleepers
- B. Material Certificates: Where dimensional lumber is provided to comply with minimum allowable unit stresses, submit listing of species and grade selected for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values

for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.

- C. Wood Treatment Data: Submit treatment manufacturer's instructions for proper use of each type of treated material.
 - 1. Pressure Treatment: For each type specified, include certification by treating plant stating chemicals and process used, net amount of preservative retained and conformance with applicable standards.
 - 2. Water-Borne Preservatives: Include statement that moisture content of treated materials was reduced to a maximum of 15% prior to shipment to project site.

1.5 PRODUCT HANDLING

A. Delivery and Storage: Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and plywood and provide air circulation within stacks.

1.6 JOB CONDITIONS

A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of nailers, blocking, and similar supports to allow proper attachment of other work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lumber, General:
 - 1. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.
 - a. Provide dressed lumber, S4S, unless otherwise indicated.
 - b. Provide seasoned lumber with 19% maximum moisture content at time of dressing.
 - c. Provide unseasoned lumber with moisture content in excess of 19% allowed at time of dressing.
- B. Framing Lumber (2" through 4" thick) (Wd-Frm):
 - 1. For light framing (less than 6" wide), provide "Stud" grade lumber for stud framing and "Standard" grade for other light framing, any species.
 - 2. For structural light framing (less than 6" wide), provide the following grade and species:
 - a. Construction grade, any species.
 - b. Standard grade, any species.

- c. Utility grade, any species.
- 3. Any species and grade which meets or exceeds the following values:
 - a. Fb (minimum extreme fiber stress in bending); 1500 psi.
 - b. E (minimum modulus of elasticity); 1,500,000 psi.
- C. Boards (less than 2" thick):
 - 1. Concealed Boards: Where boards will be concealed by other work, provide lumber of 19% maximum moisture content (S-DRY) and of following species and grade:

Redwood Construction Common (RIS), Southern Pine No. 2 boards (SPIB), or any species graded construction boards (WCLIB or WWPA).

Redwood Merchantable (RIS), Southern Pine No. 3 boards (SPIB), or any species graded standard boards (WCLIB or WWPA).

- 2. Board Sizes: Provide sizes indicated or, if not indicated (for sheathing, subflooring and similar uses), provide 1" x 8" boards.
- D. Miscellaneous Lumber: Provide wood for support or attachment of other work including cant strips, bucks, nails, blocking, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, worked into shapes shown, with a moisture content of 15% maximum for lumber items not specified to receive wood preservative treatment.
 - 1. Grade: Construction Grade light framing size lumber of any species or board size lumber as required. Provide construction grade boards (RIS or WCLIB) or No. 2 boards (SPIB or WWPA).
- E. Miscellaneous Materials:
 - 1. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

2.2 WOOD TREATMENT

A. Preservative Treatment: Where lumber or plywood is indicated as "Trt-Wd" or "Treated," or is specified herein to be treated, comply with applicable requirements of American Wood Preservers Association (AWPA) Standards C2 (Lumber) and C9 (Plywood) and of American Wood Preservers Bureau (AWPB) Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

- 1. Pressure-treat above-ground items with water-borne preservatives complying with AWPB LP-2. After treatment, kiln-dry to a maximum moisture content of 15%. Treat indicated items and the following:
 - a. Wood cants, nailers, curbs, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
 - b. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.
 - c. Wood framing members less than 18" above grade.
- 2. Complete all fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- B. Inspection: Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
 - 2. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
 - 3. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.
 - 4. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.
- B. Wood Grounds, Nailers, Blocking and Sleepers:
 - 1. For roofing applications, edge nailers shall match thickness of insulation and cover board.
 - 2. For reroofing applications, replace existing nailers, blocking, and sleepers where missing or deteriorated. Supplement existing nailers, blocking, and sleepers as needed to match thickness of insulation and cover board.

- 3. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.
- 4. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.
- 5. Provide permanent grounds of dressed, preservative treated, key-bevelled lumber not less than 1-1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

END OF SECTION 061000

SECTION 07 19 00 – MASONRY COATING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. This Section includes coating to be applied to exterior masonry surfaces.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each joint sealant product required, including instructions for joint preparation and joint sealant application.
- B. Certificates: Submit certificates from manufacturers of joint sealants attesting that their products comply with Specification requirements and are suitable for the use indicated.
- C. Samples: Submit color samples as required by Owner.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Coating Material: Two gallons of type installed.
 - 2. See Section 01 77 00, "Closeout Procedures" for additional provisions.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience
- C. Owner reserves the right to provide continuous independent inspection of surface preparation and application of water repellent.

1.5 MOCK-UP

- A. Prepare a minimum representative surface 36 inch by 36 inch in size using specified materials and preparation and application methods on surfaces identical to those to be coated; approved mock-up constitutes standard for workmanship.
- B. Verify effectiveness of surface preparation.

- C. Verify performance of coating.
- D. Verify coating adhesion to substrate(s).
- E. Invite the attendance of Owner, Engineer, and Manufacturer's representative to observe preparation of mock-ups and to witness adhesion test.
- F. Obtain Owner, Engineer, and Manufacturer's approval of mock-ups.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying:
 - 1. Product name.
 - 2. Manufacturer.
 - 3. Color.
 - 4. Batch or lot number.
 - 5. Date of manufacture.
 - 6. Use-before date.

1.7 FIELD CONDIDTIONS

- A. Protect liquid materials from freezing.
- B. Do not apply coating when ambient temperature is lower than 50 degrees F or higher than 90 degrees F and per manufacturer recommendations.
- C. Do not apply coating when wind velocity is high enough to cause coating to be blown onto vegetation or surfaces not intended to be treated.
- D. Do not apply coating to exterior surfaces if rain is expected within 8 hours.

1.8 WARRANTY

- A. See Section 01 77 00, "Closeout Procedures", for additional warranty requirements.
- B. Correct defective Work within a five-year period after Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS AND MATERIALS

- A. Masonry Coatings:
 - 1. Sika
 - a. Sikaguard 557 W Elastocolor
 - b. Sikaguard 670 W

- 2. BASF Construction Chemical
 - a. MasterProtect HB 400
 - b. MasterProtect EL 750
- 3. Euclid Chemical Companya. TAMMSCOAT (with smooth finish)
- B. Coating color to be selected by Owner.

PART 3 - EXECUTION

- 3.1 EXAMINATION
 - A. Verify existing conditions before starting work.
 - B. Verify joint sealants are installed and cured.
 - C. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of water repellent.

3.2 PREPARATION

- A. Protection of Adjacent Work:
 - 1. Protect adjacent landscaping, property, and vehicles from drips and overspray.
 - 2. Protect adjacent surfaces not intended to receive coating.
- B. Prepare surfaces to be coated as recommended by manufacturer for best results.
- C. Remove and replace damaged masonry and repoint deteriorated masonry mortar. Do not start work until masonry mortar substrate is cured a minimum of 30 days and per manufacturer recommendations.
- D. Pressure clean masonry substrate of substances that could impair bond of wall coating including dust, dirt, oil, grease, loose particles, laitance, foreign materials, release agents, peeling, incompatible paints, encapsulates, coatings, chalk, mildew, fungus, and biological growth. Remove incompatible primers and re-prime substrate if applicable. Cleaning shall be performed per the manufactures written and published applications instructions and recommendation. Collect and legally dispose of runoff water and cleaning solutions as required by the authority's having jurisdiction.
- E. Allow surfaces to dry per manufacturer's specification before applying any primer or coatings. Refer to manufacturer's specification for maximum allowable masonry moisture content for application of primer or coating.

3.3 APPLICATION

A. Protect all surfaces not to be coated from drips, spills, or other unintended coating. Drips, spills, and other unintended coating shall be removed and repaired at no additional cost to the Owner.

- B. If using primer install primer per the manufactures written instructions and recommendations.
- C. Apply new acrylic wall coating to a thickness per the manufactures written instructions and recommendations.
- D. Replace in kind all labels, warning signs, flow directions etc. that were removed during pressure clean or coated over.
- E. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- F. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- G. Protect surfaces against damage from paint application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Engineer.

END OF SECTION 07 19 00

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following sheet metal flashing and trim:
 - 1. Formed roof coping flashing and trim.
 - 2. Formed wall flashing and trim.
- B. Related Sections include the following:
 - 1. Division 06 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Division 07 Section "Joint Sealants" for field-applied sheet metal flashing and trim sealants.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Fabricate and install roof edge flashing and copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
 - Wind Zone 1: For velocity pressures of 10 to 20 lbf/sq. ft. (0.48 to 0.96 kPa): 40-lbf/sq. ft. (1.92-kPa) perimeter uplift force, 60-lbf/sq. ft. (2.87-kPa) corner uplift force, and 20-lbf/sq. ft. (0.96-kPa) outward force.
 - Wind Zone 1: For velocity pressures of 21 to 30 lbf/sq. ft. (1.00 to 1.44 kPa): 60-lbf/sq. ft. (2.87-kPa) perimeter uplift force, 90-lbf/sq. ft. (4.31-kPa) corner uplift force, and 30-lbf/sq. ft. (1.44-kPa) outward force.
 - 3. Wind Zone 2: For velocity pressures of 31 to 45 lbf/sq. ft. (1.48 to 2.15 kPa): 90-lbf/sq. ft. (4.31-kPa) perimeter uplift force, 120-lbf/sq. ft. (5.74-kPa) corner uplift force, and 45-lbf/sq. ft. (2.15-kPa) outward force.
 - 4. Wind Zone 3: For velocity pressures of 46 to 104 lbf/sq. ft. (2.20 to 4.98 kPa): 208-lbf/sq. ft. (9.96-kPa) perimeter uplift force, 312-lbf/sq. ft. (14.94-kPa) corner uplift force, and 104-lbf/sq. ft. (4.98-kPa) outward force.
- C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other

detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

- 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
 - 1. Identify material, thickness, weight, and finish for each item and location in Project.
 - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, lap dimensions and overall dimensions.
 - 3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, end-dams, back-dams and attachments to adjoining work.
 - 4. Details of expansion-joint covers, including showing direction of expansion and contraction.
- C. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.
 - 1. Include similar Samples of trim and accessories involving color selection.
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Sheet Metal Flashing: 12 inches (300 mm) long. Include fasteners, cleats, clips, closures, and other attachments.
 - 2. Trim: 12 inches (300 mm) long. Include fasteners and other exposed accessories.
 - 3. Accessories: Full-size Sample.

1.5 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

- B. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Approval of mockups is for material and construction qualities specifically approved by Engineer in writing.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Engineer in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, galvanic corrosion or other surface damage.

1.7 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, compatible and noncorrosive installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 SHEET METALS

- A. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304. Minimum 24-gauge or as recommended by SMACNA for sheet metal flashing installation.
- B. Pre-finished Steel Sheet: Manufacture coping caps, parapet flashing, and other flashing visible from the exterior buildings areas as directed by Owner's representative, from metallic-coated 24-gauge minimum steel sheet metal flashing pre-painted with coil coating. Color to be selected by Owner. Steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A 755/A 755M.
 - 1. Exposed Finishes: Apply the following coil coating:
 - a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality.
 - b. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 1) Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements of AAMA 2605.
 - 2) Color: To be selected by Owner's representative.
 - 2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer in accordance with underlayment manufacturer's written instructions.
 - 1. Acceptable Products:
 - a. Carlisle WIP 300 HT
 - b. Grace Ice & Water Shield HT
 - c. Henry Blueskin PE200HT
 - 2. Source Limitations: Obtain underlayment from single source from single manufacturer.
 - 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C) or lower.
2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and not corrode or cause galvanic corrosion with flashing material.
 - 1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
 - 3. Blind Fasteners: High-strength stainless-steel rivets.
- C. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
- D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- E. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.5 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 1. Seams: Fabricate nonmoving seams in accessories with flat-lock seams.
- D. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.6 SHEET METAL FABRICATIONS

- A. Copings: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 10-foot-(3-m-) long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
 - 1. Joint Style: Butt, with 12-inch- (300-mm-) wide concealed backup plate and 6inch- (150-mm-) wide exposed cover plates.
 - 2. Fabricate copings from the following material: $S_{1} = 1 + 0.0250$; 1 = 0.0250
 - a. Stainless Steel: 0.0250 inch (0.65 mm) thick.
- B. Base Flashing: Fabricate from stainless steel.
- C. Counterflashing: Fabricate from stainless steel.
- D. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches (150 mm) beyond each side of wall openings; and form with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch (0.40 mm) thick.
- 2.7 FINISHES
 - A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
 - C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
 - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
 - 1. Coat contact side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 1. Install continuous cleats. Fasten at 6 inches (150 mm) on center with screw or ring shanks.

- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
 - 1. Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
 - 2. Stainless Steel: Use stainless-steel fasteners.
- H. Seal joints with elastomeric sealant as required for watertight construction.
 - Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

3.3 PARAPET FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Copings: Anchor to resist uplift and outward forces according to recommendations for specified wind zone and as indicated.
 - 1. Interlock exterior bottom edge of coping with continuous cleats anchored to substrate at 16-inch (400-mm) on centers.
 - 2. Anchor interior leg of coping with screw fasteners and washers at 18-inch (450mm) on centers.

3.4 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows and doors.

3.5 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering, High-Temperature Sheet Underlayment:
 - 1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
 - 2. Prime substrate if recommended by underlayment manufacturer.
 - 3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
 - 4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses.
 - 5. Overlap side edges not less than 3-1/2 inches (90 mm).
 - 6. Roll laps and edges with roller.
 - 7. Cover underlayment within 14 days to avoid UV and weather exposure.

3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 62 00

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the provisions of all labor, materials, supervision and incidentals required to install joint sealants and associated materials.
- B. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.

1.3 REFERENCES

- A. Applicable Standards:
 - 1. American Society for Testing and Materials (ASTM):
 - a. ASTM C 1193 Standard Guide for Use of Joint Sealants

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each joint sealant product required, including instructions for joint preparation and joint sealant application.
- B. Material Certificates: Where product data does not indicate material compatibility of independent products that form a system assembly; provide a written statement of material compatibility from the system assembly manufacturer. System assembly shall include:
 - 1. Substrate Cleaning Solvents
 - 2. Backer Materials
 - 3. Primers
 - 4. Sealant Materials
- C. Environmental Certification:
 - 1. Certification that products and installation comply with applicable EPA, OSHA, and VOC requirements regarding health and safety hazards.
 - 2. Certification that products and installation comply with applicable CEPA, CCOHS, and VOC requirements regarding health and safety hazards.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project Site in original unopened containers, or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multicomponent materials.
- B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.6 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturers.
 - 2. When joint substrates are wet due to rain, frost, condensation or other causes.
 - 3. Joint Width Conditions: Do not proceed with installation of joint sealants when joint widths are less or greater than those allowed by sealant manufacturer for application indicated.

1.7 QUALITY ASSURANCE

- A. Source Limitations: For each independent repair location, use primers and sealants of a single manufacturer.
- B. Contractor's Qualifications: Contractor performing the work shall be an approved contractor by the manufacturer furnishing the materials, and shall have no less than three years experience in related work required in this project. Upon request by the Engineer, a notarized certification from the manufacturer attesting to the training shall be submitted to the Engineer/Owner.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

2.2 JOINT SEALANTS

- A. Polyurethane Sealant For Horizontal, Non-Cove Joints: Two-component, non-sagging, polyurethane based, elastomeric sealant meeting the requirements of ASTM C920, Type M, Grade P, Class 25, Use T.
 - 1. BASF Construction Chemicals

- a. Primer: MasterSeal P 173
- b. Sealant: MasterSeal SL 2
- 2. Sika Corporation
 - a. Primer: Sikaflex 260, 429 or 449
 - b. Sealant: Sikaflex-2c NS TG
- B. Polyurethane Sealant For Vertical Joints And Cove Joints: Two-component, non-sagging, polyurethane based, elastomeric sealant meeting the requirements of ASTM C920, Type M, Grade NS, Class 25 Use T.
 - 1. BASF Construction Chemicals
 - a. Primer: MasterSeal P 173
 - b. Sealant: MasterSeal NP 2
 - 2. Sika Corporation
 - a. Primer: Sikaflex 260, 429 or 449
 - b. Sealant: Sikaflex-2c NS
- C. Silicone Sealant For Non-Moving And Moving Horizontal (Non-Cove) Joints: Onecomponent, medium-modulus, neutral-cure elastomeric silicone sealant, meeting the requirements of ASTM C920, Type S, Grade NS, Class 50.
 - 1. Dow; Dowsil 795 Silicone Building Sealant
 - 2. Sika Corporation; Sikasil WS-295
 - 3. GE; SCS9000 SilPruf NB
 - 4. Tremco; Spectrem 2

2.3 ACCESSORY PRODUCTS

- A. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials.
- B. Backer Materials
 - 1. General: Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 2. Plastic Foam Joint-Fillers: Preformed, compressible, resilient, non-waxing, nonextruding strips of plastic foam of material indicated below, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum joint geometry and sealant performance.

- 3. Backer Rod: Either flexible, open cell polyurethane foam or non-gassing, closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer.
- 4. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back surface of joint. Provide self-adhesive taper where applicable.
- C. Masking Tape: Provide non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.

2.4 GLAZING GASKETS

1.

- A. Gasket (Replace in-kind): Contractor shall submit sample of existing gasket to manufacturer to determine if existing profile may be matched.
 - Available Manufacturers:
 - a. Tremco
- B. Headless Wedge: Provide headless wedge with cap bead of silicone sealant to replace loose or dislodged gaskets.
 - 1. Available Products:
 - a. Tremco Headless Wedge
 - 2. To determine size of headless wedge required, remove a small protion of the dislodged gasket and insert a small sample of the new wedge. It should exhibit good compression to properly cushion the glass.

2.5 SUBSTITUTIONS

- A. Product substitutions may be considered, provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.
- B. Changes in products required to suit temperature, environmental conditions, and local VOC regulations at the time of material application shall be specified as separate line items by the Contractor showing credit or additions to the price for the various tasks.
- C. Product substitutions for selants may be considered to comply with local VOC regulation where applicable, provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Require installer to inspect joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealant performance. Obtain installer's written report listing any condition detrimental to performance of joint sealant work. Do not allow joint sealant work to proceed until unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturers and the following requirements:
 - 1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealant, including dust; paint, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellants; water; surface dirt and frost.
 - 2. Clean concrete, substrate surfaces, by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
- B. Joint Priming: Prime all joint substrates where indicated or where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primers to areas of joint sealant bond. Do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
 - 1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.
 - 2. Do not leave gaps between ends of joint-fillers.
 - 3. Do not stretch, twist, puncture or tear joint-fillers.
 - 4. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.
 - 5. Install bond breaker tape between sealants and joint-fillers, compression seals or back of joint where required to prevent third-side adhesion of sealant to back of joint.

- D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability. Do not smear sealant onto adjacent surfaces.
- E. Tooling of Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants in concave joint configuration per ASTM C 1193, unless otherwise indicated to form smooth, uniform beads of configuration indicated, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.4 INSTALLATION OF GASKETS

- A. Removal of old gasket and insertion of new should proceed in short segments to avoid distrurbing or shifting the glass.
- B. Contractor shall consult manufacturer for additional installation requirement.

3.5 PROTECTION AND CLEANING

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations, temperature or weather conditions outside manufacturers recommendations. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and reseal joints with new materials to produce sealant installations with repaired areas indistinguishable from original work.
- B. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by the manufacturer of the sealants and of the products used in the joints.

3.6 FIELD QUALITY CONTROL

- A. Responsibilities
 - 1. Contractor's Responsibility: Contractor is responsible for performing continuous field quality control during the progress of work including workmanship and materials furnished by his subcontractors and suppliers.
- B. Minimum Quality Control Requirements
 - 1. The Contractor shall monitor environmental temperature and relative humidity to ensure the mixing and injection work is performed within the manufacturer's published range.
 - 2. The Contractor shall visually review 100% of all new sealant work to verify completeness and quality of work.
 - 3. The Contractor shall probe competed and cured sealants in general conformance with ASTM C 1521 Nondestructive procedure to verify sealant adhesion to the substrate and sealant flexural movement.

END OF SECTION 07 92 00