RODRIGUEZ + GAMBINO
BUILDING ENVELOPE CONSULTANTS

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Facade Repairs

534 West 42nd Street
New York, New York 10036

PROJECT SPECIFICATIONS

PROJECT NO. RG23-1013

June 16, 2023

Prepared by:
Rodriguez + Gambino Architectural Building Envelope Consultants

1298 Richmond Road

Staten Island, NY 10304

(718) 987-5425

Prepared for:
534 West 42nd Street Condominium c/o Livingston Management

534 West 42nd Street

New York, NY 10036

(912) 441-0062

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Division 01 - General Specifications

Division 02 - Technical Specifications

SECTION 00 11 16 – INVITATION TO BID

PART 1 - GENERAL

1.01 PROJECT INFORMATION

A. Notice to Bidders: All bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.

B. Project Identification: Facade Repairs
1. **Project Location:** 534 West 42nd Street, New York, NY 10036

C. Owner: 534 West 42nd Street Condominium
c/o Livingston Management
1. **Owner's Representative:** Claude Simon, Property Manager
Tel.: 912-441-0062
Email: csimon@fairlane.biz

D. Architect: Rodriguez + Gambino Architectural
Building Envelope Consultants
1. **Architect's Representative:** Moises D. Rodriguez, Principal
Building Envelope Consultants
Tel.: 718-987-5425
Email: mrodriguez@rglnyc.com

1.02 BID SUBMITTAL AND OPENING

A. Owner will receive emailed bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. **Bid Due Date:** Friday, July 7, 2023
2. **Bid Time:** 3:00 PM
3. **Location:** Email Bids (See Bid Submission Form)

B. Bids will be thereafter privately opened by the Owner.

1.03 PREBID CONFERENCE

A. The prebid conference for all bidders will be held starting at 534 West 42nd Street, Manhattan, New York on Tuesday June 27, 2023 @ 10:00 AM for the following project.

B. Prospective bidders are required to attend the conference, make up's will not be allowed and bid will not be accepted if bidders are not present.

1.04 DOCUMENTS

A. Online Procurement and Contracting Documents: Access will be provided to all bidders after the bid conference on Tuesday, June 27, 2023.

1.05 TIME OF COMPLETION

A. Bidders shall begin work within ten (10) calendar days after entering into a Contract with the Owner, and upon obtaining necessary permits, subject to weather or other delays as defined in the General Conditions of the Contract. Liquidated damages may apply.

1.06 BIDDER'S QUALIFICATIONS

A. Bidders must be prequalified by Owner and must submit with their bids proof of insurance that at a minimum meets the standards set below.

B. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance from insurance companies with a Best's Rating of A VIII or better and licensed to do business in the State of New York.

C. Liability insurance shall include all major divisions of coverage and be on a comprehensive basis. This insurance shall be written for not less than the limits of liability specified below, or as indicated in the Contract Documents, or required by law, whichever coverage is greater.

.1	Workers' Compensation:	Statutory
.2	Employer's Liability:	$1,000,000.00
.3	General Liability:	
	Each Occurrence:	$1,000,000.00
	Fire Damage:	$100,000.00
	Medical Expenses:	$10,000.00
	Personal and Adv. Injury:	$1,000,000.00
	General Aggregate:	$2,000,000.00
	Products and Completed Operations:	$1,000,000.00
.4	Automobile Liability:	
	Combined Single Limit:	$1,000,000.00
.5	Excess Umbrella:	$5,000,000.00

END OF SECTION 00 11 16

SECTION 00 21 13 - INSTRUCTIONS TO BIDDERS

PART 1 – BIDDING DOCUMENTS

1.01 ENUMERATION OF THE BIDDING DOCUMENTS

The Bidding Documents include:

A. Project Manual:
1. Bid Submission Form (including Schedule of Values, Schedule of Unit Prices and Table of Alternates)
2. Instructions to Bidders
3. Supplementary Conditions of the Contract
4. General Specifications
5. Technical Specifications

B. Drawings

C. Addenda (if any) issued prior to execution of the Contract

1.02 PROPOSED CONTRACT DOCUMENTS

A. The proposed Contract Documents include the Owner-Contractor Agreement and the Bidding Documents.

1.03 USE OF BIDDING DOCUMENTS

A. Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

B. In making copies of the Bidding Documents available on the above terms, the Owner and RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant permission for any other use of the Bidding Documents.

1.04 INTERPRETATION OF CORRECTION OF BIDDING DOCUMENTS

A. The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted. The Bidder shall examine the site and local conditions, and shall at once report to RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS inconsistencies or ambiguities discovered.

B. Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS at least four (4) business days prior to the date for receipt of Bids.

C. If possible, interpretations, corrections, and changes of the Bidding Documents will be made by Addendum up to one (1) day before the Bid submission date.

D. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

E. Direct all technical questions to the individual(s) named in the Bid Submission Form.

1.05 NO SUBSTITUTIONS

A. Substitutions are defined as changes to products, materials, systems, equipment, or construction assemblies necessitating revision to the Bidding Documents.

B. No substitutions will be permitted on this Project, unless originated by the Architect/Engineer.

1.06 SALES AND USE TAXES PERTAINING TO BIDDING

A. The Bidder is advised of the Sales Tax Criteria as indicated in the Bid Submission Form.

B. In the event that the Owner is a Tax Exempt Organization, an Exempt Organization Certificate shall be on file, and sales taxes are not to be included in the Bid as allowed by Law.

C. In the event that the Owner is not a Tax Exempt Organization, the Bidder by submission of his Bid, certifies that all applicable sales taxes are included in the Bid. This includes all applicable sales and use taxes levied on material, supplies, equipment and/or the installation thereof. Revise list below to suit Project. Coordinate with related Bid Form supplements.

1.07 WALK-THROUGH

A. If a walk-through date is indicated on the Bid Submission Form, the Bidder is expected to attend. The Bid from any Bidder not in attendance may be rejected.

1.08 SITE INSPECTION

A. Inspection of the site may be arranged by contacting the individual(s) named on the Bid Submission Form.

1.09 FORM AND STYLE OF BIDS

A. Bids must be submitted on the Bid Submission Form, or an identical copy.

B. All blanks on the Bid Submission Form shall be filled in by computer, typewriter or manually in ink.

C. Where so indicated on the Bid Submission Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount written in words shall govern.

D. All requested alternates shall be bid. If no change in the Base Bid is required, enter "No Change".

E. Where two or more Bids for designated portions of the Work have been requested, the Bidder may state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the Bid Submission Form nor qualify the Bid in any other manner.

1.10 SUBMISSION OF BIDS

A. When submitting the Bid, the Bidder must use the method specifically indicated on the Bid Submission Form. Bids transmitted by any other method will not be considered.
B. Bids shall be addressed as indicated in the Bid Submission Form.
C. A Bid is valid for a time period as stipulated in the Bid Submission Form and may not be modified, withdrawn or canceled by the Bidder during that time period, and each Bidder so agrees in submitting a Bid.

1.11 WITHDRAWAL OF BID

A. A submitted Bid may be withdrawn provided written and signed notice is received at the place designated, and prior to the date and time set for receipt of Bids. Such notice shall not reveal the amount of the original Bid.

1.12 MODIFICATION OF BID

A. A Bid must first be withdrawn, prior to making modifications.
B. Submit a new Bid complying with the same requirements as the original Bid submission.

PART 2 – CONSIDERATION OF BIDS

2.01 OPENING OF BIDS

A. Unless otherwise stated in the Invitation to Bid, the properly identified Bids received on time will be opened privately.

2.02 REJECTION OF BIDS

A. The Owner shall have the right to reject any or all Bids.
B. Bids received after the time and date stipulated for receipt of Bids may not be considered.
C. Bidders who fail to attend a walk-through as indicated in the Bid Submission Form may not be considered.

2.03 ACCEPTANCE OF BID

A. The Owner shall have the right to waive informalities or irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.
B. The Owner shall have the right to accept alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and alternates accepted.

FORM OF OWNER CONTRACTOR AGREEMENT

The Owner-Contractor Agreement ("Contract") will be written on AIA A104-2017 (Standard Form of Agreement between Owner and Contractor for a Project of Limited Scope). The Bidder, by submission of his Bid, acknowledges and agrees to the provisions thereof. The successful Bidder will be required to furnish and complete this form of Agreement.

DEFINITIONS

Definitions set forth in the General Conditions of the Owner-Contractor Agreement are applicable to the Bidding Documents.

Addenda: Written or graphic instruments issued by RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

Alternate (or Alternate Bid): Refer to Specification Section 01 23 00 (Alternates), Definitions heading in Part 1.

Base Bid: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in alternate bids. Base Bid is the Bidder's proposed Contract Sum.

Bid: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

Bidder: A person or entity who submits a Bid.

Unit Price: An amount stated in the Bid as a price per unit of measurement for materials, equipment, and/or services for a portion of the Work as described in the Bidding Documents.

END OF SECTION 00 21 13

SECTION 00 22 13 - SUPPLEMENTARY CONDITIONS OF THE CONTRACT

The following supplements amend the Conditions of the Owner-Contractor Agreement. Because the AIA Document A104-2017 (formerly A107-2007) is frequently used as the form of Agreement, Article and Paragraph number designations relate to the A104-2017. These Supplementary Conditions of the Contract shall obtain regardless of the form of the Owner-Contractor Agreement.

ARTICLE 4 - PAYMENTS

4.1.3 Add the following to the existing paragraph, as per the information within the brackets:

Provided that an Application for Payment is received by the Architect not later than the << first >> day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the << first >> day of the << following >> month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than << thirty >> (<< 30 >>) days after the Architect receives the Application for Payment.

4.1.4 Add the following to the existing paragraph:

Until the final Application for Payment, the Owner will retain (withhold) ten percent (10%) of the amount of each progress payment due the Contractor for completed portions of the Work.

4.1.5 Add the following to the existing paragraph:

0% zero percent

ARTICLE 6 – ENUMERATION OF CONTRACT DOCUMENTS

6.1.7 In regard to the additional documents as part of the Contract documents, add the following to the existing paragraphs:

.1 Mark “Exhibit A, Determination of the Cost of the Work.” Exhibit A will be the final bid form submitted by the Contractor and used for the A104-2017 document.

.2 If applicable, any other documentation provided as additional exhibits, as part of the Contract documents, should be listed in this section, including, but not limited to, a Rider to Agreement.

ARTICLE 9 - CONTRACTOR

9.15.3 Add the following paragraphs:

The Architect/Engineer, its members, officers, agents, employees, and representatives shall not be responsible for the Work or the safety of persons and/or property in the vicinity of the Work. To the fullest extent permitted by law, the Contractor shall hold harmless, defend, and indemnify the Architect/Engineer, its members, officers, agents, employees, and representatives from any and all liabilities, claims, demands, and/or suits arising out of the negligence, in whole or in part, or alleged negligence, in whole or in part, of the Contractor, its officers, agents, employees, or subcontractors retained by the Contractor on this Project. The Contractor shall cause all subcontractors to indemnify the Architect/Engineer to this same extent. From the initiation of any claims, demands or suits, arising out of or relating to the Work, the Contractor shall have the obligation to defend the Architect/Engineer, its members, officers, agents, employees, and representatives and pay all costs including reasonable attorneys' fees and expenses associated with the defense of such claims, demands or suits, and the Architect/Engineer shall have the right to select counsel of its choice.

ARTICLE 10 – ARCHITECT/ENGINEER

10.0 Add the following paragraph:

Whenever the term "Architect/Engineer" is used, it shall mean:

RODRIGUEZ + GAMBINO

ARCHITECTURAL BUILDING ENVELOPE CONSULTANTS, D.P.C.

1298 Richmond Road, Staten Island, New York 10304

ARTICLE 15 – PAYMENTS AND COMPLETION

15.6.1 Delete the entire paragraph and substitute the following:

Substantial Completion is the stage in the progress of the Work when, with minor exception, as determined by Architect/Engineer, all items of Work have been completed in accordance with the Contract Documents.

15.6.4 Delete the entire paragraph and substitute the following:

The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance the Contractor shall submit an Application for Payment for one hundred percent (100%) of the Contract Sum minus previous Applications for Payments and minus retainage.

15.7.1 Add the following to the existing paragraph:

The Contractor's final Application for Payment shall be in the amount of the total retainage withheld by the Owner. Final Application for Payment shall be subject to consent of surety, if any.

ARTICLE 16 – PROTECTION OF PERSONS AND PROPERTY

16.1 Delete the first paragraph of this section only and substitute the following:

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall be solely responsible for the maintenance of sidewalk shed(s) and/or bridging associated with the Project, and for the maintenance of affected pedestrian walkways. The Contractor shall take responsible precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

(For section 16.1, do not remove anything after sub-section .1)

ARTICLE 17 - INSURANCE AND BONDS

17.1.2 Liability insurance amounts shall be included in this Section of the A104-2017, where indicated, and as listed in the chart below:

.1	Workers' Compensation:	Statutory
.2	Employer's Liability:	$1,000,000.00
.3	General Liability:	
	Each Occurrence:	$1,000,000.00
	Fire Damage:	$100,000.00
	Medical Expenses:	$10,000.00
	Personal and Adv. Injury:	$1,000,000.00
	General Aggregate:	$2,000,000.00
	Products and Completed Operations:	$1,000,000.00
.4	Automobile Liability:	
	Combined Single Limit:	$1,000,000.00
.5	Excess Umbrella:	$5,000,000.00

ARTICLE 17 - INSURANCE AND BONDS (CONTINUED)

17.1.8 Remove the entire section.

17.1.9 Remove the entire section.

17.2.2 Remove the following entire section, including all sub-sections:

17.2.2 Property Insurance -17.2.3 Other Insurance Provided by the Owner

ARTICLE 18 - CORRECTION OF WORK

18.2 Delete the entire paragraph and substitute the following:

The period referred to as the "period for correction of Work" shall be the period within five years after the date of Substantial Completion of the Work, with the exception of painting or coating of metal or wood for which such period for correction of Work shall be limited to one year.

In addition to the Contractor's obligation under Section 9.4, if, within the period for correction of Work, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

18.4 Delete the entire paragraph and substitute the following:

The period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

18.5 Delete the entire paragraph and substitute the following:

The period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

END OF SECTION 00 22 13

SECTION 00 41 00 - BID SUBMISSION FORM

1.01 BID SUMMARY

2.01 BID INFORMATION

A. Project Title: Facade Repairs

B. Project Address: 534 West 42nd Street, New York, NY 10036

C. Owner: 534 West 42nd Street Condominium
c/o Livingston Management

D. "Walk-through" is scheduled for: Tuesday, June 27, 2023 at 10:00am

E. Inspection of the site may be arranged by contacting:

Claude Simon, Property Manager
912-441-0062

F. Direct all bid questions via email only: (phone or late inquiries will not be accepted)

Moises D. Rodriguez
RODRIGUEZ + GAMBINO
BUILDING ENVELOPE CONSULTANTS
mrodriguez@rglnyc.com
And Cc the following:
erivera@rglnyc.com
jardezzone@rglnyc.com
cbolandi@rglnyc.com
No later than:
Monday, July 3, 2023 at 5:00pm

G. Bid Due Date: Friday, July 7, 2023 at 3:00pm

H. Email Bids Delivered To: 534 West 42nd Street Condominium
c/o Livingston Management
csimon@fairlane.biz
kseaman@livingny.com
And CC: Rodriguez + Gambino Architectural
Building Envelope Consultants
mrodriguez@rglnyc.com
And CC the following:
jardezzone@rglnyc.com
erivera@rglnyc.com
cbolandi@rglnyc.com
No earlier than:
Friday, July 7, 2023 at 3:00pm

I. Bid is valid for a period of: One (1) Year

J. Performance and Payment Bond Required: Yes

2.02 ADDENDA:

A. The undersigned acknowledges receipt of Addenda as listed below and represents that any modifications to the Work called for in these Addenda are included in the Base Bid. If Addenda have been received, list Addendum numbers and dates. If no Addenda have been received, write "NONE".

1. Addendum No. 1, dated _____.

2. Addendum No. 2, dated _____.

3. Addendum No. 3, dated _____.

4. Addendum No. 4, dated _____.

2.03 SALES TAX:

A. Sales Tax Criteria per Instruction to Bidders:

1. Non - Tax Exempt Organization: Bid includes legally mandated sales taxes.

2.04 BASE BID:

A. General Conditions

1. General Conditions (Mobilization, Demobilization, and TPP Filing)

$_____

2. Scaffolding Installation, Maintenance, and Removal (Suspended or Pipe)

$_____

3. Bridging Installation, Maintenance, and Removal

$_____

B. SCHEDULE OF VALUES:

Enter all scheduled values below. Total of scheduled values must equal Base Bid.
Note: Quantities listed are only for bid leveling purposes only, scope of work is based on boundaries identified on drawings.

Detail #	Description	Unit	Quantity	Scheduled Value
1/A600	Masonry Replacement	SF		$
1/A601	Masonry Crack Repair	LF		$
2/A601	Masonry Repointing	SF		$
1/A602	Joint Sealant Replacement	LF		$
2/A602	Concrete Crack Repair	LF		$
3/A602	Concrete Patch Repair	SF		$
			Total Schedule of Values	**$**

C. ALLOWANCES:

Detail #	Description	Unit	Quantity	Scheduled Value
1/A600	Masonry Replacement	SF	50	$
1/A601	Masonry Crack Repair	LF	10	$
2/A601	Masonry Repointing	SF	30	$
2/A602	Concrete Crack Repair	LF	150	$
3/A602	Concrete Patch Repair	SF	100	$
			Total Allowances	**$**

D. BASE BID TOTALS:

1. Total General Conditions, Schedule of Values, and Allowances $_____

2. Taxes – Must be included $_____

3. Base Bid Total **$**_____

E. ALTERNATES:

1. Alternate #1: Contractor to Prepare and Coat Concrete Facades and Balcony Fascias with RD Coating Elastoflex System with Fleece Reinforcement along Tops of Parapet Walls.

$_____

F. SCHEDULE OF UNIT PRICES:

Enter all unit prices below. Refer to Specification Section 012200 (Unit Prices).

Detail #	Description	Unit	Unit Price
1/A600	Masonry Replacement	SF	$
1/A601	Masonry Crack Repair	LF	$
2/A601	Masonry Repointing	SF	$
1/A602	Joint Sealant Replacement	LF	$
2/A602	Concrete Crack Repair	LF	$
3/A602	Concrete Patch Repair	SF	$

2.05 TIME OF COMPLETION:

A. By submission of a Bid, the Contractor agrees to:

1. Begin Work within Ten (10) calendar days after entering into a Contract with the Owner, and upon obtaining necessary permits.

2. Complete all work within _____calendar days from the execution of the contract, subject to weather or other delays as defined in the General Conditions of the Contract.

3. Provide an estimated Schedule as part of bid submission.

2.06 ACKNOWLEDGEMENT OF BIDDING DOCUMENTS:

The undersigned acknowledges receipt of the Bidding Documents as outlined in the Instructions to Bidders. Having read and understood the Bidding Documents, and having inspected the construction site, and familiarized himself with all conditions likely to be encountered affecting the cost and schedule, the undersigned further affirms that all costs associated therewith are included in the Bid amounts.

Name of Firm:

_____

Address:

_____

City: _____ **State:** _____ **Zip:** _____

Business Structure:

☐ Corporation (State of Incorporation: _____)
☐ Sole Proprietorship
☐ Partnership
☐ Other:

The person signing this Bid is fully authorized to sign on behalf of the named firm, and to fully bind the named firm to all of the conditions and provisions thereof.

Submitted this	**day of**	**20**
Name:		
Signature:		
Title:		

END SECTION 00 41 00

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the Project description, Owner occupancy, tenant safety plan, site safety, Contractor's use of the premises; and Work restrictions.

B. Comply with Section 01 50 00 (Temporary Facilities) for Contractor's temporary use of other facilities on the premises.

1.02 RELATED DOCUMENTS

A. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

B. In some cases individual Specification Sections may refer to other Sections; the reference is noted for convenience only.

C. Requirements customarily repeated in the individual technical Specification Sections (e.g., protection, temporary support, cleaning, product delivery, handling, and storage, etc.) have been consolidated in Division 01.

1.03 DRAWINGS

A. An enumeration of the Drawings is contained in the set of Drawings.

1.04 PROJECT DESCRIPTION

A. The Project consists of restoration of the existing brownstone face as described in the drawings.

B. The Work of the Project is defined by the Contract Documents. The Work consists of all items indicated, together with minor details not customarily shown or specified but necessary for proper construction of the Work.

1.05 WORK UNDER OTHER CONTRACTS

A. There is no work to be performed under other contracts.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 OWNER OCCUPANCY

A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts.

B. Advance Notice: Provide a minimum of 72 hours advance notice to Owner of construction activities that will significantly impact Owner's normal operations.

C. Tenant-Owned Items: The Contractor shall not be responsible for moving equipment, plants, furniture, and other items belonging to the building tenants. These items shall be moved by the tenants. If tenant owned items interfere with the course of the Work, the Owner shall be notified.

3.02 SITE SAFETY

A. Comply with all site safety requirements of authorities having jurisdiction. Where required, engage a qualified specialist in site safety to provide services, including but not limited to the following:

1. Develop and prepare the site safety plan.
2. File site safety plan with authorities, and obtain approvals.
3. Staff the Project site with qualified site safety personnel (e.g., site safety manager, etc.) to the extent required by the authorities.
4. Maintain the site safety program for the duration of the Project.

B. Additional site safety requirements are found on the Drawing and in referenced codes and industry standards.

C. Contractor is solely responsible for all costs associated with site safety. These costs are to be included in the Contract Sum by implicitly including them in all the construction cost items on the Schedule of Values and Schedule of Unit Prices. Therefore, if required, additional Work based on Unit Prices will include the built-in costs needed to extend site safety provisions.

3.03 TENANT'S SAFETY PLAN

A. Tenants Safety Plan: Implement and comply with the Tenants Safety Plan as outlined on the Drawings.

3.04 CONTRACTOR USE OF PREMISES

A. Confine operations to areas permitted under the Contract:

1. Keep walkways and entrances serving the premises clear and available to the Owner at all times.
2. Confine stockpiling of material to the area approved by the Owner. If additional storage is necessary, obtain and pay for such storage off-site. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Egress: All existing means of egress for occupants of the building shall be maintained clear and free of all obstructions such as materials, tools, debris, etc.

C. Vehicular and Pedestrian Traffic: Insure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not obstruct streets or walks without written permission from authorities having jurisdiction.

D. Deliveries: Shipments to the building shall be delivered during normal working hours. Provide personnel to handle the receiving. Building personnel shall not receive deliveries for the Contractor.

3.05 WORK RESTRICTIONS

A. Work Hours: All Work is to be performed between the hours of 8:00 AM and 5:00 PM Monday through Friday. No Work may be performed at any other times, without written authorization from the Owner.

B. Access to Contractor's Personnel:

1. Maintain a checklist of all persons working at the site. Each individual shall check in and out. Any person whose name is not on the checklist shall be denied access to the site.
2. Contractor's personnel shall enter through the service entrance only.

END OF SECTION 01 11 00

SECTION 01 21 29 - QUANTITY ALLOWANCES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for identifying, performing, and documenting Work associated with quantity allowances.

1.02 DEFINITIONS

A. Quantity Allowance: Sometimes the required quantity of a restoration work at a particular location can only be roughly anticipated. In such cases, the roughly anticipated quantity is referred to as a quantity allowance. A quantity allowance is generally associated with one of the following conditions:

1. Concealed Work (e.g., concrete deck restoration below a roof membrane).
2. Difficult to access Work (e.g., masonry restoration on an area of the building where access by the Architect/Engineer is difficult or impossible.
3. Exposed but spread out Work (e.g., pointing restoration over a large area where the Work-in-place is visible for inspection.

1.03 SUBMITTALS

A. Documentation of Work: Submit the following at monthly intervals:

1. Photographs of Concealed or Inaccessible Work.
2. Quantity Allowance Progress Reports.
3. Quantity Allowance Progress Drawings.

1.04 INDICATION OF QUANTITY ALLOWANCES

A. Quantity allowances are listed on the Drawings in association with specific restoration work.

B. All Work associated with quantity allowances is the Contractor's responsibility under the Contract Sum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 NOTIFICATION

A. Before performing Work associated with quantity allowances, notify Architect/Engineer as follows:

1. For concealed Work, provide notice two (2) business days in advance of uncovering.
2. For difficult to access Work, provide notice two (2) business days in advance of providing access.

3.02 DOCUMENTATION OF WORK

A. Photographs of Concealed or Inaccessible Work: As evidence of compliance with Contract Documents, take "before" and "after" photographs of all Work associated with quantity allowances that may be concealed or inaccessible once reconstruction is complete.

1. Minimum photograph size shall be 4” x 6”. Work depicted shall be identified in the photograph by means of a legible note card which does not obstruct the installed Work. The note card shall contain the following information:
   a. Project number, or project address.
   b. Date photo was taken.
   c. Location of Work.
2. Failure to photograph concealed or inaccessible Work may result in the Contractor having to re-expose or re-access the same Work to accommodate Architect/Engineer's inspection; any resulting costs are the Contractor's responsibility.

B. Quantity Allowance Progress Reporting: Prepare and maintain a tabular report indicating current tallies of quantity allowances showing total and completed quantities by restoration assembly and location.

C. Quantity Allowance Progress Drawings: Prepare and maintain Drawings indicating specific locations and quantity allowances completed for each restoration assembly. Include photograph numbers (as applicable) on Drawings.

3.03 ADJUSTMENT OF CONTRACT SUM

A. Contract Sum will be adjusted by Change Order once the actual quantity of Work-in-place has been determined. Comply with Section 01 26 00 (Contract Modification Procedures).

B. Change Order amount, whether increasing or decreasing the Contract Sum, will be based upon costs contained in the Schedule of Unit Prices, and the difference between the quantity allowances and actual quantities of Work-in-place.

END OF SECTION 01 21 29

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

B. Comply with Section 01 26 00 (Contract Modification Procedures) for Change Orders based on unit prices.

1.02 DEFINITIONS

A. Unit Price: An amount agreed by Contractor as a price per unit of measurement for materials and/or services that will be added to or deducted from the Contract Sum by Change Order in the event the Work required by the Contract Documents is increased or decreased. Unit prices include all necessary labor, material, equipment, overhead, profit and applicable taxes.

B. Schedule of Unit Prices: A tabular listing of relevant restoration assemblies and their associated unit prices.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 22 00

SECTION 01 23 00 – ALTERNATES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.02 DEFINITIONS

A. Alternate: An amount proposed by Bidders and stated on the Bid Submission Form for certain work defined in the Bidding Documents that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods.

1. Alternates described in the Bidding Documents are part of the Work only if enumerated in the Owner-Contractor Agreement.

2. The cost or credit for each alternate is the net addition or deduction from the Contract Sum to incorporate the alternate into the Work. No other adjustments are made to the Contract Sum.

B. Table of Alternates: A tabular listing of relevant alternates. Specification Sections and/or Drawings referenced in the Table of Alternates contain requirements necessary to achieve the Work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 INCORPORATION IN THE WORK

A. Modify or adjust affected adjacent Work as necessary to completely incorporate the Work of the alternate in the Work of the Project. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

END OF SECTION 01 23 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for handling proposed changes in the Work and processing Change Orders.

1.02 OWNER-INITIATED PROPOSED CHANGES

A. Proposal requests will be issued by the Architect/Engineer for proposed changes in the Work that may require adjustment to the Contract Sum or Contract Time. Proposal requests will contain a detailed description of the proposed change, and, if necessary, supplemental or revised Drawings and/or Specifications.

B. Proposal requests issued by the Architect/Engineer are for information only. Do not consider them instructions either to stop Work in progress, or to execute the proposed change.

C. Within 5 business days after receipt of proposal request, the Contractor shall submit a proposal for changes in the Work in the form of a Change Order as indicated in this Section.

1.03 CONTRACTOR-INITIATED PROPOSED CHANGES

A. When latent or unforeseen conditions require modification to the Contract, the Contractor may submit a proposal for changes in the Work in the form of a Change Order as indicated in this Section.

1.04 CHANGE ORDERS

A. Where changes in the Work are proposed, whether initiated by Owner or Contractor, prepare and submit a Change Order as follows:

1. Include the following information (provide backup where necessary):

a. A complete description of the proposed change in the Work.

b. A statement outlining the reasons for the change and the effect of the change on the Work.

c. A list of quantity measurements of Work associated with the proposed change.

d. The effect of the proposed change on the Contract Sum.

1) For items involving increases or decreases to the Contract Sum based upon unit prices, identify items for which unit prices have been pre-established as a part of the Contract. Include a photocopy of the Schedule of Unit Prices.

2) For items for which no unit prices have been pre-established, include a list of materials, applicable taxes, delivery charges, equipment rental, associated labor, and all other costs attributable to the increase or decrease of the Contract Sum.

e. The effect, if any, of the proposed change on the Contract Time.

2. Change Order Form: Use AIA Document G701 for Change Orders.

3. Change Orders are subject to review and approval by Architect/Engineer and Owner. Do not proceed with any changes in the Work until authorized by Architect/Engineer and Owner via signed Change Order.

B. Architect/Engineer will review Change Order and take one of the following actions:

1. Request additional information.

2. Reject Change Order without returning it.

3. Approve and sign Change Order.

a. Architect/Engineer will forward three (3) copies of signed copies of Change Order to Owner for approval and signature.

b. Owner will return signed Change Order: One copy to Architect/Engineer and one copy to Contractor.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for preparing and processing Applications for Payment.

1.02 DEFINITIONS

A. Schedule of Values: A tabular listing of items of Work (e.g., repair work, etc.) containing dollar values (rounded to the nearest dollar) for the Work necessary to complete all the requirements and quantities associated with each line item. The sum total of all line items in the Schedule of Values shall equal the Contract Sum. The format and content of the Schedule of Values may include:

1. Columns for code, description, quantity, unit, and value.

2. Additional breakdown of Contract Sum where necessary in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports subsequent to award of Contract (e.g., breakdown for phased Work).

1.03 UPDATING THE SCHEDULE OF VALUES

A. Contractor shall complete the initial Schedule of Values prepared by the Architect/Engineer by entering the dollar values for every line item.

B. Contractor shall update and resubmit the Schedule of Values as often as is required to reflect modifications to the Contract Sum or for other reasons when deemed necessary by Architect/Engineer.

1.04 APPLICATIONS FOR PAYMENT

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

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

B. Payment Application Times:

1. The date for each Application for Payment, and the period of construction Work covered by each Application is as indicated in the Owner-Contractor Agreement. If not stipulated in the Agreement, they shall be as follows:

a. Applications for Payment shall be submitted to Architect/Engineer by the 1st day of the month.

b. The period of construction Work covered by each Application for Payment is one month ending on the last day of the month.

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

D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Contractor. Incomplete applications will be returned without action.

1. Entries shall match data on the latest Schedule of Values.

2. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.

E. Transmittal: Submit 3 executed copies of each Application for Payment to the Architect/Engineer. One copy shall be complete, including attachments, when required.

1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect/Engineer.

F. Waiver of Mechanic's Liens: With each Application for Payment, submit partial waivers of mechanic's lien from entities lawfully entitled to file mechanic's lien arising out of the Contract and related Work covered by the previous payment.

1. Waivers shall be in a form acceptable to the Owner and include each item and amount (after deduction for retainage) requested in the previous application.

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

1.05 INITIAL APPLICATION FOR PAYMENT

A. Initial Application for Payment: Administrative actions and submittals that must precede the submittal of the first Application for Payment are those which listed as pre-construction conference prerequisites in Section 013100 (Project Management and Coordination).

1.06 APPLICATION FOR PAYMENT AT SUBSTANTIAL COMPLETION

A. After issuance of the Certificate of Substantial Completion as indicated in Section 01 77 00 (Closeout Procedures), submit Application for Payment indicating one hundred percent (100%) completion on the application for the Work claimed as substantially complete. Submit the following, along with the Application for Payment:

1. Written acknowledgement of Architect/Engineer's revised punch list according to Substantial Completion sub-part in Section 01 77 00 (Closeout Procedures).

2. Other supporting documentation, if indicated in the Contract Documents.

1.07 FINAL APPLICATION FOR PAYMENT

A. After final completion requirements as indicated in Section 01 77 00 (Closeout Procedures) are completed, submit final Application for Payment, along with the following:

1. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706).

2. Contractor's Affidavit of Release of Liens (AIA Document G706A).

3. Contractor's release and waiver of liens (conditional upon receipt of final payment) in a form acceptable to the Owner.

4. Final and full waivers of lien from every entity involved in the performance of the Work on the Project who is lawfully entitled to a lien.

5. If liquidated damages were assessed during the course of Project, provide a final liquidated damages settlement statement.
6. If the Project is bonded, provide certified Consent of Surety to Final Payment (AIA Document G707).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for Project management and coordination of construction operations.

1.02 DEFINITION

A. Requests for Information (RFI): Request from Owner, Architect/Engineer, or Contractor seeking information from each other during construction.

1.03 SUBMITTALS

A. Pre-construction Conference Prerequisites: Prior to the pre-construction conference, submit the following.

1. Work permit (if required).

2. Certificates of Insurance.

3. Performance and Payment Bonds (if required).

4. List of Contractor's key personnel.

5. Final list of subcontractors and material suppliers.

6. Contractor's logistical plan.

7. Project construction schedule, also including:

8. Proposed workforce size.

9. Scheduled approvals of samples and mockups.

10. Delivery milestones for long lead time items.

11. Submittal log {for review of principle products) per Section 01 33 00 (Submittal Procedures).

12. Waste management plan per Section 01 74 19 (Construction Waste Management and Disposal).

13. Special inspection responsibilities.

B. Project Construction Schedule Updates: Submit updated Project construction schedule prior to regular progress meetings. Distribute copies to the Architect/Engineer, Owner, subcontractors, and other parties required to comply with scheduled dates.

1.04 COORDINATION

A. Coordinate construction operations, and related administrative activities, included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

1.05 REQUESTS FOR INFORMATION (RFI)

A. Prepare and submit an RFI immediately on discovery of the need for additional information or interpretation of the Contract Documents, so as to avoid delay to the Project construction schedule. RFIs submitted by other entities controlled by the Contractor will be returned without response.

B. RFI Forms: Use AIA Document G716 form.

C. Architect/Engineer's Action:

1. Architect/Engineer will review each RFI, determine action required, and respond. Allow seven (7) business days for Architect/Engineer's response for each RFI.

2. Architect/Engineer's action may include a request for additional information, in which case Architect/Engineer's time for response will date from time of receipt of additional information.

D. Review response and notify Architect/Engineer within seven (7) business days if Contractor disagrees with response.

1.06 CONTRACTOR'S KEY PERSONNEL

A. Provide a list of Contractor's key personnel assignments, including Project manager, superintendent, and foreman, identifying individuals, their duties and responsibilities. Include email addresses and telephone numbers (office and cell phone).

B. Key personnel shall remain assigned to Project for its entire duration. Notify Architect/Engineer and Owner in writing prior to any change in key personnel assignments.

C. The Project superintendent shall be on-site at all times during construction, and shall speak fluent English.

1.07 SUBCONTRACTORS AND MATERIAL SUPPLIERS

A. Provide a list of all subcontractors and material suppliers involved on the Project, including company addresses and contact information.

1.08 ARCHITECT/ENGINEER'S PROJECT REPRESENTATIVE

A. The Architect/Engineer may have a Project representative present at the site while the Work is in progress.

B. The Contractor shall provide ready and easy access for representatives of the Architect/Engineer to all parts of the Work, whenever and wherever it is in progress, including the provision of safety equipment of first quality and in excellent condition.

1.09 OWNER'S PROJECT REPRESENTATIVE

A. The Owner may have a Project representative present at the site while the Work is in progress.

B. The Contractor shall provide ready and easy access for representatives of the Owner to all parts of the Work, whenever and wherever it is in progress, including the provision of safety equipment of first quality and in excellent condition.

1.10 CONTRACTOR'S LOGISTICAL PLAN

A. Prepare a complete logistical plan indicating:

1. Path of entrance and egress of all workmen and material from each building entrance to location of the Work.

2. Locations for delivery of material.

3. Locations for on-site storage of materials.

4. Locations for storage of waste materials.

5. Locations for pickup of refuse.

6. Locations of vertical hoisting facilities.

7. Locations of elevators assigned for Contractor's use, if any.

8. Locations of temporary facilities.

9. Locations of water sources.

10. Locations of electricity sources.

11. Locations of support equipment (compressors, welders, etc.).

1.11 PROJECT CONSTRUCTIONSCHEDULE

A. Prepare a comprehensive horizontal Gant-chart type Project construction schedule for the entire duration of the Project, on 11" x 17" paper.

1. Indicate each construction activity / restoration assembly separately, complete with start dates, duration, and proper sequencing of activities. Also include dates for:

a. Approval of samples and mockups.

b. Delivery of long lead time items.

2. Organize schedule to clearly show Work of separate phases, buildings and facades, roofs, etc.

3. Identify first workday of each week with a continuous vertical line on the schedule.

B. Update Project construction schedule to reflect any approved changes.

1.12 PROJECT MEETINGS

A. Pre-construction Conference:

1. Architect/Engineer will schedule and conduct a pre-construction conference at the Project site before starting construction.

2. Representatives of the Owner, the Architect/Engineer, and the Contractor shall attend this meeting.

3. Minutes of the meeting will be taken by the Architect/Engineer, who will reproduce and distribute them to parties in attendance.

4. The agenda shall include review of the following:

a. Pre-construction conference prerequisites listed under "Submittals" in Part 1 of this Section.

b. Contract Documents

c. Requirement enumerated in the following Sections:

1) 01 11 00 (Summary of Work).

2) 01 21 29 (Quantity Allowances).

3) 01 31 00 (Project Management and Coordination).

4) 01 40 00 (Quality Requirements).

5) 01 43 39 (Mockups and Physical Quality Assurance Aids}.

6) 01 50 00 (Temporary Facilities).

7) 01 60 00 (Product Requirements).

8) 01 73 00 (Execution).

9) 01 74 19 (Construction Waste Management and Disposal).

d. Provisions for protection of the building and adjacent property.

e. Project administration procedures:

1) Frequency, time, and location of progress meetings (refer to Progress Meetings in this Section).

B. Pre-Installation Conferences:

1. Conduct a pre-installation conference at the Project site before each construction activity that requires coordination with other construction.

2. Send conference notification and agenda to all attendees seven (7) business days prior to date of conference.

3. Attendees shall include:

a. Contractor's Project manager and superintendent.

b. Architect/Engineer's Project representative.

c. Owner's Project representative.

d. Manufacturer's authorized representative, as applicable for warranted systems.

e. Manufacturer approved installer, as applicable for warranted systems.

f. Other attendees, if listed in the individual Specification Sections.

C. PROGRESS MEETINGS:

1. Progress meetings will be held regularly, as determined by Architect/Engineer, to review Work in progress.

2. Representatives of the Owner, the Architect/Engineer, and the Contractor shall attend these meetings. Attendance by installing subcontractors, or manufacturer authorized representatives may be requested based on the phase of the Work.

3. The Architect/Engineer will establish the agenda for the meeting, preside over it, record, reproduce and distribute the minutes.

4. The agenda will include:

a. Review and approval of the previous meeting's minutes.

b. Discussion of findings or action items identified during the previous meeting.

c. Review of submittal status.

d. Review of proposed changes.

e. Compliance of the Work with the Contract Documents.

f. Review of schedule related items:

1) Review of Work progress since the previous meeting.

2) Discussion of problems that may impede progress and solutions to meet the Project construction schedule.

3) Discussion of Work planned to be done before next meeting.

4) Schedule of pre-installation conferences.

5) Review of delivery schedules.

g. Review of Applications for Payment.

h. Other business.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

END OF SECTION 01 31 00

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for documentation of Work in progress.

B. Comply with Section 01 31 00 (Project Management and Coordination) for Project construction schedule.

1.02 SUBMITTALS

A. Reports: Submit at monthly intervals.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 RECORD SET OF CONTRACT DOCUMENTS

A. Maintain a complete, record set of the Contract Documents at the site while the Work is in progress.

1. Record all changes to the Contract Documents.

3.02 RECORD PHOTOGRAPHS

A. Where directed in the individual Specification Sections, or otherwise directed by the Architect/Engineer, as evidence of compliance with Contract Documents, take "before" and "after" record photographs of portions of the Work that may be concealed or inaccessible once reconstruction is complete.

B. Minimum photograph size shall be 4" x 6". Work depicted in the photograph shall be identified by means of note cards which do not obstruct the installed Work and shall contain the following information:

1. Project number or project address.

2. Date photo was taken.

3. Location of Work.

C. Failure to take record photographs may result in the Contractor having to re-expose or re-access the same Work to accommodate Architect/Engineer's inspection; any resulting costs are the Contractor's responsibility.

END OF SECTION 01 32 00

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for submissions.

1.02 DEFINITIONS

A. Submit: Transmit to Architect/Engineer, unless otherwise indicated.

B. Action Submittals: Submittals requiring Architect/Engineer's responsive action.

C. Informational Submittals: Submittals not requiring Architect/Engineer's responsive action.

D. On-demand Submittals: Submittals not transmitted to Architect/Engineer unless requested.

E. Architect/Engineer's Action: Architect/Engineer's response to submittal.

F. Delegated Design: Design (e.g., calculations, etc.) prepared by a qualified professional engineer retained by the Contractor.

1.03 SUBMITTALS

A. Submittal Log:

1. Submit one (1) copy of initial submittal log prior to pre-construction conference.

2. Submit updated log as necessary until all submittals have been completed.

1.04 SUBMITTAL LOG

A. Prepare and maintain a list of all action submittals in a submittal log. Include the following information in tabular format:

1. Specification Section number and title.

2. Product number and description.

3. Manufacturer name.

4. Category of submittal (e.g., Product Data, Samples, Shop Drawings, Other Documents, Delegated Design, etc.).

5. Supplier name.

6. Subcontractor name.

7. Current status.

8. Indicate potential scheduling conflicts.

9. Date scheduled for first submittal (when establishing dates allow required time for review, re-submittal, ordering, manufacturing, fabrication, and delivery).

10. Date of Architect/Engineer's approval.

11. Date required by Project construction schedule.

12. Description of Work covered.

B. Update submittal log as necessary to reflect changes in current status and timing of submittals.

C. Retain a current copy of submittal log at Project site throughout the duration of the Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Verify that all submittals comply with requirements specified in the Contract Documents prior to transmittal to Architect/Engineer.

B. Coordination:

1. Prepare and transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay. Allow sufficient time for review, including time for re-submittals.

2. Lead Time Conflicts: Identify on submittal label (in comment space provided) any construction element represented by submittal whose lead time, if selected, would conflict with the Project construction schedule.

3. Mockups and performance models shall not be constructed until associated Product Data and Sample submittals have been approved by Architect/Engineer.

4. Architect/Engineer may not approve submittals requiring coordination with other submittals until related submittals are received.

C. Preparation and Packaging:

1. Number of Copies or Samples: The number (quantity) of each submittal shall be as indicated in this Section, unless otherwise indicated in the individual Specification Sections, or elsewhere in the Contract Documents, or by direction of the Architect/Engineer.

2. Submittal Label: Place a permanent label on each submittal for identification. Use submittal label enclosed at the end of this Section, or equivalent.

3. Deviations: Highlight deviations from the Contract Documents on submittals.

4. Package each submittal appropriately for delivery and handling.

D. Initial Review: Allow ten (10) working days for initial review by Architect/Engineer.

E. Architect/Engineer's Action: For action submittals, refer to Architect/Engineer's Action in this Section for a listing of the typical actions and descriptions of each.

F. Re-submittals:

1. If a re-submittal is required by Architect/Engineer's Action, process the same as the initial review.

2. Architect/Engineer fees associated with review of submittals in excess of two reviews (one for initial submission and one for resubmission) may be charged to the Contractor at the Owner's discretion by reducing the Contract Sum by Change Order.

G. Retain and Protect: Retain one set of all approved submittals at the Project site for the duration of the Project. Protect from soiling and other damage (particularly Samples).

H. Distribution: Furnish copies of approved submittals to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

I. Product Ordering: Do not proceed with ordering, manufacturing, or fabrication of products until submittals have been approved per Architect/Engineer's Action.

J. Use for Construction: Use only submittals approved per Architect/Engineer's Action.

K. Disposition: Notify Architect/Engineer prior to disposition of approved submittals.

3.02 ACTION SUBMITTALS

A. General: Prepare and submit as indicated in the individual Specification Sections. Identify related submittals (e.g., Product Data, Samples, etc.) and transmit as a unit.

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

1. Include the following, as applicable:

a. Manufacturer catalog cut sheets.

b. Manufacturer product specifications.

c. Manufacturer written recommendations.

d. Manufacturer installation instructions.

e. Notation of compliance with recognized trade association standards.

f. Notation of compliance with recognized testing agency standards and application of testing agency labels and seals.

g. Performance curves and operational ranges.

h. Notation of coordination requirements.

i. Dimensions verified by field measurement.

2. Number of Copies:

a. Submit three (3).

b. Architect/Engineer will return two (2).

3. Where printed Product Data includes information on several products, some of which are not required, highlight required information.

4. Where Product Data has been provided as part of the Bidding Documents, it is provided solely for the Contractor's convenience. Contractor is responsible to procure current, complete information directly from the manufacturer.

C. Comparable Product Request Data:

1. Submit the same as Product Data.

D. Samples: Physical Samples for review of kind, color, pattern, and texture. Samples, as shown below, can be categorized as Type 1, Type 2, and Type 3.

1. General:

a. Transmit Samples that contain multiple related accessories together in single submittal package.

b. Identify the following information on the back of each Sample:

1) Generic description of the Sample.

2) Product name and name of manufacturer.

3) Sample source.

c. Delivery: Where Samples will be compared with existing building construction, or where the physical size, weight or quantity of Samples makes them difficult to transport, deliver Samples to the Project site, unless otherwise directed in the individual Specification Sections.

d. Comply with Section 01 43 39 (Mockups and Physical Quality Assurance Aids) for the use of reference panels and aesthetic specimens for matching Samples to existing building construction.

e. Standard for Judging Delivered Products: Approved Samples will be used at the Project site for judging products delivered and incorporated in the Work.

2. Type 1 Sample: Sample exactly representing the product to be furnished (e.g expansion bolt).

a. Number of Samples: Submit two (2).

3. Type 2 Sample: Sample comprising a set of options such as the full range of colors, patterns, textures, or similar characteristics available, which upon selection will be representative of the product to be furnished (e.g., paint color chart).

a. Number of Samples: Submit two (2) sets.

4. Type 3 Sample: Sample comprising a set of multiple units representing the range (extremes and distribution) of variation in a natural product (e.g., natural stone) or variation introduced through the manufacturing process (e.g., artificial stone), which closely simulates all the characteristics that will be present in the product to be furnished.

a. Samples for Initial Selection: Submit a set of Samples for each viable product choice, consisting of units or sections of units showing the full range of variation (as described above) to facilitate narrowing the selection to a single product.

1) Number of Samples:

a) Submit one (1) set for each viable product choice.

b) Architect/Engineer will indicate selection and/or other action in writing.

b. Samples for Verification: Submit a set of full-size Samples, or of the size indicated, of the initially selected product, fully fabricated, cured and finished as specified, and representative of the product proposed for use, to facilitate verification of the selection.

1) Number of Samples: Submit two (2) sets.

E. Shop Drawings: Each Shop Drawing shall be newly prepared with Project-specific information drawn to accurate scale.

1. Include the following information, as applicable:

a. Fabrication and installation drawings.

b. Numbering scheme identifying individual components (or units).

c. Roughing-in and setting diagrams.

d. Patterns and templates.

e. Dimensions, including verification and notation of all field measurements.

f. Identification of products.

g. Relationship to adjoining construction clearly indicated.

h. Indication of compliance with standards.

i. Notation of coordination requirements.

j. Seal and signature of professional engineer (where indicated as delegated design).

2. Number of Copies:

a. Submit two (2) sets.

b. Architect/Engineer will return one (1) set.

F. Delegated Design: Where Contract Documents indicate delegated design requirements, Contractor shall engage a qualified professional engineer to design or certify data for the product and system specified. Design data and signed statement shall bear the seal of the qualified professional engineer.

1. Include the following information:

a. Statement signed and sealed by the professional engineer stating that products and systems comply with performance and design criteria in the Contract Documents.

b. Design loads and calculations.

c. List of applicable codes.

d. Other factors used in performing these services.

2. Number of Copies:

a. Submit two (2) copies of statement.

b. Architect/Engineer will return one (1) copy.

3. In the event that performance and design criteria indicated in the Contract Documents is not sufficient to perform services required, submit a written request for additional information to the Architect/Engineer.

3.03 INFORMATIONAL SUBMITTALS

A. Other Documents: Prepare and submit as indicated in the individual Specification Sections, or elsewhere in the Contract Documents.

1. Examples include, but are not limited to, the following:

a. Certification data.

b. Insurance certificates.

c. Bonds.

d. Permits.

e. Qualification data.

f. Project construction schedule.

g. Inspection and test reports.

h. Operation and maintenance manuals.

i. Warranties & guarantees.

j. Construction progress documents.

k. Other informational submittal documents.

2. Number of Copies:

a. Submit one (1) copy.

b. Copy will not be returned.

B. Material Safety Data Sheets (MSDSs): Submit information directly to the Owner, if requested by Owner.

3.04 ON-DEMAND SUBMITTALS

A. Prepare, maintain, and retain submittals where listed and marked "(On-demand)" in the individual Specification Sections. Do not submit to Architect/Engineer unless requested.

B. Upon written notice by the Architect/Engineer, submit "On-demand" submittals within two (2) business days.

1. Number of Copies:

a. Submit two (2) copies.

b. Copy will not be returned, except at Architect/Engineer's discretion.

3.05 ARCHITECT/ENGINEER'S ACTION

A. The Architect/Engineer will respond to each Action Submittal with one of the following actions conveyed via stamp or written transmittal:

1. No Exceptions Taken: That part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

2. Accepted as Noted: That part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. Revise & Resubmit: Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay.

4. Rejected: Prepare a new submittal; resubmit without delay.

B. The Architect/Engineer's approval of any submittal is for design only and is not a complete check on the method of assembly, erection or construction. Approval shall in no way be construed as:

1. Permitting any departure whatsoever from the Contract Documents, except where the Contractor has received prior written permission from the Architect/Engineer for such departure.

2. Relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, omissions or otherwise that may exist.

3. Relieving the Contractor of full responsibility for adequate field connections, erection techniques, bracing or deficiencies in strength.
4. Relieving the Contractor of full responsibility for satisfactory performance of all Work and coordination of the Work of all subcontractors and other contractors.
5. Permitting departure from additional details or instructions previously furnished by the Architect/Engineer.

3.06 ENCLOSURES

- Sample Submittal Labels

END OF SECTION 01 33 00

SUBMITTAL LABEL: RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS	
Specification:	
Item:	
Product Number / Description:	
Manufacturer:	
Supplier: **Name / Address:** **Phone:**	
Comments:	
Date:	
Project:	
Contractor:	
Subcontractor:	

SUBMITTAL LABEL: RODRIGUEZ + GAMBINO BUILDING ENVELOPE CONSULTANTS	
Specification:	
Item:	
Product Number / Description:	
Manufacturer:	
Supplier: **Name / Address:** **Phone:**	
Comments:	
Date:	
Project:	
Contractor:	
Subcontractor:	

SECTION 01 40 00 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Qualifications of entities involved in the Project.

2. Regulatory requirements, industry standards, and utility requirements.

3. Quality control tests and inspections.

1.02 DEFINITIONS

A. Quality Assurance Terms:

1. Experienced: When used with an entity, "experienced" means having a minimum of five (5) consecutive years of experience of successfully completing previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction. Where applicable, for historical restoration Work, such previous projects must have involved facilities determined by the authorities to be of landmark quality and/or of historical significance.

2. Qualified Installer: A firm or individual (e.g., tradesperson) experienced in installing, applying, 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. Where required by authorities having jurisdiction, installer shall also be duly registered, licensed, approved, certified, and qualified, as applicable (e.g., licensed electricians, welders, riggers, etc.).

3. Qualified Specialist: An experienced firm or individual recognized as an expert in the specific activity or service for which they shall be engaged (e.g., site safety, etc.). Where required by authorities having jurisdiction, specialist shall also be duly registered, licensed, approved, certified, and qualified, as applicable.

4. Qualified Fabricator: A firm experienced in fabricating products similar to those indicated for this Project, with a record of successful in-service performance, and sufficient production capacity to fabricate the required quantity without delay to the Project construction schedule. Where required, fabricator shall also be approved by authorities having jurisdiction.

5. Qualified Manufacturer: A firm experienced in manufacturing products or systems similar to those indicated for this Project, with a record of successful in-service performance, and sufficient production capacity to manufacture the required quantity without delay to the Project construction schedule. For warranted systems, manufacturer must provide and maintain a warranty for the specified system as indicated in the individual Specification Sections.

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

7. Qualified Testing Agency: A nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, or a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or an independent agency with the experience and capability to conduct the testing and inspections indicated, as documented according to ASTM E 329. Testing agency shall also meet additional qualifications where required by the individual Specification Sections, or by authorities having jurisdiction. "Qualified Testing Laboratory" or "Qualified Inspection Agency" shall mean the same as "Qualified Testing Agency."
8. Manufacturer Approved Installer: For warranted products and systems, the qualified installer shall also be approved by manufacturer for warranted installation of the specified products. Installer shall be credentialed by manufacturer for installation of specified products where such credentials are available.
9. Manufacturer's Authorized Representative: An authorized representative of manufacturer who is technically trained and approved by manufacturer to test, inspect and certify installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

B. Quality Control Terms:

1. Performance Requirements: Design criteria (e.g., structural loads, wind loads, etc.), tests (e.g., anchor pull out tests, sealant adhesion, etc.) and inspections specified to ensure that products and assemblies incorporated in the Work perform as intended. The individual Specification Sections indicate specific performance requirements.
2. Source Quality Control Testing: Tests and inspections that are performed at the source (i.e., plant, mill, factory, or shop) to verify performance and compliance with specified requirements.
3. Product Testing: Tests and inspections that are performed by a qualified testing agency to establish product performance and compliance with specified requirements and industry standards.
4. Pre-construction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated in the Work to verify performance and compliance with specified requirements.
5. Field Quality Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work to verify performance and compliance with specified requirements.
6. Special Inspections: Tests and inspections required by authorities having jurisdiction including, but not limited to, those listed on the Drawings.

1.03 SUBMITTALS

A. Qualification Submittals: Proof of specified qualifications.

1. Installer Qualifications (On-demand).
2. Specialist Qualifications (On-demand).
3. Fabricator Qualifications (On-demand).
4. Manufacturer Qualifications (On-demand).

5. Manufacturer Approved Installer Credentials (On-demand). Manufacturer's certification, or installer credentials, indicating that installer is approved for warranted installation of specified products and systems.

6. Testing Agency Qualifications (On-demand). In the form of a recent report on the inspection of the testing agency by a recognized authority demonstrating their capabilities and experience.

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

1.04 QUALIFICATIONS OF ENTITIES INVOLVED IN THE PROJECT

A. Contractor and all entities engaged by the Contractor (e.g., employees, subcontractors, testing agency, etc.) for involvement in the Project shall meet the minimum qualifications for their respective roles (e.g., qualified installer, qualified testing agency, etc.) as established in the Definitions article above. Additional qualification requirements may be indicated in the Contract Documents.

1.05 REGULATORY REQUIREMENTS AND INDUSTRY STANDARDS

A. Comply with the latest applicable laws, codes and requirements of all authorities having jurisdiction without delay.

1. Meet all license and registration requirements as applicable.

2. File all required certificates (e.g., insurance certificates, etc.).

3. File all plans (e.g., site safety plan, etc.), except for those explicitly indicated as Owner's responsibility. Refer to Drawing notes.

4. Obtain all permits, approvals, and certificates.

5. Maintain a complete set of applications and Drawings, approved by authorities, at the Project site. Post copies of documents (e.g., licenses, permits, etc.) in a conspicuous place, as applicable.

6. Arrange for all tests and inspections for each element of construction, temporary facility, and permanent facility, when (e.g., before use, etc.) and as required.

7. Pay all applicable fees and expenses, except for those explicitly indicated as the Owner's responsibility. Refer to Drawing notes.

8. Remove any violations issued by authorities related to Contractor's operations. Contractor is solely responsible for payment of penalties and fees resulting from and related to the removal of these violations.

B. Comply with industry standards and the best trade practices.

1.06 UTILITY COMPANY REQUIREMENTS

A. Comply with requirements of all utility companies (e.g., water, gas, electric, sanitary waste, storm drainage, telephone, cable, etc.), as applicable.

1.07 CONFLICTING REQUIREMENTS

A. In the event of conflict between or among parts of the Contract Documents, the more expensive way of doing the Work, the better quality or greater quantity of material shall govern. Refer all such conflicts to the Architect/Engineer for a decision before proceeding.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 TESTS AND INSPECTIONS

A. General:

1. All Work, all products, whether or not incorporated in the Work, and all processes of manufacture, shall be subject to inspection and testing by the Owner and Architect/Engineer at all times and at all places. If inspection or testing results indicate, at the sole discretion of the Architect/Engineer, that any Work, products or processes of manufacture do not meet the requirements of the Contract Documents, the Architect/Engineer will have the right to reject same as defective Work.

2. Test and inspection requirements include, but are not limited to, those specified in the Contract Documents.

3. Special Inspections: Comply with requirements for special inspections by all authorities having jurisdiction including, but not limited to, those listed on the Drawings.

4. Specified tests, inspections, and related actions do not limit the Contractor's other quality assurance and quality control procedures that facilitate compliance with the Contract Document requirements.

B. Owner Responsibilities: Where test and inspection services listed in the Contract Documents are explicitly indicated as the Owner's responsibility, the Owner will engage a qualified testing agency to perform the services.

C. Contractor Responsibilities:

1. Where test and inspection services listed in the Contract Documents are not explicitly indicated as the Owner's responsibility, or where test and inspection services, in addition to those listed, are required by authorities having jurisdiction, the Contractor shall engage and pay for a qualified testing agency to perform the services.

2. Tests and inspections requested by Contractor and not required by the Contract Documents are solely the Contractor's responsibility.

3. Associated Services: Regardless of the assignment of responsibility for particular test and inspection services, the Contractor is responsible as follows:

a. Cooperate with agencies performing required tests and inspections.

b. Notify Architect/Engineer and testing agencies sufficiently in advance of time when Work that requires testing or inspecting will be performed to permit assignment of personnel.

c. Provide access to the Work, and incidental labor and facilities necessary to facilitate tests and inspections.

d. Provide preliminary design mix proposed for use, for material mixes that require control by testing agency.

e. Provide performance models as specified, and assist testing agency in obtaining test specimen for required tests and inspections.

f. Protect construction exposed by or for test or inspection activities.

g. Provide security and protection at Project site for test and inspection equipment.

h. Repair damaged construction and restore substrates and finishes, upon completion of testing, inspecting, specimen taking, and similar services. Comply with Section 01 73 29 (Cutting and Patching).

4. Test and Inspection Reports: Submit two (2) copies, unless otherwise indicated. Submit additional copies if required by authorities having jurisdiction.

D. Testing Agency Responsibilities:

1. Cooperate with Architect/Engineer and Contractor in performance of duties.

2. Determine the location where test specimens will be taken and where in-situ tests will be conducted.

3. Conduct tests and inspections with qualified personnel.

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

5. Certified Report:

a. Interpret results and prepare a certified written report for each test, inspection, or other quality control service performed. Include the following information on the report, as applicable:

1) Date of issue.

2) Project number and title.

3) Name, address, and telephone number of testing agency.

4) Dates and locations of samples and tests or inspections.

5) Names of individuals making tests and inspections.

6) Description of the Work and test and inspection method.

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 specimen taking and testing and inspecting.

11) Statement indicating professional opinion whether tested and inspected Work complies with or deviates from the requirements of the Contract Documents.

12) Name and signature of laboratory inspector.

13) Recommendations on retesting and re-inspecting.

b. Submit report through Contractor.

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

7. Do not perform any duties of the Contractor.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section explains the use of industry standards within the Specifications, and lists the names of organizations and/or the meaning of information referenced in the Specifications by abbreviation or acronym, including:

1. Industry Standards

2. Federal, State and Local (City) Government Agencies

3. Legislation

1.02 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the requirements of the Contract Documents exceed those of the construction industry standard, the applicable standards have the same force and effect as if incorporated directly into the Contract Documents. The standards are made a part of the Contract Documents by reference.

B. Publication Dates: Unless otherwise indicated, comply with the latest standards in effect as of the date the Work commences.

C. Copies of Standards: Contractor is responsible that each entity involved in the Work is familiar with industry standards applicable to their respective construction activities. Copies of the standards may be obtained directly from the publishers.

1.03 ABBREVIATIONS AND ACRONYMS

A. General: The lists in this Section are not necessarily exhaustive. Where abbreviations and/or acronyms are not found on the lists, contact the Architect/Engineer for specific meaning.

B. Industry Organizations: The following list contains the abbreviations and acronyms used for industry organizations in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

AAMA	American Architectural Manufacturers Association
ACI	ACI International (American Concrete Institute)
AIHA	American Industrial Hygiene Association
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute (Formerly ASA: American Standards Association and USASI: United States of America Standards Institute)
APA	APA - The Engineered Wood Association
ARMA	Asphalt Roofing Manufacturers Association

ASA	American Standards Association (now ANSI)
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASTM	ASTM International (American Society for Testing and Materials International)
AWI	Architectural Woodwork Institute
AWS	American Welding Society
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
CAS	Chemical Abstracts Service
CDA	Copper Development Association
CISPI	Cast Iron Soil Pipe Institute
CSI	Construction Specifications Institute (The)
FM	Factory Mutual System (Now FMG)
FMG	FM Global (Formerly: FM - Factory Mutual System)
FMRC	Factory Mutual Research (Now FMG)
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
ICRI	International Concrete Repair Institute, Inc.
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization of Standardization Available from ANSI
MIA	Marble Institute of America
MPI	Master Painters Institute
ML/SFA	Metal Lath/Steel Framing Association (Division of NAAMM)
NAAMM	National Association of Architectural Metal Manufacturers
NBGQA	National Building Granite Quarries Association, Inc.
NCMA	National Concrete Masonry Association
NFPA	NFPA (National Fire Protection Association)
NRCA	National Roofing Contractors Association
NWMA	National Woodwork Manufacturers Association
NWWDA	National Wood Window and Door Association (Now WDMA)
PCI	Precast/Prestressed Concrete Institute
SDI	Steel Door Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSPC	The Society for Protective Coatings (Formerly the Steel Structures Painting Council)

UL	Underwriters Laboratories Inc.
WHI	Warnock Hersey International, Inc. (ETL SEMKO Division of Intertek) (Sometimes "WH" is used)
WWPA	Western Wood Products Association

C. Code Agencies: The following list contains the abbreviations and acronyms used for the code agencies in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

IBC	International Building Code
ICC	International Code Council

D. Federal Government Agencies: The following list contains the abbreviations and acronyms used for the federal government agencies in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

CRD	Concrete Research Division
DOE	Department of Energy
DOT	Department of Transportation
EPA	Environmental Protection Agency
MSHA	Mine Safety and Health Administration
NBS	National Bureau of Standards
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration

E. State Government Agencies: The following list contains the abbreviations and acronyms used for state government agencies in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

DEC	Department of Environmental Conservation
DPH	Department of Public Health
DOL	Department of Labor
DOT	Department of Transportation

F. Local (City) Government Agencies: The following list contains the abbreviations and acronyms used for city government agencies in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

BSA	Board of Standards and Appeals
DCAS	Department of Citywide Administrative Services
DEP	Department of Environmental Protection

DOB	Department of Buildings
DOS	Department of Sanitation
DOT	Department of Transportation
MEA	Materials and Equipment Acceptance

G. Legislation: The following list contains the abbreviations and acronyms used for legislation in the Specifications, or elsewhere in the Contract Documents. The abbreviations and acronyms shall mean the name of the entities listed.

ADAAG	Americans with Disabilities Act (ADA)
	Architectural Barriers Act (ABA)
AHERA	Asbestos Hazard Emergency Response Act
CFR	Code of Federal Regulations
FS	Federal Specification
MIL	Military
PS	Product Standard (NBS)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 42 00

SECTION 01 43 39 - MOCKUPS AND QUALITY ASSURANCE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for physical quality assurance aids, such as mockups, performance models, reference panels, and various specimens.

1.02 DEFINITIONS

A. Mockup: A full-size, physical assembly that is constructed on-site to indicate the configuration of materials to be incorporated in the Work, verify constructability, and establish the level of workmanship. Approved mockups establish the standard by which the Work will be judged. Mockups can also include examples of cleaning and coating applications.

B. Performance Model: A full size, physical assembly or portion thereof that is constructed for testing and evaluating the performance of products (e.g., field test joint sealant adhesion to Project joint substrates, or laboratory test curtain wall assembly).

C. Reference Panel: An exposed and representative portion (panel) of the existing building construction used as an aesthetic reference for the approval of product Samples by the Architect/Engineer.

D. Replication Specimen: An existing building element used by a product manufacturer as the basis for producing replicas to be incorporated in the Work.

E. Aesthetic Specimen: A piece of material (e.g., mortar, brick, etc.) extracted from and representative of a particular construction element present on the existing building typically used for aesthetic determinations.

F. Test Specimen: A sampling of material (e.g., concrete, mortar, etc.) used for testing and evaluation of physical properties. Specific test requirements indicate whether the sampling is to be extracted from and representative of a particular construction element present on the existing building, or whether it is obtained from and representative of new material to be incorporated in the Work.

1.03 SUBMITTALS

A. Photographs of Mockups: Submit one (1) set of photographs (hardcopy plus electronic file) for each mockup upon approval.

B. Photographs of Performance Models: Submit one (1) set of photographs (hardcopy plus electronic file) for each performance model, showing condition before and after testing.

C. Photographs of Arranged Samples (see Reference Panels heading): Submit one (1) set of photographs (hardcopy plus electronic file) for each Sample arrangement.

D. Photographs of Replication Specimens: Submit one (1) set of photographs (hardcopy plus electronic file) for each specimen, showing condition before and after detachment from building.

E. Photographs of Test Specimens: Submit one (1) set of photographs (hardcopy plus electronic file) for each specimen, showing condition before and after testing.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 MOCKUPS

A. General:

1. Only products whose Samples and Product Data have been approved by Architect/Engineer through the submittal process shall be used in mockups.

2. Do not proceed with Work demonstrated by the mockups until approved by Architect/Engineer.

3. Mockups are not to be used for performance testing. Refer to Performance Models heading in this Section.

B. Construction of Mockup:

1. Location: Mockup location is indicated on the Drawings, or as otherwise determined by Architect/Engineer.

2. Field construct mockup in a manner indicative of type and configuration of all included materials and components and level of workmanship.

a. Mockup must demonstrate all contingent construction conditions and details, such as splices, material laps, expansion joints, shims, blocking, etc.

b. Construct mockup with dimensions greater than the minimum indicated on the Drawings, if necessary to demonstrate all contingent construction conditions and details.

c. Construct mockup in "cutaway," or "layered" fashion, if necessary to illustrate any construction components that would otherwise be concealed. For some mockups, where "cutaway" construction is not possible, separate photographs of each individual concealed component, installed in sequence (e.g., flashing, anchorage, etc.), may be allowed in lieu of "cutaway" construction, with prior written consent by the Architect/Engineer.

d. Where mockup is intended for use as an example of a cleaning and/or coating application, prepare, clean, and/or coat surface in accordance with the Specifications. Delineate mockup boundaries using a lasting but non-defacing, easily removable method

3. Identification Label: Clearly label mockup including:

a. Date

b. Detail Reference.

C. Combination of Mockups: Mockups of multiple restoration assemblies may be combined, if approved in advance by the Architect/Engineer. For example, the construction of a parapet, coping, and flashing might be combined in a single mockup.

D. Multiple Mockups: Construct multiple mockups, if necessary to demonstrate all

pertinent aspects of a restoration assembly for which it is required.

E. Notification and Approval:

1. Notify Architect/Engineer, and, if applicable, manufacturer's authorized representative, in writing when mockup is complete and ready for review. Use Mockup Review and Approval Form enclosed at the end of this Section, or equivalent.

a. Manufacturer's authorized representative approval is required for the following types of mockups, or as otherwise listed in the individual Specification Sections:

1) Post-installed anchors.

2) Coating systems for steel (surface preparation and surface coating).

3) Terra Cotta restoration.

4) Joint sealant.

2. Obtain Architect/Engineer's approval of mockup, and where required, also obtain manufacturer's authorized representative's approval. Approvals will be conveyed on the Mockup Review and Approval Form.

3. Reconstruct disapproved / rejected mockup as needed until approved.

F. Photograph Mockup: Photograph approved mockup from all sides and angles to show in detail the type and configuration of materials, level of workmanship, and "cutaway" construction exposing concealed components. Identification label must be legible in photograph.

G. Retain and Protect: Retain approved mockup in undisturbed condition. Protect from soiling and other damage.

H. Standard for Judging the Work:

1. Approved mockups will establish the standard by which the Work will be judged.

2. Work not complying with approved mockup, or Work performed in advance of approved mockup, may be rejected.

I. Disposition of Mockups:

1. Notify the Architect/Engineer prior to disposition.

2. Mockups may be incorporated in the finish Work as directed by Architect/Engineer, otherwise demolish and remove mockups when the Work is complete.

3.02 PERFORMANCE MODELS

A. General:

1. Performance model requirements are indicated in the individual Specification Sections.

2. Only products whose Samples and Product Data have been approved by Architect/Engineer through the submittal process shall be used in performance models.
3. Do not proceed with Work demonstrated by the performance models until test results comply with performance requirements.

B. Construction of Performance Model:

1. Location: Performance model location is indicated in the Contract Documents, or as otherwise determined by Architect/Engineer.
2. Construct performance model in a manner indicative of type and configuration of all included materials and components and level of workmanship. Model must include all contingent construction conditions and details required for testing, such as splices, material laps, joints, anchors, etc.
3. Facilitate storage and curing.
4. Identification Label: Clearly label performance model including:
   a. Date
   b. Section number
   c. Test identification.

C. Multiple Performance Models: Construct multiple performance models, if necessary to accomplish required testing.

D. Photograph Performance Model (Before and After Testing): Photograph approved performance model before and after testing from all sides and angles to show in detail the type and configuration of materials, and level of workmanship and physical results of tests, if any. Identification label must be legible in photograph.

E. Transport: If required, protect, pack and transport performance model to testing agency.

F. Tests, Inspections and Reporting:

1. Notify Architect/Engineer, and if applicable, manufacturer's authorized representative, in writing of test and inspection schedule. Provide notice at least 48 hours in advance of testing.
2. Comply with test, inspection, and reporting requirements specified.

G. Disposition of Performance Models: Notify the Architect/Engineer prior to disposition.

3.03 REFERENCE PANELS

A. Reference panels are required for all distinct exposed building construction elements specified in the Work to be restored or replaced.

B. Reference Panel Preparation:

1. Location: Reference panel location is indicated on the Drawings, or as otherwise determined by Architect/Engineer. Location is typically based on the following criteria:

a. Exposure to natural light.

b. Unobstructed views from various vantage points (angles and distances).

c. Accessibility (e.g., within reach from grade level or roof surface, where possible).

d. Proximity to other existing construction elements that contribute to an overall aesthetic impact.

2. Size: Reference panel size is indicated in the individual Specification Sections, on Drawings, or as otherwise determined by Architect/Engineer.

3. Identification Label: Clearly label reference panel and delineate its boundaries using a lasting but non-defacing easily removable method. Include the following information on label:

a. Date

b. Reference panel ID

c. Sample ID

4. Clean reference panel as specified in the following Specification Sections:

a. Section 04 01 00 Masonry Restoration

C. Retain and Protect: Retain reference panel in undisturbed condition. Protect from soiling and other damage.

D. Arrange Sample(s) for Evaluation:

1. Arrange product Sample(s) in relation to reference panel to permit a clear comparison when viewed by the Architect/Engineer from various vantage points. Where Sample comprises multiple units, assemble units to best simulate the configuration and variation exhibited in the reference panel.

2. Provide any temporary support required.

E. Photograph Arranged Sample(s): Photograph Sample(s) in relation to reference panel from various vantage points to show clear comparison. Identification label must be legible in photograph.

F. Notification and Approval :

1. Notify Architect/Engineer, 3 business days in advance, when Sample(s) in relation to reference panel will be ready to review.

2. Architect/Engineer will view and evaluate the Sample properties including, but not limited to; color texture, pattern, and level of finish (e.g., gloss, matte, etc.); and range (extremes and distribution) of inherent variation.

3. Architect/Engineer's approval or other action will be conveyed via stamp or written transmittal through the submittal process.

G. Disposition of Reference Panel:

4. Notify the Architect/Engineer prior to disposition.

5. When no longer required for evaluating Samples, seamlessly incorporate the Reference Panel in the Work.

3.04 AESTHETIC SPECIMENS

A. Aesthetic specimens for matching existing building elements (e.g., brick, mortar, etc.) are indicated in the individual Specification Sections, or where needed to compare with and determine preliminary samples for submittal, or as otherwise directed by the Architect/Engineer.

B. Specimen Extraction and Patching:

1. Comply with Section 01 73 29 (Cutting and Patching).

2. Location: Extract specimen from reference panel.

3. Size and Quantity: As indicated, or as otherwise directed by Architect/Engineer.

4. Identification : Clearly label specimen including

a. Date extracted.

b. Project number and name.

c. Material description.

d. Extraction location / reference panel ID.

3.05 TEST SPECIMENS

A. Test specimens required for testing and evaluation are indicated in the individual Specification Sections.

B. Obtain Specimen:

1. Where test specimen is representative of existing construction proceed as follows:

a. Comply with Section 01 73 29 (Cutting and Patching) for extraction of specimen and patching existing construction.

b. Location: As required.

c. Size and Quantity: As indicated, or as otherwise directed by Architect/Engineer.

d. Identification: Clearly label specimen including

1) Date extracted.

2) Project number and name.

3) Material description.

4) Extraction location.

2. Where test specimen is representative of new material to be incorporated in the Work proceed as follows:

   a. Obtain a sampling of material in compliance with the individual Specification Sections, codes and standards, as applicable.

   b. Size and Quantity: As indicated, or as otherwise directed by Architect/Engineer.

   c. Identification: Clearly label specimen including

      1) Date obtained.

      2) Project number and name.

      3) Material description.

      4) Batch/lot number, etc., if applicable.

C. Photograph Test Specimen (Before and After Testing): Photograph test specimen before and after testing to fully show specimen in detail and physical results of tests, if any. Identification label must be legible in photograph.

D. Transport: If required, protect, pack and transport test specimen to qualified testing agency.

E. Tests, Inspections and Reporting:

1. Notify Architect/Engineer, and if applicable, manufacturer's authorized representative, in writing of test and inspection schedule. Provide notice at least 48 hours in advance of testing.

2. Comply with test, inspection, and reporting requirements specified.

END OF SECTION 01 43 39

SECTION 01 50 00 – TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes requirements for temporary services (e.g., electric service), support facilities, protection and security facilities, and sidewalk sheds.

1.02 DEFINITIONS

A. Temporary Facilities: Temporarily installed measures that facilitate construction operations such as: scaffolding to provide access to the Work; electric service to power construction tools and equipment; barricades for security and protection of existing property and newly installed Work; and sidewalk sheds to protect pedestrians in the vicinity of the Work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Existing Conditions: Prior to installation of temporary facilities, document existing conditions that could be misconstrued as damage resulting from Contractor's operations per Section 01 73 00 (Execution).

B. Costs: All costs related to temporary facilities shall be included in the Contract Sum, including, but not limited to, mobilization, installation, relocation, removal, reinstallation, use charges and all fees (e.g., rental, permits, etc.).

C. Provide each facility ready for use when needed to avoid delay.

D. Use by Others: Allow other entities to use temporary facilities without cost including, but not limited to, Architect/Engineer, testing agencies, authorities having jurisdiction.

E. Loading: Conduct construction operations so no part of any facility is subjected to damaging operations or loading in excess of its designed safe limits. Comply with manufacturer's instructions, and requirements of authorities having jurisdiction.

F. Maintenance: Maintain facilities in safe, good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, lighting, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

G. Relocation: Relocate and modify facilities as required by progress of the Work.

H. Removal: Remove facilities when all Work in the area associated with the facility is complete and has been approved by Architect/Engineer and facility is no longer needed, or when the temporary facility has been replaced by authorized use of completed permanent facilities.

I. Reinstallation: Where temporary facilities have been removed at a location where Work is not yet complete, or where remediation per Section 01 73 00 (Execution) needs to occur, reinstall and subsequently remove facilities as required to facilitate the necessary Work; all at no cost to the Owner.

3.02 TEMPORARY SERVICES

A. General: Arrange with Owner, existing users, and utility company if applicable, for time when services can be interrupted, if necessary, to make connections for temporary services.

B. Electric: Electricity shall be provided by the Owner. Coordinate electrical service requirements and hookup locations with Owner. Provide connections and extensions of services as required for construction operations. Comply with NECA, NEMA, UL, and NFPA70 standards and regulations for temporary electric service.

C. Heating: Provide temporary heat required by construction activities for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity.

1. Provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control. Heating units shall be listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

2. Use of gasoline burning space heaters, open flame, or salamander type heating units is prohibited.

D. Water: Temporary water for construction purposes shall be taken from the nearest available source approved by the Owner. Provide all equipment to bring water to point of use. Contractor is responsible for maintenance, and for shutting off service at the end of each workday.

E. Toilets: Toilet facilities are provided by the Owner.

F. Telephones: Provide temporary telephone service in the field office for the duration of the Project. Architect/Engineer's representatives shall have free use of the telephone.

G. Temporary Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.03 SUPPORT FACILITIES

A. Tool Storage: The Owner will provide a location where the Contractor can maintain a locked tool storage cabinet. Contractor is solely responsible for stored tools.

B. Material Storage Facilities: Protect stored material from the elements and from damage by contaminants. Contractor is solely responsible for the security of storage facilities.

C. Suspended Scaffolds: Provide suspended scaffolds and rigging, erected and operated by a rigger licensed by New York City.

1. Scaffold motors must be electrically driven.

2. Obtain approval for the Architect/Engineer’s representative to ride the scaffolding as a “third person.” File necessary applications with the New York City Department of Buildings Division of Cranes and Derricks.

3. Provide, for the use of the Architect/Engineer’s representative, a new, independently secured full body safety harness with tongue buckle waist, 4 foot shock absorbing lanyard and a locking rope grabber.

4. Store scaffold platforms at roof level at the conclusion of each workday, with no cables accessible from the ground.
5. Provide two (2) scaffold operators possessing New York City Certificate of Fitness.
6. Electrical connections by licensed electricians.

D. Lifts and Hoists: Provide temporary lifts and hoisting equipment to convey materials and rubbish.

E. Use of Existing Elevators: The Contractor will be permitted to use the freight elevator for freight service and transportation of construction personnel during the construction period.

1. Freight elevator must also be available to the Owner at all times; coordinate usage with the Owner's representative.
2. Provide protective pads for the cab and other appropriate protective measures for the car and entrance doors and frames.
3. Use of other elevators by the Contractor is prohibited.

F. Use of Existing Stairs: Use of the Owner's existing stairs will be permitted, provided stairs are maintained in a condition acceptable to the Owner.

3.04 SIDEWALK SHED (COVERED WALKWAY)

A. A sidewalk shed has been installed by the Owner. Owner is responsible for cost of installation, rental, and subsequent removal of the sidewalk shed. Do not include these costs in the Contract Sum.

B. Contractor shall maintain sidewalk shed and related elements (e.g., lighting fixtures, bulbs, etc.) in good condition for the entire duration of the Project.

1. Contractor is solely responsible for maintenance of sidewalk shed in relation to construction. Include all costs for maintenance of sidewalk shed in the Contract Sum.
2. Sidewalk sheds shall be inspected daily.
3. Where required by authorities having jurisdiction, record daily inspection results in an inspection log, readily available on-site at all times. Inspection log shall contain all information as required by authorities.

3.05 PROTECTION AND SECURITY FACILITIES

A. Protection of Existing Facilities, Work in Progress, and Completed Work:

1. Protect from damage all portions of the building, adjoining property, surrounding yards, walkways, driveways, curbs, courts, terraces, roofs, walls, floors, ceilings, and other surfaces and finishes that are to remain, or that are exposed during construction operations, or that are in the path of material transport or waste removal from building. Protective measures shall include, but are not limited to, the following:
   a. Mask surfaces.
   b. Use drop cloths to protect against dust and dirt penetration.
   c. Install a protective covering of 1/4" plywood at all parapets, terraces, walls etc. adjacent to debris storage areas, and where necessary to prevent damage to existing surfaces.

d. Install 1/2" closed cell foam padding over tops of all protruding air conditioning units below Work areas.

2. Protect drains to prevent construction dust and debris from being washed down building drains.

3. Maintain weep holes; keep clear and functioning.

4. Protect roofs of adjoining buildings below Work areas. Install 1/2" plywood covering on roof surface from building wall to a minimum distance of twelve feet out from wall. Protection to be compliant in accordance with building code requirements. Coordinate protection efforts with owners of adjoining properties.

5. Cover and protect furniture, equipment and fixtures from soiling or damage when construction operations are to be performed in areas from which such items have not been removed.

6. Provide protection and take precautions to prevent wet or fluid materials used in the Work (e.g., paints, coatings, adhesives, mortars, concrete, grouts, sealants, etc.) from contaminating, staining, or defacing adjacent or surrounding exposed surfaces. Protect sills, ledges, and other projections from droppings.

7. Protect Work in progress and completed Work against damage from construction operations and other activities. (For example, protect newly installed membranes from puncture or other damage by subsequent construction activities.)

B. Accessible Temporary Egress: Maintain temporary egress from existing occupied facilities as required by authorities having jurisdiction. Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

C. Temporary Fire Protection: Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses.

1. Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

2. Prohibit smoking in hazardous fire exposure areas.

3. Provide portable UL rated fire extinguishers with class and extinguishing agent as required by locations and classes of fire exposures.

4. Store combustible materials in containers in fire safe locations.

5. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

6. Maintain unobstructed access to fire extinguishers, standpipes, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires.

D. Barricades, Warning Signs and Lighting: Provide temporary barricades, warning signs, lighting, and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

E. Temporary Enclosures: Provide temporary enclosures for protection of building structure and interior, construction in progress, and completed construction at risk of exposure to foul weather, construction operations and other activities.

1. Construct load bearing temporary enclosures at openings in floors, roof decks, etc.

2. Where heating or cooling is needed, insulate temporary enclosures.

F. Security Enclosure and Lockup: Construct substantial temporary enclosure of partially completed areas of Work. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security, and lock entrances at end of each workday. Provide Owner with two (2) sets of keys for all entrance locks.

G. Dust Enclosures and Controls:

1. Provide temporary dust enclosures to isolate Work areas and seal window and door openings to limit dust and dirt rising and scattering in air to lowest practical level. Provide walk-off mats at each entrance through temporary dust enclosures.

2. Protect heating, ventilation and air-conditioning (HVAC) intake and exhaust grilles:

a. Use temporary air filters approved by Owner over operational HVAC intake and exhaust grilles. Periodically replace temporary filters as required.

b. Notify Owner five (5) days written notice prior to installation of protection which affects operation of, or requires temporarily shutting down, HVAC equipment.

3. Water Mist Dampening for Dust Control:

a. Obtain Owner's written approval for use of water mist dampening and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.

b. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, or pollution.

4. Vacuum Attachments on Tools: Use vacuum collection attachments on dust producing tools and equipment.

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for product quality assurance; product manufacturers' warranties; product selection; product delivery, storage, and handling; etc.

1.02 DEFINITIONS

A. Product: An item purchased for incorporating in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Product Callout: A product description (e.g., "Sealant: NT(NS)") noted on Drawings.

C. Named Product: A product identified in the individual Specification Sections by product name (or other designation) and manufacturer name.

D. Comparable Product (sometimes referred to as "or equal"): Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified named product.

1.03 SUBMITTALS

A. Certificates of Manufacture (On-demand): Authoritative evidence in the form of certificates of manufacture that the products have been manufactured and tested in conformity with the Specifications. These certificates shall include copies of the results of physical tests and chemical analysis, where necessary, that have been made directly on the product, or on similar products being fabricated by manufacturer. This shall include all necessary approvals by agencies having jurisdiction as applicable.

1.04 QUALITY ASSURANCE

A. Provide products that comply with the Contract Documents, and have been tested and approved for use, where applicable, and meet the requirements of all authorities having jurisdiction.

B. Product Approval: All products selected for incorporation in the Work, whether named or otherwise, must be approved by Architect/Engineer through the submittal process. Do not order, manufacture, or fabricate any products until such approval by Architect/Engineer.

C. Products shall be undamaged, and, unless otherwise indicated, new at time of installation. Expired products shall not be incorporated in the Work; expiration dates are as indicated by manufacturer.

D. Products shall be complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

E. Every product callout shall be limited to a single approved product.

F. Product Source Limitation: Where products are intended to be installed as a system (warranted or otherwise) use only compatible products from the same manufacturer without exception, unless authorized in writing by Architect/Engineer and, for warranted systems, approved in advance by manufacturer.

1.05 VOLATILE ORGANIC COMPOUNDS (VOCS)

A. Comply with all regulations and limitations pertaining to VOCs. Do not use any product that does not meet the current requirements of all authorities having jurisdiction. In the event any named products are not in compliance, notify the Architect/Engineer immediately.

1.06 PRODUCT WARRANTIES

A. Warranties specified in the individual Specification Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Manufacturer's warranty is the written warranty published by an individual manufacturer for a particular product or system and specifically endorsed by manufacturer to Owner. Warranty shall be in the manufacturer's standard form, unless otherwise directed by Owner, and shall be modified to include Project specific content as required in the individual Specification Sections.

C. Contractor must submit manufacturers' written warranties for all materials and labor (as applicable) incorporated into the work upon completion of the project prior to the submittal of his final application for payment or invoice. The warranty periods provided by the manufacturers shall be the maximum length offered by those manufacturers and will commence on the date when Architect/Engineer certifies that all work of the project has been completed and accepted, regardless of the actual completion date for any particular item of work. Warranties shall protect against defects in materials and workmanship and shall not exclude incidental damages to Owner's property caused by material failure or improper installation or application of materials

D. Contractor's warranty shall guarantee all work performed by him or his subcontractors against defects in workmanship and materials for a period of five (5) years or for the maximum length warranted by a manufacturer, whichever is longer, commencing on the date when the Architect/Engineer certifies that all work of the project has been completed and accepted, regardless of the actual completion date for any particular item of work. Warranties shall not be pro-rated and shall not exclude incidental damages to Owner's property caused by material failure or improper installation or application of materials.

E. Engage manufacturer approved installers for the installation of warranted products and systems, where required by the manufacturer, or where indicated in the individual Specification Sections.

F. Engage manufacturer's authorized representatives for participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of installer activities, performance testing, inspection of completed portions of the Work, and preparation of reports/certifications. Submit manufacturer reports/certifications, including the following information, as applicable:

1. Specification Section number, manufacturer, and named products.

2. Name, address, and telephone number of representative making report.

3. Statement on condition of substrates and their acceptability for installation of product.
4. Summary of installation procedures being followed, whether they comply with requirements for warranted system 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 for warranted system.
6. Other required items indicated in individual Specification Sections.

G. Comply with the following Sections:

1. 01 77 00 (Closeout Procedures) for submission of warranties.
2. 01 73 00 (Execution) relating to existing warranties.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION

A. Named Products: Where Specifications include one or more named products, provide one of the products listed.

B. Named Manufacturers: Where Specifications do not include named products, but only one or more named manufacturers, provide an appropriate product by one of the manufacturers listed.

C. Generically Specified Products: Where neither products nor manufacturers are named, descriptive, performance, and reference standard requirements listed in the individual Specification Sections establish "salient characteristics" of products.

D. Comparable Products:

1. Unless otherwise noted, Architect/Engineer will consider Contractor requests for review of comparable products by other manufacturers in lieu of named products. The named products establish the basis of design for significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics. The burden of proof of the merit of a proposed comparable product is on the Contractor.
2. Prepare, package and submit requests for review of comparable products including the following:
   a. Identify proposed comparable product and manufacturer.
   b. Identify named product to be used as the basis for comparison. Include Specification Section number and title, product callout, and Drawing numbers and titles.
   c. Product Data
   d. Samples
   e. Detailed comparison of significant qualities of proposed comparable product with those of the named product. Significant qualities include attributes such as type, performance, weight, size, durability, visual effect, and other specific features and requirements indicated.

f. Evidence that the proposed comparable product:

1) Provides specified warranty.

2) Complies with all applicable regulatory requirements (e.g., building codes, etc.) and has received necessary approvals of all authorities having jurisdiction.

3) Will not be replacing individual components of another manufacturer's warranted system.

4) Will not adversely affect Project construction schedule.

g. Material test reports, where applicable, from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Cost information as compared with costs associated with named products.

i. List of similar installations on other projects completed by Contractor including project names and addresses, and names and addresses of Architect/Engineers and owners, if requested.

3. Architect/Engineer's decision whether to review a proposed comparable product will be final.

2.02 MATCHING

A. Unless otherwise explicitly indicated in the Contract Documents, all products which replace existing exposed construction elements shall "match existing" aesthetic characteristics of those construction elements. This includes specified products which are not made of the same material as the existing construction element. (For example, glass-fiber reinforced concrete (GFRC) may be specified as a suitable replacement for terra cotta, provided it is able to simulate and maintain the appearance of the existing terra cotta.)

B. Comply with Section 01 43 39 (Mockups and Physical Quality Assurance Aids) for reference panels and aesthetic specimens for aiding Architect/Engineer in making aesthetic determinations.

2.03 IDENTIFICATION OF INDIVIDUAL UNITS

A. Where required, manufacturer shall physically mark (label) each individual product unit with a unique identifier which indicates its specific location within the Work. The identifier shall correspond to a pre-established scheme contained in the Contract Documents. Do not place marks on any exposed surface of the unit.

2.04 PRE-SHIPPING PROTECTION

A. Provide all necessary crating, boxing, and other packaging (including shock-absorbing material), around and between product units as required to protect products from damage during transport.

B. Provide factory applied strippable plastic film for protection of finish surfaces which may be subject to scratches or marring.

PART 3 - EXECUTION

3.01 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products in a safe manner, and to prevent damage, deterioration, theft, and other losses. Comply with manufacturer's written instructions.

B. Contractor is solely responsible for any loss or damage to products. In the case of loss or damage to Owner-furnished products, the Contract Sum will be reduced by Change Order for cost of replacement orders.

C. Transport and Delivery:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of Work areas.

2. Deliver products in ample quantities to ensure the most prompt and uninterrupted progress of the Work so as to complete the Work without delay.

3. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

4. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses or damage.

5. Lift or support units only at the points prescribed by manufacturer.

6. Support units during shipment on non-staining shock-absorbing material. Place non-staining resilient spacers of even thickness between units.

7. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

8. Inspect products on delivery to ensure compliance with Contract Documents and to confirm that products are undamaged and properly protected.

D. Storage:

1. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

2. Store combustible materials in containers in fire safe locations. Keep containers tightly closed and away from open flames.

3. Store products to allow for inspection and measurement of quantity or counting of units.

4. Store products in a manner that will not endanger Project structure.

5. Store units on firm, level, and smooth surface; avoid warping.

6. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation. Cover materials when necessary to protect from the elements.

7. Store masonry units and cementitious products off the ground on elevated platforms to prevent contamination or staining.

8. Store grout, mortar, and other dry products and components in a dry location or waterproof containers. Protect from deterioration by moisture and temperature.

9. Store foam plastic away from exposure to sunlight, except to extent necessary for period of installation and concealment.

10. Store and handle roofing and waterproofing materials in a manner, which will prevent moisture pick up. Store in a dry, well ventilated, weather tight place. Unless protected from weather or other moisture sources, do not leave unused membrane on the roof overnight or when roofing Work is not in progress.

11. Store rolled sheet materials (e.g., roofing membranes, etc.) on end on pallets or other raised surface.

12. Protect liquid products and components from freezing.

13. Protect stored products from damage.

3.02 RETAIN PRODUCT BARCODE LABELS

A. Where required in the individual Specification Sections remove and retain product barcode labels from delivered and installed products to evidence compliance with Specifications.

B. Submit product barcode labels to Architect/Engineer on-demand.

END OF SECTION 01 60 00

SECTION 01 73 00 – EXECUTION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following additional requirements for execution of the Work, which supplement requirements in the individual Specification Sections:

1. Examination and documentation of existing conditions.

2. Existing warranties.

3. Manufacturer instructions and recommendations.

4. Preparation of substrates.

5. Structural and loading.

6. Environmental.

7. Protection.

8. Progress cleanup.

9. Remediation.

1.02 SUBMITTALS

A. Photographs of Existing Damage: Submit to Owner prior to commencement of Work in areas where existing damage is visible.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 EXISTING CONDITIONS

A. Photograph Existing Damage: Prior to commencement of Work, examine areas where Work will be performed and photograph any existing conditions of building, equipment, or surrounding properties, etc. which could be misconstrued as damage resulting from construction operations. Flag damage in photographs.

B. Examination Prior to Bid: The Contractor is responsible for verifying all quantities as indicated graphically on the Drawings, and for performing the indicated Work under the base Contract. Quantity allowances are noted in the Bid Documents.

C. Examination Prior to Commencement of Work:

1. Examine areas where Work will be performed. Determine field conditions which differ from the Contract Documents, or may adversely affect, or be affected by, the Work, including but not limited to, the following:

a. Concealed utilities, mechanical, electrical or other systems.

b. Points of connection to existing utilities and other systems.

c. Indications of conflicting installations (e.g., conduit running through a beam location, etc.).

d. Substrate conditions and other conditions affecting performance.

e. Measurements and tolerances required for installation.

f. Walls, floors, and roofs for suitable conditions where products and systems are to be installed.

2. Submit RFI to Architect/Engineer immediately on discovery of the need for clarification of the Contract Documents caused by adverse existing conditions outside the control of the Contractor. Do not proceed with Work in the area where adverse condition exists, without the Architect/Engineer's written direction.

D. Examination During the Work: The restoration assembly types and extents shown on the Drawings are indicative only. The Contractor, while in close proximity to the Work, shall visually and physically examine existing conditions, and notify the Architect/Engineer if the underlying condition or extent is inconsistent with the restoration Work indicated at that location.

3.02 EXISTING WARRANTIES

A. Conduct construction operations in a manner that does not invalidate or jeopardize existing warranties.

3.03 MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS

A. Comply with manufacturer's written installation instructions and recommendations for applications indicated.

B. If written instructions are not available or do not apply to Project conditions, consult manufacturer's authorized representative for specific recommendations before proceeding with Work. Document such recommendations in detail and submit to Architect/Engineer along with Product Data.

3.04 PREPARATION OF SUBSTRATES

A. Prior to installation of new Work, perform all necessary substrate repairs to return substrate to sound condition. (For example, the substrate may be a deteriorated masonry wall which requires some repairs, in preparation for the proper installation of furring channels, as part of a stucco finish wall system.)

B. Do not install new Work over unsatisfactory substrates.

3.05 STRUCTURAL AND LOADING

A. Provide temporary shoring, bracing, and structural support of Work in progress and existing to remain to preserve stability and prevent movement, settlement, or collapse. Retain a qualified professional engineer to design temporary shoring, bracing, and structural support as needed.

B. Conduct construction operations so no part of the Work or existing to remain is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

1. Determine floor and roof load carrying capacities before using such areas for storage of construction materials, relocated items, debris, etc.

2. Loading shall not exceed thirty (30) pounds per square foot on any horizontal surface, other than a slab on grade.

3.06 ENVIRONMENTAL

A. Conduct construction operations as required to comply with environmental regulations and minimize noise, odor, dust, and possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Use products, cleaners, and installation materials that are not considered hazardous.

2. Do not use tools or equipment that produces harmful noise levels.

3.07 PROTECTION

A. Comply with Section 01 50 00 (Temporary Facilities).

B. Provide protection in compliance with all requirements of authorities having jurisdiction.

C. Maintain premises in a safe, secure and weather-tight condition.

D. Secure all objects (e.g. material, equipment, temporary facilities, partially completed Work), involved in or affected by the execution of the Work, from movement due to winds at all times.

E. Maintain existing services, systems and facilities which are to remain, keep in service, and protect against damage during construction operations.

F. Maintain fire protection facilities in service.

G. Provide final protection and maintain conditions that ensure installed Work will not be subject to damage or deterioration.

H. Contractor is solely responsible for any damage or injuries caused by or during the execution of the Work.

3.08 PROGRESS CLEANUP

A. General:

1. Comply with manufacturer's instructions and recommendations for progress cleanup of finish surfaces. Do not use tools, materials, or agents that might damage finished surfaces.

2. Clean Project site, Work areas, and common areas daily, or more frequently if needed, to maintain free of waste materials and debris.

3. Coordinate progress cleanup for joint-use areas where more than one installer has worked.

4. Immediately clean exposed finish surfaces when inadvertently contacted by wet or fluid materials used in the Work, to prevent contamination, staining, defacing, or other damage.

B. Work in Progress: Maintain areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills quickly.

2. Remove excess materials, droppings, and debris.

3. Remove debris from concealed spaces before enclosing the space.

4. Keep all weep holes clear and functioning.

5. Leave all areas broom clean.
6. Keep installed Work clean.
7. Dry-brush newly installed masonry at end of each workday.
8. Newly Installed Glass (e.g. Windows, etc.):
   a. Exercise care to avoid damage to protective coatings and finishes.
   b. Remove nonpermanent labels from glass surfaces.
   c. Clean both sides of glass.
   d. Remove excess glazing and sealants, dirt, and other substances.

C. Completed Work Areas:

1. Remove tools and equipment from completed Work areas.
2. Clean, protect and provide maintenance of completed Work areas to keep clean through the remainder of the construction period.
3. Adjust and lubricate operable components to ensure operability without damaging effects.
4. Clean adjacent structures and improvements of dust, dirt, and debris caused by construction operations, returning them to the condition existing before operations began.
5. Where temporary facilities (e.g. scaffolds, etc.) will no longer be available to access completed Work areas, the Contractor may proceed with final cleanup. However, if these areas become dirtied by Contractor's subsequent operations, Contractor is responsible to re-perform final cleanup at time of Project closeout.

3.09 REMEDIATION

A. Promptly repair existing structures, surfaces, fixtures, facilities, streets, curbs, driveways, walks, terraces, and trees, etc. damaged or removed by construction operations, or where demolition was performed in excess of that required.

1. Return all items to the condition in which they existed prior to commencement of construction operations.
2. Remove and replace items that are exposed to view if they cannot be repaired without visible evidence of repair.
3. In the event local jurisdiction requires repairs to be accomplished with its own labor and materials, Contractor shall bear the expense of such work.

B. Repair or remove and replace defective construction. Construction that does not comply with the requirements of the Contract Documents is considered defective construction.

1. Remove and replace construction that is exposed to view if it cannot be repaired without visible evidence of repair.
2. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
3. Remove and replace chipped, scratched, or broken glass and other damaged transparent or reflective surfaces.

C. Touch-up or restore finishes damaged or defaced during construction operations so that no evidence remains of correction Work; where necessary refinish entire unit, or provide new units. Items which cannot be refinished in the field shall be returned to the shop for refinishing, and later reinstalled.

D. Restore permanent facilities used during construction to the condition in which they existed prior to commencement of construction operations.

END OF SECTION 01 73 00

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes requirements for cutting and patching of existing construction.

1.02 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit the installation or performance of other Work.

B. Patching: Fitting and repair Work to restore construction to original conditions after the installation of other Work.

1.03 QUALITY ASSURANCE

A. Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: Do not cut or patch structural elements in a manner that would reduce their load carrying capacity or load deflection ratio. Obtain Architect/Engineer's approval before cutting and patching any structural elements not explicitly indicated on Drawings.

2. Other Construction Elements: Do not cut and patch other construction elements (e.g., moisture barriers, membranes, flashing, etc.) in a manner that results in reducing their capacity to perform as intended.

3. Operational and Safety Related Elements: Do not cut or patch operating or safety related elements in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

4. Visual Elements: Do not cut or patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect/Engineer's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect.

B. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.01 CUTTING

A. Provide temporary structural support of Work to be cut.

B. Cut existing construction using methods least likely to damage elements to remain or adjoining construction.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through masonry using a cutting machine such as a diamond blade saw or diamond core drill.

3.02 PATCHING

A. Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work, as necessary to provide an even plane surface of uniform appearance.

1. Patch with durable seams that are as invisible as possible.

2. Restore exposed finishes of patched areas and extend finish restoration into remaining or adjoining construction in a manner that will eliminate evidence of patching and refinishing. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken containing the patch, after the patched area has received primer and second coat.

3. Provide materials and comply with installation requirements specified in other Sections, where applicable.

END OF SECTION 01 73 29

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.01 SUMMARY

A. This Section includes requirements for collection and disposal of non-hazardous waste material, recycling of waste material.

1.02 DEFINITIONS

A. Waste Material: Building and site improvement materials and other solid waste or debris resulting from construction operations (which include demolition). Waste material includes packaging.

B. Disposal (Dispose): Removal off-site of waste material and subsequent deposit in landfill or incinerator acceptable to authorities having jurisdiction.

C. Recycle: Recovery of waste materials for subsequent processing in preparation for reuse.

1.03 SUBMITTALS

A. Waste Management Plan: Prior to pre-construction conference per Section 01 31 00 (Project Management and Coordination), submit as indicated.

1.04 QUALITY ASSURANCE

A. Comply with hauling and disposal regulations all authorities having jurisdiction.

B. Comply with requirements of NFPA 241 "Standard for Safeguarding Construction, Alteration and Demolition Operations" for removal of combustible waste material and debris.

1.05 WASTE MANAGEMENT PLAN

A. Comply with Section 02 41 19 (Selective Demolition) for items to be removed and salvaged, and items to be removed and reinstalled.

B. Obtain written approval of waste management plan from Owner and Architect/Engineer, prior to commencing Work.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 COLLECTION AND DISPOSAL OF NON-HAZARDOUS WASTE MATERIAL

A. General:

1. Comply with manufacturer's instructions and recommendations for management and disposal of waste materials.

2. Provide handling, equipment, containers, storage, signage, transportation, and other items as required for waste material collection and disposal for entire duration of the Project. Do not use Owner or tenant-owned facilities.

3. Do not allow waste materials to accumulate on-site. Do not hold waste materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 °F.

4. Do not allow construction dust or debris to be washed down building drains, sewers or into waterways.
5. Remove and transport waste material in a manner that will prevent spillage on adjacent surfaces and areas.
6. All waste material is the property of the Contractor. Pay all hauling, dumping, and permit fees.

B. Recyclable Waste Materials: Recycle waste material in accordance with waste management plan.

C. Non-recyclable Waste Materials:

1. Dispose of all non-recyclable waste material.
2. Do not bury or burn waste materials on-site.

END OF SECTION 01 74 19

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for Substantial Completion, final completion, and final cleanup.

B. Additional closeout requirements for specific construction activities are included in the individual Specification Sections.

C. Comply with the following Sections:

1. 01 29 00 (Payment Procedures) for Application for Payment at Substantial Completion and final Application for Payment.

2. 01 73 00 (Execution) for remediation Work.

1.02 DEFINITIONS

A. Substantial Completion: The stage in the progress of the Work when, with minor exception, as determined by Architect/Engineer, all items of Work have been completed in accordance with the Contract Documents.

B. Punch List: A comprehensive list of incomplete items of Work or items needing correction including, if necessary, areas disturbed by Contractor that are outside the limit of construction. Punch list items shall be organized by location. Failure to include an item on the punch list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection at Substantial Completion, complete the following:

1. All items of Work, with only minor exception.

2. Prepare and submit a punch list indicating all items of Work which remain incomplete or in need of correction, including the value of each item and the reasons why the Work is not complete.

a. At the Architect/Engineer's discretion, the Contractor may be required to complete any items on the punch list prior to issuance of the Certificate of Substantial Completion.

3. Remove temporary facilities installed for protection of the Work during construction, except for temporary facilities required for punch list items.

4. Where extra materials of value, remaining after completion of associated Work, are indicated by the Contract Documents to become the Owner's property, arrange for disposition of these materials as directed. Otherwise, remove surplus materials, rubbish and similar elements.

5. Complete final cleanup requirements.

6. Submit maintenance agreements and equipment operation instructions.

7. Submit documentation of hazardous material removal.

8. Submit final certifications and warranties including, but not limited to, those products and materials specified in the Project Manual. Refer to the Section following each item for specific requirements.

B. Inspection Procedures:

1. When the preliminary procedures listed above have been completed, submit a written request for inspection for Substantial Completion.

2. On receipt of request, the Architect/Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements.

3. After inspection, the Architect/Engineer will notify Contractor of items, either on the Contractor's punch list or additional items identified by the Architect/Engineer, that must be completed or corrected before certificate will be issued.

   a. Re-inspections: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

   b. Architectural and engineering fees and expenses associated with re-inspections may be charged to Contractor at the Owner's discretion by reducing the Contract Sum by Change Order.

4. Architect/Engineer's Revised Punch List: Architect/Engineer will revise the punch list to include incomplete or unacceptable Work, which will not prevent issuance of the Certificate of Substantial Completion, but will form the basis of requirements for final completion.

   a. The Architect/Engineer may add items to the punch list at any time before or after Substantial Completion.

   b. Architect/Engineer will provide Contractor with one copy of the revised punch list.

C. Certificate of Substantial Completion: When all the procedures listed above have been completed, the Architect/Engineer will prepare the Certificate of Substantial Completion (AIA Document G704).

3.02 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit certified copy of Architect/Engineer's revised punch list (refer to Substantial Completion above) stating that each item has been completed or otherwise resolved for acceptance.

2. Remove remaining temporary facilities.

B. Inspection Procedures:

1. When the preliminary procedures listed above have been completed, submit a written request for final inspection for acceptance.

2. On receipt of request, the Architect/Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements.

3. After inspection, the Architect/Engineer will notify the Contractor of Work that must be completed or corrected before final Application for Payment can be submitted.

   a. Re-inspections: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

   b. Architectural and engineering fees and expenses associated with re-inspections may be charged to Contractor at the Owner's discretion by reducing the Contract Sum by Change Order.

3.03 FINAL CLEANUP

A. Comply with manufacturer's instructions and recommendations for final cleanup of finish surfaces. Do not use tools, materials, or agents that might damage finished surfaces.

B. Clean and remove grime and residue that were introduced as a result of construction operations.

C. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits.

D. Remove dirt, dust, and mortar droppings from sills, frames and glass.

E. Clean exposed exterior and interior hard surfaced finishes to a dust free condition, free of stains, films and similar foreign substances.

F. Restore reflective surfaces to their original reflective condition.

G. Clean windows and frames that are part of, or in the vicinity of the Work.

H. Leave concrete floors broom clean.

I. Vacuum carpeted surfaces.

J. Remove labels that are not permanent labels.

K. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

END OF SECTION 01 77 00

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Extent and type of selective demolition work is indicated on the Drawings.

B. Selective Demolition Work requires the selective removal and subsequent off-site disposal of the following:

1. Portions of building structure indicated on drawings and as required to accommodate new construction.

2. Removal and protection of existing fixtures and equipment items indicated “salvage.”

1.02 PROJECT CONDITIONS

A. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

B. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.

1. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

2. Protect floors with suitable coverings when necessary.

3. Construct temporary insulated solid dust proof partitions where required separating areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dust proof doors and security locks if required.

4. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces, and installation of new construction to insure that no water leakage or damage occurs to structure or interior areas of existing building. Remove protection at completion of work.

C. Damage: Promptly repair damage caused to adjacent facilities by demolition work, at no cost to Owner.

D. Explosives: Use of explosives will not be permitted.

E. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations

F. Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

G. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 INSPECTION

A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions of structure surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner prior to starting work.

3.02 PREPARATION

A. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

B. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.

C. Erect and maintain dust proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.

D. Provide weatherproof closures for exterior openings resulting from demolition work.

E. If unanticipated mechanical, electrical or structural elements are encountered, which conflict with intended function or design, investigate and measure both nature and extent of the conflict. Submit report to Architect/Engineer in written, accurate detail. Pending receipt of directive from Architect/Engineer or Owner, rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.03 DEMOLITION

A. Remove/ demolish concrete, masonry, and mortar in small sections. Use demolition techniques no more aggressive than the following:

1. Masonry:

a. Use only hand tools at locations immediately adjacent to existing to remain.

b. At other locations use power driven angle grinder with diamond blade, or electronic demolition “chipping” hammer (15 lbs max. weight).

2. Mortar Joints (Brick Masonry):

a. Use only hand tools at locations immediately adjacent to existing to remain.

b. At other locations use power driven angle grinder with diamond blade.

3. Mortar Joints (Terra Cotta, Limestone, Sandstone):

a. Use only hand chisel and mallet at all locations. Cutting edge of chisel to be narrower than width of joint being cut.

4. Concrete (building façade, balconies and appurtenances):

a. Use only hand tools at locations immediately surrounding embedded reinforcing steel.

b. At other locations use power driven angle grinder with diamond blade, or electronic demolition “chipping” hammer (15 lbs max. weight).

5. Concrete (garage decks, slabs on grade):

a. Use only hand tools at locations immediately surrounding embedded reinforcing steel.

b. At other locations use pneumatic “paving breaker” hammer (70 lbs max. weight).

B. Use vacuum attachments on power driven angle grinders, to minimize dust dispersion during demolition operations.

3.04 CLEAN-UP AND REPAIR

A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02 41 19

SECTION 03 73 23 – CONCRETE REPAIR

PART I GENERAL

1.01 GENERAL PROVISIONS

A. Perform work of this section in accordance with the owner's general conditions, special requirements, drawings, and all other requirements of the contract documents.

1.02 QUALITY ASSURANCE

A. Materials Manufacturer: Company specializing in manufacturing the products specified in this section with a minimum of ten years documented experience.

B. Applicator: Company specializing in concrete repair and protection with a minimum of five years documented experience and qualified by the materials manufacturer.

C. Work specified herein shall be performed by and be the responsibility of the installation contractor qualified and trained by the manufacturer of the materials used; having the necessary equipment and facilities to fulfill the requirements of the manufacturer and this section.

1.03 SCOPE OF WORK

A. Furnish all labor, materials, tools and equipment required to perform the work of this section as shown on the drawings and as specified herein. In general, the work shall include, but not necessarily be limited to, the following:

1. Sounding of exposed concrete, including cutting, chipping, and removing of all deteriorated, unsound concrete on horizontal, vertical and overhead surfaces.

2. Proper surface preparation of the concrete area, in accordance with the instructions of the manufacturer of the repair material.

3. Preparation and coating of all exposed reinforcement steel.

4. Placement of appropriate repair material to horizontal, vertical and overhead surfaces.

5. Application of Sikadur 32 Hi-Mod as a bonding agent.

1.04 SUBMITTALS

A. When alternates to the specified products are submitted for acceptance, include laboratory tests or data that validate product compliance using the same testing methods as the specified product.

B. Submit manufacturers' technical data sheets and material safety data sheets for

each product.

C. Submit to the manufacturer upon completion any necessary documentation to receive the material warranty.

D. Submit products from a single source manufacturer, including related work specified elsewhere, and noted in section 03 73 23 1.03 B, in order to provide the owner a complete system of concrete repair and protection.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver the specified product in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers.

B. Store and condition the specified product as recommended by the manufacturer.

PART II – PRODUCTS

2.01 MATERIALS

A. The steel reinforcement protective coating shall be an epoxy-cementitious coating such as Sika Armatec 110 Epocem as manufactured by Sika Corporation, Lyndhurst, NJ, or approved equal, which must have the following physical properties:

1. Compressive strength (ASTM C-109):

a. 3 days 4500 psi

b. 7 days 6500 psi

c. 28 days 8500 psi

2. Flexural strength (ASTM C-348):

a. 28 days 1250 psi

3. Splitting tensile strength (ASTM C-496):

a. 28 days 600 psi

4. Bond strength:

a. 14 day moist cure, plastic concrete to hardened concrete

1. Wet on wet: 2800 psi 24 hour open time 2600 psi

5. Time-To-Corrosion Testing:

a. Independent test data verifying materials ability to triple the time-to-corrosion and reduce rate of corrosion by over 40% (40 mil film thickness)

B. The epoxy bonding agent for the steel I-beam repairs shall be a Hi-Modulus, 100% solids, moisture insensitive, epoxy resin binder. The product approved for use under this section shall be Sikadur 32 Hi-Mod LPL, as manufactured by Sika Corporation,

Lyndhurst, NJ or approved equal with the following minimum physical characteristics:

1. Bond Strength (ASTM C-882):
    a. 14 day 2200 psi
2. Compressive Strength (ASTM D-695):
    a. 12,000 psi
3. Flexural Strength (ASTM D-790):
    a. 9,100 psi
4. Tensile Strength (ASTM D-638):
    a. 5,800 psi

C. The hand applied, vertical and overhead, repair mortar shall be a two component polymer-modified, cementitious product, with a migratory corrosion inhibitor, such as SikaTop 123 Plus, or approved equal, and will have the following minimum physical properties:

1. Compressive strength (ASTM C-109):
    a. 1 day 3500 psi
    b. 28 days 7000 psi
2. Flexural strength (ASTM C-293):
    a. 28 days 2000 psi
3. Bond strength (ASTM C-882 modified):
    a. 28 days 2200 psi
4. Chloride ion permeability (AASHTO T-277 modified):
    a. 28 days less than 500 coulombs
5. Splitting tensile strength (ASTM C-496):
    a. 28 days 600 psi

D. The form and pour repair mortar shall be a one component, polymer modified, self consolidating, cementitious product, with an integral migrating corrosion inhibitor, such as Sikacrete 211 SCC Plus and will have the following minimum physical properties:

1. Compressive strength (ASTM C-39):
    a. 1 day 2000 psi
    b. 7 days 6000 psi
    c. 28 days 7000 psi
2. Flexural strength (ASTM C-78):
    a. 28 days 1000 psi

3. Splitting tensile strength (ASTM C-496):
    a. 28 days 1000 psi
4. Bond strength (ASTM C-882 modified):
    a. 28 days 2500 psi
5. Shrinkage (ASTM C-157):
    a. 28 days <0.05%

E. The horizontal repair and re-pitching mortar shall be a two component, polymer-modified, cementitious product with a migratory corrosion inhibitor, such as SikaTop 122 Plus, and will have the following minimum physical properties:

1. Compressive strength (ASTM C-109)
    a. 1 day 3000 psi
    b. 7 days 5500 psi
    c. 28 days 7000 psi
2. Flexural strength (ASTM C-293):
    a. 28 days 2000 psi
3. Splitting tensile strength (ASTM C-496):
    a. 28 days 750 psi
4. Bond strength (ASTM C-882 modified):
    a. 28 days 2200 psi
5. Chloride ion permeability:
    a. 28 days approximately 500 coulombs

PART III - EXECUTION

3.01 SURFACE PREPARATION

A. The concrete surface preparation will be performed in strict accordance with the manufacturer's instructions. The surface must be mechanically prepared. Areas to be repaired must be clean, sound and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means approved by the Architect/Engineer. Be sure the repair area is not less than ¼" in depth, 1" depth minimum for the Sikacrete 211 SCC Plus. Where reinforcement steel is visible, chip, cut and remove concrete behind and all around the reinforcement to such a depth that existing reinforcement is encountered which is not rusted or deteriorated and so as to allow the preparation and coating of the back of the reinforcement steel. The depth cut behind the reinforcement steel shall not be less than 3/4"**.**

B. Cracks in the substrate in the area of the patching work must be treated as directed by the Architect/Engineer.

C. Extend all existing control and expansion joints through any patch. Install new joints as directed by the Architect/Engineer.

D. If cross-sectional loss of reinforcement steel is evident, splice on additional steel as directed by the Architect/Engineer.

E. Mechanically remove all dirt, grease, paint, laitance, rust, and any other bond inhibiting material from the reinforcement steel.

3.02 APPLICATION

A. Mixing and application of the anti-corrosion coating for the reinforcement steel:

1. Shake contents of components “A and B”. Empty the appropriate amount into a clean mixing container. Mix thoroughly for 30 seconds with a low speed drill and a jiffy mixing paddle. Slowly add the appropriate amount of component “C” while continuing to mix for three minutes until uniform with no lumps.

2. Apply two coats of the mixed material with a stiff bristle brush, waiting two hours between coats

B. Mixing and application of the vertical and overhead repair mortar:

1. Mix component “A” latex with component “B” mortar in a clean dry mixing container, until uniform consistency, a maximum of three minutes.

2. The substrate should be saturated surface dry with no standing water.

3. Apply a scrub coat of the mixed material with a stiff bristle brush.

4. While the scrub coat is still wet, place the SikaTop 123 Plus repair mortar. For applications greater than 1” in depth overhead, apply the material in lifts. Score the top surface of each life to product a roughened surface for the next lift. Allow the preceding life to set prior to continuing. Repeat from step 2.

C. Mixing and application of the form and pour material:

1. Place 5½ pints of clean water in a mixing container. Slowly add Sikacrete 211 SCC Plus while continuing to mix. An additional ½ pint of water can be added if needed. Mix to a uniform consistency, maximum 3 minutes.

2. The substrate should be saturated surface dry with no standing water.

3. Pour the material into the forms and vibrate.

D. Mixing and application of the horizontal repair mortar:

1. Mix component “A” latex with component “B” mortar in a clean dry mixing container, until uniform consistency, a maximum of three minutes.

2. The substrate should be saturated surface dry with no standing water.

3. Apply a scrub coat of the mixed material with a stiff bristle brush.

4. While the scrub coat is still wet place the SikaTop 122 Plus repair mortar. For applications greater than 1" in depth, add 42 pounds of clean, saturated, 3/8" course aggregate per bag of material. After filling the repair area, consolidate, then screed. Allow the material to set and finish as recommended by the engineer.

E. Mixing and application of the steel I beam epoxy bonding agent.

1. Mix equal amounts of Sikadur 32 Hi-Mod LPL, part "A" and part "B" in a clean mixing container using a low speed drill and a jiffy paddle to a consistency that conforms with the manufacturer's instructions. Apply the mixed epoxy to the steel I beam with a clean brush. Apply two coats and install the repair mortar while the second coat is still tacky.

F. All products mentioned in this section must be applied in strict accordance with the manufacturer's instructions. Carefully observe mixing, application and curing recommendations for each product.

3.03 CLEANING AND PROTECTION

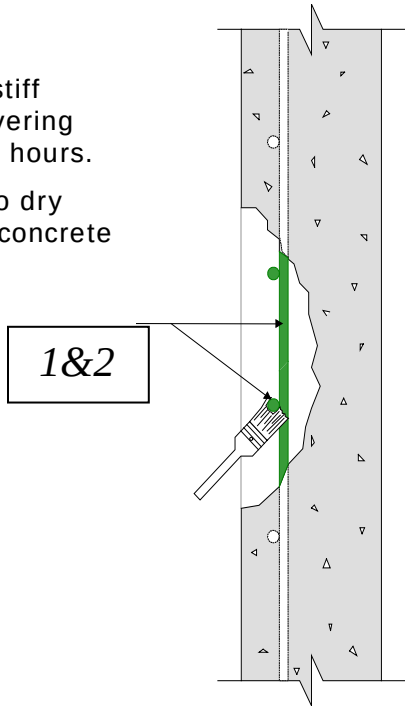
A. The applicator shall promptly remove all temporary coverings and protections of adjacent work areas and will clean these areas of all foreign materials resulting from their work.

B. The applicator shall promptly remove all temporary coverings and protections of adjacent work areas and will clean these areas of all foreign materials resulting from their work.

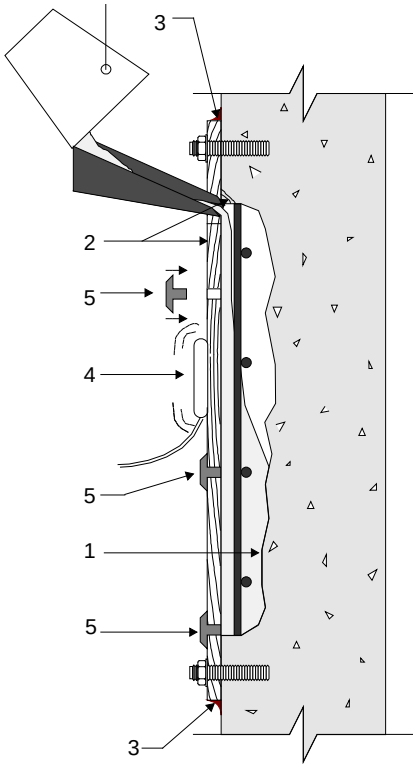
1. **Sika Armatec 110 Epocem-Anti-corrosion coating for reinforcement steel**

   a. Apply Sika Armatec 110 EpoCem with stiff bristle brush or spray 20 mils thick, covering all exposed steel. Cure to tack-free 2-3 hours.

   b. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar or concrete



2. Sikacrete 211 SCC Plus – Form and Pour Repair Mortar



a. Apply Sikadur 32 Hi-Mod LPL onto the prepared steel I-beam as a bonding agent. The repair area should not be less than 1" deep.

b. Set form and chip spot for pour box. Apply release agent to form, or use plastic lined plywood.

c. Run bread of Sikaflex 1a around form edge, let cure, and then anchor form. Fill with water to check for water tightness. Drain the form so there is no free standing water.

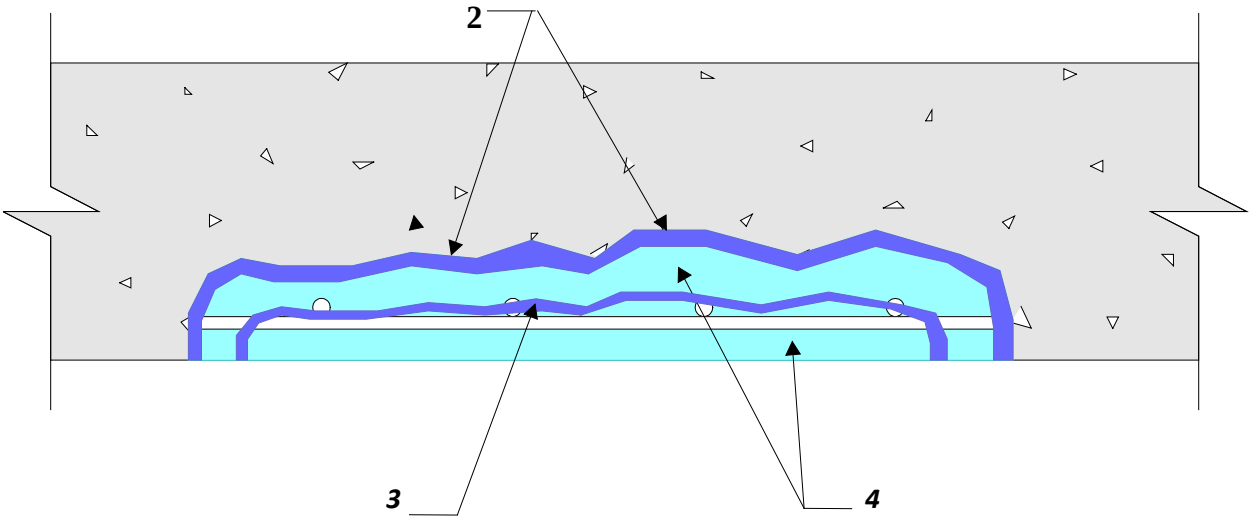
d. Vibrate form while pouring Sikacrete 211 SCC Plus.

e. Vent to be capped when steady flow is evident.

f. Strip form when appropriate.

g. Dry pack anchor holes with SikaTop 123 Plus.

3. Vertical & Overhead Hand Applied Repair Mortar



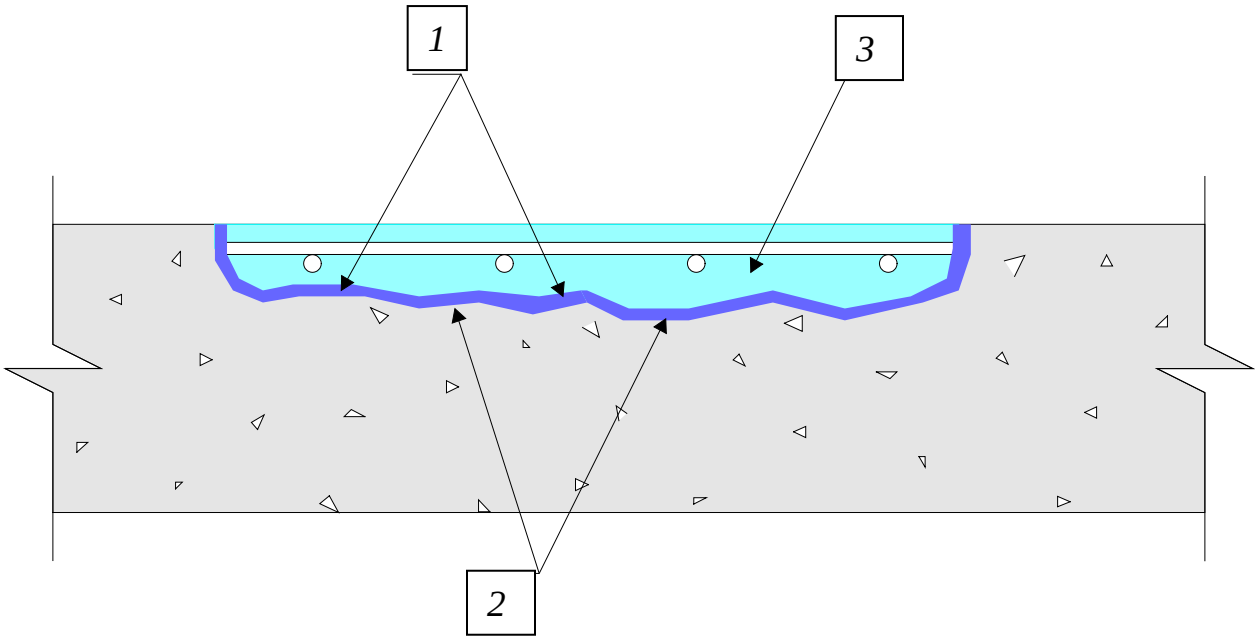
a. Repair area should not be less than ¼" in depth. Saturate the concrete with clean water to a saturated surface dry condition.

b. Apply a scrub coat of **SikaTop 123 Plus** to the saturated surface dry concrete.

c. While the scrub coat is still wet apply **SikaTop 123 Plus mortar.**

***Note**: For applications greater than 1 ½-in. in depth, apply **SikaTop 123 Plus** in lifts. Roughen the surface prior to hardening to promote bond of the subsequent lifts. Allow preceding lift to reach final set. Repeat from step 3.

SikaTop 122 Plus Horizontal Repair Mortar



d. Repair area should not be less than ¼" in depth. Saturate the concrete with clean water to a saturated surface dry condition.

e. Apply a scrub coat of **SikaTop 123 Plus** to the saturated surface dry concrete.

f. Apply **SikaTop 122 Plus** mortar while the bonding agent is still tacky.

***Note:** For applications greater than 1" in depth, add 42 pounds of 3/8" clean, coarse aggregate

END OF SECTION 03 73 23

SECTION 04 01 00 - MASONRY RESTORATION

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of masonry restoration work is indicated on the Drawings and in schedules.

1.02 SUBMITTALS

A. Product Data: Obtain from manufacturer and submit latest technical data, and installation instructions for each product specified in Part 2 - Products.

B. Mortar component samples: Submit dry samples (minimum 4 oz.) of each of the following mortar components:

1. Portland cement

2. Lime

3. Pigment (color)

4. Sand (aggregate) samples

C. Tooled-only mortar samples: Submit cured tooled-only samples of mortar to be incorporated in the Work in the form of 6 inch long x 1/2 inch wide strips set in aluminum or plastic channels.

D. Masonry grout sample including full range of products expected to be incorporated into the Work.

1.03 QUALITY ASSURANCE

A. Codes and Standards: Conform to standards of the Brick Institute of America (BIA), the National Concrete Masonry Association (NCMA), American Society for Testing and Materials (ASTM), and Reference Standard RS 10-1 of the New York City Building Code.

B. Source of Materials: Obtain materials for masonry restoration from a single source for each type of material required (cement, sand, etc.) to ensure match of quality, color, pattern, and texture.

1.04 PROJECT CONDITIONS

A. **Weather:** Perform work only when ambient temperature and surface temperature of existing masonry and new materials are between 40°F and 90°F. Work only when temperature is forecasted to be 40°F or above for at least one week after work. Weather and temperature conditions shall also be within the limits established by manufacturers of the materials and products used.

B. **Protection:** Cover work at the end of each day and whenever work is not in progress. Extend cover down both sides of walls at least 24 inches and hold securely in place.

C. Cold Weather Protection **When Owner Approved Only**: Provide protection when ambient air temperature is below 40° F, or is expected to fall below 40° F within 48 hours after completion of work, as follows:

1. 40° F to 32° F
    a. Heat sand or mixing water to produce mortar temperatures between 40° F and 120° F.
    b. Protect from rain or snow with thermal weather- resistive membrane for 48 hours.
2. 32° F and below
    a. No work allowed.

D. Completely cover with insulating blankets or equal protection for 48 hours.

E. Do not lower freezing point of mortar by use of antifreeze, calcium chloride, or other additives.

F. If ice or snow has formed on masonry bed, remove by carefully applying heat until top surface is dry to touch.

G. Hot Weather Protection: Use mortar within 1-1/2 hours after mixing. Discard all mortar over 1-1/2 hours old and all mortar that has stiffened due to hydration (setting).

1.05 DELIVERY, STORAGE AND HANDLING

A. Carefully pack, handle, and ship masonry units and accessories strapped together in suitable packs or pallets or in heavy cartons. Unload and handle to prevent chipping and breakage.

B. Deliver other materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and names of products and manufacturers.

C. Store masonry units off the ground to prevent contamination or staining. Cover materials when necessary to protect from the elements.

D. Protect grout, mortar, and other dry materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing.

PART 2 - PRODUCTS

2.01 GENERAL

A. Refer to Drawings for color and texture of exposed mortars.

B. Pigmented Portland cement-lime should be used achieve the required color in exposed mortars.

C. Use aggregates that match color and size of original aggregates as closely as possible.

D. Where texture of mortar is required to match existing, the texture and grain sizing of sand is to match existing mortar sand as closely as is practicable.

E. Mortars are to comply with ASTM C270, type as indicated.

F. Mortar components are to comply with the following standards:

1. Portland cement: ASTM C150, Type I; gray or non-staining white
2. Hydrated Lime: ASTM C 207, Type S
3. Aggregates (for mortar): ASTM C 144
4. Aggregates (for grout): ASTM C 404

5. Coloring Agent (Pigments): Alkali stable as approved by in writing by Architect/Engineer.
6. Admixtures: None, unless approved in writing by Architect/Engineer.
7. Water: Potable

G. Grout components are to comply with the following standards:

1. Portland Cement: ASTM C 150
2. Aggregate for Masonry Grout: ASTM C 404
3. Grout for Masonry: ASTM C 476
4. Standard Method of Sampling and Testing Grout: ASTM C 1019
5. Standard Test Method for Slump of Hydraulic Cement: ASTM C14
6. Water: Potable

2.02 MORTAR TYPE N

A. Mortar: ASTM C270 Type N

1. Pre-blended, Aggregates Added in Field

PCL and Color:	Color Portland Cement Lime Mortar (Type N)	Glen Gery
Aggregates:	Sand	George Schofield & Sons

2.03 MASONRY GROUT

A. Grout

1. Pre-blended Core-Fill Masonry Grout

a. Core-Fill Masonry Grout	Quikrete
b. Core-Fill Grout	Spec Mix

2.04 CEMENTITIOUS EPOXY GROUT

A. Non-Shrink: ASTM C1107

1. SikaGrout 212 Sika Corporation
2. Sonogrout Sonneborn

PART 3 - EXECUTION

3.01 MORTAR MIXING

A. Measurement and Mixing: Mix materials in a clean mechanical batch mixer. Measure cementitious and aggregate material in a dry condition by volume or equivalent weight. Do not measure by shovel.

3.02 PROTECTION OF EXISTING CONSTRUCTION

A. Prevent grout or mortar used in pointing and repair work from staining face of surrounding masonry and other surfaces. Remove immediately grout and mortar in contact with exposed masonry and other surfaces.

B. Protect sills, ledges and projections from mortar droppings.

3.03 FINAL WASH DOWN

A. Following masonry installation or repointing, after mortar is thoroughly set and cured, wash down masonry to remove matter accumulated during construction. Wash as follows:

1. Remove large mortar particles by hand with wooden paddles and non metallic scrap hoes or chisels.

2. Test wash down methods on sample panels before proceeding with wash down of all masonry work.

3. Wash down brick masonry in accordance with: Brick Industry Association Technical Notes on Brick Construction, No. 20, June 2006, “Cleaning New Masonry: Bucket and Brush Hand Cleaning”

4. Wash down stone or terra cotta masonry in accordance with: National Park Service Preservation Brief #1. Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings, Robert C. Mack, FAIA, Anne Grimmer, 2000. Do not use acid or alkali agents.

END OF SECTION 04 01 00

SECTION 04 01 20 UNIT MASONRY RESTORATION

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of unit masonry restoration work is indicated on the Drawings and in schedules.

1.02 SUBMITTALS

A. Product Data: Obtain from the manufacturer and submit latest technical data, and installation instructions for each product specified in Part 2 - Products.

B. Brick: Submit product data and samples of each type of brick to be incorporated in the Work. Sample sets should be in the form of straps or panels containing not less than 4 units. Include in each set of samples the full range of colors and textures to be expected in completed Work.

C. Masonry Test Results: Obtain from testing laboratory as indicated in Quality Assurance.

1.03 QUALITY ASSURANCE

A. Masonry Pre-Construction Testing Service:

1. Required only if proposed replacement units do not meet standards of ASTM C216, SW.

a. Employ and pay for the services of a testing laboratory accepted in writing by Architect/Engineer based on experience in performing types of masonry tests indicated.

b. Pre-construction Tests by Unit Test Methods: Test the following materials by methods indicated:

1) Brick: Test each type and grade of brick per ASTM C 67. If coefficient of variation of compression samples tested exceeds 12%, obtain compressive strengths by multiplying average compressive strengths by (1 - 1.5) x [(0.01 x coefficient of variation) - 0.12].

2) Concrete Masonry Units: Test each type, class and grade of concrete masonry unit per ASTM C 140.

3) Mortar Tests: Test each mortar type per ASTM C 780.

B. Source of Materials: Obtain materials for masonry restoration from a single source for each type of material required (face brick, glazed brick, concrete masonry units, etc.) to ensure match of quality, color, pattern, and texture.

PART 2 - PRODUCTS

2.01 FACE BRICK

A. Face Brick and Accessories: includes units for lintels, arches, corners, and other special ground, cut, or sawed shapes where required to complete masonry restoration work.

B. Match existing brickwork in color, surface, texture, appearance, and size. Size to be determined as an average measurement of the existing brick in each of the brick's dimensions. See 'Type' below for size tolerances.

C. Provide uncored units with all exposed surfaces finished, for sills, caps and similar applications resulting in exposure of brick surfaces which otherwise would be concealed from view

D. Physical properties to meet or exceed the lesser of the following:

1. Physical properties determined from pre-construction testing of selected existing units.

2. ASTM C216, Grade SW (Severe Weathering)

E. Type to be FBS, FBX per ASTM C216 for allowable size variations

F. Compressive Strength: 6000 psi (minimum required by ASTM C 216)

2.02 BUILDING (COMMON) BRICK

A. Building (Common) Brick: for masonry work concealed from view, of same vertical dimension as face brick.

Physical Properties to be as follows:

1. Grade SW

2. Compressive Strength to comply with more stringent of the following:

a. 6000 psi (for Grade SW)

b. New York City Building Code Table RS 10 -1.4.

2.03 EXISTING BRICK

A. Existing brick may be re-used only when directed in advance in writing by Architect/Engineer.

2.04 MORTAR

A. Refer to Section 04 01 00, Masonry Restoration, for specification of mortar.

2.05 REINFORCING BARS

A. Stainless steel threaded throd

1. ASTM F593, Grade 65, AISI 304/316

2.06 HORIZONTAL JOINT REINFORCEMENT

A. Z-Ties

1. 401R, 3/8" diameter, 304 stainless steel .. Hohmann & Barnard

2.07 MASONRY ACCESSORIES

A. Compressible Filter (Neoprene)

1. # NS Closed Cell Neoprene Sponge..... Hohmann & Barnard

B. Expansion Joint Filler (Neoprene)

1. # NS Closed Cell Neoprene Sponge..... Hohmann & Barnard

C. Weep Slot

1. # QV Quadro Vent.....Hohmann & Barnard

PART 3 - EXECUTION

3.01 BRICK MASONRY INSTALLATION:

A. Install masonry units in the bond pattern indicated, or if none is indicated, in running bond.

B. Cut exposed masonry units, where necessary, with a power saw. Avoid the use (by proper layout) of less than half size units.

C. Wet brick of high absorption, prior to laying. Do not wet concrete masonry units.

D. Matching Existing Masonry Work: Match coursing, bonding, color and texture of new masonry work with existing work.

E. Keep cavities clean of mortar droppings.

F. At expansion joints, surface of the sealant shall be tooled neat and smooth, no excess material on the surrounding masonry.

G. Build other work into the masonry work as shown, fitting masonry units around other work, and grouting for secure anchorage.

H. Protect newly laid masonry from exposure to precipitation, excessive drying, freezing, soiling, backfill and other harmful elements.

I. Dry-brush masonry work at end of each day's work.

3.02 ANCHORAGE TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces new or existing structural members.

B. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated.

3.03 BRICK REMOVAL

A. Extent of brick removal and rebuilding is indicated on the Drawings.

B. Carefully remove by hand at locations indicated any brick which are damaged, spalled or deteriorated. Cut out full units from joint to joint and in manner to permit replacement with full size units.

C. Support and protect masonry indicated to remain which surrounds removal area.

D. Clean remaining brick at edges of removal areas by removing mortar, dust, and loose debris in preparation for rebuilding.

3.04 BRICK REBUILDING

A. Install new brick to replace removed brick. Fit replacement units into bonding and coursing pattern of existing brick. If cutting is required use motor driven saw designed to cut masonry with clean, sharp un-chipped edges.

B. Lay replacement brick with completely filled bed, head and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place.

C. Maintain joint width for replacement units to match existing.

D. Point new mortar joints in repaired area to comply with requirements for pointing existing masonry, except rake out joints before mortar sets.

E. Do not traverse existing expansion joints with rebuilt masonry construction.

END OF SECTION 04 01 20

SECTION 04 05 13 - MASONRY POINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of masonry pointing is indicated on the Drawings and on schedules.

B. New masonry mortar to match the original or existing mortar as indicated by the Architect/Engineer in color, texture, and profile.

1.02 SUBMITTALS

A. Product Data: Obtain from manufacturer and submit latest technical data, and installation instructions for each product specified in Part 2 - Products.

B. Refer to Section 04 01 00, Masonry Restoration, for required mortar related submittals.

1.03 QUALITY ASSURANCE

A. Mockups:

1. Prepare two sample areas for each substrate being pointed, each measuring approximately 18 inches high by 2 feet wide: One sample area for demonstrating methods and quality expected in removal of mortar from joints, the other sample area for demonstrating quality of materials expected in pointing mortar joints.

PART 2 - PRODUCTS

2.01 MORTAR FOR POINTING

A. Refer to Section 04 01 00, Masonry Restoration, for specification of mortar.

PART 3 - EXECUTION

3.01 JOINT PREPARATION

A. Cut mortar from joints to depths indicated on Drawings.

B. Use methods indicated on Drawings, and described in Section 02 41 19, Selective Demolition.

C. Do not chip edges of masonry units or widen joints.

D. Replace any masonry units which become damaged.

E. Remove mortar from masonry surfaces within raked out joints to provide reveals with square backs and to expose top and bottom masonry for contact with pointing mortar. Brush, vacuum or flush joints to remove dirt and loose debris.

F. Rinse masonry joint surfaces with water to remove any dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off, and joint surfaces are damp, but free of standing water.

3.02 MIXING POINTING MORTAR

A. Thoroughly mix cement, binder, pigment and aggregate materials together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix which will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 1 1/2 hours. Add remaining water in small portions until mortar of desired consistency is reached. Use mortar within 30 minutes of final mixing. Do not re-temper or use partially hardened material.

3.03 POINTING

A. PRE-WETTING:

1. For absorptive surface masonry, saturate masonry and joint after existing mortar has been removed. No standing water should be present at the time of pointing.

2. For masonry with non-porous surface glaze, saturate joint only and allow to dry slightly before proceeding with pointing.

B. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 1/4" until a uniform depth is formed. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.

C. After joints have been filled to a uniform depth, place remaining pointing mortar in lifts, as indicated on Drawings.

D. Fully compact each lift and allow to become thumbprint hard before apply next lift. Where existing masonry has rounded edges recess final lift slightly from face. Do not spread mortar over edges onto exposed masonry surfaces. Do not feather edge mortar.

3.04 TOOLING

A. When mortar is thumbprint hard, tool joints to match original appearance of joints, unless otherwise indicated. Remove excess mortar from edge of joint by brushing.

B. Stipple joints lightly with a soft bristle brush to expose aggregate, if necessary to match appearance of original mortar.

3.05 CURING

A. Cure mortar by maintaining in a damp condition for not less than 72 hours.

B. Where repointing work precedes cleaning of existing masonry allow mortar to harden not less than thirty (30) days before beginning cleaning work.

END OF SECTION 04 05 13

SECTION 04 05 19 - ANCHORS AND FASTENING SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Extent and locations of anchors and fastening systems in concrete and masonry base materials are indicated on the Drawings and by provisions of this Section.

1.02 RELATED DOCUMENTS

A. All of the Contract Documents, including General Conditions and Division 1: General Requirements, apply to the work of this section.

1.03 SUBMITTALS

A. Product Data: Submit manufacturers' technical data along with anchors and fasteners stress load capacity in base materials for each product indicated, including recommendations for their application and use, installation instructions and applicable allowable load information.

B. Samples: Submit, for verification purposes, prior to installation, samples of each type of anchor or fastener to be used.

C. Test Results: Submit test results for the anchors and fasteners selected and secured to each of the existing base material indicated.

D. Engineering Design Calculation (if required): Submit original copy of the engineering design calculation prepared by a professional engineer licensed in the State of New York for anchor selection to the tested base material for the use intended.

E. Shop Drawings (if required): Submit shop drawings showing the type, material, configuration and quantity of anchors and fasteners selected to fasten each building element intended to the existing base material. Selection of anchors and fasteners, their configuration and intent of usage shall be based on the structural design calculation performed.

1.04 QUALITY ASSURANCE

A. Pre-Construction Testing: When requested by the Architect/Engineer, the Contractor shall employ and pay for the services of a New York City certified engineering testing laboratory acceptable to the Architect/Engineer to perform any/all tests where directed by the Architect/Engineer to determine the actual capacity of anchors installed at the base material substrate indicated on the Drawings to sustain the loads imposed within factors of safety on the type of anchor selected to determine the allowable load on an anchor selected.

1. The tests shall include but not limited to:

a. ASTM E 488: "Standard Test Method for Strength of Anchors in Concrete and Masonry Elements".

b. ASTM E 1190: "Standard Test Method for Strength of Power-Actuated Fasteners Installed in Structural Members".

c. ASTM E 1512: "Standard Test Method for Testing Performance of Bonded Anchors".

B. Engineering Calculation: When requested by the Architect/Engineer, the Contractor shall retain and pay for the services of a professional engineer licensed in the State of New York for design load calculation and configuration for the anchors selected to be anchored to the existing base material. Follow anchor design calculation on anchor manufacturer design method and test results performed in accordance to ACI Committee 355.

C. Pre-Installation Conference: Prior to selection of an anchor for the intending use, the Contractor shall schedule and hold on site a conference to review the submitted anchors; Test results; the procedure for securing the anchors to the different base materials; and the detailed requirement of the Work. Attendees shall include the Contractor's project manager, The Architect/Engineer's project manager, The Owner's representative, and product manufacturer's technical personnel. Contractor shall send a written conference notification and pre-restoration agenda to all attendees seven (7) days prior to the date of the conference.

1. Conference agenda shall include, but not necessary limited to:

a. Examination of uncovered base material.

b. Anchor testing on each type of base material and evaluation.

c. Submitted anchors for selected use.

d. Quality control / inspection

D. Single Source Responsibility of products and Systems: For mechanical and adhesive anchor systems, obtain products from a single source manufacturer with resources to provide anchor products with consistent quality in physical and chemical properties without delaying the Work indicated.

1.05 FIELD MOCK-UP SAMPLE

A. Prior to commencement of this Work and furnishing the anchors and fasteners, perform a field mock-up sample at location instructed by the Architect/Engineer on the uncovered substrate base material in accordance with anchor manufacturer's technical personnel instructions. Executed mock-up sample may be used to perform the tests requested for performance of the selected anchors.

1. Notify Architect/Engineer and manufacturer's technical personnel in writing the date and time of performance of each mock-up sample for each type of anchor on the base material. The Architect/Engineer and manufacturer's technical personnel shall be present during field mock-up sample to record results, procedure adopted and make any comment/revisions to the field mock-up sample.

2. Obtain Architect/Engineer and manufacturer's technical personnel written acceptance of each mock-up sample for selected anchors and fasteners.

B. Retain acceptable sample in undisturbed condition, suitably marked, during the construction period as a standard for judging completed Work.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver anchors, fasteners and associated products to the job-site in original sealed and undamaged manufacturers' packages with manufacturers' name, product and date of material expiration distinctively marked there on. Store delivered material and associated products in a manner recommended by the manufacturer.

1.07 PROJECT CONDITIONS

A. Comply with manufacturers' recommendations for weather limitations for application of adhesive, including cementitious products, epoxies, urethanes and acrylics used in the anchorage systems selected. Use adhesive anchors only when the weather conditions are suitable for the specific material as indicated by the manufacturers.

B. Take all measures required to avoid corrosion and/or electrochemical (galvanic) reaction of the selected anchors to the base material and the product to be anchored. Avoid using anchors and fasteners that are dissimilar to the base material or the anchored product. When using dissimilar material is un-avoidable select anchors and fasteners to be the most “noble” and separate materials with inert gaskets and washers that have low electric conductivity.

C. Where the uncovered base material was found damaged and/or defective and its properties would diminish the load carrying capacity of the anchoring system, notify the Architect/Engineer for close examination of the base material and for obtaining any corrective action that should be undertaken for restoring the properties of the base material prior to selecting anchors and fasteners and/or selecting an anchoring system compatible with the uncovered base materials.

D. Comply with ANSI A10.3: ‘Operations Safety Requirements for Powder Actuated Fastening Systems:.

PART 2 - PRODUCTS

2.01 ANCHORS AND FASTENERS MATERIAL

A. Components of anchoring systems shall be stainless steel AISI 304, 306 or 316 conforming to:

1. ASTM A 276: “Standard Specifications for Stainless Steel Bars and Shapes”.

2. ASTM A 493: “Standard Specification for Stainless Steel Wire and Wire Rods for Cold Heading and Cold Forging”.

3. ASTM F593: “Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs”.

B. Stainless steel wedges shall be of the same material grade and alloy as the bolts.

C. Stainless Steel Nuts shall conform to ASTM F594: “Standard Specification for Stainless Steel Nuts” and be of the same material grade and alloy as the bolts. Nuts shall be furnished with the bolt and shall meet the dimensional requirements of ANSI to conform to the bolt.

2.02 ACCEPTABLE MANUFACTURERS FOR ANCHORS AND FASTENERS

A. Hilti North America, 5400 South 122nd East Avenue, Tulsa, OK 74146, tel: 800 876 7539, Fax: 516 825 6645, website: www.hilti.com.

B. Powers Fasteners, 2 Powers Lane, Brewster, NY 10509, tel: 914 235 6300, fax: 914 576 6483, website: www.powers.com.

C. Hohmann & Barnard, Inc., 30 Rasons Court, Hauppauge, NY 11788, Tel: 800 645 0616, fax: 516 234 0683, website www.h-b.com.

2.03 ANCHORS AND FASTENERS IN SOLID BRICK MASONRY

A. Mechanical Anchor:

1. Hohmann & Barnard, Inc.:

a. 523-Brass Expansion Bolt

B. Adhesive Anchor with stainless steel treaded anchor rod:

1. Hilti North America:

a. HIT HY70 Injection adhesive

2. Powers Fasteners:

a. AC 100 PLUS Gold adhesive

2.04 ANCHORS AND FASTENERS: CORED BRICK, HOLLOW CMU OR TERRA COTTA BLOCK

A. Adhesive Anchors:

1. Hilti North America:

a. HIT HY 70 Injection adhesive

2. Powers Fasteners:

a. AC100 PLUS Gold adhesive

B. Adhesive Anchor with Internally treaded Insert:

1. Hilti North America:

a. HIT HY 70 Injection adhesive with screen tube, HIT-I Internally threaded Insert to receive stainless steel treaded anchor, with nut and washer / fastener.

2.05 VENEER TIES AND ANCHORING DEVICES

A. VENEER ANCHOR

1. Solid Masonry Wall: Hohmann & Barnard

a. 345 SV Seismic-Notch Veneer Anchor-Stainless steel with pencil rod

2. Cavity Masonry Wall: Hohmann & Barnard

a. 5213 SIS Seismic-Veneer Anchor-Stainless steel with pencil rod

B. SPANDREL ANCHOR

1. Hohmann & Barnard

a. DW 10 HS SIS with VEE Byna-Tie Stainless steel

C. COLUMN ANCHOR

1. Hohmann & Barnard

a. DW 10 HS SIS with VEE Byna-Tie Stainless steel

D. EXPANSION JOINT

1. Slip-Set Stabilizer Style H

2.06 STEEL REINFORCING BARS

A. Stainless Steel Reinforcing Bar Threaded Rod: ASTM F 593, Grade 65, AISI 304/316, unless otherwise indicated

B. Reinforcing Bar Steel Connector: Bar Splicer Structural Connector

1. Bar Splice Products, Inc.

2.07 MISCELLANEOUS AND ASSOCIATED PRODUCT

A. Stainless Steel Eye Bolt, AISI 304, 306 or 316

1. #408 Stone Anchor by Hohmann & Barnard.

B. Stainless steel dowels: AISI 304, 306, 316.

C. Masonry Fasteners, Stainless steel:

1. KWIK-CON II by Hilti North America.

2. Zamac Hammer Screw by Powers Fasteners.

2.08 ACCESSORIES

A. Lead Shims ASTM B29:

B. Stainless Steel Shims, AISI 404, 306, 316.

C. Bearing Pads: Neoprene Rubber pads ASTM D 2000 Type C, Class A.

D. Shields:

1. Scru-Lead by Powers Fasteners

2. Bantam Plug by Powers Fasteners

2.09 CEMENTITIOUS AND EPOXY GROUTS

A. Acceptable products and manufacturers for cementitious grout, non-shrink as per ASTM C 1107:

1. SikaGrout by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, tel: 800 933 7452, fax: 201 933 6225, website: www.sikausa.com.

2. Masterflow 828 by BASF Construction Chemical, LLC-Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, tel: 800 433 9517, website: www.BuildingSystems.BASF.com.

3. NC Grout by The Euclid Chemical Company, 19218 Redwood Road, Cleveland, OH 44110, Tel: 216 531 9222, fax: 216 531 9596, website: www.euclidchemical.com.

4. Five Star Grout by Five Star Products, Inc., 425 Stillon Road, Fairfield, CT 06430, tel: 203 336 7900, fax: 203 336 7930, website: www.fivestarproducts.com.

B. Acceptable products and manufacturers for epoxy grout, non-shrink as per ASTM C 881:

1. Sikaddur 32, Hi-Mod by Sika Corporation.,201 Polito Avenue, Lyndhurst, NJ 07071, tel: 800 933 7452, fax: 201 933 6225, website: www.sikausa.com.

2. Five Star Epoxy Grout by Five Star Products, Inc., 425 Stillon Road, Fairfield, CT 06430, tel: 203 336 7900, fax: 203 336 7930, website: www.fivestarproducts.com.

3. E³-HP by The Euclid Chemical Company, 19218 Redwood Road, Cleveland, OH 44110, Tel: 216 531 9222, fax: 216 531 9596, website: www.euclidchemical.com.

PART 3 - EXECUTION

3.01 GENERAL

A. Prior to selection and designing the anchoring system, examine the base material to determine its soundness and appropriateness for receiving selected anchor and fastener. Report to the Architect/Engineer any damage found to the base material and schedule a close examination and further instructions, if any.

B. Testing: Prior to installation of selected anchor perform tests as per Architect/Engineer instruction in accordance to ASTM standard tests indicated and design anchoring system as per ACI Committee 355.

1. Test fasteners and anchors in accordance with ASTM E488, ASTM E 1190 and/or ASTM E 1512, as per Architect/Engineer instructions.

2. Submit test results to the Architect/Engineer for review and action as specified herein.

3.02 INSTALLATION

A. Install anchors of type and diameter indicated, at locations shown on the Drawings following the approval of the Architect/Engineer.

1. Avoid galvanic reaction between dissimilar anchor material, base material and top material.

2. Load anchor and fasteners to the full allowable load as per manufacturer's recommendations.

B. Follow manufacturer's product installation instructions to obtain the tools and installation of anchors. Where length of anchor is not indicated on the Drawings, follow manufacturer's recommendations for structural calculation using load charts and diagrams for base material indicated.

1. Submit structural calculation along with selected anchor for Architect/Engineer for review.

2. Obtain approval from Architect/Engineer prior to delivery and installation of anchors indicated.

END OF SECTION 04 05 19

SECTION 05 12 00 - STRUCTURAL STEEL REPLACEMENT

PART I GENERAL

1.01 SUMMARY

A. Work of this section shall conform to the requirements of the conditions of the Contract Division 1 - General Requirements and the Contract Drawings.

1.02 DESCRIPTION OF WORK

A. Extent of structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections, and type of steel required.

B. Structural steel is that work defined in AISC "Code of Standard Practice" and as otherwise shown on drawings.

C. Miscellaneous Metal Fabrications are specified elsewhere in Division 5.

1.03 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of following (use latest edition), except as otherwise indicated:

1. AISC "Code of Standard Practice for Steel Buildings and Bridges".

2. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including "Commentary" and Supplements thereto as issued.

3. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

4. AWS D1.1 "Structural Welding Code".

5. ASTM A 6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".

B. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

1. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification test and hold an active welder's license. Acceptable to all applicable governing authorities.

2. If recertification of welders is required, retesting will be Contractor's responsibility.

1.04 SUBMITTALS

A. Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. Structural steel (each type), including certified copies of mill reports covering chemical and physical properties.

2. High-strength bolts (each type), including nuts and washers.

3. Structural steel primer paint.

4. Shrinkage-resistant grout.

B. Shop Drawings: Submit shop drawings prepared under supervision of a registered professional engineer, including complete details and schedules for fabrication and assembly of structural steel members, procedures, and diagrams (including connection design).

C. Submittals to Inspecting Engineer:

1. Mill tests certifying that materials meet ASTM specifications. Include names and locations of mills.

2. If steel is used from a source other than in the United States, submit independent testing agency test report (see paragraph 1.4A.5). Submit seven days minimum before starting fabrication.

3. Welding certificates for each welder with name and title of person who conducted examination, kind of specimens, positions of welds, results of tests and date of examination.

4. Proposed method for tightening high strength bolts. Submit 14 days minimum before starting erection.

5. Proposed methods of field welding. Where field welding is permitted, submit a detailed written procedure for each type of joint. Include the following: identification of joint; joint dimensions, details and tolerances; identification of welding process; type and size of electrodes; type of flux, gas, etc.; current and voltage (with changes as required for difference passes); preheat and interpass temperature; pass sequence; type of inspection required; special instructions to temperature; pass sequence; type of inspection required; special instructions to welder; and other pertinent information. Submit at same

time as Shop Drawings.

D. Submittals to ARCHITECT/ENGINEER for approval:

1. Shop drawing submittal schedule. Submit within 14 days after award of contract.

2. Anchor bolt setting plans including anchor bolt details, locations, and elevations. Submit sufficiently in advance to allow for standard Shop Drawing review and conformance to construction schedule of items into which anchor bolts are to be embedded. See paragraph 1.B.4 for other requirements.

3. Proposed typical connection details (including completed fabrication details for same) for each type of connection to be used on the project. Submit sufficiently in advance of shop drawings production to permit the incorporation of approval comments in shop drawings. Detail shop-drawings submitted prior to the approval of the typical connection details will be returned to the contractor unchecked.

4. Requests for substitutions of member sizes, addition of filed splices or other medications to any details. Submit seven days minimum prior to submitting Shop Drawings.

5. Shop Drawings for fabrication and erection of all steel members. Prepare Shop Drawings comparable to those in AISC “Structural Steel Detailing”. Include the following: size and location of all members; details of shop and field contractors; copes; holes; brackets; surface preparation; shop paint; type and grade of steel; type, size and extent of all welds and welding sequence, including welding symbols adopted by AWS; weld electrodes and welding process; and other pertinent information. Shop Drawings on portions of the work may be submitted prior to other portions only when conditions noted below are met. Where such portions of the work are so submitted, furnish at the same time sufficient information on connecting portions, which are yet to be submitted, to facilitate review.

Paragraph 4.2.1 of AISC “Code of Standard Practice for Steel Buildings and Bridges”, Section 4, is hereby modified to delete the sentence, “This approval constitutes the Owner’s acceptance of all responsibility for the design adequacy of any detail configuration of connection developed by the fabricator as part of his preparation of these Shop Drawings”, and add the sentence, “All connections designed by the fabricator shall be his responsibility and review or Shop his responsibility”. See General Conditions for other requirements. The steel fabricator shall have all connections, designed by or under the direct supervision of a Licensed Professional Engineer Registered in the State of who shall affix his seal and signature on calculations. All shop drawings shall be prepared by or under the direct supervision of Licensed Professional Engineer Registered in the State of New York. This Professional Engineer shall affix his

seal and signature on all shop drawings, except for erection plans. Review of Shop Drawings by ARCHITECT/ENGINEER is only for general conformance with design concept of project and general compliance with information given in Contract Documents. It does not relieve the Contractor for the full responsibility for his work.

6. Type and orientation of bolt holes and washers to be provided, for other than anchor bolts, if holes are to be oversize, short slotted or long slotted. Submit at same time as Shop Drawings.

7. High strength bolt assemblies data and certifications (see Section 1.4) Submit 28 days minimum before starting erection.

8. Brand and chemical composition of shop applied and filed touch-up paints, and a certificate of compliance certifying that the paint materials to be used conform to the requirements specified herein. Submit at same time as Shop Drawings.

9. Inspection test results.

E. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld.

F. Provide setting drawings, templates, and direction for installation of anchor bolts and other anchorages to be installed by others.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to side at such intervals to insure uninterrupted progress of work.

B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not delay work.

C. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART II - PRODUCTS

2.01 MATERIALS

A. Structural Steel Shapes, Plates, and Bars: ASTM A 36, ASTM A 992 (Fy=50 KSI).

B. Cold-Formed Steel Tubing: ASTM A 500, Grade B.

C. Hot-Formed Steel Tubing: ASTM A 501.

D. Steel Pipe: ASTM A 53, Type E or S, Grade B.

E. Anchor Bolts: ASTM A 307, nonheaded type unless otherwise indicated.

F. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:

G. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A 325.

H. Electrodes for Welding: Comply with AWS Code.

I. Structural Steel Primer Paint: Fabricator's standard rust-inhibiting primer.

J. Metallic Shrinkage-Resistant Grout: Pre-mixed factory-packaged ferrous aggregate grouting compound. On-ferrous aggregate grout for exposed surface if exposed.

K. Products: Subject to compliance with requirements, provide one of the following:

1. Firmix: Euclid Chemical Co.

2. Embeco 153; Master Builders

2.02 CONNECTIONS

A. Weld or bolt shop connections, as indicated on drawings.

1. Bolt field connections, except where welded connections or other connections are indicated or required.

2. Provide high-strength threaded fasteners for principal bolted connections, except where unfinished bolts are indicated.

B. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with AISC "Specification for Structural Joints using ASTM A 325 or A 490 Bolts" (RCRBSJ).

C. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.

D. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.

E. Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

F. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

2.03 SHOP PAINTING

A. General: Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel which is partially exposed on exposed portions and initial 2" of embedded areas only.

B. Do not paint surfaces which are scheduled to receive sprayed-on fireproofing.

C. Apply 2 coats of paint to surfaces which are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

D. Painting: Provide a one-coat shop applied paint system complying with Steel Structures Painting Council (SSPC) - Paint System Guide No. 7.00.

PART III - EXECUTION

3.01 SURVEYS

A. Surveys: Employ a registered professional engineer or land surveyor for accurate erection of structural steel. Check elevation of concrete and masonry bearing surfaces, and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect/Engineer. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Architect/Engineer.

3.02 TEMPORARY SHORING AND BRACING

A. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

3.03 ANCHOR BOLTS

A. Anchor Bolts: Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.

B. Furnish template and other devices as necessary for presetting bolts and other anchors to accurate locations.

3.04 SETTING BASES AND BEARING PLATES

A. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond--reducing materials and roughen to improve bond surfaces. Clean bottom surface of base and bearing plates.

B. Set loose and attach base plates and bearing plates for structural members on wedges or other adjusting devices.

C. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

D. Pack grout solidly between bearing surfaces and bases or plates to ensure that no

voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.

E. For proprietary grout materials, comply with manufacturer's instructions.

3.05 FIELD ASSEMBLY

A. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surface which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances. Splice members only where indicated and accepted on shop drawings.

3.06 ERECTION BOLTS

A. Erection Bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.

B. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

C. Do not enlarge unfair holes in members by burning or by use of drift pints, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.

3.07 GAS CUTTING

A. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary member which are not under stress, as acceptable to Architect/Engineer. Finish gas-cut sections equal to a sheared appearance when permitted.

3.08 TOUCH-UP PAINTING

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

3.09 QUALITY CONTROL

A. All shop and field welded and bolted connections to be tested as per AISC Specifications.

END OF SECTION 05 12 00

SECTION 07 62 00 - SHEET METAL AND MEMBRANE FLASHING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Extent of each type of flashing membrane and sheet metal flashing work is indicated on the Drawings and by provision of this Section. It includes but not necessary limited to shop fabrication, delivery to the jobsite, field modification and installation as shown on the Drawings and specified herein.

B. Excludes roof flashing and accessories which are installed integrally with roofing membrane. Roof flashing and accessories are specified in roofing system sections as roofing work.

1.02 RELATED DOCUMENTS

A. All of the Contract Documents, including General Conditions and Division 1: General Requirements, apply to the work of this section.

1.03 QUALITY ASSURANCE

A. Codes and standards:

1. Sheet Metal and Air Conditioning Contractors national Association (SMACNA): "Architectural Sheet Metal Manual".

2. National Roofing Contractors Association (NRCA): "Roofing and Waterproofing Manual".

B. Fabricator Qualifications: Engage a qualified sheet metal flashing fabricator who has minimum ten (10) years' experience, qualifications, and industrial capacity and knowledge to shop fabricate sheet metal flashing using the material specified herein without delaying the Work indicated.

C. Installer Qualifications: Engage a qualified installer and obtain from the sheet metal flashing manufacturer a certificate showing that the installer is qualified and certified to install and field modify shop fabricated sheet metal flashing similar to the Work indicated.

D. Installer of sheet metal flashing shall have a minimum of continuous five (5) years' experience in installation of sheet metal flashing similar to the one specified herein.

E. Environmental Requirements: Flashing product, mastics, primers and coatings shall comply with the limits set by the latest New York State rules and regulations pertaining to Air Pollution Control Requirements for Architectural and Industrial Maintenance (AIM) Coating: 6NYCRR Part 205 for volatile organic compounds (VOC).

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data, specifications, including Material Safety Data Sheet and installation instructions for each product specified.

B. Samples: Submit 12" long, completely finished units of pre-formed or fabricated sheet metal flashing and membrane flashing products.

1.05 FIELD CONSTRUCTION MOCK-UPS

A. Prior to commencement of Work, provide for each sheet metal and membrane flashing type a complete installed sample, 24" long at location selected by the Architect/Engineer. Executed field mock-up sample shall include but not necessary limited to substrate preparation and details to adjoining building components.

B. Obtain Architect/Engineer's acceptance prior to proceeding with this Work.

C. Retain acceptable sample in undisturbed condition, suitably marked, during the construction period as a standard for judging completed flashing work.

1.06 PROJECT CONDITIONS

A. Weather Conditions: Proceed with flashing work including substrate preparation when weather conditions are dry and will permit flashing work to be performed and completed during a weather dry period in accordance with manufacturer's recommendations.

1.07 DELIVERY STORAGE AND HANDLING

A. Sheet Metal Flashing: Factory apply protective film on all sheet metal flashing in a manner to protect the sheet metal flashing surfaces for contamination and damage during shipping, handling and jobsite storage. Retain protective film on the sheet metal till substantial completion to prevent damage due to construction work.

B. Store as much as practical sheet metal flashing off-site until the time for installation.

C. Membrane Flashing: Deliver membrane flashing and related products, including flashing cement and mastic to the jobsite in manufacturer's sealed packaging and container that show manufacturer's name, designated product name, formulation, specification, date of expiration, manufacturer's warning, special direction from handling, storage and use, special precautionary measures to be followed by Contractor, and instructions for disposing the empty containers and unused material. Contractor shall strictly follow manufacturer's direction indicated.

PART 2 – PRODUCTS

2.01 SHEET METAL PRODUCTS FOR FLASHING

A. Aluminum: Comply with ASTM B 209, 3003-H14 alloy.

2.02 SHEET METAL FLASHING FABRICATION

A. Furnish factory fabricated sheet metal flashing run in eight (8) to ten (10) feet length using the product and thickness indicated on the Drawings. Factory fabricated inside and outside corners with minimum twelve (12) inches length. Comply with recognized industry standards for fabrication; for waterproof performance and for provision for expansion joints for running work as recommended by SMACNA, CDA and other recognized standards. Form sheet metal to fit substrate with an allowance for minor field modification to fit confronted field conditions without damage to the substrate, including roof base flashing membrane.

B. Form sheet metal flashing in a manner to prevent excessive stresses, oil canning, bucking and tool marks with exposed edges hemmed.

C. Acceptable manufacturers for sheet metal flashing product indicated:

Item	Acceptable Product	Manufacturer
Pre-Formed Sheet Metal Flashing (Aluminum)	Standard mill finish aluminum sheet 0.050 inch thick.	Contractor's fabricator, approved by Architect/Engineer as per submitted sample

2.03 FLASHING MEMBRANE

Item	Acceptable Product	Manufacturer
Self-Adhesive Rubberized	Perm-A-Barrier: Primer and Flashing	W.R.Grace
	Bituthane Liquid Flashing	W.R. Grace

2.04 MISCELLANEOUS MATERIALS AND ACCESSORIES

Item	Standard
Masonry Nails	1" long non-corrosive metal, with 1" diameter neoprene washers
Masonry Fasteners	Section 04 05 19, material non-corrosive same as flashing
Urethane Sealant: One-part Nonsag	Sonolastic NP 1
Fasteners	Same metal as flashing / sheet metal or, other non-corrosive metal as recommended by sheet manufacturer.
Epoxy Seam Sealer	2-part non corrosive metal seam cementing compound, recommended by metal manufacturer for exterior / interior non-moving joints
Bituminous Coating	FS TT-C-494 or SSPC-paint 12, solvent type bituminous mastic, normally free of sulfur, compounded for 15-mil dry film thickness per coat
Mastic Sealant	Polyisobutylene; non hardening, non skinning, nondrying, non migrating sealant
Asphalt Saturated Glass Fiber Felt	Minimum 30 lbs asphalt saturated glass fiber felt ASTM D 2178
Asphalt Saturated Organic Felt	ASTM D 226, No. 30 Type II

Adhesives	Type recommended by flashing sheet manufacturer for waterproof/ weather-resistant seaming and adhesive application of flashing sheet.
Metal Accessories, Clamp Assembly, Termination Bar	Sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non corrosive, size and gage required for performance

2.05 FABRICATED UNITS

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry standard practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true at line and levels indicated, with exposed edges folded back to form hems.

B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams.

C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

PART 3 - EXECUTION

3.01 INSTALLATION REQUIREMENTS FOR SHEET METAL FLASHING

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations; SMACNA "Architectural Sheet Metal Manual".

B. Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units. Conceal fasteners where possible.

C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

D. Provide for separation between dissimilar metals, non-compatible metals and/or corrosive substrate by coating concealed surfaces at location of contacts, with bituminous coating or other permanent separation as recommended by manufacturer / sheet metal slashing fabricator.

E. Where installation is to be directly on cementitious or wood substrates, install a slip sheet of rosin size paper on a coarse of asphalt saturate glass fiber felt.

F. Install membrane flashing in accordance with manufacturer's recommendations. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.

G. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6". Fabricate seams at joints between units with minimum 3" overlap, to form a continuous waterproof system.

H. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finish.

I. Protection: Ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION 07 62 00

SECTION 07 71 13 - MANUFACTURED COPINGS AND FASCIAS

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of work is indicated on Drawings and by provisions of this section.

1.02 SUBMITTALS

A. Submit manufacturer's product data describing each type of product required. Include detailed technical data on materials, finishes, accessories and fasteners.

B. Submit shop drawings for coping covers including layout, springs, cleats, fasteners, and splice plates.

PART 2 - PRODUCTS

2.01 GENERAL

A. Aluminum products must comply with the following:

1. Extrusions: Strength and durability properties specified in ASTM B 221 for 6063 T5.

2. Sheet: Strength and durability of 5005 H15, ASTM B 209.

3. Aluminum Finishes:

a. Comply with NAAMM "Metal Finishes Manual" to produce uniformly finished products. For colored finishes, if any, provide colors or color matches indicated below. If not indicated, as selected in writing by Architect/Engineer from manufacturer's standard colors.

b. Finish: High Performance Coating

c. Standard: AA C12C42R1x (cleaned with inhibited chemicals, conversion coated and painted with specified organic coating). Apply fluorocarbon coating system consisting of thermo cured primer, 0.2 mil min. dry film thickness, and thermo cured fluorocarbon coating containing "Kynar 500" resin, 1.0 mil min. dry film thickness.

B. Fabrication: Fabricate fascias and coping covers in sizes and profiles required to fit applications indicated and to remain watertight. Include provisions for controlled expansion of fascia and coping components relative to themselves and to adjoining dissimilar materials.

C. Color: Color of fascias and coping covers shall be as shown on Drawings or as selected in writing by Architect/Engineer from fabricator’s standard colors.

D. Include exposed and concealed fasteners, sealants, flashing materials, seals and adhesive required for complete assembly of systems indicated.

E. Where new roof membranes are being installed, products must be acceptable to the manufacturer of the overall roofing system.

2.02 FASCIA SYSTEMS

A. Multi Part Fascia System

1. Aluminum (0.050” Thick with Kanar finish edge metal)

a. Proform Gravel Stop	Siplast
b. JM Gravel Stop	Johns Manville
c. Soprema Modified Drip Edge	Soprema

2.03 BLOCKING & FASTENERS

A. Wood Blocking

B. Exterior grade Alkaline Copper Quat (ACQ-B) pressure treated Douglas-fir.

C. Use either G185 (min.) zinc coated hot-dipped galvanized steel, type 304/316 stainless steel, or copper for fasteners/metal flashing in contact with ACQ wood. Do not combine stainless & galvanized steel.

D. Redwood or Cedar.

E. Masonry Nails.

F. 1” long non-corrosive with 1” diameter neoprene washers.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's instructions. Coordinate with installation of roof decks and other substrates to produce a watertight assembly capable of withstanding inward and outward loading pressures, and thermal and lateral loads. Isolate metals from dissimilar metals or corrosive substrates using bituminous coatings or other means of permanent separation to prevent electrolytic corrosion.

END OF SECTION 07 71 13

SECTION 07 90 01 - JOINT PROTECTION

PART I - GENERAL

1.01 SUMMARY

A. This Section includes joint sealants, and related cleaners, primers and accessories (e.g., backer rod, etc.).

B. The work of this section includes, but is not limited to, the following:

1. Install sealant between masonry and dissimilar adjacent materials.

2. Install sealant between precast concrete and adjacent materials.

3. Install sealant where shown on drawings.

C. Provide joint preparation, joint sealers, and joint fillers as scheduled in this section and as indicated on the drawings. Before beginning work, obtain Architect/Engineer's clarification if the extent of each type of sealer and filler is uncertain.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation and curing instructions, use limitations and recommendations for each material used. Provide certifications stating that materials comply with requirements.

B. Certifications: Provide manufacturers' certification of the performance of this work. Provide certified test reports on aged performances, hardness, stain resistance, adhesion, cohesion and tensile strength, low temperature flexibility, elongation, modulus of elasticity, water absorption, and resistance to weight loss and deterioration due to heat, ozone and ultraviolet exposure.

C. Initial Selection Samples: Submit samples showing complete range of standard colors and finishes available for each material used. If standard colors are determined by Architect/Engineer to not satisfy the project requirements, custom colors shall be selected at no additional cost to the Owner.

D. Verification Samples: Submit representative samples of each material that are to be exposed in the finished work, showing the full range of color and finish variations expected. Provide actual samples having minimum length of 4 inches.

E. Test Reports: Submit certified reports for tests required.

1.03 QUALITY ASSURANCE

A. Source: For the type of sealant required for the work of this section, provide primary materials which are the products of one manufacturer. Provide secondary materials which are acceptable to the manufacturers of the primary materials.

B. Mock-Ups: Before beginning primary work of this section, provide mock-ups for each color of sealing and filler work at locations acceptable to Architect/Engineer and obtain Architect/Engineer's acceptance of visual qualities and installation requirements. Mock-ups shall extend a maximum of 10 linear feet for each color. Protect and maintain acceptable mock-ups throughout the work of this section to serve as criteria for acceptance of this work. Acceptable mock-ups may be incorporated into the finished work.

1.04 RELATED SECTIONS

01 40 00 (Quality Requirements).

01 43 39 (Mockups, and Quality Assurance Aids).

01 60 00 (Product Requirements).

01 73 00 (Execution).

1.05 INTENT

A. Joint sealers are intended to permanently establish and maintain airtight and watertight continuous seals within the manufacturer's published limits of normal wear and aging.

1.06 PERFORMANCE

A. Performance and Design Requirements for Sealants: Provide sealants to maintain long- term airtight and watertight seals. No cohesive or adhesive failures or cracking or bubbling of sealant surfaces are permitted. Provide sealants certified by sealant manufacturer to be capable of accommodating the full range of manufacturing tolerances, field erection tolerances, thermal movements, seismic movements, building structure movements (floor sag, beam sag, and column settlement), building deflections, and all other movements.

1.07 TESTS

A. Preconstruction Sealant Tests for Adhesion and Compatibility: Submit samples of each material to be used in the work including, but not limited to, sealants, backer rod and all other components and accessories, to sealant manufacturer to verify sealant compatibility and to determine, by testing according to ASTM C794, if and what type of primers are required to ensure adhesion to substrates.

1. Test all non-porous surfaces.

2. Schedule sufficient time for testing, analysis and reporting of results, to allow for the long lead times are required by the sealant manufacturer.

3. Obtain manufacturer's written report and recommendations regarding proper sealant choice and use. Use sealants and substrates only in combinations for which favorable adhesion and compatibility results have been obtained.

4. Make all arrangements and pay all expenses related to these tests.

1.08 DELIVERY, STORAGE AND HANDLING

A. Weather: Perform work only when existing and forecasted weather conditions are within the limits established by manufacturers of the materials and products used. Do not perform joint sealer work when there is precipitation of any kind.

B. Substrates: Proceed with work only when substrate construction is complete and when substrate is completely dry.

C. Temperature: Comply with manufacturer's requirements and recommendations. Joints to be sealed should not be near their fully closed nor fully open extremes, but in the mid-range of the joint's intended movement. Seal joints when ambient temperatures are between 50° F or above 85° F and will remain so for at least 72 hours.

1.09 COORDINATION

A. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1. Advise other trades to ensure that no other work adversely affects surfaces to be sealed.

1.10 WARRANTIES

A. Manufacturers' Warranties: Contractor must submit manufacturers' written warranties for all materials and labor (as applicable) incorporated into the work upon completion of the project prior to the submittal of his final application for payment or invoice. The warranty periods provided by the manufacturers shall be the maximum length offered by those manufacturers and will commence on the date when the Architect/Engineer certifies that all work of the project has been completed and accepted, regardless of the actual completion date for any particular item of work. Warranties shall protect against defects in materials and workmanship and shall not exclude incidental damages to Owner's property caused by material failure or improper installation or application of materials.

PART 2 – PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Each sealant shall be checked for adhesion and compatibility with all adjacent materials.

B. Colors: The colors of the sealant shall be standard colors as selected by the Owner.

2.02 NON-SAG MULTI-PART POLYURETHANE SEALANT

A. Provide multi-part, non-sag, polyurethane-based sealant.

1. *Sikaflex 2CNS*

2. Tremco Dymeric 240 FC.

2.03 NON-SAG ONE PART POLYURETHANE SEALANT

A. Provide one part, non-sag polyurethane based sealant.

1. Sikaflex 15LM

2. BASF Masterseal NP1.

2.04 ONE PART SELF-LEVELING POLYURETHANE SEALANT

A. Provide one part, self-leveling polyurethane-based sealant.

1. Sikaflex 1CSL

2. BASF Masterseal NP1.

2.05 ONE PART SILICONE SEALANT

A. Provide one part silicone sealant.

1. Sikasil WS-295

2. Dow Corning 795.

2.06 ONE PART SELF-LEVELING SILICONE SEALANT

A. Provide one part self-leveling silicone sealant.

1. Dow Corning 890-SL.

2.07 PRE-FORMED SILICONE SEAL

A. Provide preformed silicone seal (tape).

1. Sika Silbridge 300

2. Dow Corning 123.

2.08 PRE-COMPRESSED, SELF-EXPANDING SEALANT SYSTEM

A. Provide preformed, pre-compressed, self-expanding, sealant system

1. Colorseal by Emseal

2.09 MISCELLANEOUS MATERIALS

A. Primer: Provide the specified primer recommended by sealant manufacturer for joints.

B. Bond Breaker Tape: Provide polyethylene tape as recommended by the sealant manufacturer to prevent three-sided adhesion.

C. Backer Rod: Provide compressible closed-cell foam rod compatible with the specified sealant. Provide certification that the supplied rod meets requirements.

D. Joint Fillers: Provide closed cell compressible neoprene joint filler *(e.g. vertical control joints, horizontal soft joints)* and/or asphalt-impregnated fiberboard joint filler *(e.g. sidewalk expansion joints).*

PART 3 - EXECUTION

3.01 INSPECTION

A. The Installer shall examine substrates and conditions under which this work is to be performed and notify Contractor, in writing, of conditions detrimental to the proper completion of the work; do not proceed with work until unsatisfactory conditions are corrected. Commencement of sealant work signifies Installer's acceptance of joint surfaces and conditions.

3.02 SEALANT PREPARATION AND INSTALLATION

A. Manufacturer's Instructions and Recommendations: Strictly comply with manufacturers' instructions and recommendations, except where more restrictive requirements are specified herein.

B. Preparation: Clean joint surfaces immediately before installation of sealants, primers, tapes and fillers. Remove all substances which could interfere with bond. Etch or roughen joint surfaces to improve bond. Prime all porous surfaces and all non-porous surfaces that require priming. Tape or mask adjoining surfaces to prevent spillage and migration problems. Provide backer rods for all sealants except where specifically recommended against by sealant manufacturers. Prevent three-sided adhesion by use of bond breaker tapes or backer rods.

C. Applications:

1. Masonry Joints polyurethane sealant.

2. Masonry to Metal Joints polyurethane sealant.

3. Metal to Metal/Other Non-porous Surface Joints silicone sealant.

4. Horizontal Expansion Joints	self-leveling polyurethane sealant.
5. Asphalt to Concrete Joints	self-leveling silicone sealant.
6. Building to Building Joints	pre-compressed, self-expanding sealant

D. Sealing: Force sealant into joints to provide uniform, dense, continuous ribbons free from gaps and air pockets. Install sealants so that compressed sealants do not protrude from joints. Dry-tool sealants to form a smooth dense surface with joint surfaces adhering equally on opposite sides. At horizontal joints, form a slight cove to prevent trapping water. Except in hot weather, make sealant surface slightly concave, except as indicated otherwise.

1. Sealant Depth: Joint depths shall equal joint width for joints under ½-inch in width, unless indicated otherwise in the Specifications or on the Drawings. Joint depths shall equal ½ of the joint width for joints equal to and over ½-inch in width, unless indicated otherwise in the Specifications or on the Drawings.

E. Tooling: Install sealants so that compressed sealants do not protrude from joints. Dry-tool sealants to form a smooth dense surface. At horizontal joints, tool sealants to shed water. Make custom fabricated tools as needed to create smooth, accurately formed sealant beads.

3.03 CURING

A. Cure sealants in strict compliance with manufacturers' instructions and recommendations to obtain highest quality surface and maximum adhesion. Make every effort to minimize accelerated aging effects and increase in modulus of elasticity.

3.04 REPAIR AND CLEANING

A. Remove and replace work that is damaged or deteriorated in any way, as determined by the Architect/Engineer.

B. Clean adjacent surfaces using materials and methods recommended by sealant manufacturer. Remove and replace materials that cannot be successfully cleaned.

END OF SECTION 07 90 01

SECTION 09 97 14 - COATINGS

PART I - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION OF WORK

A. Extent of painting work is indicated on the Drawings. The work includes, but is not limited to painting of the following items: Masonry, cast iron, fiberglass, and wood façade/window components.

B. “Paint” as used herein means all coating systems materials, enamels stains, sealers and fillers, and other applied materials whether used as prime, intermediate or top coats.

1.03 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer and use only within recommended limits.

B. Standards:

1. Structural Steel Painting Council, SP-3 “Power Tool Cleaning”.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer’s technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Prior to beginning work, Architect/Engineer, Rodriguez + Gambino Architectural Building Envelope Consultants, will furnish color chips for surfaces to be painted to match LPC approved color.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer’s name and label and the following information:

1. Name or title of material

2. Federal Specification Number

3. Manufacturer’s stock number and date of manufacture

4. Manufacturer’s name

5. Contents by volume, for major pigment and vehicle constituents.

6. Thinning instructions

7. Application instructions

8. Color name and number

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in clean condition, free of foreign materials and residue.

C. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.06 PROJECT CONDITIONS

A. Perform work only when ambient temperature and surface temperature of existing masonry and new materials are between 50°F and 90°F. Work only when exterior temperature remains a constant 50°F or above for a 72-hour period from commencement of work. Weather and temperature conditions shall also be within the limits established by manufacturers of the materials and products used.

B. Do not apply paint in snow, rain, fog or mist or when relative humidity exceeds 85%; or to damp or west surfaces.

1.07 MOCK-UPS

A. Provide mock-ups on all types of surfaces illustrating paint coating color, texture and finish.

B. Mock-up shall remain in place until reviewed by Rodriguez + Gambino Architectural Building Envelope Consultants, Owner, and Manufacturer, and until Manufacturer approves adhesion test in mockup.

C. Mock-up may remain as part of the work.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with the requirements, provide products of the following for the painting of the base bid steel adjacent to masonry work, and if alternates are accepted, for the lintel, window, and rooftop steel painting work.

1. The Acrylic polymer system specified for the painting work shall be manufactured by the RD Coatings Company, USA, located in Stratford, CT and represented by Righter Group, Wilmington, MA. Local Rep, Phil Gonnella, 1-800-533-3003 or mobile 201-401-5300

2.02 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

1. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.

2. Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Rodriguez + Gambino Architectural Building Envelope Consultants. Furnish material data and manufacturer's certificate of performance to the Architect/Engineer for any proposed substitutions.

B. Color Pigment: Pure, non-fading, applicable types to suit substrates and service indicated.

2.03 CLEANER

A. Acceptable products:

1. Enviro Klean 2010 All Surface Cleaner, manufactured by ProSoCo, Inc., Lawrence, KS.

2. Sure Klean Light Duty Restoration Cleaner, manufactured by ProSoCo, Inc., Lawrence, KS.

PART 3 - EXECUTION

3.01 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film. All loose existing paint shall be removed prior to beginning new painting.

3.02 SURFACE PREPARATION

A. All Ferrous Metal (To include cast iron and steel):

1. Pressure wash all surfaces at 3000 psi with a 0 degree spinner tip. Sand rusty/bare spots to remove rust per SP2 and/or SP3.

2. Clean surfaces with Enviro Klean 2010 All Surface Cleaner in accordance with manufacturer recommendations and specifications.

B. All Non-Ferrous Metal Surfaces (To include aluminum, copper, and stainless steel):

1. Pressure wash all surfaces at 3000 psi with a 0 degree spinner tip.

2. Clean surfaces with Enviro Klean 2010 All Surface Cleaner in accordance with manufacturer recommendations and specifications.

3. Scruff Sand with 80 grit sandpaper.

C. All previously painted Masonry finish.

1. Hand scrape to remove all loose paint. Pressure wash all surfaces at 500 psi max with a 15 degree tip.

2. Where needed, clean surfaces with by lightly hand scrubbing with plain water in accordance with manufacturer recommendations and specifications.

3.03 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with the manufacturers instructions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.04 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Provide finish coats which are compatible with prime paints used.

2. Apply additional coats where undercoat, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent that of flat surfaces.

3. Finish exterior doors on tops, bottoms and side edges same as exterior faces.

4. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause lifting or loss of adhesion of the undercoat.

C. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate, to establish a dry film thickness as indicated, or if not indicated, as recommended by the coating manufacturer.

D. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

1. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

3.05 CLEAN-UP AND PROTECTION

A. Clean-up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.

1. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Rodriguez + Gambino Architectural Building Envelope Consultants D.P.C.

1. Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

2. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces

3.06 EXTERIOR PAINT SCHEDULE

A. All Ferrous Metal: (To include all cast iron and steel) Matte Finish (to match existing)

1. Acrylic Polymer Finish: Surface preparation to comply with Item 3.02 A.

a. Prime Coat: Provide spot prime coat of RD Elastometal at bare metal only at 4-6 mils dft.

b. Base Coat(s): Provide 2 coats of RD Elastometal at 5-7 mils dft each. Tint final coat a different color from primer.

c. Finish Coat: RD Mur-Acryl at 2-4 mils dft. Color to be provided by Architect/Engineer based on LPC approval.

B. All Non-Ferrous Metal Surfaces: (To include aluminum, copper and stainless steel) Matte Finish (to match existing)

1. Acrylic Polymer Finish: Surface preparation to comply with Item 3.02 B

a. Prime Coat: Provide spot prime coat of RD Monoguard at bare metal only at 2-3 mils dft.

b. Finish Coat(s): Provide 2 coats of RD Monoguard at 2-3 mils dft each. Tint final coat a different color from the primer. Color to be provided by Architect/Engineer based on LPC approval.

C. All previously painted Masonry: Matte Finish (to match existing)

1. Acrylic Polymer finish: Surface preparation to comply with Item 3.02 C.

a. Prime coat on all bare masonry, after repair of joints and brick, 1 coat RD Elastoflex at 4-5 mils dft. Dilute Elastoflex 10% with water.

b. Finish coat. 2 coats RD Elastoflex at 4-5 mils dft per coat in color to be provided by Architect/Engineer based on LPC approval.

END OF SECTION 09 97 14

SECTION 09 97 16 – ELASTOMERIC ACRYLIC WALL COATINGS (REINFORCED AND NON-REINFORCED)

PART I - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes surface preparation and field coating of the following:

1. Reinforced: The work shall consist of surface cleaning, concrete/masonry patching, crack and joint repair and the application of a breathable, elastic, UV resistant, waterproof acrylic coating system for exterior walls that is fully reinforced with fleece. “Paint” as used herein means all coating systems materials, enamels stains, sealers and fillers, and other applied materials whether used as prime, intermediate or top coats.

2. Non-Reinforced: The work shall consist of surface cleaning, concrete/masonry patching, crack and joint repair and the application breathable, elastic, UV resistant, waterproof acrylic coating for exterior walls, including, concrete, stucco, CMU, terra cotta, EIFS, brick, either bare or previously coated

1.03 QUALITY ASSURANCE

A. The Contractor shall give the Architect/Engineer and coatings Manufacturer a minimum of three days advance notice of the start of any field surface preparation work or coating application work.

B. All work on surface preparation and coating application shall be performed in the presence of the Architect/Engineer or his designated representative, unless the Architect/Engineer has specifically allowed the performance of such work in his absence.

C. Only applicators trained in the application of the specified products will be allowed to work on the project.

D. Equipment: All equipment for application of the coating shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the coating manufacturer.

1.04 SUBMITTALS

A. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application. Identify each material by manufacturer's general classification.

B. Manufacturer's Information: Provide manufacturer's technical information and instructions for handling, storing, and applying each coating material proposed for use.

C. Samples for Initial Selection: Provide color charts showing the full range of colors available for each type of finish-coat material indicated.

D. Samples for Verification: Provide stepped samples, defining each separate coat. Use representative colors when preparing a job site mock-up for review. Reapply until required sheen, color and texture are achieved.

1.05 SERVICES OF MANUFACTURER'S REPRESENTATIVE

A. The Contractor shall purchase coatings from the accepted manufacturer. The manufacturer shall assign a local representative to periodically observe the application of the product. The Contractor shall submit a detailed report to the Owner at the completion of his work identifying the products used and verifying that said products were applied in accordance with the written specification.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label and the following information:

1. Name or title of material

2. Product description (generic classification or binder type)

3. Manufacturer's stock number and date of manufacture

4. Thinning instructions

5. Application instructions

6. Color name and number

7. VOC content

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45° F (7° C). Maintain containers in storage in a clean condition, free of foreign materials and residue.

C. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing and application.

1.07 PROJECT CONDITIONS

A. Apply water-based coatings only when the air temperature is 45° F and rising for 24 hours.

B. Do not apply water-based paint in snow, rain, fog or mist; or at temperatures less than 5° F (3° C) above the dew point; or to damp or wet surfaces.

C. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during

application and drying periods.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All coating materials shall be equal to those manufactured by RD Coatings, Assesse, Belgium and distributed by RD Coatings USA, Stratford, CT. Products of other manufacturers, comparable in quality and type of those specified will be considered. Product data must be provided, substantiated by certified tests that prove that the substituted material is equal in performance to the coating material specified. Also, the manufacturer must provide in writing, satisfactory proof of past performance of similar applications. All information for substitute products must be included in the contractors bid package at the time of bid. Only products, which were submitted as part of the original bid, will be considered. The written acceptance by the Architect/ Engineer must be obtained before the Contractor uses any such alternative products.

B. Masonry Patching:

1. Reinforced: Acrylic -modified one part concrete RD-Edeck Filler, or similar Single package Acrylic, flexible patching material.

2. Non-Reinforced: Acrylic -modified one part concrete RD-Edeck Filler, or similar Single package acrylic patching material

C. Caulking:

1. Reinforced: One part, waterborne, recoatable acrylic dispersion, RD-Acrykit as manufactured by RD Coatings

2. Non-Reinforced: One part, waterborne, recoatable acrylic dispersion, RD-Acryl W as manufactured by RD Coating

D. Primer:

1. Reinforced: Acrylic Polymer coating shall be RD-Elastoflex applied with RD-Reinforcing Fleece as manufactured by RD Coatings. RD-Elastoflex is 71% solids by weight and 58% solids by volume. Volatile organic compounds shall be 45.g/l. Thin 5-10% with water

2. Non-Reinforced: Acrylic impregnating water borne primer shall be RD-Unifix primer as manufactured by RD Coatings. The coating shall be a one part, acrylic, water borne, self-priming coating which can be applied either by brush or roller. Volatile organic compounds shall be 0% per gallon. RD-Unifix primer is 15% solids and must be used undiluted. Unifix is typically used on brick with deteriorating mortar joints, or surfaces with several coats of paint or terra cotta etc. For Most other surfaces, RD Elastoflex, thinned 5-10% with water is used as the primer

E. Base Coat:

1. Reinforced: Acrylic Polymer coating shall be RD-Elastoflex applied with RD-Reinforcing Fleece as manufactured by RD Coatings. RD-Elastoflex is 71% solids

by weight and 58% solids by volume. Volatile organic compounds shall be 45.g/l.

2. Non-Reinforced: Acrylic Polymer coating shall be RD-Elastoflex as manufactured by RD-Coatings. RD-Elastoflex is 71% solids by weight and 58% solids by volume. Volatile organic compounds shall be 45 g/l. For a textured finish, apply RD-Elastoflex Quartz

F. Finish Coat:

1. Reinforced: Acrylic polymer coating shall be RD-Elastoflex as manufactured by RD Coatings. RD-Elastoflex is 71% solids by weight; 58% solids by volume. Volatile organic compounds shall be 45 g/l. All above products shall be a one part, acrylic, thixotropic liquid, which can be applied either by brush, roller or airless spray equipment. The coating System shall form a seamless rubber waterproof membrane that can bridge large active cracks at cold temperatures (up to 1/16th inch), is unaffected by long-term weathering or ultraviolet light. The coating shall be breathable for water vapor but will reduce the diffusion of CO2.

2. Non-Reinforced: Acrylic polymer coating shall be RD-Elastoflex as manufactured by RD Coatings. RD-Elastoflex is 71% solids by weight; 58% solids by volume. Volatile organic compounds shall be 45 g/l. All above products shall be a one part, acrylic, thixotropic liquid, which can be applied either by brush, roller or airless spray equipment. The coating System shall form a seamless rubber waterproof membrane that can bridge small active cracks at cold temperatures, is unaffected by long-term weathering or ultraviolet light. The coating shall be breathable for water vapor but will reduce the diffusion of CO2

G. Accessory materials:

1. Reinforced: RD-Elastometal is a rust inhibitive coating to be used on exposed metals such as reinforcing bars etc. Volatile organic compounds shall be 8 g/l. RD-Reinforcing Fleece.

2. Non-Reinforced: RD-Elastometal is a rust inhibitive coating to be used on exposed metals such as reinforcing bars etc. Volatile organic compounds shall be 8 g/l. RD-Reinforcing Fleece to be used locally over active joints, cracks, and concrete patches.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. General: Surfaces to be coated shall be cleaned as required by the coating manufacturer to properly receive prime and finish coats. No surface preparation method shall be used unless acceptable to the coating manufacturer and the Architect/Engineer.

B. Pressure Washing: All the surfaces of the existing walls shall be pressure washed at a pressure of 4,000 psi to remove all dirt, contamination, loose concrete, old unsound coatings and cementitious patch material not removed by power tools. The pressure washer shall be fitted with a 0°Spinner Tip and held at a distance of 6" to 12" from the

surface, while staying perpendicular to the surface. Depending on the substrate, such as certain brick, soft stone, terra cotta, etc, the pressure may have to be decreased or the 0° tip replaced with a fan tip. This will be determined during preparation of the Mock-up sample area.

C. Hand and Power Tools: As necessary to remove all unsound concrete and mortar splatter.

3.02 MATERIALS PREPARATION

A. Mix and prepare coating materials according to manufacturer's written instructions.

B. Maintain containers used in mixing and applying coating in a clean condition, free of foreign materials and residue.

C. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

D. Use only thinners approved by paint manufacturer and only within recommended limits

3.03 COATING APPLICATION

A. Minimum surface and atmospheric conditions: All surfaces must be completely dry. If the surfaces have picked up atmospheric pollutants, dust or airborne contaminants since the masonry was pressure washed, or at any other time during the project, it may be necessary to rinse the surface prior to applying the next coating.

1. Temperature must be 45° F and rising for 24 hours. If the relative humidity is above 85% consult the Manufacturer's Representative before proceeding with any coating application.

B. Mock-up: The contractor must apply the specified system to a 10’ x10’ area and have it approved by the Architect/Engineer.

C. Coatings shall be applied without runs, sags, thin spots, pinholes or unacceptable marks. Coatings shall be applied at the rate specified by the coating manufacturer to achieve the minimum dry mil thickness required. Additional coats shall be applied, if necessary, to obtain thicknesses specified.

D. Coatings shall be applied either by roller, brush or spray in strict accordance with the Manufacturer’s instructions, as well as with the full knowledge of the Architect/Engineer.

E. Inspection Between Coats: The Contractor shall follow a system of using different colors so that no two coats on a given surface are exactly the same color. Wet film thickness gages will be utilized for quality control.

F. Special areas: Special attention shall be given to insure that edges, corners and crevices receive a film thickness equivalent to that of the adjacent coated surfaces.

G. Masonry or Concrete Patching: RD-Edeck Filler or similar acrylic patching material.

H. Acrylic Reinforced Wall Coating Sequence: The following coating sequence must be followed in the application of the coating specified. Change colors for each coat.

1. Reinforced:

a. Prime all concrete surfaces with RD-Elastoflex. thinned 5-10% with water at approximately 550-650 sf/ 5 gal unit.

b. All cracks over 1/16" must be filled and sealed with RD-Acrykit.

c. After the primer has dried, apply RD-Elastoflex with RD-Reinforcing Fleece over all surfaces at a thickness of 6 mils DFT, overlapping by 2" minimum. The spread rate is approximately 400 sf / 5 gal unit.

d. Apply the finish coat of RD-Elastoflex using a ½" to ¾" nap roller, brushes or airless spray, at a thickness of 6 mils DFT. The spread rate is approximately 550 sf / 5 gal unit.

2. Non-Reinforced:

a. Prime all concrete surfaces with RD-Unifix. Use a 3/4" nap roller and saturate the surface, the spread rate is approximately 1200- 1500 sf / 5 gal unit. RD-Elastoflex thinned 5-10% with water can be used as alternate to RD-Unifix. The spread rate of RD-Elastoflex is 600-700 sf/ 5 gal unit

b. All cracks over 1/16" must be filled and sealed with RD_Acryl W

c. After the primer has dried, apply RD-Elastoflex at a thickness of 6 mils DFT. The spread rate is approximately 550-600 sf / 5 gal unit. If a textured finish is selected, use RD-Elastoflex Quartz. The spread rate for Elastoflex Quartz is 400-450 sf/ 5 gal unit

d. Apply the finish coat of RD-Elastoflex using a ½" to ¾" nap roller, brushes or airless spray, at a thickness of 6 mils DFT. The spread rate is approximately 550-600 sf / 5 gal unit

I. Completed Work: The completed system shall be uniform in color and texture.

a. Reinforced: The RD-Reinforcing Fleece shall be completely hidden and the system pinhole free.

3.04 QUALITY WORKMANSHIP

A. The Contractor shall be responsible for the cleanliness of his coating operations and shall use covers and masking tape to protect the new and existing material not intended to be coated whenever such covering is necessary, or if so requested by the

Owner. Any coatings identified for removal shall be carefully removed without damage to any finished coatings or surface. If damage does occur, the entire surface, adjacent to and including the damaged area, shall be recoated without visible lap marks and without additional cost to the Owner.

B. Coatings found defective shall be removed and recoated as required by the Engineer. Before final acceptance of the Work, damaged surfaces shall be cleaned and recoated as directed by the Engineer.

3.05 CLEANING

A. Clean-up: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surface

END OF SECTION 09 97 16