PROJECT MANUAL for:

Volume 1:
Bidding Documents and Common Information

Volume 2:
Various Locations – Repair
Masonry Stair Towers at Hudson and Gillett

PROJECT NO: CP231031

PREPARED BY:

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Volume 3:
Student Recreation Center –
East Elevation Masonry Repair

PROJECT NO.: CP231201

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UNIVERSITY OF MISSOURI
COLUMBIA, MISSOURI

For:
THE CURATORS OF THE UNIVERSITY OF MISSOURI

Issued for Bid: February 21, 2024

VOLUME 2

ARCHITECT:

I hereby certify these Drawings and/or Specifications have been prepared by me, or under my supervision. I further certify that to the best of my knowledge these Drawings and/or Specifications are as required by and in compliance with Building Codes of the University of Missouri.

The below listed Drawings and/or Specification sections have been prepared by me, or under my supervision. Any Specification sections within this document, not listed below, are not certified under this statement and are the responsibility of other parties

2023-12-05

Signature:_____

Eric S. Roselle – MO License No.: #A-2014036992

Certified Drawings:

G001 - COVER SHEET
G002 - LOCATION MAPS, LIST OF DRAWINGS, & LEGENDS
G003 - STAGING & TRAFFIC CONTROL: HUDSON & GILLETT
A130 - NEW WORK: PLANS: HUDSON
A131 - NEW WORK: PLANS: GILLETT
A201 - NEW WORK: ELEVATIONS: HUDSON
A202 - NEW WORK: ELEVATIONS: HUDSON
A203 - NEW WORK: ELEVATIONS: HUDSON
A204 - NEW WORK: ELEVATIONS: HUDSON
A205 - NEW WORK: ELEVATIONS: GILLETT
A206 - NEW WORK: ELEVATIONS: GILLETT
A207 - NEW WORK: ELEVATIONS: GILLETT
A208 - NEW WORK: ELEVATIONS: GILLETT
A501 - NEW WORK: DETAILS

Certified Specification Sections:

02 4100	Demolition
04 0100	Maintenance of Masonry
07 5300	Elastomeric Membrane Roofing
07 6200	Sheet Metal Flashing and Trim
07 9200	Joint Sealants
09 9000	Painting and Coating

SECTION 00 0110

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SHOP DRAWING AND SUBMITTAL LOG

Project: Various Locations – Repair Masonry Stair Towers at Hudson and Gillett
Project Number: MU No. CP231031 / PWA 202302
Contractor:

Section	`	Submittal No.	Contractor	Action					Remarks	Date Returned	Copies		
				Date Received	#	Date Sent to Consultant	#	Date Returned			Cont'r	Owner	File
04 0100	MAINTENANCE OF MASONRY												
	Product Data - Brick												
	Product Data - Cleaning Compounds												
	Product Data - Water Repellents												
	Product Data - Mortar												
	Product Data - Crack Stitching System												
	Product Data – Anchoring												
	Product Data - Accessories												
	Product Data - Repair Mortar												
	Test Reports - Mortar												
	Samples - Brick												
	Manuf. Instructions - Cleaning Materials												
	Manuf. Instructions - Repair Mortar												
	Manuf. Certificate - Brick												
	Contractor Work Plan												
07 5300	ELASTOMERIC MEMBRANE ROOFING												
	Product Data												
07 6200	SHEET METAL FLASHING AND TRIM												
	Product Data												
	Shop Drawings												
	Samples												
	Sample Finish Warranty												
07 9200	JOINT SEALANTS												
	Product Data - Sealants - Type E-1												
	Product Data - Sealants - Type E-2												
	Product Data - Accessory Products												
	Color Cards for Selection												

SHOP DRAWING AND SUBMITTAL LOG

Section	`	Submittal No.	Contractor	Action					Remarks	Date Returned	Copies		
				Date Received	#	Date Sent to Consultant	#	Date Returned			Cont'r	Owner	File
09 9000	PAINTING AND COATING												
	Product Data												
	Samples												
	Certification - VOC limits												
	Maintenance Data												

CLOSEOUT LOG

Project: Various Locations – Repair Masonry Stair Towers at Hudson and Gillett
Project Number: MU No. CP231031 / PWA 202302
Contractor:

Section	Description	Contractor / Subcontractor	Date Rec/d	# of Copies	CPM Initials	Remarks
GC /3.14	As-built drawings (Field Redlines)					
07 6200	Warranty (Finish)					
07 9200	Warranty					

SECTION 1.F

INDEX OF DRAWINGS

Drawings referred to in and accompanying Project Manual consist of following sheets dated **December 5, 2023**.

CP231031 Various Locations – Repair Masonry Stair Towers at Hudson and Gillett

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Sheet	5	of	14	A131	New Work: Plans: Gillett
Sheet	6	of	14	A201	New Work: Elevations: Hudson
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END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2019.

1.03 SUBMITTALS

A. See Division One for submittal procedures.

B. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction and site improvements. Include finish surfaces and other items that might be misconstrued as damage caused by demolition operations.

1.04 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of five years of documented experience.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

A. Remove the entire portion of building designated on drawings..

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with all requirements specified in Division One.

B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
   3. Maintain fire watch during and for at least 24 hours after flame-cutting operations.
   4. Maintain adequate ventilation when using cutting torches.
   5. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   6. University has a Tile V Permit that states that no fugitive particulate matter emissions shall go beyond the premise of origin in the quantities that the particulate matter may be found on surfaces beyond the property line of origin. Conduct demolition operations to comply with University's Title V Permit regulations.
   7. Comply with applicable requirements of NFPA 241.
   8. Use of explosives is not permitted.
   9. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   10. Provide, erect, and maintain temporary barriers and security devices.
   11. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.

12. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
13. Do not close or obstruct roadways or sidewalks without permit.
14. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
15. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from Owner.

D. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
2. Prevent movement or settlement of adjacent structures.
3. Stop work immediately if adjacent structures appear to be in danger.

E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

C. Remove existing work as indicated and as required to accomplish new work.
1. Remove items indicated on drawings.

D. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

UNIVERSITY *of* MISSOURI
ENVIRONMENTAL HEALTH AND SAFETY

ASBESTOS SURVEY
CP231031
HUDSON HALL, GILLETT HALL
REPAIR MASONRY – STAIR TOWERS
4/24/2023

TO: Heather Brown
Planning, Design, and Construction

FROM: Pete Kohler
Environmental Health and Safety

MU Environmental Health and Safety has completed an asbestos survey of material that will be affected by repairs on the stairwell towers of Hudson and Gillett Halls.

The asbestos inspection was conducted to satisfy the requirements of 40CFR 61, subpart M, which stipulates that all buildings be "thoroughly inspected" for asbestos before the commencement of renovation or demolition activities. The asbestos inspection was conducted by Pete Kohler (MO Asbestos Inspector #10883, expires 11/05/2023). The survey was conducted in April, 2023 and the report was completed April 24, 2023.

Analysis of samples was made by polarized light microscopy (PLM).

As a result of sampling and analysis, no asbestos was identified in the scope of the project, with this exception: Coating left on the top of coping stones was found positive for asbestos, but the project can be completed without disturbance of this material.

FIELD OBSERVATIONS

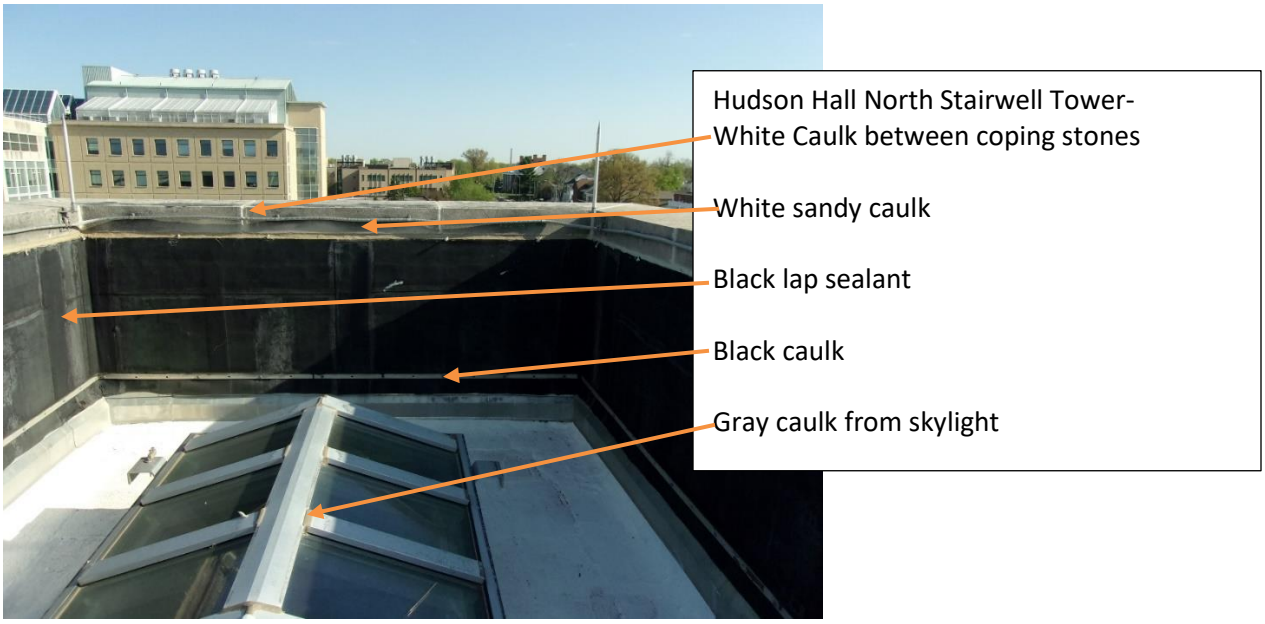
The two buildings have similar construction on the stairwell towers which will be repaired, except that Hudson has a layer of EPDM around the interior of the parapet wall, and Gillett does not.

The EPDM is attached to brick, which defines the area around the stairwell towers. The adhesive behind the EPDM was sampled and analyzed. It does not contain asbestos.

The coping stones on the top of the parapets will be removed, and new material will be put down across the top of the short wall. Then the coping stone will be re-laid, with new caulking as needed. The material which will be disturbed by this repair was sampled and analyzed. It does not contain asbestos.

Several different varieties of caulk have been used. I collected samples of the different types of caulk, plus lap sealant on the EPDM, and the adhesive used to glue the rubber to the bricks.

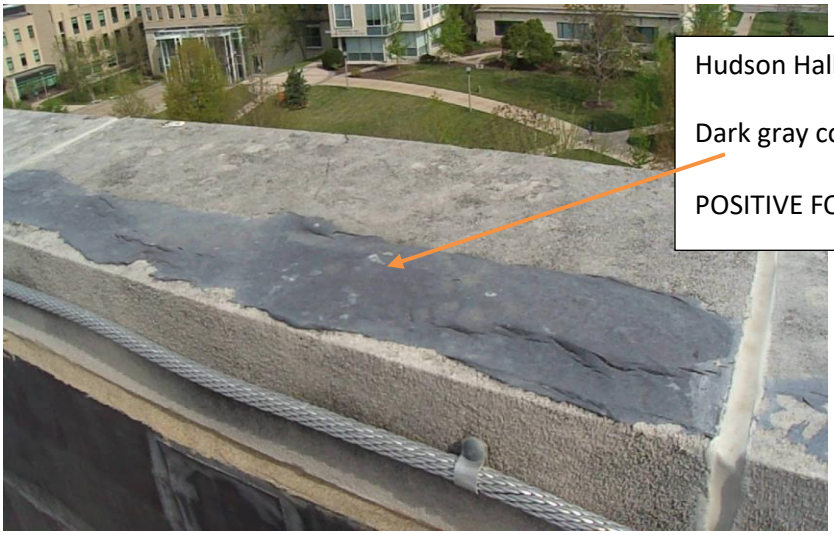
None of the suspect material was found to contain asbestos, with one exception.



PLEASE NOTE:

There is one type of material used on Hudson Hall which was found to contain asbestos. On the north stairwell tower, a black coating has been applied to the top of the coping stone. This material has aged to a dull, dark gray, and is hard as concrete. It is non-friable material and is stuck tight to the stone. It is positive for asbestos.

I found a small patch of this same material on the coping stones of the west tower of Hudson. It may be found in other locations. The coping stones with this material on them may be re-used. The project can be completed without disturbing this positive material. The stones can be removed, the repairs made, and the stones can be put back with the positive material still in place.



SAMPLE ID	LOCATION/DESCRIPTION	ANALYSIS
230418-01	Hudson Hall Stairwell Tower 1, adhesive from EPDM	100% non-fibrous
230418-02	Hudson #1, black lap sealant	100% non-fibrous
230418-03	Hudson #1, white caulk with sand	100% non-fibrous
230418-04	Hudson #1, black caulk	100% non-fibrous
230418-05	Hudson #1, hard gray coating on top of coping stone	**CONTAINS 5% CHRYSOTILE,** 95% non-fibrous
230418-06	Hudson #2, adhesive from EPDM	100% non-fibrous
230418-07	Hudson #2, black lap sealant	100% non-fibrous
230418-08	Hudson #2, gray caulk from skylight	100% non-fibrous
230418-09	Hudson #2, white caulk	100% non-fibrous
230418-10	Gillett stair tower #2, white caulk with sand	100% non-fibrous
230418-11	Gillett #2, gray caulk from skylight	100% non-fibrous
230418-12	Gillett #2, gray caulk from parapet	100% non-fibrous
230418-13	Gillett #2, white caulk with sand	100% non-fibrous

ASBESTOS SUMMARY:

Materials that will be disturbed by the repairs to be made on the stairwell towers of Hudson and Gillett Halls do not contain asbestos, with one exception.

Hard, dark gray coating found on top of the coping stones of Hudson Hall in two locations, is positive for asbestos. Please see photograph in the report. With care, the project can be completed without removing this material from the stone. It is non-friable material which is stuck tight to the stone. The workers must be made aware of the presence of this material, to perform the repair accordingly.

SECTION 04 0100
MAINTENANCE OF MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clay facing brick.

B. Mortar.

C. Water and chemical cleaning of brick and stone surfaces.

D. Sealing of stone masonry.

E. Replacement of damaged brick units.

F. Repointing mortar joints.

G. Repair of damaged masonry.

H. Removing and reinstalling of items that would interfere with the proper execution of work regardless of whether items are shown on drawings.

I. Accessories.

J. Miscellaneous items not specifically listed or shown on drawings but required for proper completion of work.

1.02 DEFINITIONS

A. Defective Mortar Joints: Joints that are open, unsound, soft, loose, cracked (larger than 0.016 in.), broken, eroded more than 1/4 inch, crumbly or otherwise disintegrated mortar that would impair its proper performance.

B. Defective Brick: Brick that is unsound, cracked, broken, spalled, crazed, effloresced, or otherwise deteriorated that would impair its proper performance.

1.03 PRICE AND PAYMENT PROCEDURES

A. See Special Conditions, for Unit Price requirements and Base Bid quantities.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.
   1. Require attendance of parties directly affecting work of this section.
   2. Review conditions of installation, installation procedures, and coordination with related work.

1.05 SUBMITTALS

A. See Division One for submittal procedures.

B. Product Data:
   1. Brick masonry units.
   2. Cleaning compounds and cleaning solutions.
   3. Water repellents.
   4. Mortar: Include design mix using the Proportion specification of ASTM C 270.
   5. Accessories.
   7. Repair Mortar.

C. Reports: Submit reports on mortar indicating conformance of component mortar materials to requirements of ASTM C 270 and test and evaluation reports per ASTM C 780

D. Samples: Provide individual brick samples, that illustrate full range of color and texture of brick being replaced.

E. Manufacturer's Instructions:
   1. For cleaning materials, indicate special procedures, conditions requiring special attention.
   2. For repair mortar.

F. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

G. Contractor Work Plan: Submit detailed written plan indicating staging, access, protection, staffing, and general workflow related to how work is proposed to be completed.

1.06 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Comply with provisions of the Brick Industry Association (BIA) Technical Notes on Brick Construction, except where exceeded by requirements of the contract documents.

C. Restoration Company Qualifications: Company specializing in masonry restoration with minimum five years of documented experience.

1.07 MOCK-UPS

A. Repoint an existing masonry wall area sized 8 feet long by 6 feet high.

B. Use tools, methods and products that will be used on actual work. If it cannot be successfully demonstrated to the satisfaction of the Owner's Project Representative that power tools can be used to accomplish work without damage to adjacent materials, then hand tools will be required to perform work.

C. The masonry mockups shall demonstrate the minimum standard for the following:
   1. Rebuilding of brick
   2. Repointing of brick.
   3. Sealant joints specified in Section 07 9200.

D. Locate where directed.

E. Acceptable panel and procedures employed will become the standard for work of this section.

F. Mock-up may remain as part of the Work.

G. Mock-up must be completed and approved before start of construction.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.

B. Store restoration cleaner and water repellent materials in manufacturer's packaging.

1.09 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

B. Protect landscaping and lawns from construction operations in a manner acceptable to Owner's Project Representative.

C. Do not cut, grind, clean, seal or use process creating dust, dirt or airborne liquid when wind is over 10 mph, unless special precautions approved by the Owner's Representative are implemented to prevent adjacent non-project related damage.

D. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

E. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 BRICK UNITS

A. Acceptable Products:
   1. Cloud Ceramics Modular Brick.
      a. Distributor: Midwest Block and Brick; 573-635-7119.
      b. Color: French Grey.
      c. Texture: Velour.
   2. Substitutions: See Division One.

B. Facing Brick: ASTM C216, Type FBS, Grade SW, with a rating of "no efflorescence" when tested according to ASTM C67.

C. Lab certification of brick shall be based on samples taken from bricks produced for the project and must be approved prior to delivery. The Owner may retain an independent testing agency to randomly test brick delivered to the site for compliance.

2.02 CLEANING MATERIALS

A. Basis of Design - Brick & Stone Cleaning Agent: PROSOCO Sure Klean Light Duty Restoration Cleaner; www.prosoco.com.

B. Stone Pre-Wash: PROSOCO Sure Klean 766 Limestone & Masonry Prewash.

C. Stone After-Wash: PROSOCO Sure Klean Limestone & Masonry Afterwash.

D. Substitutions: See Division One.

2.03 WATER REPELLENT

A. Basis of Design - Water Repellent for Stone: PROSOCO Natural Stone Treatment WB Plus.

B. Substitutions: See Division One.

2.04 MORTAR MATERIALS

A. Portland Cement: ASTM C150, Type I.
   1. **Not more than 0.60 percent alkali.**
   2. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979.
      a. Color(s): As required to match existing adjacent mortar. Adjust proportions as required by field conditions.
   3. Hydrated Lime: ASTM C 207, Type S.
   4. Mortar Aggregate: ASTM C 144.
   5. Water: Clean and potable.

2.05 MORTAR MIXES

A. Mortar for Unit Masonry: ASTM C 270, Proportion Specification.
   1. Exterior, loadbearing and non-loadbearing masonry: Type N.
      a. Replicate the existing mortar in color, texture, tooling, general composition and appearance. Between new mortar and aged mortar, maintain the continuity of surface that has developed from age and weathering.
   2. Admixtures: Use admixtures only if approved by Architect in writing. Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

2.06 MORTAR MIXING

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.

B. Maintain sand uniformly damp immediately before the mixing process.

C. Do not use anti-freeze compounds to lower the freezing point of mortar.

D. If water is lost by evaporation, re-temper only within two hours of mixing.

E. Colored Mortar: Proportion selected pigments and other ingredients to match existing adjacent mortar without exceeding manufacturer's recommended pigment-to-cement ratio; mix in accordance with manufacturer's instructions; uniform in coloration.

2.07 REPAIR MORTAR (STONE PATCH)

A. Basis of Design - Cathedral Stone Products, Inc.; Jahn; Product M70, Limestone Repair Mortar; www.cathedralstone.com http://www.cathedralstone.com.

1. Color/Texture/Profile: Match adjacent surface of stone that is being repaired.

B. Substitutions: See Division One.

2.08 REINFORCEMENT AND ANCHORAGE

A. Anchors:

1. Basis-of-Design: Hohmann & Barnard, Inc.; Product: HB-5213 Adjustable Veneer Anchor; www.h-b.com.
   a. Material: Stainless Steel, Type 304.
2. Substitutions: See Division One.

2.10 FLASHINGS

A. Combination Non-Asphaltic Flashing Materials - Stainless Steel:

1. Stainless Steel/Polymer Fabric Flashing - Self-adhering: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on inward facing side to a sheet of polymer fabric that has a clear adhesive with a removable release liner.
   a. Manufacturers:
      1) Hohmann & Barnard, Inc; Mighty-Flash SA Self-Adhering SS Fabric Flashing: www.h-b.com.
      2) Substitutions: See Division One.

B. Drip Edges:

1. Basis-of-Design: Hohmann & Barnard, Inc.; Product: DP - Drip Plate; www.h-b.com.
   a. Material: Stainless Steel, Type 304.
   b. Width: 3-inch.

2. Substitutions: See Division One.

C. Flashing Sealant/Adhesives: Specified in Section 07 9200.

2.11 ACCESSORIES

A. Joint Filler: Specified in Section 07 9200.

B. Control Joint Filler:

1. Basis-of-Design: Hohmann & Barnard, Inc. Product: NS – Closed Cell Neoprene Sponge; www.h-b.com.
2. Substitutions: See Division One.

C. Termination Bars:

1. Basis-of-Design: Hohmann & Barnard, Inc. Product: T1 – Termination Bar; www.h-b.com.
   a. Material: Stainless Steel, Type 304.
2. Substitutions: See Division One.

D. Weep Tubes:

1. Basis-of-Design: Hohmann & Barnard, Inc. Product: #341W; www.h-b.com.
2. Substitutions: See Division One.

E. Primer for Stainless Steel/Polymer Fabric Flashing: Primer for self- adhering flashing as recommended by manufacturer.

F. Mastic/ sealant: H - B Mastic or manufacturer approved urethane sealant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces to be cleaned and restored are ready for work of this section.

3.02 PREPARATION

A. Protect surrounding elements from damage due to restoration procedures.

B. Carefully remove and store removable items located in areas to be restored that interfere with the work. Reinstall upon completion.

C. Verify joint sealants are installed and cured.

D. Verify surfaces to be coated with water repellent are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of water repellent.

E. Separate areas to be protected from restoration areas using means adequate to prevent damage.

F. Cover existing landscaping with tarpaulins or similar covers.

G. Mask immediately adjacent surfaces with material that will withstand cleaning and restoration procedures.

H. Protect roofing and flashings from damage with 1/2-inch plywood laid over 1-1/2-inch polystyrene on roof surfaces over full extent of work area and traffic route. Other protection means may be used ONLY when requested in writing and approved in writing by Owner's Representative.

I. Take precautions to avoid harm to building occupants, pedestrians and autos.

J. Construct covered pedestrian safe walkways in areas of pedestrian traffic.

K. When using cleaning methods that involve water or other liquids, install drainage devices to prevent runoff over adjacent surfaces unless those surfaces are impervious to damage from runoff.

H. Do not allow cleaning runoff to drain into sanitary or storm sewers.

3.03 REPAIR MORTAR - STONE PATCHING

A. Mix approximately 5 to 5-1/2 parts powder to 1 part powder to 1 part water by volume, depending on temperature and humidity. Add the powder to the water slowly. Continue mixing until the mortar is thoroughly mixed and is the approximate consistence of damp sand.

B. Preparation: Prepare surfaces in accordance with Manufacturer’s instructions. Surfaces to receive Repair Mortar must be sound and free of dust, dirt, grease, laitance and any other coating or foreign substance that would prevent proper adhesion. Remove all loose and deteriorated concrete from the repair area a minimum of 1/2 inch deep. Follow the direction of the crack being repaired using manual or pneumatic cutting techniques with square cut edges in accordance with the manufacturer’s installation instructions. Do not feather the edges of repair.

C. Application: Apply in accordance with Manufacturer’s instruction.

1. Moisten the substrate using clean water. Apply to a glistening wet surface. Do not allow surface to dry out.
2. Mix the mortar to the consistency of wet putty. Apply to the glistening wet substrate approximately 1/8 inch thick. Do not allow this coat to dry out prior to the application of the 5:1 mix.
3. Build up the 5:1 material beyond the surface of the substrate. After achieving initial set, scape away excess mortar until profile is flush with adjacent surfaces.

D. Curing and Clean Up: Cure and clean up in accordance with manufacturer’s instructions.

1. Periodically mist repairs using clean water for at least a 72-hour period in accordance with manufacturer’s instructions.

2. Remove uncured mortar from the perimeter of repair before it dries using clean water and a rubber sponge. Repeat several times to prevent staining of adjacent material.

3.04 REBUILDING

A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.

B. Support structure as necessary in advance of cutting out units.

C. Cut away loose or unsound adjoining masonry and mortar as directed.

D. Build in new units following procedures for new work specified in other section(s).

E. Mortar Mix: Colored and proportioned to match existing work.

F. Ensure that anchors, ties, and flashings are correctly located and built in.

G. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.

3.05 COURSING

A. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

B. (Brick) Bond: Match existing. Cut brick as required to match header bricks.

C. Mortar Joints: Concave.

3.06 REPOINTING

A. Inspect the entire building as the work progresses; field verifying locations and quantities of work to be performed. As work is identified and performed, provide lifts or other acceptable means of access to the work and notify Owner's Representative for verification of quantities of work completed.

B. Perform repointing prior to cleaning masonry surfaces.

C. Cut out all mortar in joints to minimum 3/4-inch depth; maximum 1 inch depth or until sound mortar is reached. Cut out with a maximum 1/8-inch blade run through the center of the joint - if approved in mock- up. Chip out remainder of mortar adjacent to the masonry using hand tools, unless, in approved mock- up, it can be demonstrated that larger blade may be used without damaging adjacent masonry.

D. Use power tools only after test cuts determine no damage to masonry units will result.

E. Do not damage masonry units.

F. When cutting is complete, remove dust and loose material by brushing.

G. Premoisten joint and apply mortar. Pack tightly in maximum 1/4 inch layers. Form a smooth, compact concave joint to match existing.

H. Moist cure for 72 hours.

3.07 WEEPS

A. Install weep tubes as noted on drawings, in veneer and cavity walls at maximum 16-inches on center horizontally above through-wall flashing and above shelf angles and lintels. Install in accordance with manufacturer’s printed installation instructions.

3.08 SEALANT JOINTS

A. Sealant Joints: Carefully cut out mortar and sealant joints designated to receive new sealant. Cut to a minimum depth of 3/4", or to sound mortar. If deeper than 3/4", repoint with mortar up to a depth of 3/4" from the masonry surface. Clean void of all old sealant, loose particles and dust, in preparation to receive sealant specified in Section 07 9200.

3.09 CHEMICAL CLEANING OF MASONRY

A. Before full-scale application of cleaning products begins, review manufacturers application data to determine suitability of cleaning of specific materials and surfaces. Apply cleaner to test area

to determine optimum dwell time, compatibility, effectiveness, rinsing and other pertinent application procedures that would affect the effectiveness of the cleaning operations with respect to desired results. Use the least caustic materials and methods required to produce desired results. Allow test areas to dry thoroughly before evaluating the final results with the Architect and Owner's Project Representative.

B. At new masonry, verify mortar is fully set and cured.

C. Apply cleaner in accordance with manufacturers recommendations. If improvements are necessary to achieve proper cleaning of surfaces, alternate cleaning methods may be used only with approval of the Owners Project Representative and the Architect.

D. Clean surfaces and remove large particles with wood scrapers or non-ferrous wire brush.

E. Spray coat masonry with cleaning agent, mixed into solution in accordance with manufacturer's instructions.

F. Allow sufficient time for solution to remain on masonry and agitate with soft fiber brush or sponge.

G. Rinse from the bottom up with potable water applied at recommended rate of 400 psi and at a rate of 4 gal/min. Make sure to cover each portion of the masonry surface with a concentrated stream of water. To avoid streaking, keep wall surfaces immediately below area being cleaned running wet and free of cleaner rundown and residue.

3.10 AGING

A. Rub in new masonry work to match, as close as possible, adjacent original work.
   1. Use carbon black in small amounts, rubbing in well with burlap rags.

B. After each application, dust off surplus and wash down with low pressure hose. Allow surface to dry before proceeding with succeeding applications.

C. Continue process until acceptance.

3.11 WATER REPELLENT APPLICATION

A. Apply water repellent in accordance with manufacturer's instructions, using procedures and application methods recommended as producing the best results.

B. Apply at rate recommended by manufacturer, continuously over entire surface.

C. For vertical application, apply "wet-on-wet" to a visibly dry and absorbent surface.

D. For spray application, saturate from the bottom up creating a 4"- 8" rundown below the spray contact point. Let the first application penetrate for 5-10 minutes. Re-saturate.

E. For brush or roller application, saturate uniformly. Let penetrate for 5-10 minutes. Brush out heavy runs and drips that don't penetrate.

F. For horizontal application, saturate in a single application. Use enough to keep the surface wet for 2-3 minutes before penetration. Brush out puddles until they soak in.

G. For dense surface application, apply a single coat. Use enough to wet the surface without creating drips, puddles or rundown. Do not over apply. Test for application rate.

H. Protect treated surfaces from rainfall for a minimum of six hours following treatment.

3.12 CLEANING

A. Immediately remove stains, efflorescence, or other excess resulting from the work of this section.

B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.

C. Clean surrounding surfaces.

D. Clean all windows after all work is completed.

END OF SECTION

SECTION 07 5300
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Elastomeric roofing membrane, adhered conventional application.

B. Coverboard/Parapet sheathing,

1.02 RELATED REQUIREMENTS

A. Section 07 6200 - Sheet Metal Flashing and Trim.

1.03 SUBMITTALS

A. See Division One for submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials, fasteners, and coverboard/sheathing.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with manufacturer's instructions.
   1. Maintain one copy on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum twenty years of documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section with minimum ten years documented experience and approved by manufacturer.

D. Source Limitation: Obtain components for roofing system from roofing system manufacturer or from a source approved by that manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.

B. Store materials in weather protected environment, clear of ground and moisture.

1.06 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Comply with manufacturer's printed cold and hot weather installation requirements.

C. Do not apply roofing membrane when environmental conditions are outside of the manufacturer's written requirements.

D. Do not apply roofing membrane to damp or frozen surface or when precipitation is expected or occurring.

E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. EPDM Membrane Materials:
   1. Carlisle Roofing Systems, Inc; Sure-Seal EPDM: www.carlisle-syntec.com
   2. Holcim Elevate, LLC; Rubbergard: www.holcimelevate.com.
   3. Versico Roofing Systems; VersiGard EPDM: www.versico.com
   4. Substitutions: See Division One.

B. Coverboard/Parapet Sheathing:
   1. Carlisle Roofing Systems, Inc.; SecurShield HD Polyiso Insulation: www.carlisle-syntec.com.
   2. Holcim Elevate, LLC; ISOGARD HD Cover Board: www.holcimelevate.com.
   3. Versico Roofing Systems; SecurShield HD POLYISO Insulation: www.versico.com.
   4. Substitutions: See Division One.

2.02 ROOFING - UNBALLASTED APPLICATIONS

A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over coverboard.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Membrane: Ethylene-propylene-diene-monomer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
   1. Thickness: 60 mil, 0.060 inch.
   2. Sheet Width: 120 inches, minimum; factory fabricate into widest possible sheets.
   3. Color: Black.

B. Seaming Materials: Factory-applied tape, 6-inch minimum width.

C. Seaming Tape: Provide "target" cover patches over seams at all tee intersections in accordance with manufacturer's installation instructions.

D. Vapor Retarder: Reinforced Kraft paper laminate, complying with requirements of fire rating classification; compatible with roofing and insulation materials.
   1. Fire-retardant adhesive.

E. Flexible Flashing Material: Same material as membrane.
   1. Thickness: To match thickness of membrane.
   2. Color: Black.

2.04 ACCESSORIES

A. Primer: As recommended by membrane manufacturer.

B. Membrane Adhesive: As recommended by membrane manufacturer.

C. Termination Bar: 1" wide x.098 thick extruded aluminum bar, pre- punched @ 6" o.c.; provide angled sealant ledge to support sealant and to provide increased stability for membrane terminations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify surface is clean and smooth, flat, free of depressions, waves, or projections, and suitable for installation of membrane.

C. Verify surfaces are dry and free of snow or ice.

3.02 INSTALLATION - MEMBRANE

A. Install elastomeric membrane roofing system in accordance with manufacturer's recommendations and NRCA (WM) applicable requirements.

B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

C. Shingle joints on sloped substrate in direction of drainage.

D. Membrane splicing:
   1. Splice membranes using factory applied tape in accordance with manufacturers written installation instructions. Field splices at roof drains must be located outside the drain sump.

3.03 CLEANING

A. Remove any markings from finished surfaces.

B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

C. Repair or replace defaced or damaged finishes caused by work of this section.

D. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

E. Repair or replace defaced or damaged finishes caused by work of this section.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashing, counterflashing, and miscellaneous sheet metal items shown on drawings, not specified elsewhere.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

C. ASTM A666 – Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

D. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.03 SUBMITTALS

A. See Division One for submittal procedures.

B. Product data.

C. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

D. Samples: Submit two sample sets 2x2 inch in size illustrating Manufacturer's full range of metal finish colors available.

E. Sample Warranty: Submit sample of Manufacturer's standard 20 year finish warranty.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.

B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.
   1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple-coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by Architect from manufacturer's standard colors.

B. Stainless Steel: ASTM A666, Type 304 alloy, soft temper, 26-gauge, (0.018) inch thick; smooth No. 4 - Brushed finish.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of same material as sheet, minimum 4 inches wide, interlocking with sheet.

C. Form pieces in longest possible lengths.

D. Hem exposed edges on underside 1/2 inch; miter and seam corners.

E. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

F. Joints and Seams: Use locks and seams recommended by appropriate SMACNA standard for item being joined. Set in compatible sealant as specified in Section 07 9200. Allow joint to move.

G. Fabricate corners from one piece with minimum 18-inch-long legs; seam for rigidity, seal with sealant.

H. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

2.03 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.

B. Underlayment: ASTM D226/D226M, organic roofing felt, Type II (No. 30).

C. Primer: Zinc chromate type.

D. Sealants - as specified in Section 07 9200:
   1. Type E1 for exposed sealants, color to match adjacent material.
   2. Type E2 for concealed sealants.

E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION

3.01 PREPARATION

A. Install starter strips, edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil. Manufacturer's standard back paint on pre-finished sheet metal is acceptable in lieu of in-field back painting.

3.02 INSTALLATION

A. Conform to drawing details and/or SMACNA standards, whichever is most stringent.

B. Secure flashings in place using concealed cleats and fasteners, unless otherwise detailed.

C. Apply plastic cement compound between metal flashings and felt flashings.

D. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

E. Seal metal joints watertight with sealant specified in Section 07 9200.

END OF SECTION

SECTION 07 9200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants, joint backings, bond breakers, and accessories.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with other sections referencing this section.

1.03 SUBMITTALS

A. See Division One for submittal procedures.

B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.04 QUALITY ASSURANCE

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

B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

1.05 WARRANTY

A. Correct defective work within a five-year period after Date of Substantial Completion.

B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal , exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 JOINT SEALANTS

A. Type E-1 - General Purpose Exterior Sealant: Silicone Sealant; ASTM C920, Grade NS, Class 25; Uses M, G, A, O; single or multi-component, neutral-curing.
   1. Non-Staining to Porous Masonry: Non-staining when tested in accordance with ASTM C1248.
   2. Color: To be selected by Architect from manufacturer's standard range.
   3. Applications: Use for:
      a. Joints between metal frames and other materials.
      b. Control and soft joints in masonry.
      c. Other exterior joints for which no other sealant is indicated.

B. Type E-2 - Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene; non-drying, non-skinning, non-curing.
   1. Applications: Use for:
      a. Concealed sealant bead in sheet metal work.

2.02 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range or will be outside that range during the entire curing period, unless manufacturer's approval is obtained, and instructions are followed.

G. Non-sag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 TESTING AND INSPECTION

A. Furnish all labor and material to remove and replace sealant during on-site inspections by an independent testing agency furnished by the Owner as hereinafter specified.
   1. Upon completion of all sealant work on an elevation, cut and remove the sealant installed in joints at not to exceed 6 locations per side of building, approximately 1 lineal foot per location. The location(s) will be randomly selected by the independent testing agency.

2. Coordinate removal of the sealant and backup material with independent testing agency. Work will be checked for compliance with the contract documents in accordance with ASTM C 1193.
3. If defective work is found in any of the test locations, additional test sections may be required of the Contractor at no additional cost to the Owner.
4. If defective work is found in any of the test locations, additional tests may be required of the contractor at no additional cost to the owner. If any test section removed reveals non-complying work, remove all adjacent sealant work to the point where work is found to comply. Re-seal in accordance with the contract documents. If all tests fail to meet the contract document requirements, the Contractor shall be required to re-seal the entire section of the building at no additional cost to the Owner.
5. Provide lifts or other acceptable means of access to the work.

3.05 CLEANING

A. Clean adjacent surfaces of excess sealant and smears as a result of this work, before the sealant cures.

B. Repair joints that have shrunk, sagged, run, and/or that have thin spots or other defects.

C. Leave adjacent surfaces in as good or better condition than they were before sealant operations.

3.06 PROTECTION

A. Protect sealants until cured.

3.07 SCHEDULE

A. See Drawings for designated sealant joints.

B. Exterior joints for which no other sealant type is Indicated: Type E-1.

C. Control and soft joints between masonry and adjacent work: Type E-1.

D. Lap joints in exterior sheet metal work: Type E-2.

E. Joints between exterior metal frames and adjacent work: Type E-1.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Specified testing of substrates.

D. Exterior painting and coating systems.

E. Scope:
   1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
      a. Exterior Steel: Existing lintels, railings, and other items as noted.
   2. Do not paint or finish the following:
      a. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
      b. Items indicated to receive other finishes.
      c. Items indicated to remain unfinished.

1.02 SUBMITTALS

A. See Division One for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
   3. Manufacturer's installation instructions.
   4. If proposal of substitutions is allowed under submittal procedures, explanation of all substitutions proposed.

C. Samples: Submit two paper draw down samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.

D. Certification: By manufacturer that paint and finishes comply with VOC limits specified.

E. Maintenance Data: Submit coating maintenance manual including product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum ten years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years’ experience.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.

C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS

A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.

B. Follow manufacturer's recommended procedures for producing the best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer, no exceptions.

B. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company products as indicated; www.sherwin-williams.com.
   1. Other Acceptable Manufacturers:
      a. PPG Paints: www.ppgpaints.com.
      b. Tnemec: www.tnemec.com.
   2. Substitutions: See Division One.

2.02 PAINTINGS AND COATINGS

A. General:
   1. Provide factory-mixed coatings unless otherwise indicated.
   2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site, or other method acceptable to authorities having jurisdiction.

C. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.03 PAINT SYSTEMS - EXTERIOR

A. Exterior Ferrous Metal - Galvanized and Non-Galvanized; Lintels, railings, and other ferrous metal items shown on drawings to be painted.
   1. Two topcoats and one coat primer.
   2. Semi-Gloss Finish.
      a. Primer: Sherwin-Williams DTM Acrylic Primer Product No. B-66-W1.
      b. Topcoat Product: Sherwin-Williams DTM Acrylic Coating Product No. B-66-W2-11.
      c. Color: Match existing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-PC 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).

D. Uncorroded, Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs

3.03 APPLICATION

A. Protect adjacent materials from damage as a result of this work.

B. Temporarily remove and re-install existing fixtures and other items such as lighting and cameras to allow for this work.

C. Apply products in accordance with manufacturer's written instructions.

D. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.

E. Coordinate this work with joint sealant installation as specified in Section 07 9200 and as noted on Drawings.

F. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

G. Apply each coat to uniform appearance.

H. Sand metal surfaces lightly between coats to achieve required finish.
   1. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

3.04 PRIMING

A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

B. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION