This addendum provides information to clarify or adjust construction items which may affect any or all trade contractors. The original documents for the referenced project are amended as noted in this addendum and made part of said documents and shall govern the work covered by the Form of Proposal. All work to be in strict accordance with the terms, stipulations and conditions of contract documents.

SUMMARY OF ATTACHMENTS

1. Drawings:
   a. C301 – Grading Plan
   b. C701 – Storm Plan and Profile
   c. C801 – Sanitary Plan and Profile
   d. L105A – Landscape Site Details
   e. A101 – Reflected Ceiling Plan and Canopy Plans
   f. A121 – Reflected Ceiling Plan and Canopy Plans
   g. A210 – Precast Panel Schedule – East & West Elevations
   h. A211 – Precast Panel Schedule – South Elevation
   i. A301 – Building Sections
   j. A311 – Wall Sections
   k. A624 – Curtainwall Details – Section Details
   l. A632 – Section Details
   m. A702 – Stair #1 and Elevator Sections

2. Specifications
   a. SECTION 00 01 00 – TABLE OF CONTENTS (BID-LD)
   b. SECTION 00 61 00 – AIA A312 PERFORMANCE BOND
   c. SECTION 04 43 13.13 – ANCHORED STONE MASONRY VENEER
   d. SECTION 06 16 00 – SHEATHING
   e. SECTION 07 41 13.15 – STANDING-SEAM METAL ROOF PANELS
   f. SECTION 07 42 13.53 – METAL SOFFIT PANELS
   g. SECTION 07 62 00 – SHEET METAL FLASHING AND TRIM

PART 1 – CONTRACTOR QUESTIONS and ADDITIONAL CLARIFICATIONS (in no particular order)

1. COMMENT: Please supply details for the canopy framing to precast panels at northwest corner of elevator at curtainwall.
   RESPONSE: Reference detail #4 on sheet A502 dated 07/09/18 for detail connection.

2. COMMENT: Please supply details for the canopy framing to architectural metal wrapped columns along west entry curtainwall.
   RESPONSE: Reference similar detail #2 on sheet A502 dated 07/09/18 for detail connection.

3. COMMENT: Please supply details for the canopy framing to curtainwall system.
   RESPONSE: The canopy framing does not tie into the curtainwall system. The north-south beam along the building edge intersects the metal panel system on the south end and ties into the beam below the round stair column. Reference detail 3/A121.
4. **COMMENT:** The front entry is shown as 20'-8 ¾” from face of precast to inside face of curtain wall. Allowing 8 ¼” for the curtain wall, that leaves a clear opening of 20'-0 ½”. Detail 4/A634 shows the overall length of the canopy to be 16'-8. What is the correct width of the canopy?

**RESPONSE:** The aluminum wrapped beams running north-south extend the full width between the elevator and the stair tower. The 16’-8” indicated on 4/A634 is the solid portion of the canopy that does not run the full length.

5. **COMMENT:** The transformer enclosure (A101) calls for a painted galvanized structure with a clear finish. What is the clear finish that is required?

**RESPONSE:** No clear finish is required. Paint all exposed steel elements.

6. **COMMENT:** Is the structural steel referred to on the architectural drawings that supports the metal wall panel columns (note 2 A102) and the canopy/brow (note 9 A102) to be supplied by the wall panel and/or canopy supplier or by the miscellaneous metals supplier? It could be included under 1.2 A 3 of the miscellaneous metal spec but drawing notes seem to indicate that the support steel is part of the metal panel and canopy system.

**RESPONSE:** The structural steel should be provided by the miscellaneous metals supplier.

7. **COMMENT:** Drawing A201 shows a structural steel tube and steel embed plates for the support steel of the aluminum enclosures. Is the steel tube to be welded in place or is a slip connection required to allow for building movement? If the slip connection is required, please provide a design for the connection.

**RESPONSE:** Reference details 4 & 7 on sheet A631 and details 9 & 10 on sheet S-541 for information regarding connections.

8. **COMMENT:** Detail 7/L104 for the installation of the bike loops states “6” core drill paving secure bike loop with non-shrink grout” the same detail shows a 2’ deep concrete footer to install the loop. Which method is to be used?

**RESPONSE:** Core drilling is not required. Provide concrete footer and hold top of footing down below scheduled paving.

9. **COMMENT:** Drawing A101 and Precast Panel elevation drawings do not show vehicle barrier panels at the following locations:
   a. North and south elevations between column lines 4&5 and 11&12
   b. East elevation between column line C.8 & C.4
   c. West elevation column line A and A.3
   d. The north elevation may not require vehicle barriers since this is the area of bicycle parking. If this is the case, what is the detail for the termination/mounting of the plant trellis at ground level?

**RESPONSE:**
   a. On the Ground Tier, regarding the north elevation between column lines 4 & 5 and 11 & 12, this area is protected by bollards and does not have vehicle barrier protection. Reference keynote # 6 on sheet A101. Regarding the south elevation, a precast panel acts as the vehicle barrier as indicated in wall section 3/A311. Lines showing the precast panels have been added to #1 & 2 on sheet A211 for clarification.
   b. On the Ground Tier, regarding the east elevation between column lines C.8 & C.4, a precast panel acts as the vehicle barrier as indicated in wall section 3/A311. Lines showing the precast panels have been added to #2 on sheet A210 for clarification.
   c. On the Ground Tier, regarding the west elevation between column lines A & A.3, a bollard has been added to protect the trellis. Reference sheet A101 for revision.
d. Reference detail 2/A631 for termination of trellis and the mounting bracket.

10. COMMENT: The 034500 spec. mentions stone being cast into the face of the precast panels, but the drawings do not show this, they mention precast simulating limestone. Please confirm which is correct. If the drawings are correct there are quite a few places in the spec. that needs to be changed.
RESPONSE: Provide precast simulating limestone finish. Specifications will be updated.

11. COMMENT: The 034500 spec. mentions sand-cement grout between the thin brick units, but we do not do that, the precast concrete mix is the “mortar joint”, it gets an acid etched finish to make it look more like mortar. Is this acceptable? If so there are quite a few references to the sand-cement mortar that would need to be taken out of the spec.
RESPONSE: Yes, the acid etched finish is acceptable.

12. COMMENT: The 034500 spec. mentions a mock-up. Is a mock-up required, which would include a combination of the building façade materials (precast, curtain wall, glass, metal panel, screening, etc., and caulking of the joints)? If so, is there a mock-up drawing available? And if a mock-up is required, could you confirm where on site it would be set up?
RESPONSE: A mock up drawing will be issued in addendum number 3. Location will also be issued in the addendum.

13. COMMENT: The 034500 spec. mentions reglet, but none are shown. Please confirm whether they are required or not.
RESPONSE: These are not required.

14. COMMENT: The 034500 spec. mentions a honed finish for the face of the precast, is that correct? Normally simulated limestone finish on precast is a light acid wash or a light sandblast. A honed finish is polishing, which requires special equipment and is much more expensive than either acid etching or sandblasting.
RESPONSE: Furnish precast with a light acid wash.

15. COMMENT: On the garage elevations there are a few precast panels that have the brick pattern running vertically instead of horizontally. Is that correct?
RESPONSE: Yes, this is correct.

16. COMMENT: Spec 075323-2.2-A mentions “internally reinforced” EPDM sheets, 60-mil thickness, with a white-on-black exposed face color. Internally reinforced EPDM sheets only come in the color black. Please clarify if you would like “white-on-black” unreinforced EPDM, or “black” reinforced EPDM.
RESPONSE: Provide black reinforced EPDM

17. COMMENT: Spec 075323-2.5-C mentions a minimum thickness of ¼” of tapered insulation. There is typically a base layer, plus the designated minimum in order to achieve a minimum R-value. Is there a minimum R-value required for these areas?
RESPONSE: No, there is no minimum R-value required for these areas. The tapered insulation is used to create the roof slope.
18. COMMENT: Detail 2.3/A-121 describes a standing seam canopy over the west entrance, but there appears to be no relative specification section. Please provide a specification for the standing seam metal roofing.
RESPONSE: Specification is included in this addendum.

19. COMMENT: Ref spec 074213.16 Para 2.2.A The specified manufacturer Firestone no longer produces Plate Products as they exited the industry in 2016. Metalwerks would like to submit Our 1/8” alum Arcwall as a Rainscreen substitute for approval.
RESPONSE: See modifications to architectural specifications in this addendum.

20. COMMENT: Ref spec 074213.16 Para 2.2.C calls for a 3 coat Fluoropolymer finish while Keynote 25 on A201 and many of the panel details (i.e. 7/A624) call for a wood like finish. Is there a specific manufacturer paint finish and grain type required? There are no known Fluropolymer Coaters currently offering wood grain finishes. Most in the Market are Powder coat films or multi step process. Also Keynote 11 & 25 point to the sloped soffit and appear to conflict with reference to color.
RESPONSE: Reference General Notes on sheet A201. Metal Finish Color B indicates the basis of design for the wood grain finish. Reference revised details 11 & 12/A632 for locations of metal finish A and metal finish B at the sloped soffit and fascia. Specification for metal panel soffit is included in this addendum.

21. COMMENT: Elevations A211-A212 call for Perforated aluminum Panels infill in the Precast openings and Keynote 24 &27 on A201. We do not see any perforated panel specs for this work in the Documents other than keynote 24 on A201. Please advise which spec section governs this work?
RESPONSE: Specification will be issued as part of Addendum #3.

22. COMMENT: Is the square perf pattern on the elevations and keynote 24 on A201 the desired pattern for this work? If so please provide spacing dimensions for the 3” square Perf Pattern. We Include Our Metalwerks Screenwall Product data using the Arcwall product data as the Panel design platform for both solid and perforated panels for approval.
RESPONSE: Yes. Perforations are spaced at 7 1/8” o.c. horizontally and vertically. See Specifications section of addendum for information regarding Metalwerks Screenwall. Perforated panel specification will be issued as part of addendum number 3.

23. COMMENT: Advise if details 2-6/A101 are intended to be the same square perf pattern system as keynote #24 on A201. Who provides the supporting steel components at the Perforated screen walls?
RESPONSE: Yes, the perforated pattern is the same. The miscellaneous steel supplier to supply the steel supports for the perforated panels.

24. COMMENT: Please advise if all keynotes 10,11&12 on A201 pertain to spec 074213.16. Many details on 2-7/A501 and A624- 634 call out Composite metal panel in lieu of plate. Please clarify panel type.
RESPONSE: Panel type is to be plate metal panel. Composite panel references have been removed.

25. COMMENT: What spec governs the Architectural trellis work on details 3/A631 & 2/A633. If None, please consider Metalwerks Custom Sunshades for approval.
RESPONSE: Specification for architectural trellis will be issued as part of addendum number 3.

26. COMMENT: Please advise if glazed in panel details on A624 are part of spec 074213.16 or the Curtainwall spec 084413?
RESPONSE: Glazed in panel details on A624 are part of spec 074213.16

27. COMMENT: Reference Elev 2/A201- and 1/A210 Please clarify wall and glass finishes to the right of Col E noted as Keynote 10. There are no sections through this area calling for metal panel. Sect 1/A702 shows glass and not metal panel as shown on 1/A701 Keynote 13. Also, elevations 4/A702 seem to be incomplete at showing panel joints.
RESPONSE: On elevation 2/A701, the material to the right of column E is metal panel and the left is curtainwall.

PART 2 – CIVIL SPECIFICATIONS
1. SECTION 312323 – FILL – Modify as follow:
   Remove and replace Section 3.4, H.2 with the following: Fill up to bottom of topsoil layer below finished proposed grade elevations in 12-inch compacted lifts. Coordinate subgrade elevations with planting plans and Owner. Unless otherwise noted, lawn areas shall receive 6 inches of topsoil. Plant beds shall receive 12 inches of topsoil.

2. SECTION 312323 – FILL – Modify as follow:
   DELETE: Section 3.4, H.3.

3. SECTION 312200 – GRADING – Modify as follows:
   DELETE: Section 3.5, B.

PART 3 – ARCHITECTURAL SPECIFICATIONS
1. SECTION 00 01 10 – TABLE OF CONTENTS (BID-LD)
   a. Updated TOC shall become part of the Contract Documents

2. ADD: SECTION 00 61 00 AIA A312 PERFORMANCE BOND

3. ADD: SECTION 04 43 13.13 – ANCHORED STONE MASONRY VENEER

4. SECTION 05 73 00 DECORATIVE METAL RAILINGS
   a. 2.1 B. Stainless-Steel Decorative Railings
      ADD: e. Livers Bronze Co.

5. ADD: SECTION 06 16 00 – SHEATHING

6. ADD: SECTION 07 41 13.15 – STANDING-SEAM METAL ROOF PANELS

7. SECTION 07 42 13.16 – METAL PLATE WALL PANELS
   a. 2.2 METAL PLATE WALL PANELS A. 1.
      ADD: d. Metalwerks Architectural Plate Systems

8. ADD: SECTION 07 42 13.53 – METAL SOFFIT PANELS

9. ADD: SECTION 07 62 00 – SHEET METAL FLASHING AND TRIM

10. SECTION 08 10 10 DOOR HARDWARE
    a. 2.3 Locks, Latches and Bolts
       ADD: A. Mfrs of Mortise Lock/Latch Sets: Schlage, Dormakaba
DELETE: C. Mfrs. of Panic Devices: Von Duprin. No Exceptions
ADD: C. Mfrs of Panic Devices: Dorma, Von Duprin, Stanley

b. 2.5 Door Control Devices
DELETE: A. Mfrs of Overhead Closers: LCN. No Substitutions
ADD: A. Mfrs of Overhead Closers: Dorma, LCN, Norton
DELETE: A.2. Exception: In the Auditorium, closers should be located on lobby side, and not visible from the main auditorium.

11. SECTION 08 80 00 GLAZING
a. 2.1 MANUFACTURERS
DELETE: “A. Manufacturers: Subject...4. Viracon, Inc.”
ADD: A. Basis-of-Design Product: Subject to compliance with requirements, provide Viracon; Optiwhite Laminated HS/HS (GL-1) and Viracon; Optiwhite Laminated HS/HS Silkscreen, screen #2002 #2 (GL-2) or a comparable product by one of the following:
1. Cardinal Glass Industries
2. Guardian Glass; SunGuard
3. Pilkington North America

8. SECTION 09 91 13 EXTERIOR PAINTING
a. 1.2 SUMMARY
ADD: A.3. Galvanized metal
b. ADD: 2.4 EXTERIOR ACRYLIC LATEX BLOCK FILLER
A. Block Filler, High Fill Latex, Interior/Exterior:
2. Basis of Design: High performance, latex block filler applied at spreading rate recommended by the manufacturer to achieve a total dry mill thickness of not less than 4.0 mils (0.102 mm) concrete and 5.0 mils concrete masonry units.
a. Manufacturer: PPG Paints 6-15XI Speedhide Interior/Exterior Masonry High Fill Latex Block Filler
c. ADD: 2.5 SEMIGLOSS, ACRYLIC-LATEX FINISH FOR CONCRETE AND CONCRETE MASONRY UNITS
A. Acrylic-Latex Finish for Concrete and Concrete Masonry Units
1. Basis of Design: 2 finish coats over a block filler consisting of first and second coats of semigloss acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils.
d. ADD: 2.6 EXTERIOR/INTERIOR ACRYLIC-ENAMEL PRIMER FOR ZINC-COATED (GALVANIZED) METALS
A. Galvanized Metal Primer:
1. Basis of Design: Galvanized metal primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
ADD: 2.7 EXTERIOR/INTERIOR FINISH DTM INDUSTRIAL ENAMEL FOR ZINC-COATED (GALVANIZED) METALS
A. Enamel finish system
  1. Basis of Design: 2 finish coats over primer consisting of first and second coats of semi-gloss industrial enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 4 mils.

DELETE: 3.6 EXTERIOR PAINTING SCHEDULE

PART 4 – STRUCTURAL SPECIFICATIONS
1. SECTION 033000 – CAST-IN-PLACE CONCRETE
   a. 2.5 Admixtures, U. Integral Capillary Waterproofing Admixture
      ADD: 3) MasterLife 300D BASF Corporation – Admixture Systems
   b. 2.6 Fiber Reinforcement, B. Micro-Fiber, 1. Products
      ADD: e. MasterFiber, BASF Corp. Minimum dosage rate at 3.5 pounds per cubic yard of concrete.

PART 5 – HVAC SPECIFICATIONS
1. SECTION 263600: TRANSFER SWITCHES
   Under Paragraph 2.2, add Subparagraph 2.2 12.: “12. Provide (1) NO, (1) NC auxiliary switch contact to indicate status of generator running for interconnection with elevator.
2. SECTION 263600: TRANSFER SWITCHES
   Under Paragraph 2.2, add Subparagraph 2.2 13.: “13. Provide (1) NO, (1) NC auxiliary switch contact to indicate pre-transfer to generator, and pre-transfer to utility for interconnection with elevator.

PART 6 – TECHNOLOGY SPECIFICATIONS
1. SECTION 271116: COMMUNICATION RACKS, FRAMES, AND ENCLOSURES
   Paragraph 2.2 I.1.: Change Ortronics part number for the copper patch panel to “#OR-PHD6AU48”.
2. SECTION 271116: COMMUNICATION RACKS, FRAMES, AND ENCLOSURES
   Paragraph 2.2 J.: Delete paragraph for patch panel jacks, since patch panel is revisited to version that includes jacks.

PART 7 – CIVIL DRAWINGS
1. Sheet C301 Grading Plan
   a. Revise grading along northwest quadrant to align with architectural and structural plan.

2. Sheet C701 Storm Plan and Profile
   a. Revise rim elevations for Structures STR718, STR705 and STR703 in conjunction with grade revisions.

3. Sheet C801 Sanitary Plan and Profile
a. Revise proposed grade between Structures 804 and 805 in conjunction with grade revisions.

PART 8 – LANDSCAPE DRAWINGS

1. Sheet L105
   a. Replace Detail 2/L105 with attached page L105A. Detail reflects changes in hardware to connect bench end cap as indicated.

PART 9 – ARCHITECTURAL DRAWINGS

1. Sheet A101
   a. Key notes #2, 13 and #20 revised.
   b. On view 7, Dimensions added. See revised sheet.
   c. On view 1, Bollard added in Northwest region of floorplan. Bollard to be located at the intersection along column line “1” and the center point of nearest trellis. See revised sheet.
   d. On view 6, revise notes. See revised sheet.

2. Sheet A102 (not reissued)
   a. Revise key note #2. Keynote now indicates “CUSTOM FABRICATED METAL PLATE WALL SYSTEM, SUPPORTED FROM INTERNAL STEEL TUBE ANCHORED TO STRUCTURE.”
   b. Revise key note #13. Keynote now indicates “METAL PLATE WALL PANEL SYSTEM.”

3. Sheet A103 (not reissued)
   a. Revise key note #2. Keynote now indicates “CUSTOM FABRICATED METAL PLATE WALL SYSTEM, SUPPORTED FROM INTERNAL STEEL TUBE ANCHORED TO STRUCTURE.”
   b. Revise key note #13. Keynote now indicates “METAL PLATE WALL PANEL SYSTEM.”

4. Sheet A104 (not reissued)
   a. Revise two keynotes #4 to keynote #5. Key notes located along column line 15 between column B.6 and C.
   b. Revise key note #2. Keynote now indicates “CUSTOM FABRICATED METAL PLATE WALL SYSTEM, SUPPORTED FROM INTERNAL STEEL TUBE ANCHORED TO STRUCTURE.”
   c. Revise key note #13. Keynote now indicates “METAL PLATE WALL PANEL SYSTEM.”

5. Sheet A121
   a. Add detail bubble on detail 3/A121.
   b. Revise dimension of canopy beam on detail 3/A121.
   c. Add notes to 1/A121.
   d. Revise keynote #3.
   e. Locations and dimensions of panel joints revised. See view 1.

6. Sheet A201 (not reissued)
   a. Revise key note #9. Keynote now indicates “HORIZONTALS. METAL PLATE WALL PANEL SYSTEM. 8” DEEP X 8” FACE. SUPPORTED FROM CURTAINWALL SYSTEM. METAL FINISH COLOR A.”
b. Revise key note #10. Keynote now indicates “METAL PLATE WALL PANEL SYSTEM. METAL FINISH COLOR A.”

c. Revise key note #12. Keynote now indicates “VERTICALS: CUSTOM FABRICATED METAL PLATE WALL PANEL SYSTEM, SUPPORTED FROM INTERNAL STEEL TUBE ANCHORED TO STRUCTURE. METAL FINISH COLOR A.”

d. Revise key note #14. Keynote now indicates “HORIZONTAL OR VERTICAL PANEL JOINT OR REVEAL IN METAL WALL PANEL SYSTEM.”

e. Revise key note #25. Keynote now indicates “ALUMINUM SOFFIT SYSTEM. METAL FINISH COLOR B. PATTERN TO RUN PARALLEL TO ROOF EDGE.”

f. Keynote 27, finish information added. Keynote now indicates “PERFORATED METAL PANEL SCREEN WITH 8'-0" WIDE MANUAL SWINGING GATE. SEE ENLARGED ELEVATIONS FOR DIMENSIONS. BASIS OF DESIGN: HENDRICK’S ARCHITECTURAL METAL CUSTOM PATTERN 3" SQUARE 50% OPENING. SEE DETAILS. METAL FINISH COLOR A.”

g. Keynote 10 modified to read “METAL PLATE WALL PANEL SYSTEM. FINISH COLOR A.”

7. Sheet A210
   a. Delete references to wood-look finish and replace with “METAL FINISH COLOR B”. See revised sheet.
   b. Revise location of mechanical louver on elevation 2/A210.
   c. Add precast spandrel plan on ground tier between column C.4 and C.8 on elevation 2/A210.
   d. Revise notes regarding aluminum panel system to metal plate wall panel. See attached sheet.

8. Sheet A211
   a. Delete references to wood-look finish and replace with “METAL FINISH COLOR B”. See revised sheet.
   b. Revise location of mechanical louver on elevation 1/A211.
   c. Add precast spandrel plan on ground tier between column 11 and 12 on elevation 1/A211.
   d. Add precast spandrel plan on ground tier between column 4 and 5 on elevation 2/A211.
   e. Revise notes regarding aluminum panel system to metal plate wall panel. See attached sheet.

9. Sheet A212 (not reissued)
   a. Delete references to wood-look finish and replace with “METAL FINISH COLOR B”.
   b. Revise notes regarding aluminum panel system to metal plate wall panel.

10. Sheet A301
    a. Add notes indicating extent of Alternate #1 on building sections 1,2,3, and 4/A301.

11. Sheet A310 (not reissued)
    a. On detail 3,4, and 5, revise boxed note reading “NOTE: EXPOSED STEEL TO BE GALVANIZED AND PAINTED.” to instead read, “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
    b. On details 1 and 2, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
    c. On detail 3, revise notes regarding aluminum panel system to metal plate wall panel.
12. Sheet A311
   a. On detail 3, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   b. Revise section 1 and 2, fascia location and dimensions.
   c. On details 1 & 2, revise notes regarding aluminum panel system to metal plate wall panel. Sloped composite aluminum panel system and fascia to remain as composite aluminum panel system.

13. Sheet A312 (not reissued)
   a. On detail 2, revise notes regarding aluminum panel system to metal plate wall panel.

14. Sheet A501 (not reissued)
   a. On details 1 and 8, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   b. On detail 1, revise note reading “COMPRESSIBLE FILLER.” to instead read, “COMPRESSIBLE FILLER, TYP. AT VERTICAL AND HORIZONTAL PRECAST PANEL JOINTS.”
   c. On detail 1, revise note reading “BACKER ROD AND SEALANT, TYP.” to instead read, “BACKER ROD AND SEALANT, TYP. AT VERTICAL AND HORIZONTAL PRECAST PANEL JOINTS.”
   d. On details 2, 4, 5, and 7, revise notes regarding aluminum panel system to metal plate wall panel.

15. Sheet A502 (not reissued)
   a. On detail 5, revise boxed note reading “NOTE: EXPOSED STEEL TO BE GALVANIZED AND PAINTED.” to instead read, “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   b. On details 2, 3, and 4, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   c. On detail 4, revise notes regarding aluminum panel system to metal plate wall panel.

16. Sheet A503 (not reissued)
   a. On details 2, 4, 6, 7, and 8, revise notes regarding aluminum panel system to metal plate wall panel.

17. Sheet A610 (not reissued)
   a. Revise lockset on Hardware Set #1, #2, and #3 to be Schlage LV9080.
   b. On details 5 and 6, revise notes regarding aluminum panel system to metal plate wall panel.

18. Sheet A622 (not reissued)
   a. On details 3, 7, and 11, revise notes regarding aluminum panel system to metal plate wall panel.

19. Sheet A623 (not reissued)
   a. Revise details 2 & 3/A623, showing graphic of expansion joint cover.

20. Sheet A624
   a. Revise detail 3/A632, flashing location.
b. On details 3, 5, 8, and 10, revise notes regarding aluminum panel system to metal plate wall panel.

21. Sheet A630 (not reissued)
   a. On details 3, 4, 7, and 10, revise boxed note reading “NOTE: EXPOSED STEEL TO BE GALVANIZED AND PAINTED.” to instead read, “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   b. On details 5, 6, and 9, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   c. On details 3, 4, 7, and 10, revise notes regarding aluminum panel system to metal plate wall panel.

22. Sheet A631 (not reissued)
   a. On details 1, 3, 4, and 7, revise boxed note reading “NOTE: EXPOSED STEEL TO BE GALVANIZED AND PAINTED.” to instead read, “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”
   b. On details 5 and 8, add a boxed note reading “NOTE: STRUCTURAL STEEL TO BE GALVANIZED AND PAINTED, INCLUDING PRECAST PANEL CONNECTIONS.”

23. Sheet A632
   a. Revise detail 10/A632, flashing location.
   b. Revise detail 11 & 12/A632, fascia location and dimensions.
   c. On details 2, 4, and 6, revise notes regarding aluminum panel system to metal plate wall panel.

24. Sheet A634 (not reissued)
   a. Regarding the underside canopy metal panel soffit finish color, revise note reading “COMPOSITE ALUMINUM PANEL SYSTEM ON 3/4” EXTERIOR SHEATHING. PANEL FINISH: WOOD FINISH, TBD.” to instead read, “COMPOSITE ALUMINUM PANEL SYSTEM ON 3/4” EXTERIOR SHEATHING. PANEL FINISH: METAL FINISH COLOR A.” Note is located in details 1, 2, 3, and 4 on sheet A634. Metal finish color A is located in the General notes on sheet A201.
   b. In details 1 and 3, revise the number of soffit panels, between steel beams, from four to one panel.
   c. On details 1, 2, 3, and 4, revise notes regarding aluminum panel system to metal plate wall panel.

25. Sheet A701 (not reissued)

26. Sheet A702
   a. On view 4, revise note “REVEAL IN METAL PANEL WALL SYSTEM” to “PANEL JOINT OR REVEAL IN METAL PLATE WALL PANEL SYSTEM”.
   b. On view 4, note added “METAL PLATE WALL PANEL SYSTEM. METAL FINISH COLOR B.”

27. Sheet A703 (not reissued)
a. Revise keynote 2. Keynote now indicates “VERTICALS: CUSTOM FABRICATED METAL PLATE WALL PANEL SYSTEM, SUPPORTED FROM INTERNAL STEEL TUBE ANCHORED TO STRUCTURE. METAL FINISH COLOR A.”

b. Revise keynote 13. Keynote now indicates “METAL PLATE WALL PANEL SYSTEM. FINISH COLOR A.”

**PART 10 – ELECTRICAL DRAWINGS**

1. **SHEET E301: GROUND TIER POWER PLAN**
   Add a 1-inch conduit, with (4) #12 AWG conductors, between ‘ATS-EQ’ located in Electrical 112 and Elevator Controller located in Elev. 220, on the Second Tier. Connect conductors for transfer switch on generator and transfer switch pre-transfer signal. Coordinate connections with Elevator Installer.

2. **SHEET E701: ELECTRICAL SCHEDULES**
   On the Panelboard Schedule for ‘1LEQ1’: Change circuit breaker in Positions #32, 34, 36 to an adjustable trip circuit breaker.

Issued By:

Champlin Architecture
Sean M. Bright, AIA
Principal

End of Addendum
### Document 00 01 10

**Table of Contents (BID-LD)**

New York Avenue Parking Structure  
BSU Project No. 2018-014.00 XP

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CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

CONSTRUCTION CONTRACT
Date:
Amount: $
Description:
(Name and location)

BOND
Date:
(Not earlier than Construction Contract Date)
Amount: $
Modifications to this Bond: [ ] None [ ] See Section 16

CONTRACTOR AS PRINCIPAL
Company: (Corporate Seal)
Signature: ____________________________
Name and Title: _______________________

SURETY
Company: (Corporate Seal)
Signature: ____________________________
Name and Title: _______________________

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)
AGENT or BROKER: ______________________
OWNER’S REPRESENTATIVE: ______________________
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.
§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety’s obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor’s performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner’s notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety’s receipt of the Owner’s notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner’s right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety’s obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety’s expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner’s concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
2. additional legal, design professional and delay costs resulting from the Contractor’s Default, and resulting from the actions or failure to act of the Surety under Section 5; and
3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety’s liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with such statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: ____________________________ (Corporate Seal)
Signature: ____________________________
Name and Title: ____________________________
Address: ____________________________

SURETY
Company: ____________________________ (Corporate Seal)
Signature: ____________________________
Name and Title: ____________________________
Address: ____________________________
Additions and Deletions Report for
AIA® Document A312™ – 2010

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 09:19:51 on 06/29/2012.

There are no differences.
Certification of Document's Authenticity
AIA® Document D401™ – 2003

I, [Name], hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 09:19:51 on 06/29/2012 under Order No. 1696697092_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A312™ – 2010, Performance Bond, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)
SECTION 044313.13 - ANCHORED STONE MASONRY VENEER

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Stone masonry anchored to concrete backup.
   2. Stone masonry anchored to unit masonry backup.

1.2 ACTION SUBMITTALS

A. Product Data: For each variety of stone, stone accessory, and manufactured product.

B. Samples:
   1. For each stone type indicated.
   2. For each color of mortar required.

1.3 FIELD CONDITIONS

A. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work.

B. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
   1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried.


PART 2 - PRODUCTS

2.1 GRANITE

A. Material Standard: Comply with ASTM C615/C615M.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Prairie Brown; by Coldspring, BASIS OF DESIGN
      b. Dakota Granite
2.2 LIMESTONE

A. Material Standard: Comply with ASTM C568/C568M.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Standard Buff; by Indiana Limestone Company, BASIS OF DESIGN
   b. Evans Limestone
   c. Indiana Limestone Supply

2. Description: Dolomitic limestone.

3. Finish: As indicated on Drawings.

B. Match Architect's samples for color, finish, and other stone characteristics relating to aesthetic effects.

2.3 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; natural color or white cement may be used as required to produce mortar color indicated.

1. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or III, and hydrated lime complying with ASTM C 207.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Essroc, Italcementi Group; Capitol PCL Blend or Saylor's Plus.
   b. Lafarge North America; Eaglebond.
   c. Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.

D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in stone masonry mortar.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Davis Colors; True Tone Mortar Colors.
   b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
   c. Solomon Colors; SGS Mortar Colors.
E. Aggregate: ASTM C 144 and as follows:
   1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 (1.18-mm) sieve.
   2. White Aggregates: Natural white sand or ground white stone.
   3. Colored Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.

F. Water: Potable.

2.4 VENEER ANCHORS

A. Materials:
   2. Stainless Steel Wire: ASTM A580/A580M, Type 304.
   4. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.

B. Size: Sufficient to extend at least halfway, but not less than 1-1/2 inch, through stone masonry and with at least a 5/8-inch cover on exterior face.

C. Corrugated-Metal Veneer Anchors: Not less than 0.060-inch-thick by 7/8-inch-wide stainless steel sheet with corrugations having a wavelength of 0.3 to 0.5 inch and an amplitude of 0.06 to 0.10 inch.

D. Adjustable Masonry-Veneer Anchors:
   1. General: Provide anchors that allow vertical adjustment but resist a 100-lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.
   2. Fabricate sheet metal anchor sections and other sheet metal parts from 0.078-inch-thick, stainless steel sheet.
   3. Fabricate wire ties from 0.187-inch-diameter, stainless steel wire unless otherwise indicated.
   4. Fabricate wire connector sections from 0.187-inch-diameter, stainless steel wire.

2.5 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing, where flashing is exposed or partly exposed and where indicated, complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
   1. Stainless Steel: ASTM A240/A240M, Type 304, 0.016 inch thick.
   2. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet. Provide splice plates at joints of formed, smooth metal flashing.
   3. Fabricate metal drip edges from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
B. Flexible Flashing: For flashing unexposed to the exterior, use [one of] the following unless otherwise indicated:

1. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive, rubberized-asphalt compound, bonded to a high-density, cross-laminated, polyethylene film to produce an overall thickness of not less than 0.040 inch.

   a. Products: Subject to compliance with requirements, provide one of the following:
      1) Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.
      2) Dur-O-Wal, a Dayton Superior Company; Dur-O-Barrier-44.
      4) Heckmann Building Products Inc.; No. 82 Rubberized-Asphalt Thru-Wall Flashing.

C. Adhesives, Primers, and Seam Tapes for Flexible Flashings: Flashing manufacturer’s standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene urethane or PVC.

B. Cementitious Dampproofing: Cementitious formulations that are recommended by ILI and that are nonstaining to stone, compatible with joint sealants, and noncorrosive to veneer anchors and attachments.

C. Asphalt Dampproofing: Cut-back asphalt complying with ASTM D 4479, Type I.

D. Weep Hole/Vent Products: Use the following unless otherwise indicated:

   1. Mesh Weep Holes/Vents: Free-draining mesh; made from polyethylene strands, full width of head joint and 2 inches (50 mm) high by thickness of stone masonry; in color selected from manufacturer’s standard.

      a. Products: Subject to compliance with requirements, provide one of the following:
         1) CavClear/Archovations, Inc.; CavClear Weep Vents.
         2) Mortar Net USA, Ltd.; Mortar Net Weep Vents.

E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.

   1. Provide one of the following configurations:

      a. Strips, full-depth of cavity and 10 inches (250 mm) wide, with dovetail shaped notches 7 inches (175 mm) deep that prevent mesh from being clogged with mortar droppings.

      2. Products: Subject to compliance with requirements, provide one of the following:
         a. CavClear/Archovations, Inc.; CavClear Masonry Mat.
         b. Dur-O-Wal, a Dayton Superior Company; Polytite MortarStop.
2.7 FABRICATION

A. Fabricate stone to comply with sizes, shapes, and tolerances recommended by applicable stone association or, if none, by stone source, for faces, edges, beds, and backs.
   1. For limestone, comply with recommendations in ILI's "Indiana Limestone Handbook."

B. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated.

C. Cut and drill sinkages and holes in stone for anchors and supports.

D. Carefully inspect stone at quarry or fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units before shipment.
   1. Clean sawed backs of stone to remove rust stains and iron particles.

E. Thickness of Stone: Provide thickness indicated, but not less than the following:
   1. Thickness: As indicated on Drawings.

F. Finish exposed stone faces and edges to comply with requirements indicated for finish and to match approved samples.
   1. Finish:
      a. Granite: Split face.
      b. Limestone: Smooth

2.8 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces without discoloring or damaging masonry surfaces; expressly approved for intended use by cleaner manufacturer and stone producer.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Diedrich Technologies, Inc.
      b. Dominion Restoration Products.
      c. Hydrochemical Techniques, Inc.
      d. Prosoco, Inc.

2.9 MORTAR MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
1. Do not use calcium chloride.
2. Limit cementitious materials in mortar to portland cement and lime.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
4. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

   1. Mortar for Setting Stone: Type N.
   2. Mortar for Pointing Stone: Type N.

D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
   1. Pigments shall not exceed 10 percent of portland cement by weight.
   2. Mix to match Architect's sample.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coat concrete and unit masonry backup with asphalt dampproofing.

B. Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.2 INSTALLATION OF STONE MASONRY

A. Perform necessary field cutting and trimming as stone is set.
   1. Use power saws to cut stone that is fabricated with saw-cut surfaces. Cut lines straight and true, with edges eased slightly to prevent snipping.
   2. Use hammer and chisel to split stone that is fabricated with split surfaces. Make edges straight and true, matching similar surfaces that were shop or quarry fabricated.
   3. Pitch face at field-split edges as needed to match stones that are not field split.

B. Sort stone before it is placed in wall to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.
C. Arrange stones in broken-range ashlar pattern with uniform course heights, random lengths, and uniform joint widths.

D. Maintain uniform joint widths except for variations due to different stone sizes and where minor variations are required to maintain bond alignment if any. Lay walls with joints not less than 1/4 inch at narrowest points or more than 3/8 inch at widest points.

E. Provide sealant joints of widths and at locations indicated.

1. Keep sealant joints free of mortar and other rigid materials.
2. Sealant joints are specified in Section 079200 “Joint Sealants.”

F. Install embedded flashing and weep holes at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

1. At multiwythe masonry walls, including cavity walls, extend flashing through stone masonry, turned up a minimum of 4 inches and extend into or through inner wythe to comply with requirements in Section 042000 "Unit Masonry."
2. Extend sheet metal flashing 1/2 inch beyond masonry face at exterior, and turn flashing down to form a drip.
3. Install metal drip edges beneath flexible flashing at exterior wall face. Stop flexible flashing 1/2 inch back from exterior wall face and adhere flexible flashing to top of metal drip edge.

G. Place weep holes and vents in joints where moisture may accumulate, including at base of cavity walls, above shelf angles, and at flashing.

1. Use mesh weep holes/vents to form weep holes.
2. Space weep holes 16 inches o.c.
3. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in “Miscellaneous Masonry Accessories” Article.

H. Install vents in head joints at top of each continuous cavity at spacing indicated. Use mesh weep holes/vents to form vents.

3.3 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.

B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.

C. Variation of Linear Building Line: For position shown in plan, do not exceed 1/2 inch in 20 feet or 3/4 inch in 40 feet or more.

D. Measure variation from level, plumb, and position shown in plan as variation of the average plane of the face of each stone from level, plumb, or dimensioned plane.

E. Variation in Mortar-Joint Thickness: Do not vary from joint size range indicated.
F. Variation in Plane between Adjacent Stones: Do not exceed one-half of tolerance specified for thickness of stone.

3.4 INSTALLATION OF ANCHORED STONE MASONRY

A. Anchor stone masonry to concrete with corrugated-metal veneer anchors unless otherwise indicated. Secure anchors by inserting dovetailed ends into dovetail slots in concrete.

B. Anchor stone masonry to unit masonry with wire anchors unless otherwise indicated. Connect anchors to masonry joint reinforcement with vertical rods inserted through anchors and through eyes of masonry joint reinforcement projecting from unit masonry.

C. Embed veneer anchors in mortar joints of stone masonry at least halfway, but not less than 1-1/2 inches, through stone masonry and with at least a 5/8-inch cover on exterior face.
   1. Install continuous wire reinforcement in horizontal joints and attach to seismic veneer anchors as stone is set.

D. Space anchors not more than 16 inches o.c. vertically and 24 inches o.c. horizontally. Install additional anchors within 12 inches of openings, sealant joints, and perimeter at intervals not exceeding 12 inches.

E. Set stone in full bed of mortar with full head joints unless otherwise indicated. Build anchors into mortar joints as stone is set.

F. Provide cavity between stone masonry and backup construction unless otherwise indicated. Keep cavity free of mortar droppings and debris.
   1. Place mortar spots in cavity at veneer anchors to maintain spacing.
   2. Slope beds toward cavity to minimize mortar protrusions into cavity.
   3. Do not attempt to trowel or remove mortar fins protruding into cavity.

G. Rake out joints for pointing with mortar to depth of not less than 1/2 inch before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

3.5 POINTING

A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch (10 mm) deep until a uniform depth is formed.

B. Point stone joints by placing and compacting pointing mortar in layers not more than 3/8 inch (10 mm) deep. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.

C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:
   1. Joint Profile: Smooth, flat face recessed 1/4 inch (6 mm) below edges of stone (raked joint).
3.6  ADJUSTING AND CLEANING

A. Remove and replace stone masonry of the following description:

1. Broken, chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Architect.
2. Defective joints.
3. Stone masonry not matching approved samples and mockups.
4. Stone masonry not complying with other requirements indicated.

B. Replace in a manner that results in stone masonry matching approved samples and mockups, complying with other requirements, and showing no evidence of replacement.

C. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before cleaning stone masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20 Revised II, using job-mixed detergent solution.
6. Clean stone masonry with proprietary acidic cleaner applied according to manufacturer's written instructions.
7. Clean limestone masonry to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.7  EXCESS MATERIALS AND WASTE

A. Excess Stone: Stack excess stone where directed by Owner for Owner's use.

B. Excess Masonry Waste: Remove excess clean masonry waste and other waste, and legally dispose of off Owner's property.

END OF SECTION 044313.13
SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY
   A. Section Includes:
      1. Wall sheathing.

1.2 ACTION SUBMITTALS
   A. Product Data: For each type of process and factory-fabricated product.

PART 2 - PRODUCTS

2.1 WALL SHEATHING
   A. Glass-Mat Gypsum Sheathing: ASTM C 1177/1177M.
      1. Products: Subject to compliance with requirements, provide one of the following:
         a. CertainTeed Corporation; GlasRoc.
         b. Continental Building Products, LLC; Weather Defense.
         c. Georgia-Pacific Building Products; Dens-Glass Gold.
         d. National Gypsum Company; Gold Bond eXP Extended Exposure Sheathing.
         e. USG Corporation; Securock.
      2. Type and Thickness: As indicated on Drawings.

2.2 FASTENERS
   A. General: Provide fasteners of size and type indicated that comply with requirements specified in
      this article for material and manufacture.
      1. For wall sheathing, provide fasteners with hot-dip zinc coating complying with
         ASTM A 153/A 153M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL
   A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to
      use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces
      do not span between fewer than three support members.
B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

C. Securely attach to substrate by fastening as indicated, complying with the following:
   1. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.
   2. ICC-ES evaluation report for fastener.

D. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 GYPSUM SHEATHING INSTALLATION

A. Comply with GA-253 and with manufacturer's written instructions.
   1. Fasten gypsum sheathing to cold-formed metal framing with screws.
   2. Install panels with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
   3. Install panels with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Seal sheathing joints according to sheathing manufacturer’s written instructions.
   1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
   2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

END OF SECTION 061600
SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY
   A. Section includes standing-seam metal roof panels.

1.2 ACTION SUBMITTALS
   A. Product Data: For each type of product.
   B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
   C. Samples: For each type of metal panel indicated.

1.3 INFORMATIONAL SUBMITTALS
   A. Product test reports.
   B. Warranties: Sample of special warranties.

1.4 CLOSEOUT SUBMITTALS
   A. Maintenance data.

1.5 QUALITY ASSURANCE
   A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
   B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.6 WARRANTY
   A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
      1. Warranty Period: Two years from date of Substantial Completion.
B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:
   1. Wind Loads: As required by local and state codes.
   2. Other Design Loads: As required by local and state codes.
   3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 1680 at the following test-pressure difference:
   1. Test-Pressure Difference: 1.57 lbf/sq. ft.

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 at the following test-pressure difference:
   1. Test-Pressure Difference: 2.86 lbf/sq. ft.

D. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E 2140.

E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
   1. Uplift Rating: UL 90.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
   1. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1637.
B. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. MBCI; LokSeam
   b. Morin, A Kingspan Group Company; Symmetry Roof Systems
   c. PAC-CLAD; Snap-Clad

2. Aluminum Sheet: Coil-coated sheet, ASTM B 209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
   a. Thickness: 0.040 inch.
   b. Surface: Smooth, flat finish.
   d. Color: Match Architect's samples.

3. Clips: One-piece fixed to accommodate thermal movement.
   a. Material: 0.064-inch nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.

5. Panel Height: 1.5 inches.

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
   2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D 1970.

B. Felt Underlayment: ASTM D 226/D 22M, Type II (No. 30), asphalt-saturated organic felts.

C. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.4 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C 645; cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 coating designation or ASTM A 792/A 792M, Class AZ50 coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Gutters and Downspouts: Formed from same material as roof panels according to SMACNA's "Architectural Sheet Metal Manual." Finish to match metal roof panels.

E. Panel Fasteners: Self-tapping screws designed to withstand design loads.

F. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
   1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.
   2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.

2.5 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
2.6 FINISHES

A. Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer’s written recommendations.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated below, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the entire roof surface.

B. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

C. Flashings: Install flashings to cover underlayment.

3.3 METAL PANEL INSTALLATION

A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Install pressure plates at locations indicated in manufacturer’s written installation instructions.
3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
4. Watertight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.

b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.
B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074113.16
SECTION 074213.53 - METAL SOFFIT PANELS

PART 1 - GENERAL

1.1 SUMMARY
A. Section includes metal soffit panels.

1.2 PREINSTALLATION MEETINGS
A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS
A. Product test reports.
B. Warranties: Samples of special warranties.

1.5 CLOSEOUT SUBMITTALS
A. Maintenance data.

1.6 WARRANTY
A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As required by local and state codes.
3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 283 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft.

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lbf/sq. ft.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METAL SOFFIT PANELS

A. Reveal-Joint-Profile Metal Soffit Panels: Solid panels formed with vertical panel edges and a flat pan between panel edges; with recessed reveal joint between panels.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Mitsubishi Chemical Composites America, Inc; ALPOLIC Materials or a comparable product by one of the following:
   a. 3A Composites USA, Inc; ALUCOBOND
   b. Kingspan Group; Benchmark Façade System
   c. PAC-CLAD; Reynobond

2. Aluminum Sheet: Coil-coated sheet, ASTM B 209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
   a. Thickness: 0.020 inch aluminum skin. 4mm total panel thickness
   b. Surface: Smooth finish.
   c. Exterior Finish: Manufacturer’s standard fluoropolymer finish with image transfer and clear coat.
   d. Color: Match Architect’s samples. See drawings for colors.

3. Panel Coverage: As indicated on Drawings
4. Panel Height: 1.5 inches.

2.3 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 coating designation or ASTM A 792/A 792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
   1. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

E. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
   1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/8 inch thick.
   2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.

2.4 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
2.5 FINISHES

A. Panels and Accessories:
   1. Manufacturer’s standard fluoropolymer finish with image transfer and clear coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers’ written instructions.
   2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer’s written recommendations.
   1. Soffit Framing: Clip furring channels to supports, as required to comply with requirements for assemblies indicated.

3.2 METAL PANEL INSTALLATION

A. Watertight Installation:
   1. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer’s written installation instructions, and SMACNA’s “Architectural Sheet Metal Manual.” Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.3 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed unless otherwise indicated in manufacturer’s written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074213.53
SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Formed roof-drainage sheet metal fabrications.
   2. Formed low-slope roof sheet metal fabrications.
   3. Formed wall sheet metal fabrications.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For sheet metal flashing and trim.
   1. Include plans, elevations, sections, and attachment details.
   2. Distinguish between shop- and field-assembled work.
   3. Include identification of finish for each item.
   4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.
1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA’s “The NRCA Roofing Manual” and SMACNA’s “Architectural Sheet Metal Manual” requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. SPRI Wind Design Standard: Manufacture and install roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:

1. Design Pressure: As indicated on Drawings.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

1. Exposed Coil-Coated Finish:
a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.


C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; 2D (dull, cold rolled) finish.

2.3 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.

b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

C. Solder:

1. For Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.


2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.
2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomerics sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.
2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch-long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.

B. Downspouts: Fabricate downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.
   1. Fabricate from the following materials:
      a. Aluminum: 0.024 inch thick.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Roof Edge Flashing (Gravel Stop): Fabricate in minimum 96-inch-long, but not exceeding 12-foot-long sections. Furnish with 6-inch-wide, joint cover plates. Shop fabricate interior and exterior corners.
   1. Fabricate from the Following Materials:
      a. Aluminum: 0.050 inch thick.

B. Base Flashing: Fabricate from the following materials:
   1. Stainless Steel: 0.019 inch thick.

C. Counterflashing and Flashing Receivers: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

2.8 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch-long, but not exceeding 12-foot-long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch-high, end dams. Fabricate from the following materials:
   1. Stainless Steel: 0.016 inch thick.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder aluminum sheet.
2. Do not use torches for soldering.
3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.
3.2 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections with joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.

3.3 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.

C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches.

D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.4 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Through-Wall Flashing: Installation of through-wall flashing is specified in Section 042000 "Unit Masonry."

3.5 CLEANING AND PROTECTION

A. Clean and neutralize flux materials. Clean off excess solder.

B. Clean off excess sealants.
C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer’s written installation instructions.

END OF SECTION 076200
TYPICAL BENCH

PLAN

SIDE ELEVATION

FRONT ELEVATION

CROSS SECTION A

CROSS SECTION B

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL BENCH COMPONENTS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

BSU NY Ave. Parking Structure
BSU Project # 2018 - 014.01 XP
Addendum No. 2

DETAIL 2/L105 HAS BEEN SCALED IN HALF TO FIT ON THIS SHEET. RESULTANT SCALE IS 3/8" = 1' - 0"
CONTINUOUS GRAVEL STOP. FINISH TO SYSTEM.

COMPOSITE ALUMINUM PANEL SYSTEM FRAMING, 16 GAUGE, CLIPPED TO 10 1/4" 6" COLD FORMED METAL FRAMING, 16 GAUGE.

STAIR #1 ROOF PLAN

PREFINISHED ALUMINUM CURTAINWALL SYSTEM METAL FINISH COLOR B.

PREFINISHED ALUMINUM CURTAINWALL MULLION DRAY SEAL JOINT, TYPICAL

PRECAST CONCRETE WALL PANEL W/ SIMULATED INDIANA LIMESTONE FINISH.

PREFINISHED ALUMINUM CURTAINWALL MULLION VAPOR BARRIER

PRECAST CONCRETE PANELS ATTACHED TO CURTAINWALL SYSTEM. FINISH TO MATCH REFERENCE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

PRECAST CONCRETE WALL PANEL TO ACT AS VEHICLE CAR BARRIER. REFERENCE STRUCTURAL DRAWINGS FOR BUMPER IMPACT DESIGN LOADS.

PRECAST CONCRETE PANEL WITH MODULAR TRELLIS BACKER ROD AND SEALANT INCLUDING PRECAST PANEL

THREE DIMENSION MODULAR TRELLIS CANOPY ("BROW") SUSPENDED FROM ADJUSTABLE MOUNTING BRACKETS FOR TRELLIS SYSTEM ANCHORED TO PRECAST CONCRETE PANELS

PRECAST CONCRETE PANELS VENNER. RANDOM COURSE LENGTHS.

3'-6" VAPOR BARRIER

GROUND TIER WALL SECTION - ELEVATOR SHAFT AT CURTAINWALL

SECOND TIER WALL SECTION - CURTAINWALL TOWER

THIRD TIER WALL SECTION - TRELLIS

GROUND TIER WALL SECTION - ELEVATOR SHAFT

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1/2" = 1'-0"
CONCRETE SLAB. REFER TO STRUCTURAL DRAWING.

60 MIL EPDM ROOF MEMBRANE

FRT WOOD BLOCKING

ROOFING SYSTEM OVER ROOFING PROTECTION BOARD

SLOPE: 1/4" PER 1'-0"

COMPOSITE PANEL SYSTEM.

3-5/8" COLD FORMED METAL STUDS, 16 GAUGE, 16" OC

AIR AND VAPOR BARRIER

1/2" EXTERIOR SHEATHING

FASCIA, METAL FINISH COLOR A

1 5/8"

CONCRETE BEAM AND SLAB. REFERENCE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

METAL FINISH COLOR B.

3'-0"

6" COLD FORMED METAL FRAMING, 16 GAUGE, CLIPPED TO EDGE OF

3-1/2" BATT INSULATION

PREFINISHED ALUMINUM CURTAINWALL SYSTEM WITH 2-1/2" WIDE X 7-1/2" DEEP MULLIONS.

PREFINISHED ALUMINUM CURTAINWALL

INDIANA LIMESTONE CAP WITH SLOPED TOP TO FINISH COLOR B.

ATTACHMENTS TO CMU BACKUP PER MANUFACTURER'S RECOMMENDED INSTALLATION.

MASONRY UNIT BACKUP, FULLY GROUTED SHEATHING, VAPOR BARRIER, AND FINISH TO MATCH ADJACENT SYSTEM. REFLECTED CEILING PLAN FOR ORIENTATION OF PANEL SYSTEM.

PREFINISHED ALUMINUM CURTAINWALL SYSTEM WITH 2-1/2" WIDE X 7-1/2" DEEP MULLIONS.

PREFINISHED ALUMINUM CURTAINWALL

INDIANA LIMESTONE CAP WITH SLOPED TOP TO FINISH COLOR B.

ATTACHMENTS TO CMU BACKUP PER MANUFACTURER'S RECOMMENDED INSTALLATION.

MASONRY UNIT BACKUP, FULLY GROUTED SHEATHING, VAPOR BARRIER, AND FINISH TO MATCH ADJACENT SYSTEM. REFLECTED CEILING PLAN FOR ORIENTATION OF PANEL SYSTEM.

PREFINISHED ALUMINUM CURTAINWALL SYSTEM WITH 2-1/2" WIDE X 7-1/2" DEEP MULLIONS.

PREFINISHED ALUMINUM CURTAINWALL

INDIANA LIMESTONE CAP WITH SLOPED TOP TO FINISH COLOR B.