

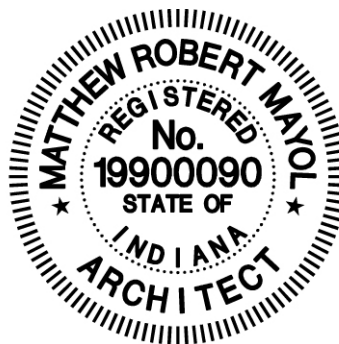
ADDENDUM NO. 1

ALBANY ELEMENTARY
BUILDING ADDITION & RENOVATION PROJECT
700 W. STATE ST.
ALBANY, IN 47320

OMS PROJECT NO. 22063

MARCH 14, 2023

ODLE McGUIRE SHOOK
7222 N. SHADELAND AVE., SUITE 100
INDIANAPOLIS, INDIANA 46250



Matthew R. Mayol

Matthew R. Mayol, IN AR1900090

TO: BIDDERS OF RECORD

This Addendum changes and modifies the Bidding Documents dated February 26, 2024 and will become a part of the Contract Documents.

Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of: Pages ADD.1-1 through ADD.1-30

GENERAL

1. A Pre-Bid meeting for this Project was held on March 13, 2024. Copies of the Pre-Bid Agenda and Sign-In-Sheet are attached to this Addendum for reference only.
2. A map to the Project Site has been included to show best route is north on SR 67 and south on Cleo Street.
3. A copy of the School Calendar has been included for reference.
4. Bidders questions are as follows:
 - a. Q: Is there an Alternate in Cafeteria XA143A?
A: No Base Bid is no work in the Cafeteria. Refer to Changes to Drawings A105-Overall Reflected Ceiling Plan
 - b. Q: Please clarify the Telecommunications (Data/Communication/AV & Access Control) scope of work on the Project? Also, RFI received 3/14/2024 reads as follows:

Will the customer/owner be providing and installing any or all low-voltage telecommunication cabling, terminations, and equipment. It has been confirmed with E-Solutions, Inc. that they shall be providing and installing all Fire Alarm, Security, and Intercom cabling and equipment as well as performing all necessary integration into the existing systems. The electrical subcontractor will include the provision and installation of all wall rough-ins for these packages as well as the telecom/data rough-ins. However, it is not stated who shall be responsible for providing and installing the data/telecom systems and cabling. As this is typically done separate from the bid as a cost-reducing measure, we want to be clear as to whether or not we are to include this work in our scope.

i.

- A: The Contractor is responsible for Data & Communication Outlets & Cabling (wall, ceiling or floor) as referenced in the Data/Communication Symbols shown in Schedule on E100 including Data Drops, Conduit/Cable as indicated in the six (6) Details 2 Port Data, 3 Port Data, Projector Data (PR), Smart Board (SB), Teacher's Station (T2), Teachers Station (T1), Television (TV), Public Address Speaker (PS), Speaker (SP).
- i. Work not in Contract is by Owner provided Fire Alarm/IT, Security Consultant E-Solutions, Inc. (317) 400-5187 Aaron Brunsman, Project Manager and includes:
- (i) Security Cameras (C), Door Hold Opens (DH), Access Control (AC), Card Readers (CR), Call Station (CS).
- c. Q: Are substitutions allowed for the Light Fixture Package?
A: Yes. We encourage Bidders to provide alternative fixture manufacturers see per Light Fixture Schedule Note 1.
- d. Q: Will the last Addendum really be issued five (5) days prior to Bid.
A: Yes. This is best practices in the industry.
- e. Q: Please clarify the Construction Phasing & Timeline for the Building portion of the Project?
A: Phase 2 Renovation as shown on Drawing G004 (Unit 'A' Corridor A129 Fire Doors, & Workroom A104 and Unit 'C' Kindergarten Toilet C10CA and Art C105 is the Contractor's Option to complete either between start June 1, 2024 complete July 20, 2024 or it can push to the following summer start June 1, 2025 and complete July 20, 2025.
- f. Q: Can you please provide existing drawings for Contractor use?
A: Yes. A link to access those drawings is included at: [Albany Elementary Existing 1980 & 1995 Dwgs \(No other dwgs exist\)](#). *Note: Please download files for proper viewing.*
- g. Will the Owner relocate the books, shelving and furniture in existing Media Center XA103 and XC133?
A: Yes. The Contractor is not responsible for moving these items.
- f. Q: Can Bidders tour the building with a scheduled appointment?
A: Yes, for access to the building call Tyce Stebbins at (765) 212-0652. Tyce will meet you at the school between 6:00am and 5:00pm EST, Monday through Friday. You must make an appointment and please do not just show up and ask permission to tour the building! NOTE: Direct all questions to the Architect. The Owner will not answer any questions.
- h. Q: Where is electrical panel '1H1' Located?
A: Please disregard Power Plan Note 6 on Drawing E202 that references a new 60 AMP Panel Feed to a New Equipment Shed. The Equipment Shed was removed from the project due to cost limitations.
- i. Q: Can you give us the elevations of the exiting footings in the courtyard and the elevations of the proposed new footings?
A: Existing drawings show the existing footing on the north side of the courtyard stepping from one end to the other to match existing. There are no existing drawings for the south side of the courtyard. Both will have to be field determined. We assume they are at least three feet due to frost depth. Proposed footings will be at the same depth as the existing footings so they can be tied in.

CHANGES TO SPECIFICATIONS:

1. Section 000010 TABLE OF CONTENTS add 074213 METAL COMPOSITE WALL PANELS
2. Section 051200 STRUCTURAL STEEL FRAMING Paragraph 1.8 QUALITY ASSURANCE A-D
 - a. Delete reference to AISC Quality Certification Program
3. Add Section 074210 METAL COMPOSITE MATERIAL WALL PANELS

4. Section 075400 THERMOPASTIC MEMBRANE ROOFING Paragraph 2.1 Manufacturers A.5
 - a. Add Johns Manville (a Berkshire Hathaway Company) TPO FB115 and JM TPO 60 as approved manufacturer Tel: (720) 786-0705 or (303) 978-5200; RSSpecservices@jm.com; www.jm.com. JM Peak Advantage@Guarantee
5. Section 10110 VISUAL DISPLAY BOARDS Paragraph 2.1 Manufacturers A.1
 - a. Add K-Pro Specialty Products / Educational Equipment Corporation as approved manufacturer Tel: (330) 673-4881 or Fax: (330) 673-4915 or jantonucci@mkco.com.
6. Section 123400 PLASTIC LAMINATE FACED CASEWORK Paragraph 2.1 Manufacturers A
 - a. Add P.R. Bean Educational Casework (PR Bean Co. LLC) Tel: (812) 254-3761 or andy@prbeanco.com.
7. Section 271123 CABLE MANAGEMENT Paragraph 2.1 b.
 - a. Add b. Hubbell is an Approved Manufacturer
 - b. Add c. Or equal as approved by Architect / Engineer

CHANGES TO DRAWINGS:

1. Drawing A105 OVERALL REFLECTED CEILING PLAN
 - A. Delete Plan Note 4 in its entirety. There is no ceiling Alternate in the Project.
 - B. At CAF XA143 Revise Plan Note 4 to Plan Note 1 No Work This Area.
2. Drawing E202 ELECTRICAL POWER PLAN
 - A. Delete Plan Note 6 in its entirety.

END OF ADDENDUM NO. 1



PRE-BID CONFERENCE AGENDA

Master Planning • Architecture • Engineering • Landscape Architecture • Interior Design • Technology Design
7222 N. Shadeland Ave., Suite 100, Indianapolis, Indiana 46250, 317.842.0000
www.omscorp.net

DATE: March 13, 2024

PROJECT: Albany Elementary Building Addition & Renovations

OMS Project No. 22063

1. **Introductions:** OMS requests everyone present please sign-in on the sheet provided.

a. Matt Mayol - OMS Principal-in-Charge

2. **General Overview of Project Scope:**

The work consists of architectural, civil, structural, mechanical, plumbing, electrical, and fire protection work as indicated on the Bidding Documents for Albany Elementary Project 2023 Additions & Renovations.

Work includes:

1. paving and sidewalk improvements.
2. new one-story, administration area addition (offices, reception area, nurse, records, storage, staff break room, and restrooms) including south parking area site improvements.
3. conversion of interior courtyard for use as a media center, including two (2) focus rooms and a media storage room.
4. light renovations for Kindergarten and Art.
5. partial roof replacements.
6. miscellaneous other renovations throughout

3. **Type of Bid:**

a. Stipulated Sum

b. Bids will be received until 2:00pm, local time, Wednesday, March 27, 2024. Bids received after that time will be returned unopened. Bids will be publicly opened and read aloud.

4. **Time of Commencement and Completion:**

Construction Schedule: The Construction shall begin on issuance of the Notice to Proceed and shall be Substantially Complete as follows:

The Work at the building and site shall be conducted simultaneously and sequenced as indicated below:

1. Notice to proceed: On or about April 9, 2024
2. On site construction begins: On or about April 15, 2024
3. Substantial completion: July 20, 2025
4. Building Addition and Renovations (Phases 1 through 3 Reference Drawing G004 Building Phasing Plan):

Work begins at Notice to Proceed with Substantial Completion no later than April 15, 2025. The phases of construction are as follows:

a. Phase 1:	Begin:	April 15, 2024
	Substantially Complete:	May 15, 2025

b. Phase 2:	Begin:	June 1, 2024
	Substantially Complete:	July 20, 2024

b. Phase 3:	Begin:	June 1, 2025
	Substantially Complete:	July 20, 2025

Site Work (1 Phase Reference Drawing G003 Site Construction Staging & Phasing Plan) – Site paving, landscape, sidewalks, and all site related work around the addition:

- a. Begin Construction April 15, 2025
- b. Substantial Completion by July 20, 2025
- c. All punch list items shall be completed by July 30, 2025

5. Examination and Procurement of Documents:

- a. Documents are available for review at www.easternengineering.com via the Planroom.

6. Bid Security: Five percent (5%) Bid Security shall accompany each Bid.

7. Performance and Payment Bond: In the amount 100% of Contract Sum will be required from the successful Bidder.

8. Condition of Award:

- a. The Owner reserves the right to accept or reject any Bid and to Waive irregularities in Bidding.
- b. The Project will be financed using General Obligation Bonds. Contracts will be awarded contingent upon completion of financing by the Owner.
- c. The Owner shall be granted 30 days to award a Contract.

9. Contractor/Subcontractor Employees: Contractor shall review Supplementary Conditions Section 007300 Article 13 for conditions regarding employment of workers. This refers to Equal Opportunity, Sexual Predator and Criminal History Backgrounds.

10. Instructions to Bidders:

- a. AIA 701 Instructions to Bidders and Supplemental Instructions to Bidders are included in the Division One Specifications and should be reviewed by all Bidders.
- b. Contractor's Bid for Public Works is to be completed in full for all Bids and is included in the Division One Specifications.
- c. The Agreement shall be AIA Document A101.
- d. AIA Document A201, "General Conditions of the Contract for Construction" shall be used and is included in the Division One Specifications.
- e. The Supplementary Conditions included in the Division 1 Specifications modify the General Conditions of the Contract for Construction and should be carefully reviewed by all Bidders.

11. Alternates:

- a. Alternate No. 1: Replace roofing at Cafeteria X143A and above the Unit 'B' Classroom wing as shown on A108 - Roof Plan. Alternate includes providing PVC or TPO (Felt or Fleece Back) membrane roof adhered to existing roof membrane, including new edge metal, scuppers and downspouts. Base Bid: Existing roofing to remain.
- b. Alternate No. 2: Color Changing Can Lights at K-2 Life Skills A126 and 3-5 Life Skills A123. Alternate includes work associated with providing light fixture symbol 'C' as shown on E101 Electrical Lighting Plan Area A. Base Bid: Provide 2x2 LED fixtures which provide sufficient footcandles for the rooms.

12. Addenda:

- a. Addenda will be issued as required with the last addenda being issues no later than five (5) days before bids are due.
- b. Questions concerning the Bidding Documents must be forwarded to the Project Architect and will be answered by Addendum.

13. Architect's Comments:

- a. The Contract Documents are complementary, and what is required by one shall be binding as required by all.
- b. Bidders shall be required to provide what is called for in the Contract Documents. If the Contract Documents call for #53 Widgets, Bid #53 Widgets. Do not under any circumstances bid #52 Widgets and expect approval for use in the Project at a later date. "We didn't bid it that way" will not be an acceptable reason for a claim for extra money. Product Substitutions will be considered only in accordance with the Contract Documents (Reference Section 01630 for requirements).
- c. Each Contractor is responsible for reviewing **the complete set of Drawings and Specifications** to assure the Work required to be installed to complete his phase of the Work is included in his proposal.

14. Questions:

- a. Questions concerning the Bidding Documents must be forwarded to the Project Architect and will be answered in writing by Addendum.
- b. Verbal questions and verbal answers will not be considered valid.

15. Tour: A tour of the existing facilities will be conducted for interested Bidders to review existing conditions immediately following this Meeting. ALL BIDDERS ARE ENCOURAGED TO PARTICIPATE.



Odle McGuire Shook

Pre-Bid Conference Sign-In Sheet

Albany Elementary Building Addition & Renovations

March 13, 2024

NAME (Please Print Clearly)

COMPANY NAME

PHONE NO./EMAIL

Layne Cameron
GC MC EC Sub

RL Turner Corp.

P 317-873-2712

E bwhitaker@rlturner.com

Troy Hugg
GC MC EC Sub

Pride mark Construction

P (765) 744-4948

E thugg@pridemarkconstruction.com

CHAD BAKER
GC MC EC Sub

WR DUNKIN

P 317-538-3321

E cbaker@wrdunkin.com

Andy Hall
GC MC EC Sub

JG BOWERS, INC

P 765-620-7020

E ahall@jgbowers.com

Jason Cox
GC MC EC Sub

Benchmark Mechanical

P 765-4529500

E jcox@benchmarkmechanical.com

GC MC EC Sub

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Odle McGuire Shook

Pre-Bid Conference Sign-In Sheet

Albany Elementary Building Addition & Renovations

March 13, 2024

NAME (Please Print Clearly)

COMPANY NAME

PHONE NO./EMAIL

Steve Bidwell

C.E. Reeve Rfg.

P 765-730-4416

GC MC EC Sub Sub

E sbidwell@tectaamerica.com

Matthew Klepinger

C.E. Reeve Rfg.

P 317-752-8893

GC MC EC Sub Sub

E MKlepinger@tectaamerica.com

Steve Walden

McGuff Roofing

P JR@McGuffRoofing.com

GC MC EC Sub

E

Monte Hough

Mallerna

P D.MALLERNEE@comcast.net

GC MC EC Sub



Odle McGuire Shook

Pre-Bid Conference Sign-In Sheet

Albany Elementary Building Addition & Renovations

March 13, 2024

NAME (Please Print Clearly)

COMPANY NAME

PHONE NO./EMAIL

Luke Weber

Nugent Electric, Inc.

P (765) 744-8517

GC MC EC Sub

E lukeweber@nugentelectric.net

GC MC EC Sub

P

E

GC MC EC Sub

P

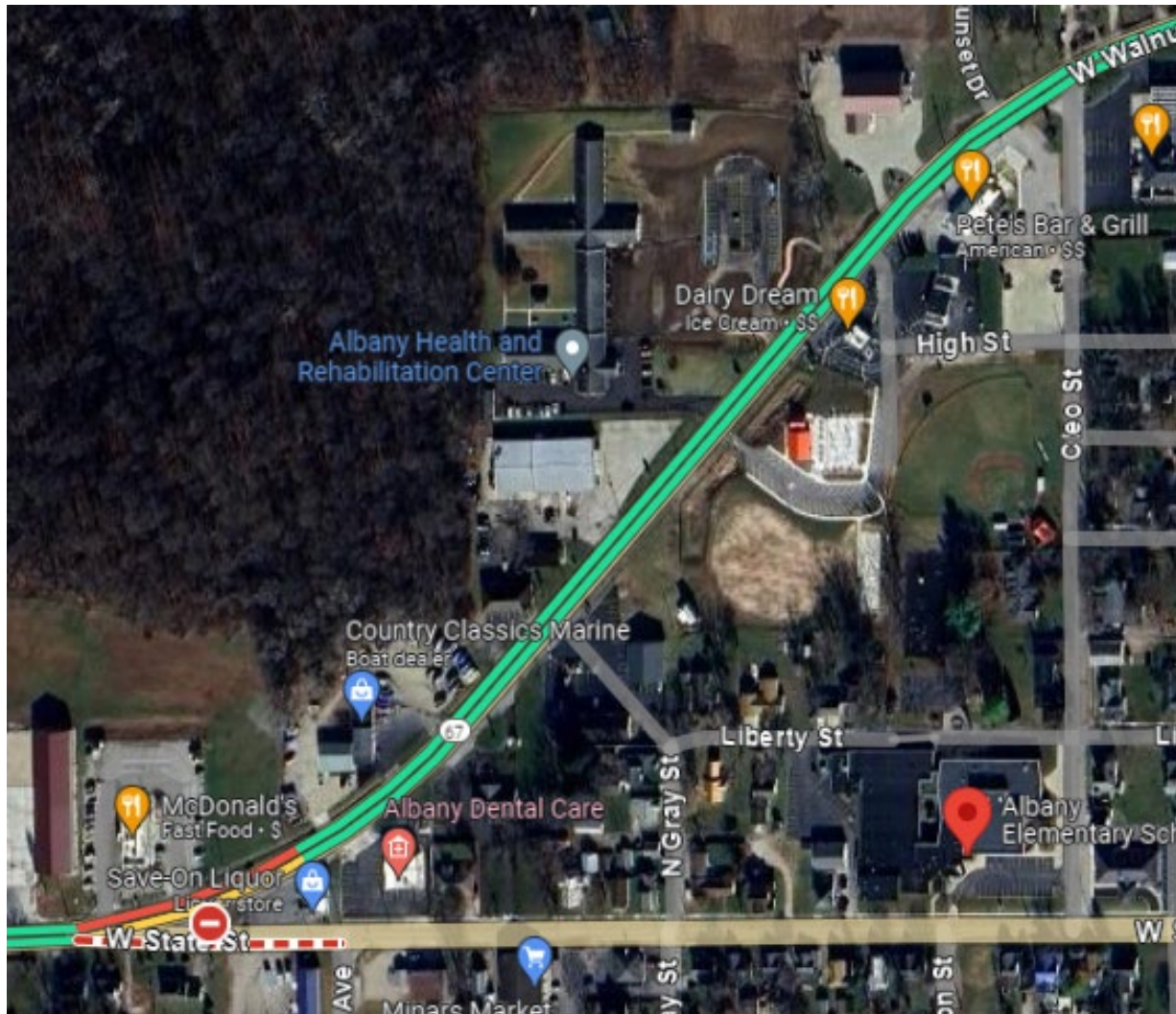
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GC MC EC Sub

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TO AVOID ROAD CONSTRUCTION ON ST ROAD 28 WE RECOMMEND YOU TRAVEL NORTH AND EAST ON STATE ROAD 67 AND THEN TURN SOUTH (RIGHT) ONTO CLEO STREET. PARKING IS AVAILABLE ON THE EAST SIDE OF THE SCHOOL MAIN ENTRY.



Delaware Community School Corporation

2023-2024

Approved 11-21-22

School Year Calendar

Teacher Work Day
 No School
 First/Last Student Return
 Inclement Weather Day

July 23						
Su	M	Tu	W	Th	F	Sa
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August 23						
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July 24						
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August 24						
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Aug 1 & 2: Teachers Report
 Aug 3: First Student Day
 Sept 4: Labor Day (No School)
 Oct 5 : K-12 Conferences 3:00-7:00 p.m.
 Oct 6: K-12 Conferences 7:30-11:00 a.m.
 (No School)
 Oct 9-13: Fall Break (No School)
 Nov 22-24: Thanksgiving Break
 Dec 20: Last Student Day

End Semester 1

Dec 21-Jan 3: Winter Break
 Jan 3: Teacher Work Day
 Jan 4: Classes Resume-All Grades
 Jan 15: MLK Jr Day (No School)
 Feb 16: Inclement Weather Day (No School)
 Feb 19: Presidents' Day (No School)
 Mar 1: Inclement Weather Day (No School)
 Mar 22-29: Spring Break (No School)
 Mar 29: Good Friday (No School)
 May 22: Last Student Day

End Semester 2

May 23: Teacher Work Day
 May 27: Memorial Day
 Jun 1: Commencement

Delaware Community School Corporation

2024-2025

School Year Calendar

Approved 11-20-2023

July 24						
Su	M	Tu	W	Th	F	Sa
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 Teacher Work Day	 No School
 First/Last Student Return	 Inclement Weather Day

August 24						
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S-18 T-20

September 24						
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S-20 T-20

October 24						
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S-17 T-18

November 24						
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S-18 T-18

December 24						
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S-15 T-15

January 25						
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S-19 T-20

February 25						
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S-18 T-18

March 25						
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S-15 T-15

April 25						
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S-20 T-20

May 25						
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S-20 T-21

June 25						
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July 25						
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August 25						
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31						

Aug 5 & 6: Teachers Report
 Aug 7: First Student Day
 Sept 2: Labor Day (No School)
 Oct 3 : K-12 Conferences 3:00-7:00 p.m.
 Oct 4: K-12 Conferences 7:30-11:00 a.m.
 (No School)
 Oct 7-11: Fall Break (No School)
 Nov 27-29: Thanksgiving Break
 Dec 20: Last Student Day

End Semester 1

Dec 23-Jan 3: Winter Break
 Jan 3: Teacher Work Day
 Jan 6: Classes Resume-All Grades
 Jan 20: MLK Jr Day (No School)
 Feb 14: Inclement Weather Day (No School)
 Feb 17: Presidents' Day (No School)
 Mar 21-28: Spring Break (No School)
 April 18: Good Friday (No School)
 April 21: Inclement Weather Day (No School)
 May 26: Memorial Day (No School)
 May 29: Last Student Day

End Semester 2

May 30: Teacher Work Day
 Jun 7: Commencement

SECTION 074213 - METAL COMPOSITE MATERIAL WALL PANEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes metal composite material wall panels utilizing rain screen wall design principles for installations as follows:
 - 1. Installation over furring channels over fluid applied air barrier on glass-mat gypsum board fastened to cold-formed metal framing.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 5 Section "Cold-Formed Metal Framing" for glass-mat gypsum sheathing board and air infiltration barrier incorporated in fascia and wall panel applications.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Metal composite material panel Installer, metal composite material panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal composite material panels, including installers of doors, windows, and louvers.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review methods and procedures related to metal composite material panel installation, including manufacturer's written instructions.
 - 4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
 - 5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect metal composite material panels.
 - 6. Review temporary protection requirements for metal composite material panel assembly during and after installation.
 - 7. Review procedures for repair of panels damaged after installation.
 - 8. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
- B. Shop Drawings:
 - 1. Include fabrication and installation layouts of metal composite material panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, and accessories; and special details.
 - 2. Accessories: Include details of the flashing, trim and anchorage, at a scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
 - 1. Metal Composite Material Panels: 12 inches long by actual panel width.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each product, tests performed by a qualified testing agency.
- C. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal composite material panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The metal composite material wall panel manufacturer and fabricator shall have a minimum of 10 years' experience in the performance of projects with similar size and scope.
 - 1. Metal composite material wall panel fabricator shall be a current member of Metal Construction Associates (MCA) Premium MCM Fabricator Certification Program.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained in the installation of metal composite material wall panels with minimum 5 years' experience in the performance of projects with similar size and scope.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical metal composite material panel assembly, including soffits, supports, attachments, and accessories.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal composite material panels, and other manufactured items so as not to be damaged or deformed. Package metal composite material panels for protection during transportation and handling.
- B. Unload, store, and erect metal composite material panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal composite material panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal composite material panels to ensure dryness, with positive slope for drainage of water. Do not store metal composite material panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on metal composite material panels during installation.

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal composite material panels to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before metal wall panel fabrication and indicate measurements on Shop Drawings.

1.10 COORDINATION

- A. Coordinate metal composite material panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal composite material panel systems that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing, cracking, or puncturing.
 - b. Deterioration of metals and other materials beyond normal weathering.

1. Warranty Period: Five years from date of Substantial Completion.
- A. Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal composite material panels only that show evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2- PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

General: Provide metal wall panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency and that are capable of withstanding the effects of gravity loads and wind loads required by the prevailing applicable codes.

- A. Structural Performance: Provide metal composite material panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 330:
 1. Wind Loads: As indicated on Drawings.
 2. Deflection Limits: For wind loads, no greater than 1/240 of the span.
- B. Wind Resistance: Provide materials and assembly that will conform to requirements of ASCE 7 - 98 in Factory Mutual Approval Guide.
- C. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 Lis per sq. m) when tested according to ASTM E 283 at the following test-pressure difference:
 1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).
- D. 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: 6.24 lbf/sq. ft. (300 Pa).
- E. 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 (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- G. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.
 2. ASTM E 84 Flame Spread Index must be less than 25, Smoke Developed Index must be less than 450
 3. ASTM D 1929 A self-ignition temperature of 650° For greater
 4. ASTM D-635 Requires a CCI classification
- H. Panel Flatness Criteria: Maximum 1/32 inches in 2 ft. -0 in. on panel in any direction for assembled units (non-accumulative).

2.02 METAL COMPOSITE MATERIAL WALL PANELS

- A. Metal Composite Material Wall Panel Systems: Provide factory-formed and -assembled, metal composite material wall panels fabricated from two metal facings that are bonded to a solid, extruded thermoplastic core; formed into profile for installation method indicated. Include attachment assembly components, panel stiffeners, and accessories required for weathertight system.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Alfrex FR MCM
 - b. Alucobond PLUS
 - c. Alpolic FR
- B. Aluminum-Faced Composite Wall Panels: Formed with 0.020-inch- (0.50-mm-) thick, coil-coated aluminum sheet facings.
1. Panel Thickness: 0.157 inch (4 mm).
 2. Core: FR (Fire-Rated)
 3. Reveal width: 9/16"
 4. Exterior Finish: As selected by Architect from Manufacturers Full Color Range
- C. Attachment Assembly Components: Formed from extruded aluminum.
1. Include manufacturer's standard perimeter extrusions with integral weather stripping, panel stiffeners, panel clips and anchor channels.
 2. Provide concealed fasteners to the greatest extent possible.
- D. Flashing and Trim: Same material, finish, and color as facings of adjacent composite panels, unless otherwise indicated. All flashing and trims shall be provided by the panel manufacturer.

2.03 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Sub framing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet ASTM A 653/A 653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A 792/A 792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard panel sections as required for support and alignment of metal composite material 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 composite material panels unless otherwise indicated.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal composite material panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, end walls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal composite material panels. Flashing and trims related to the system shall be provided by the panel manufacturer.
- D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal composite material panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- E. Panel Sealants: ASTM C 920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal composite material panels and remain weather resistant; and as recommended in writing by metal composite material panel manufacturer.

2.04 ATTACHMENT SYSTEM- Dry-Joint Filler System:

- A. Manufacturer -Aluminum Attachment System:
 - 1. Subject to compliance with requirements, provide panel attachment system by one of the following:
 - a. **Basis of Design: D7-Fusion as fabricated by Division 7 Metals. 8641 E. 30th Street, Suite A, Indianapolis, IN 46219. (317) 890-0100. www.division7mtls.com**
 - b. **NorthCLAD. ACM**
 - c. **Keith Panel Systems. System A**
 - 2. Hanging System: Minimum .063 extrusions designed to mechanically integrate with composite and provide for water collection and weep to exterior.
 - 3. Extrusions shall be full length around panel perimeter for panel reinforcement and alignment.
 - 4. Spline at back of reveal shall be continuous around perimeter of panel. Minimize joints. Produce flat, flush surfaces, forming exposed connections with hairline joints, flush and smooth, using concealed fasteners.
- B. Manufacturer - Integral Attachment System: Subject to compliance with requirements, provide integral panel attachment system by one of the following:
 - 1. Fusion Drill Free; CARTER FUSION Systems
- C. Attachment Clips: Design attachment to structural supports to provide for

movement in all directions. Provide all necessary shims, clips, etc. to assure alignment specified.

2.05 ACCESSORIES

- A. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including trim, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels, unless otherwise indicated.
 - 1. Accessories:
 - a. Flashings related to composite panels. Flashings related to the composite panels shall be provided by the panel manufacturer.

2.06 WEATHER-RESISTANT BARRIER

- A. Refer to Division 07 Sections for Weather-Resistant Barrier sections.

2.07 FABRICATION

- A. General: Fabricate and finish metal composite material 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.
 - 1. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle.
 - 2. Fabricate wall panels with panel stiffeners as required to maintain fabrication tolerances and to withstand design loads.
- B. Fabricate metal composite material 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.
- C. Metal-Faced Composite Wall Panels: Factory form panels in a continuous process with no glues or adhesives between dissimilar materials. Trim and square edges of sheets with no displacement of face sheets or protrusion of core material.
 - 1. Fabricate panels with panel stiffeners, as required to comply with deflection limits, attached to back of panels with structural silicone sealant and mechanically retained by the edge trim members.
 - 2. Fabricate panels with sharply cut edges, with no displacement of face sheets or protrusion of core material.
 - 3. Dimensional Tolerances:
 - a. Length: Plus 0.375 inch.
 - b. Width: Plus 0.188 inch.
 - c. Thickness: Plus, or minus 0.008 inch.
 - d. Panel Bow: 0.8 percent maximum of panel length or width.
 - e. Squareness: 0.2 inch maximum.

- 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.
1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 3. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
 5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
 - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.08 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Aluminum Panels and Accessories:
1. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal composite material panel supports, and other conditions affecting performance of the Work.
1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal composite material

- 2. wall panel manufacturer.
- 2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking, and that installation is within flatness tolerances required by metal composite material wall panel manufacturer.
 - a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and assemblies penetrating metal composite material panels to verify actual locations of penetrations relative to seam locations of metal composite material panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.
- B. Install flashings and other sheet metal to comply with requirements specified in Division 07 Section "Sheet Metal Flashing and Trim."
- C. Install fasciae and copings to comply with requirements specified in Division 07 Section "Sheet Metal Flashing and Trim."
- D. Weather-Resistant Barrier: Comply with manufacturer's written installation instructions for installation of weather-resistant barrier and flashing at openings.
 - 1. Apply barrier to cover vertical flashing with a minimum 4-inch overlap, unless otherwise indicated.
- E. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck or sloped sheathing. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
 - 1. Prime concrete and masonry surfaces to receive self-adhering sheet underlayment.
- F. Miscellaneous Supports: Install sub framing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal composite material panel manufacturer's written recommendations.
 - 1. Soffit Framing: Wire-tie or clip furring channels to supports.

3.03 METAL PANEL INSTALLATION

- A. General: Install metal composite material panels according to manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings.

Install panels perpendicular to supports unless otherwise indicated. Anchor metal composite material panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. At initial start of metal face composite wall panel installation, install a minimum of 300 sq. ft. in presence of factory authorized representative.
2. Shim or otherwise plumb substrates receiving metal composite material panels.
3. Flash and seal metal composite material panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water- resistive barriers and flashings that will be concealed by metal composite material panels are installed.
4. Install screw fasteners in predrilled holes.
5. Locate and space fastenings in uniform vertical and horizontal alignment.
6. Install flashing and trim as metal composite material panel work proceeds.
7. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
8. Align bottoms of metal composite material panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
2. Provide concealed fasteners.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal composite material panel manufacturer.

D. Attachment Assembly, General: Install attachment assembly required to support metal composite material wall panels and to provide a complete weathertight wall system, including sub-girts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar- material joinery, and panel-system joint seals.
2. Do not begin until weather barrier and flashings that will be concealed by composite panels are installed and inspected for proper installation.

E. Installation: Attach metal composite material wall panels to supports at locations, spacings, and with fasteners recommended by manufacturer to achieve performance requirements specified.

F. Rainscreen-Principle Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Leave horizontal and vertical joints with open reveal.

1. Do not apply sealants to joints unless otherwise indicated.

3.04 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal composite material panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal composite material panel manufacturer; or, if not indicated, provide types recommended in writing by metal composite material panel manufacturer.
- B. 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.
 - 1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof performance.
 - 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.05 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal composite material wall panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m), non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.06 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal composite material panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal composite material panel installation, clean finished surfaces as recommended by metal composite material panel manufacturer. Maintain in a clean condition during construction.
- B. After metal composite material panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
- C. Replace metal composite material panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

2.09 METAL COMPOSITE MATERIAL WALL PANELS

- E. Metal Composite Material Wall Panel Systems: Provide factory-formed and -assembled, metal composite material wall panels fabricated from two metal facings that are bonded to a solid, extruded thermoplastic core; formed into profile for installation method indicated. Include attachment assembly components, panel stiffeners, and accessories required for weathertight system.
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - d. Alfrex FR MCM
 - e. Alucobond PLUS
 - f. Alpolic FR
- F. Aluminum-Faced Composite Wall Panels: Formed with 0.020-inch- (0.50-mm-) thick, coil-coated aluminum sheet facings.
 - 5. Panel Thickness: 0.157 inch (4 mm).
 - 6. Core: FR (Fire-Rated)
 - 7. Reveal width: 9/16"
 - 8. Exterior Finish: As selected by Architect from Manufacturers Full Color Range
- G. Attachment Assembly Components: Formed from extruded aluminum.
 - 3. Include manufacturer's standard perimeter extrusions with integral weather stripping, panel stiffeners, panel clips and anchor channels.
 - 4. Provide concealed fasteners to the greatest extent possible.
- H. Flashing and Trim: Same material, finish, and color as facings of adjacent composite panels, unless otherwise indicated. All flashing and trims shall be provided by the panel manufacturer.

2.10 MISCELLANEOUS MATERIALS

- F. Miscellaneous Metal Sub framing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet ASTM A 653/A 653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A 792/A 792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal composite material panel system.
- G. 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 composite material panels unless otherwise indicated.

- H. Flashing and Trim: Provide flashing and trim formed from same material as metal composite material panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, end walls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal composite material panels. Flashing and trims related to the system shall be provided by the panel manufacturer.
- I. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal composite material panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- J. Panel Sealants: ASTM C 920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal composite material panels and remain weather resistant; and as recommended in writing by metal composite material panel manufacturer.

2.11 ATTACHMENT SYSTEM- Dry-Joint Filler System:

- B. Manufacturer -Aluminum Attachment System:
 - 3. Subject to compliance with requirements, provide panel attachment system by one of the following:
 - a. **Basis of Design: D7-Fusion as fabricated by Division 7 Metals. 8641 E. 30th Street, Suite A, Indianapolis, IN 46219. (317) 890-0100. www.division7mtls.com**
 - b. **NorthCLAD. ACM**
 - c. **Keith Panel Systems. System A**
 - 5. Hanging System: Minimum .063 extrusions designed to mechanically integrate with composite and provide for water collection and weep to exterior.
 - 6. Extrusions shall be full length around panel perimeter for panel reinforcement and alignment.
 - 7. Spline at back of reveal shall be continuous around perimeter of panel. Minimize joints. Produce flat, flush surfaces, forming exposed connections with hairline joints, flush and smooth, using concealed fasteners.
- C. Manufacturer - Integral Attachment System: Subject to compliance with requirements, provide integral panel attachment system by one of the following:
 - 2. Fusion Drill Free; CARTER FUSION Systems
- D. Attachment Clips: Design attachment to structural supports to provide for movement in all directions. Provide all necessary shims, clips, etc. to assure alignment specified.

2.12 ACCESSORIES

- B. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including trim, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels, unless otherwise indicated.

2. Accessories:

- b. Flashings related to composite panels. Flashings related to the composite panels shall be provided by the panel manufacturer.

2.13 WEATHER-RESISTANT BARRIER

- B. Refer to Division 07 Sections for Weather-Resistant Barrier sections.

2.14 FABRICATION

- D. General: Fabricate and finish metal composite material 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.
 - 2. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle.
 - 4. Fabricate wall panels with panel stiffeners as required to maintain fabrication tolerances and to withstand design loads.
- E. Fabricate metal composite material 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.
- F. Metal-Faced Composite Wall Panels: Factory form panels in a continuous process with no glues or adhesives between dissimilar materials. Trim and square edges of sheets with no displacement of face sheets or protrusion of core material.
 - 4. Fabricate panels with panel stiffeners, as required to comply with deflection limits, attached to back of panels with structural silicone sealant and mechanically retained by the edge trim members.
 - 5. Fabricate panels with sharply cut edges, with no displacement of face sheets or protrusion of core material.
 - 6. Dimensional Tolerances:
 - f. Length: Plus 0.375 inch.
 - g. Width: Plus 0.188 inch.
 - h. Thickness: Plus, or minus 0.008 inch.
 - i. Panel Bow: 0.8 percent maximum of panel length or width.
 - j. Squareness: 0.2 inch maximum.
- 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.
 - 6. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 - 7. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 - 8. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.

9. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
10. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
 - b. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.15 FINISHES

- D. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- E. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- F. Aluminum Panels and Accessories:
 2. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.04 EXAMINATION

- G. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal composite material panel supports, and other conditions affecting performance of the Work.
 3. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal composite material wall panel manufacturer.
 4. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking, and that installation is within flatness tolerances required by metal composite material wall panel manufacturer.
 - b. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- H. Examine roughing-in for components and assemblies penetrating metal composite material panels to verify actual locations of penetrations relative to seam locations of metal composite material panels before installation.
- I. Proceed with installation only after unsatisfactory conditions have been corrected.

3.05 PREPARATION

- A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.
- B. Install flashings and other sheet metal to comply with requirements specified in Division 07 Section "Sheet Metal Flashing and Trim."
- C. Install fasciae and copings to comply with requirements specified in Division 07 Section "Sheet Metal Flashing and Trim."
- J. Weather-Resistant Barrier: Comply with manufacturer's written installation instructions for installation of weather-resistant barrier and flashing at openings.
 - 1. Apply barrier to cover vertical flashing with a minimum 4-inch overlap, unless otherwise indicated.
- K. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck or sloped sheathing. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
 - 2. Prime concrete and masonry surfaces to receive self-adhering sheet underlayment.
- L. Miscellaneous Supports: Install sub framing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal composite material panel manufacturer's written recommendations.
 - 2. Soffit Framing: Wire-tie or clip furring channels to supports.

3.06 METAL PANEL INSTALLATION

- B. General: Install metal composite material panels according to manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor metal composite material panels and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 1. At initial start of metal face composite wall panel installation, install a minimum of 300 sq. ft. in presence of factory authorized representative.
 - 2. Shim or otherwise plumb substrates receiving metal composite material panels.
 - 3. Flash and seal metal composite material panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water- resistive barriers and flashings that will be concealed by metal composite material panels are installed.
 - 4. Install screw fasteners in predrilled holes.
 - 5. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 6. Install flashing and trim as metal composite material panel work

proceeds.

7. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
8. Align bottoms of metal composite material panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

C. Fasteners:

3. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
4. Provide concealed fasteners.

G. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal composite material panel manufacturer.

H. Attachment Assembly, General: Install attachment assembly required to support metal composite material wall panels and to provide a complete weathertight wall system, including sub-girts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery, and panel-system joint seals.
2. Do not begin until weather barrier and flashings that will be concealed by composite panels are installed and inspected for proper installation.

I. Installation: Attach metal composite material wall panels to supports at locations, spacings, and with fasteners recommended by manufacturer to achieve performance requirements specified.

J. Rainscreen-Principle Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Leave horizontal and vertical joints with open reveal.

2. Do not apply sealants to joints unless otherwise indicated.

3.05 ACCESSORY INSTALLATION

D. General: Install accessories with positive anchorage to building and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal composite material panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal composite material panel manufacturer; or, if not indicated, provide types recommended in writing by metal composite material panel manufacturer.

- E. 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.
1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.07 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal composite material wall panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m), non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.08 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal composite material panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal composite material panel installation, clean finished surfaces as recommended by metal composite material panel manufacturer. Maintain in a clean condition during construction.
- B. After metal composite material panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
- C. Replace metal composite material panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

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