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New Construction for:

Belmont College - Construction Trades Building

Addendum No. 02 – 21.162

July 24, 2025

This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto. The following clarifications, amendments, revisions, changes and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum. Each bidder shall acknowledge receipt of this Addendum in his bid proposal. Bidders shall be responsible for becoming familiar with every item of this Addendum.

General:

1. Clarification: Bids will be due via BidExpress will be due 1:00 pm August 5, 2025 local time.

2. Question: The bid is due August 5th, 2025.

   Response: Yes.

3. Question: There is a video surveillance/access control component to this project.

   Response: Yes. Please refer to the technology drawings and specs in bid documents. Some components are contractor provided, some are owner provided.

4. Question: There are no addendums to the most recent bid documents posted.

   Response: Addendum 1 has been posted on bid express.

5. Question: There is a site walk.

   Response: There was a prebid meeting 7/15.

6. Question: The site walk wasn't mandatory.

   Response: Correct.

7. Question: You are accepting approved equals on this project.

   Response: Requests for approved equpals must be submitted and approved prior to final addendum to be issues on 7/30. Only reviewing approvals on equals for contractor provided items.

8. Question: Is there anything else we should know about bidding on this project before moving forward?

Response: It is your responsibility to review and be familiar with bid documents in their entirety.

9. Question: The bid form states "Alternate: Owner-agency may award independently from entire bid." Does this mean bidder who are not awarded the project may be awarded one or more alternates? In which case, they are not really alternates but stand alone projects.

   Response: The text is boiler plate language on Bid Express to mean that we may choose one, several, or none of the alternates regardless of order on the bid form. We would use the base bid and the alternates to determine lowest bidder and can use their alternate bids as a determining factor. They will not be considered as stand-alone projects.

10. Question: Please clarify the budget/funding (construction cost) available for this project.

    Response: Please refer to architects advertised cost estimate.

11. Question: Please confirm the Bid due time on 8/5/2025 is 11 am, not 1 pm as stated on page 11 of the Specs.

    Response: The bid due time is 1:00 pm on 8/5/2025.

12. Question: The invitation to bid list that there is a 5% EDGE goal for this project., however the electronic bid form include in the specifications (also attached) has all EDGE items red lined and the states "There is no EDGE requirements." If you could please let us know which one is accurate so we may proceed accordingly.

    Response: There are no EDGE requirements.

13. Question: Besides Bid Express are we able to gain access to the addendum in any other forum?

    Response: Documents are also available out of AA Blueprint.

14. Question: Which material or brand of ductwork is required for the dust collection system? Is it standard galvanized gasketed spiral, or is it the Norfab style round duct?

    Response: Information provided in specification section 23 30 00 Air Distrubution.

15. Question: Other than OVCEC Plan Room, is there another way to obtain the complete set of bid documents? Also has the first Addendum been issued yet?

    Response: The bid set is only being issued through BidExpress and AA Blueprint.

16. Question: Spec section 081116 calls for medium stile doors and wide stile doors. Which is preferred?

    Response: Medium stile.

17. Question: Spec section 081116 and the door schedule calls for dark bronze anodize – spec section 084300 calls for painted and clear. Please advise.

    Response: Doors and storefront shall be dark bronze anodized.

18. Question: For spec section 087113, can Stanley be an acceptable manufacturer for the automatic doors? See attached information.

    Response: Stanley is an acceptable manufacturer.

19. Question: The building elevations show the mechanical louver being installed above the aluminum storefront. Sheet 8.3 shows the louvers as being installed in the aluminum storefront. Please advise which is correct.

    Response: Mechanical louvers should be installed in aluminum storefront. Building elevations have been revised to reflect this.

20. Question: Who installs the new 6" underground gas line to within 5' of the new building? Is this under the sitework Subs Scope of work or the Plumber? Please advise.

    Response: Under single prime contract, it is the contractor's responsibility to designate division of work.

21. Question: Our local glazing supplier does not carry Viracon VE1-2M. Can you Vitro Solarban 60 be an acceptable alternate?

    Response: Vitro is an approved fabricator under spec section 08 80 00.

22. Question: Is the earthwork supposed to balance?

    Response: Due to the problematic soils that require excavation within the building footprint, the design was not done to balance earthwork.

23. Question: Can you please provide the size of the water line?

    Response: The gas and waterline information is to be coordinated with the MEP. This is detailed on our drawings. The information we were provided by the MEP indicates 3" for Water and 4" for Gas. Size and material should be confirmed by the MEP.

24. Question: Can you please provide the size and type of pipe required for the gas line and is this to be by GC or others?

    Response: The gas and waterline information is to be coordinated with the MEP. This is detailed on our drawings. The information we were provided by the MEP indicates 3" for Water and 4" for Gas. Size and material should be confirmed by the MEP. The contractor responsible for installation is

determined by whom assembled the bid documents and the limits of contract for all applicable work packages that were defined therein.

Specifications:

1. Specification 08 11 13 – Aluminum Doors (Medium & Wide Stile):
   A. Crossed out wide stile door information.
2. Specification 08 43 00 – Aluminum-Framed Storefronts (High Performance):
   A. Color anodized finish revised to dark bronze.
3. Specification 08 43 00 – Aluminum-Framed Storefronts (Interior):
   A. Color anodized finish revised to dark bronze.
4. Specification 08 71 13 – Automatic Door Operators
   A. Added Stanley Door as accepted manufacturer.
5. Specification 08 80 00 – Glazing:
   A. Vitro added as acceptable fabricator.

Architectural / Structural Drawings:

1. Drawing 5.1 – EXTERIOR ELEVATIONS
   A. A1 North Elevation revised to show mechanical louvers in aluminum storefront.
2. Drawing H62 – HVAC DETAILS AND DIAGRAMS
   A. Revised detail for the dust collection blast gate.
3. Drawing T11 – FIRST FLOOR TECHNOLOGY PLAN
   A. Sheet revised for clarity and fixed graphical error.

- - - END OF ADDENDUM NO. 02 - - -

Attachments:

Specification 08 11 13 – Aluminum Doors (Medium & Wide Stile)

Specification 08 43 00 - Aluminum-Framed Storefronts (High Performance)

Specification 08 43 00 - Aluminum-Framed Storefronts (Interior)

Specification 08 71 13 – Automatic Door Operators

Specification 08 80 00 – Glazing

Drawing 5.1 – Exterior Elevations

Drawing T11 – First Floor Technology Plan

SECTION 08 11 16

ALUMINUM DOORS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.

B. If AIA Document 201 is included in this contract (refer to Section 01 11 00 Summary of Work to verify), it is part of this Section as though bound herein.

C. Related Sections:
1. Section 01 74 19 – Construction Waste Management
2. Section 07 92 00 – Joint Sealants
3. Section 08 41 13 – Glazed Aluminum Storefront
4. Section 08 44 13 – Glazed Aluminum Curtain Wall
5. Section 08 71 00 – Door Hardware
6. Section 08 80 00 – Glazing

D. Products Furnished But Not Installed Under This Section:
1. Anchoring devices which are built into masonry
2. Anchoring devices which are cast in concrete

1.2 SUMMARY

A. Section includes, but is not limited to:
1. Medium stile aluminum doors.
2. Wide stile aluminum doors.
3. Hardware

1.3 REFERENCES

A. Aluminum Association (AA):
1. DAF-45 Designation System for Aluminum Finishes.

B. American Architectural Manufacturers Association (AAMA):
1. 501.2 Field Check of Metal Curtain Walls for Water Leakage.
2. 2605 Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
3. 606.1 Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum.
4. 607.1 Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
5. 608.1 Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.
6. 701.2 Specifications for Pile Weatherstripping.
7. Manual #10 Care and Handling of Architectural Aluminum From Shop to Site.

8. SFM-1 Aluminum Storefront and Entrance Manual.

C. American National Standards Institute (ANSI):
1. A117.1 Safety Standards for the Handicapped.

D. American Society for Testing and Materials (ASTM):
1. A36 Structural Steel.
2. A123 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. B209 Aluminum and Aluminum - Alloy Sheet and Plate.
4. B221 Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
5. B308 Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded.
6. E283 Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors.
7. E330 Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
8. E331 Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.

E. Federal Specifications (FS):
1. TT-P-641G(1) Primer Coating, Zinc Dust-Zinc Oxide (For Galvanized Surfaces).
2. TT-P-645A Primer, Paint, Zinc Chromate, Alkyd Type.

F. Steel Structures Painting Council (SSPC):
1. Paint 12 Cold-Applied Asphalt Mastic (Extra Thick Film).

1.4 BID REQUIREMENTS

A. If Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents, the Contractor shall include in their bid the most stringent and demanding, or highest cost requirement.

B. Pre-Bid Exceptions: If, for any reason, you deem the designed system is not appropriate or feasible, submit this concern, proposed modification, qualification and / or exception to the drawings and specifications with your bid proposal.

1.5 SUBMITTALS

A. In accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data:
1. Submit manufacturer's descriptive literature and product specifications.
2. Include information for factory finishes, hardware, accessories, and other required components.
3. Include color charts for finish indicating manufacturer's standard colors available for selection.

C. Shop Drawings:
1. Submit shop drawings covering fabrication, installation and finish of specified systems.

2. Include following:
    a. Fully dimensioned plans and elevations with detail coordination keys.
    b. Locations of exposed fasteners and joints.
3. Provide detailed drawings of:
    a. Composite members.
    b. Joint connections for framing systems and for entrance doors.
    c. Anchorage.
    d. System reinforcements.
    e. System expansion and contraction provisions.
    f. Glazing methods and accessories.
    g. Internal sealant requirements and recommended types.
4. Schedule of finishes.

D. Samples:
1. Submit manufacturers standard samples indicating quality of finish.
2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.
3. Submit samples for each type of glass, 12 x 12 inch size.

E. Sample Warranty: Sample copy of manufacturer's warranty.

F. Close-Out Document Submittals
1. Warranty: Signed warranty.
2. Operations & Maintenance Data: Maintenance instructions.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility:
1. To ensure quality of appearance and performance, obtain materials for systems from either a single manufacturer or from manufacturer approved by systems manufacturer.
2. Installer Qualifications: Certified in writing by system manufacturer as qualified for installation of specified systems.
3. Perform Work in accordance with AAMA SFM-1 and manufacturer's written instructions.
4. Conform to requirements of ANSI A117.1 and local amendments.

1.7 DELIVERY, STORAGE & HANDLING

A. Protect finished surfaces as necessary to prevent damage.

B. Do not use adhesive papers or sprayed coatings which become firmly bonded when exposed to sun.

C. Do not leave coating residue on any surfaces.

D. Replace damaged units.

1.8 PERFORMACE REQUIREMENTS

A. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage, or moisture disposal.

B. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.

C. Provide concealed fastening.

D. Provide entrance and storefront systems, including necessary modifications, to meet specified requirements and maintaining visual design concepts.

E. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.

F. Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.

G. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.

1.9 WARRANTY

A. See Section 01 77 00 – Closeout Procedures, for additional close out submittal information.

B. See Section 01 78 36 – Warranties, for additional warranty requirements.

C. Aluminum Entrance Door Warranty: Provide written warranty jointly signed by manufacturer and installer warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.
   1. Warranty shall cover following:
      a. Complete watertight and airtight system installation within specified tolerances.
      b. System is structurally sound and free from distortion.

D. Finish Warranty: Provide written warranty signed by manufacturer, agreeing to repair or replace work which exhibits defects in finish. “a Defect” is defined as: abnormal aging or deterioration and failure to perform as required. For painted finishes, defects may also be defined to include peeling, chipping, chalking or fading.
   1. Warranty Period for Fluorocarbon Finish: Ten (10) years from date of Substantial Completion.
   2. Warranty Period for Anodized Finish: Two (2) years from date of Substantial Completion.
   3. Finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer’s descriptive standards for 5 years from date of substantial Completion and agreeing to promptly correct defects.

PART 2 PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS

A. Subject to compliance with requirements indicated, provide products by one of the following:
1. Oldcastle BuildingEnvelope, Terrell, TX.
2. EFCO Corporation, Monett, MO.
3. Kawneer Company, Inc., Norcross, GA.
4. TRACO, Cranberry Township, PA.
5. Tubelite, Inc., Reed City, MI.
6. CMI Architectural Products, Inc., Minneapolis, MN.
7. Capital Aluminum & Glass Corp., Bellevue, Ohio

B. Medium Stile Product: Basis-of-design shall be Standard Duty Systems (0.125" wall thickness; 1-3/4" deep) Model 375 - medium stile (8-1/2" bottom rail, 3-1/2" top rail, 4-1/4" verticals) as manufactured by Oldcastle BuildingEnvelope.

~~C. Wide Stile Product: Basis-of-design shall be Standard Duty Systems (0.125" wall thickness; 1-3/4" deep) Model 500 - wide stile (8-1/2" bottom rail, 4-1/2" top rail, 5-1/2" verticals) as manufactured by Oldcastle BuildingEnvelope.~~

2.2 FRAMING MATERIALS AND ACCESSORIES

A. Recycled Content of Aluminum: Provide products with an average recycled content of aluminum products so the minimum post-consumer recycled content plus one-half of pre-consumer recycled content is as follows:
1. Post-Consumer – 50%
2. Pre-Consumer – 25%

B. Aluminum:
1. ASTM B221, alloy 6063-T5 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

C. Internal Reinforcing:
1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
2. Shapes and sizes to suit installation.
3. Steel components factory coated with alkyd type zinc chromate primer complying with FS TT-P-645.

D. Anchorage Devices:
1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.
2. Hot-dip galvanized steel assemblies after fabrication, comply with ASTM A123, 2.0 ounce minimum coating.

E. Fasteners:
1. Aluminum, non-magnetic stainless steel or other non-corrosive materials compatible with items being fastened.

2. Provide concealed fasteners wherever possible.
3. For exposed locations, provide Phillips flathead screws with finish matching item fastened.
4. For concealed locations, provide manufacturer's standard fasteners.

F. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

G. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

H. Touch-Up Primer for Galvanized Components: Zinc oxide conforming with FS TT-P-641.

I. Glazing Gaskets:
1. Compression type design, replaceable, molded or extruded, of neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM).
2. Profile and hardness as required to maintain uniform pressure for watertight seal.

J. Weatherstripping:
1. Wool pile conforming to AAMA 701.2.
2. Provide EPDM or vinyl-blade gasket weatherstripping in bottom door rail, adjustable for contact with threshold.

2.3 GLASS AND GLAZING ACCESSORIES

A. Exterior aluminum doors shall be glazed with 1-inch thick insulated glass and interior aluminum doors shall be glazed with 1/4-inch thick glass.

B. Refer to Section 08 80 00 – Glazing.

2.4 DOOR HARDWARE

A. Refer to Section 08 71 00 – Finish Hardware
1. ALL hardware specified in Section 08 71 00 – "Door Hardware" shall be part of that supplier/contractor bidding ALL hardware. This contractor/installer is only responsible for installing the hardware for the aluminum door systems specified in Section 08 71 00.

2.5 FABRICATION

A. Coordination of Fabrication:
1. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.
2. Fabricate units to withstand loads which will be applied when system is in place.

B. General:
1. Conceal fasteners wherever possible.
2. Reinforce work as necessary for performance requirements, and for support to structure.

3. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators which will prevent contact and corrosion.
4. Comply with Section 08 80 00 for glazing requirements.

C. Entrance Doors:
1. Fabricate with mechanical joints using internal steel reinforcing plates and shear blocks attached with fasteners and by welding.
2. Provide extruded aluminum glazing stops of square design, permanently anchored on security side and removable on opposite side.

D. Hardware:
1. Receive hardware supplied in accordance with Section 08 71 00 and install in accordance with requirements of this Section.
2. Cut, reinforce, drill and tap frames and doors as required to receive hardware.
3. Comply with hardware manufacturer's templates and instructions.
4. Use concealed fasteners wherever possible.

E. Welding:
1. Comply with recommendations of the American Welding Society.
2. Use recommended electrodes and methods to avoid distortion and discoloration.
3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

F. Flashings: Form from sheet aluminum with same finish as extruded sections. Material thickness as required to suit condition without deflection or "oilcanning".

2.6 FINISHES

A. Color Anodized:
1. Conforming to AA-M12C22A44 and AAMA 606.1 and 608.1.
2. Architectural Class II, dark bronze colored anodic coating, 0.7 mil minimum thickness.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions are acceptable for product installation in accordance with manufacturer’s instructions.

3.2 INSTALLATION

A. Erection Tolerances:
1. Limit variations from plumb and level:
a. 1/8 inch in 10'-0" vertically.
b. 1/8 inch in 20'-0" horizontally.
2. Limit variations from theoretical locations: 1/4 inch for any member at any location.

3. Limit offsets in theoretical end-to-end and edge-to-edge alignment: 1/16 inch from flush surfaces not more than 2 inches apart or out-of-flush by more than 1/4 inch.

B. Install doors and hardware in accordance with manufacturer's printed instructions.

C. Set units plumb, level and true to line, without warp or rack of frame.

D. Anchor securely in place, allowing for required movement, including expansion and contraction.

E. Separate dissimilar materials at contact points, including metal in contact with masonry or concrete surfaces, with bituminous paint or preformed separators to prevent contact and corrosion.

F. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weathertight construction.

G. Coordinate installation of perimeter sealant and backing materials between assemblies and adjacent construction in accordance with requirements of Section 07920.

H. Glazing: Refer to requirements of Section 08 80 00.

3.3 ADJUSTING

A. Test door operating functions. Adjust closing and latching speeds and other hardware in accordance with manufacturer's instructions to ensure smooth operation.

3.4 CLEANING

A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, foreign materials and other unsightly marks.

B. Clean metal surfaces exercising care to avoid damage.

END OF SECTION

SECTION 08 43 00

HIGH PERFORMANCE ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.

B. If AIA Document 201 is included in this contract (refer to Section 01 11 00 Summary of Work to verify), it is part of this Section as though bound herein.

C. Related Sections:
1. Section 01 74 19 – Construction Waste Management

1.2 SUMMARY

A. Section includes, but is not limited to:
1. Aluminum curtain wall systems, complete with reinforcing, shims, anchors, and attachment devices.
2. Accessories necessary to complete Work.

B. Products Furnished But Not Installed Under this Section:
1. Inserts and anchoring devices which are to be built into structure.

1.3 REFERENCES

A. Reference Standards:
1. Aluminum Association (AA):
a. DAF-45 – Designation System for Aluminum Finishes.
2. American Architectural Manufacturers Association (AAMA):
a. Aluminum Curtain Wall Design Guide Manual.
b. 501.2- Field Check of Metal Curtain Walls for Water Leakage.
c. 2605 - Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
d. 606.1 - Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum.
e. 607.1 - Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
f. 608.1 - Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.
g. 701.2 - Specifications for Pile Weatherstripping.
h. Manual #10 - Care and Handling of Architectural Aluminum From Shop to Site.
3. American National Standards Institute (ANSI):
a. Z97.1 - Specifications and Methods of Test for Safety Glazing Material Used in Buildings.

4. American Society for Testing and Materials (ASTM):
    a. A36 - Structural Steel.
    b. A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
    c. A525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
    d. A526 - Sheet Steel, Zinc Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
    e. B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
    f. B221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
    g. B308 - Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded.
    h. C716 - Installing Lock-Strip Gaskets and Infill Glazing Materials.
    i. C920 - Elastomeric Joint Sealants.
    j. E283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
    k. E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
    l. E331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
    m. E773 - Test Method for Seal Durability of Sealed Insulating Glass Units.
    n. E774 - Sealed Insulating Glass Units.
5. Consumer Product Safety Commission (CPSC):
    a. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
6. Federal Specifications (FS):
    a. TT-P-645A Primer, Paint, Zinc Chromate, Alkyd Type.
7. Flat Glass Marketing Association (FGMA):
    a. Glazing Manual.
8. Steel Structures Painting Council (SSPC):
    a. SP2 - Hand Tool Cleaning.
    b. SP3 - Power Tool Cleaning.
    c. Paint 12 - Cold-Applied Asphalt Mastic (Extra Thick Film).

1.4 BID REQUIREMENTS

A. If Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents, the Contractor shall include in their bid the most stringent and demanding, or highest cost requirement.

B. Pre-Bid Exceptions: If, for any reason, you deem the designed system is not appropriate or feasible, submit this concern, proposed modification, qualification and / or exception to the drawings and specifications with your bid proposal.

1.5 SUBMITTALS

A. In accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data:
    1. Submit manufacturer's descriptive literature for each manufactured products.
    2. Include information for factory finishes, accessories and other required components.

3. Include color charts for finish indicating manufacturer's standard colors available for selection.

C. Shop Drawings:
1. Submit drawings indicating elevations, detailed design, dimensions, member profiles, joint locations, arrangement of units, member connections, and thickness of various components.
2. Show following items:
a. Details of special shapes.
b. Reinforcing.
c. Drainage details and flow diagrams.
d. Anchorage system.
e. Interfacing with building construction.
f. Provisions for system expansion and contraction.
g. Thermal breaks.
3. Indicate glazing details, methods, locations of various types and thickness of glass and internal sealant requirements.
4. Clearly indicate locations of exposed fasteners and joints for Architect's acceptance.
5. Clearly show where and how manufacturer's system deviates from Contract Drawings and these Specifications.

D. Mock-up Drawings: Submit drawings for mock-ups; refer to Section 01430 for mock-up requirements.

E. Manufacturer's Installation Instructions: Submit manufacturer's printed installation instructions.

F. Samples:
1. Submit manufactures samples indicating quality of finish [in required colors] on alloys used for work, 12 inches long for extrusions and 6 inches square for sheet materials.
2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.

G. Test Reports: Submit certified copies of previous tests reports by independent laboratory substantiating performance of system. Include other supportive data as necessary.

H. Certificates:
1. Submit manufacturer's certification stating that installed system is in compliance with specified requirements.

I. Sample Warranty: Sample copy of manufacturer’s warranty.

J. Close-Out Document Submittals
1. Warranty: Signed warranty.
2. Operations & Maintenance Data: Maintenance instructions.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility:

1. Provide curtainwall systems that are products of a single manufacturer.

B. Qualifications:
1. Engineer Qualifications: Professional Structural Engineer registered in State where Project is located.
2. Installer Qualifications: Certified in writing by system manufacturer as qualified for specified systems.

1.7 DELIVERY, STORAGE & HANDLING

A. Protect finished surfaces to prevent damage.

B. Do not use adhesive papers or sprayed coatings which become firmly bonded when exposed to sun.

C. Do not leave coating residue on surfaces.

D. Deliver glass units with manufacturer's labels intact on interior side of glass. Ensure labels indicate glass thickness, unit location, glass strength and orientation of units in vertical position.

E. Protect glass edges and corners to prevent chipping, cracking, and other similar damages.

1.8 PROJECT CONDITIONS

A. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.

1.9 PERFORMACE REQUIREMENTS

A. General Standard: In addition to requirements shown or specified, comply with applicable provisions of Aluminum Curtain Wall Design Guide Manual for design, materials, fabrication and installation of component parts.

B. Design Requirements:
1. Metal stick framed systems with interior and exterior exposed metal framing.
2. System manufacturer shall provide curtainwall systems, including necessary modifications to meet specified requirements and maintaining visual design concepts.
3. System manufacturer shall provide low profile entrance frames as an integral part of the curtain wall system.
4. Fabricate glazing systems for interior [exterior] glazing at vision areas and exterior [interior] glazing at spandrel areas.
5. Perimeter conditions shall allow for installation tolerances, expansion and contraction of adjacent materials, and sealant manufacturer's recommended joint design.
6. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage or moisture disposal.
7. Requirements shown by details are intended to establish basic dimension of unit, sight lines and profiles of members.

8. Do not assume glass, sealants, and interior finishes contribute to framing member strength, stiffness, or lateral stability.
9. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.
10. Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.
11. Allow for expansion and contraction due to structural movement without detriment to appearance or performance.
12. System shall drain to exterior face of wall, water entering joints and condensation occurring within system by drain holes and gutters of adequate size to evacuate water without infiltration to interior or top of lower light of glass. No visible weep holes allowed.
13. Provide concealed fastening.
14. Metal faces are required to be visually flat under all lighting conditions, subject to acceptance of Architect.
15. Provide uniform color and profile appearance at components exposed to view.
16. Not Permitted: Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system.

C. Performance Requirements:
1. Air infiltration: Air leakage shall not exceed 0.03 cfm per square foot of surface area when tested in accordance with ASTM E283 at differential static pressure of 6.24 psf.
2. Water infiltration: No uncontrolled leakage when tested in accordance with ASTM E331 at test pressure of 9.0 psf.

D. Structural Requirements:
1. Wind loading:
   a. Basic zones:_____.
   b. Corner zones:_____.
   c. Parapet zones:_____.
2. Deflection under uniform loading: When tested in accordance with ASTM E330 at design pressure, maximum deflection of exterior member shall not exceed L/175 of span or 3/4 inch or L/240 + ¼" for spans over 13'-6".
3. Parallel to wall and corner mullion deflections: 75% of glass edge bite or 3/8 inch, whichever is less.
4. Compression flanges of flexural members may be assumed to receive effective lateral bracing only from:
   a. Anchors to building structure and
   b. Horizontal glazing rails or interior trim which are in actual contact with compression flange.
5. Do not regard points of contraflexture as lateral braces or as end points of unbraced length; unbraced length is actual distance between effective lateral braces as defined above.
6. Where framing member reaction is resisted by continuous element, maximum assumed effective length of the resisting element is 4 times bearing length, but not more than 12 inches.

E. Thermal Requirements: Framing systems shall accommodate expansion and contraction movement due to surface temperature differential of 180°F without causing buckling, stress on glass, failure of joint seals, excessive stress on structural elements, reduction of performance or other detrimental effects.

F. Interface:
1. Furnish inserts and anchoring devices which need to be preset and built into structure to appropriate trade.
2. Supply on timely basis to avoid delay in Work.
3. Instruct other trades of proper location and position.
4. Furnish setting drawings, diagrams, templates and installation instructions.

1.10 COORDINATION

A. Pre-installation Meeting:
1. Arrange with Construction Manager, Architect and representatives of window and sealant manufacturer to visit Project site before beginning glazing operations to analyze site conditions, and inspect surfaces and joints to be sealed in order that recommendations may be made should adverse conditions exist.
2. Discuss following items:
a. Weather conditions under which work will be done.
b. Anticipated frequency and extent of joint movement.
c. Joint design.
d. Glazing procedures.

1.11 WARRANTY

A. See Section 01 77 00 – Closeout Procedures, for additional close out submittal information.

B. See Section 01 78 36 – Warranties, for additional warranty requirements.

C. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

D. Warranty shall cover following:
1. Complete watertight and airtight system installation within specified tolerances.
2. Glass and glazing gaskets will not break or "pop" from frames due to design wind, expansion or contraction movement or structural loading.
3. Glazing sealants and gaskets will remain free from abnormal deterioration or dislocation due to sunlight, weather or oxidation.

E. Provide written warranty stating organic coating finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer's descriptive standards for 5 years from date of Substantial Completion and agreeing to promptly correct defects.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Accepted Manufacturers (* indicates the basis of design)
1. Oldcastle (previously Vistawall), Terrell, TX*
a. HP-175 -1-3/4" x 4-1/2", 5-1/4", or 6" mullion profile - front set, exterior loaded, thermally broken system; available with butt glazed verticals, as manufactured by Oldcastle. Can accept 1/4", 1", 1-1/4" glazing and variations in between.
b. Basis-of-design shall be HP-225 - 2-1/4" x 5", 5-3/4", 7", or 7-1/4" mullion profile - front set, exterior loaded; available with butt glazed verticals, as manufactured by Oldcastle. Can accept 1/4", 1", 1-1/4" glazing and variations in between. For applications where longer and wider spans are encountered and/or greater wind load performance is needed.
2. EFCO Corporation, Monett, MO
3. Kawneer Company, Inc., Norcross, GA
4. TRACO, Cranberry Township, PA
5. Tubelite, Inc., Reed City, MI
6. CMI Architectural Products, Inc., Minneapolis, MN
7. YKK AP
8. Capitol Aluminum & Glass Corp., Bellevue, Ohio
9. Or Architect approved equal.

2.2 FRAMING MATERIALS AND ACCESSORIES

A. Aluminum:
1. ASTM B221, alloy 6063-T5 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.
2. Minimum thickness of 0.125 inch for framing members and 0.050 inch for glazing stops and similar components.

B. Internal Reinforcing:
1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
2. Shapes and sizes to suit installation.
3. Shop coat steel components after fabrication with alkyd type zinc chromate primer complying with FS TT-P-645.

C. Inserts and Anchorage Devices:
1. Manufacturer's standard formed or fabricated assemblies, steel or aluminum, of shapes, plates, bars or tubes.
2. Hot-dip galvanize steel assemblies after fabrication, comply with ASTM A123, 2.0 ounce minimum coating.

D. Fasteners:
1. Non-magnetic stainless steel or cadmium plated steel coated with yellow or silver iridescence plating, compatible with materials being fastened.
2. Series 300 stainless steel for exposed locations. Cadmium plated steel with 0.0005 inch plating thickness and color chromate coated for concealed locations.

3. Provide nuts or washers of design having means to prevent disengagement; deforming of fastener threads is not acceptable.
4. Provide concealed fasteners wherever possible.
5. For exposed locations, provide countersunk flathead fasteners with finish matching item fastened.

E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

F. Shims: Non-staining, non-ferrous, type as recommended by system manufacturer.

G. Protective Coatings: Cold applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

H. Glazing Gaskets:
1. Compression type design, replaceable, molded or extruded neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM).
2. Comply with ASTM C509 or C864.
3. Profile and hardness as necessary to maintain uniform pressure for watertight seal.
4. Manufacturer's standard black color.

I. Internal Sealants: Types recommended by system manufacturer to remain permanently elastic, tacky, non-drying, non-migrating and weathertight.

J. Curtain Wall Insulation and Fire Safing: Refer to Sections 07210 and 07840.

K. Spandrel Panels:
1. Type: Aluminum sheet, 1/8 inch thick, suitably reinforced on concealed surface for surface flatness, or prefabricated sandwich panels at manufacturer's option.
2. Surface flatness: 0.015 inch maximum deviation when measured with 6 inch rule.
3. Squareness: 0.002 inch maximum for each inch of length at panel edge.
4. Anchorage: Allow for expansion and contraction, to minimize oilcanning and distortion.

2.3 GLASS AND GLAZING ACCESSORIES

A. Refer to Section 08800.

2.4 SYSTEM FABRICATION

A. Take accurate field measurements to verify required dimensions prior to fabrication.

B. Location of exposed joints are subject to Architect's acceptance.

C. Fabricate components in accord with approved shop drawings. Remove burrs and ease edges. Shop fabricate to greatest extent practicable to minimize field cutting, splicing, and assembly. Disassemble only to extent necessary for shipping and handling limitations.

D. Steel Components:
1. Clean surfaces after fabrication and immediately prior to application of primer in accord with SSPC-SP2 or SSPC-SP3 at manufacturer's option.

2. Apply specified shop coat primer in accord with manufacturer's instructions to provide 2.0 minimum dry film thickness.

E. Fabricate components true to detail and free from defects impairing appearance, strength or durability. [Fabricate custom extrusions indicated and as necessary for complete installation.]

F. Fabricate components to allow for accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections will be flush and weathertight. Ensure slip joints make full, tight contact and are weathertight.

G. Reinforce components as required at anchorage and support points, at joints, and at attachment points for interfacing work.

H. Provide structural reinforcing within framing members where required to maintain rigidity and accommodate design loads.

I. Provide holes or slots, deflector plates, internal flashings, and sealants to accommodate internal weep and drainage system.

J. Head and sill extrusions act as gutter and weep water to exterior; do not penetrate sections with fasteners.

K. Allow for adequate clearance around perimeter of system to enable proper installation and for thermal movement within system.

L. Separate dissimilar metals with protective coating or preformed separators to prevent contact and corrosion.

M. Provide framing members to rigidly glaze spandrel panels and column covers within framing system.

N. Provide special shapes and filler pieces with tight corners.

2.5 FINISH

A. Organic Coating high performance fluorocarbon:
1. Comply with requirements of AAMA 2605.
2. Surfaces cleaned and given conversion coating pre-treatment prior to application of 0.3 mil dry film thickness of epoxy or acrylic primer following recommendations of finish coat manufacturer.
3. Finish coat of [50%] [70%] minimum fluorocarbon resin fused to primed surfaces at temperature recommended by manufacturer, 1.0 mil minimum dry film thickness.
4. Acceptable coatings are Trinar by Akzo Coatings, Inc.; Nubelar by Glidden Company; Fluoroceram by Morton International, Inc.; Duranar by PPG Industries Inc.; and Fluropon by Valspar Corporation.
5. Provide in either 2, 3, or 4 coat system as required for color selected.
6. Manufacturer's standard colors as selected by Architect.

B. Clear Anodized:

1. Conforming to AA-M12C22A31 and AAMA 607.1.
2. Architectural Class I, etched, medium matte, clear anodic coating, 0.7 mil minimum thickness.

C. Color Anodized:
1. Conforming to AA-M12C22A44 and AAMA 606.1 and 608.1.
2. Architectural Class II, dark bronze colored anodic coating, 0.7 mil minimum thickness.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions and applicable provisions of AAMA Aluminum Curtain Wall Design Guide Manual.

B. Align assemblies plumb and level, free of warp or twist, aligning with adjacent Work.

C. Tolerances:
1. imit variations from plumb and level:
   a. 1/8 inch in 20'-0" vertically and horizontally.
   b. 1/4 inch in 40'-0" either direction.
2. Limit offsets in theoretical end-to-end and edge-to-edge alignment:
   a. 1/16 inch where surfaces are flush or less than 1/2 inch out of flush and separated by not more than 2 inches.
   b. 1/8 inch for surfaces separated by more than 2 inches.
3. Step in face: 1/16 inch maximum.
4. Jog in alignment: 1/16 inch maximum.
5. Location: 1/4 inch maximum deviation of any member at any location.
6. Tolerances are not accumulative.

D. Provide attachments and shims to permanently fasten system to building structure.

E. Anchor securely in place, allowing for required movement, including expansion and contraction.

F. Separate dissimilar materials at contract points, including metal in contact with masonry or concrete surfaces, with protective coating or preformed separators to prevent contact and electrolytic action.

G. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weathertight construction.

H. Glazing:

1. Install glazing gaskets and sealants in accordance with manufacturer's instructions without exception, including surface preparations. Refer to Section 08800 for additional requirements.

I. Fire Safing and Curtain Wall Insulation:
1. Install fire safing and curtain wall insulation specified in Section 07210 and 07840.

3.3 FIELD QUALITY CONTROL

A. Field Tests: Independent testing laboratory will perform air infiltration, water infiltration, and] hose test; refer to Section 01411 for requirements.

3.4 CLEANING

A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, and other foreign materials.

B. Clean metal surfaces exercising care to avoid damage.

END OF SECTION

SECTION 08 43 00

INTERIOR ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.

B. If AIA Document 201 is included in this contract (refer to Section 01 11 00 Summary of Work to verify), it is part of this Section as though bound herein.

C. Related Sections:
1. Section 01 74 19 – Construction Waste Management
2. Section 07 92 00 – Joint Sealants
3. Section 08 11 16 – Aluminum Doors
4. Section 08 80 00 – Glazing

1.2 SUMMARY

A. Section includes, but is not limited to:
1. Interior aluminum storefront system, complete with reinforcing, fasteners, shims, anchors, and attachment devices.
2. Interior aluminum storefront system for display cases.
3. Accessories necessary to complete Work.

B. Products Furnished But Not Installed Under this Section:
1. Inserts and anchoring devices which are to be built into structure.

1.3 REFERENCES

A. Reference Standards:
1. Aluminum Association (AA):
a. DAF-45 Designation System for Aluminum Finishes.
2. American Architectural Manufacturers Association (AAMA):
a. 501.2 - Field Check of Metal Curtain Walls for Water Leakage.
b. 2605 - Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
c. 606.1 - Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum.
d. 607.1 - Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
e. 608.1 - Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.
f. 701.2 - Specifications for Pile Weatherstripping.
g. Manual #10 - Care and Handling of Architectural Aluminum From Shop to Site.

h. SFM-1 – Aluminum Storefront and Entrance Manual.

3. American National Standards Institute (ANSI):
   a. Z97.1 - Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
   b. A117.1 – Safety Standards for the Handicapped.
4. American Society for Testing and Materials (ASTM):
   a. A36 - Structural Steel.
   b. A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   c. B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
   d. B221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
   e. B308 - Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded.
   f. E283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
   g. E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
   h. E331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
5. Consumer Product Safety Commission (CPSC):
   a. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
6. Federal Specifications (FS):
   a. TT-P-641G(1) - Primer Coating, Zinc Dust-Zinc Oxide (For Glav. Surfaces)
   b. TT-P-645A - Primer, Paint, Zinc Chromate, Alkyd Type.
7. Steel Structures Painting Council (SSPC):
   a. Paint 12 - Cold-Applied Asphalt Mastic (Extra Thick Film).

1.4 BID REQUIREMENTS

A. If Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents, the Contractor shall include in their bid the most stringent and demanding, or highest cost requirement.

B. Pre-Bid Exceptions: If, for any reason, you deem the designed system is not appropriate or feasible, submit this concern, proposed modification, qualification and / or exception to the drawings and specifications with your bid proposal.

1.5 SUBMITTALS

A. In accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data:
   1. Submit manufacturer's descriptive literature and product specifications.
   2. Include information for factory finishes, hardware, accessories, and other required components.
   3. Include color charts for finish indicating manufacturer's standard colors available for selection.

C. Shop Drawings:

1. Submit shop drawings covering fabrication, installation and finish of specified systems.
2. Include following:
    a. Fully dimensioned plans and elevations with detail coordination keys.
    b. Locations of exposed fasteners and joints.
3. Provide detailed drawings of:
    a. Composite members.
    b. Joint connections for framing systems and for entrance doors.
    c. Anchorage.
    d. System reinforcements.
    e. System expansion and contraction provisions.
    f. Glazing methods and accessories.
    g. Internal sealant requirements.
4. Schedule of finishes.

D. Samples:
1. Submit manufacturers standard samples indicating quality of finish.
2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.

E. Test Reports:
1. Standard Systems: Submit certified copies of previous test reports substantiating performance of system in lieu of retesting. Include other supportive data as necessary.

F. Qualification Data:
1. Submit installer qualifications verifying years of experience.

G. Manufacturer's Installation Instructions: Submit manufacturer's printed installation instructions.

H. Sample Warranty: Sample copy of manufacturer's warranty.

I. Close-Out Document Submittals
1. Warranty: Signed warranty.
2. Operations & Maintenance Data: Maintenance instructions.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility:
1. To ensure quality of appearance and performance, obtain materials for systems from either a single manufacturer or from manufacturer approved by systems manufacturer.

B. Perform Work in accordance with AAMA SFM-1 and manufacturer's written instructions.

C. Conform to requirements of ANSI A117.1 and local amendments.

D. Qualifications:

1. Installer Qualifications: Certified in writing by system manufacturer as qualified for installation of specified systems.

1.7 DELIVERY, STORAGE & HANDLING

A. Protect finished surfaces as necessary to prevent damage.

B. Do not use adhesive papers or sprayed coatings which become firmly bonded when exposed to sun.

C. Do not leave coating residue on any surfaces.

D. Replace damaged units.

1.8 PERFORMACE REQUIREMENTS

A. Design Requirements:
1. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage, or moisture disposal.
2. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.
3. Provide concealed fastening.
4. Provide entrance and storefront systems, including necessary modifications, to meet specified requirements and maintaining visual design concepts.
5. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.
6. Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.
7. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.

B. Performance Requirements:
1. Air infiltration: Air leakage through fixed light areas of storefront shall not exceed 0.06 cfm per square foot of surface area when tested in accordance with ASTM E283 at differential static pressure of 6.24 psf.
2. Water infiltration: No uncontrolled leakage when tested in accordance with ASTM E331 at test pressure of 10 psf.

C. Thermal Requirements:
1. Framing systems shall accommodate expansion and contraction movement due to surface temperature differentials of 180°F without causing buckling, stress on glass, failure of joint seals, excessive stress on structural elements, reduction of performance, or other detrimental effects.

D. Structural Requirements, as measured in accordance with ANSI/ASTM E330:
1. Deflection: Maximum calculated deflection of any framing member in direction normal to plane of wall when subjected to specified design pressures for spans up to and including 13'-6" shall be limited to 1/175 of its clear span and for spans

greater than 13'-6" deflection shall be limited to 1/240 + ¼" of its clear span, except that maximum deflection of members supporting plaster surfaces shall not exceed 1/360 of its span.

E. Testing Requirements: Provide components that have been previously tested by an independent testing laboratory.

1.9 WARRANTY

A. See Section 01 77 00 – Closeout Procedures, for additional close out submittal information.

B. See Section 01 78 36 – Warranties, for additional warranty requirements.

C. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

D. Warranty shall cover following:
1. Complete watertight and airtight system installation within specified tolerances.
2. System is structurally sound and free from distortion.

E. Provide written warranty stating anodized finish will be free from abnormal aging or deterioration beyond manufacturer's descriptive standards for two (2) years from date of Substantial Completion and agreeing to promptly correct defects.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Accepted Manufacturers (* indicates the basis of design)
1. Oldcastle (previously Vistawall), Terrell, TX*
   a. Flush Glazed System, center set, exterior loaded: Series 2000; 1-3/4" x 4-1/2" mullion profile; accommodates ¼" glazing only.
   b. Flush Glazed System, center set, exterior loaded: Series 3000; For storefront requiring ½" glazing
   c. These products to be used on interior applications only.
2. Kawneer Company, Inc., Norcross, GA
3. Wausau Metals Corp., Wausau, WI
4. YKK AP
5. Capitol Aluminum & Glass Corp., Bellevue, Ohio
6. Or Architect approved equal.

2.2 FRAMING MATERIALS AND ACCESSORIES

A. Aluminum:
1. ASTM B221, alloy 6063-T5 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.
2. Minimum thickness of 0.078 inch for main framing members.

B. Internal Reinforcing:
   1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
   2. Shapes and sizes to suit installation.
   3. Steel components factory coated with alkyd type zinc chromate primer complying with FS TT-P-645.

C. Anchorage Devices:
   1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.
   2. Hot-dip galvanize steel assemblies after fabrication, comply with ASTM A123, 2.0 ounce minimum coating.

D. Fasteners:
   1. Aluminum, non-magnetic stainless steel or other non-corrosive materials compatible with items being fastened.
   2. Provide concealed fasteners wherever possible.
   3. For exposed locations, provide Phillips flathead screws with finish matching item fastened.
   4. For concealed locations, provide manufacturer's standard fasteners.

E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

F. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

G. Touch-Up Primer for Galvanized Components: Zinc oxide conforming with FS TT-P-641.

H. Glazing Gaskets:
   1. Compression type design, replaceable, molded or extruded, of neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM).
   2. Profile and hardness as required to maintain uniform pressure for watertight seal.

I. Internal Sealants and Baffles.

2.3 GLASS AND GLAZING ACCESSORIES

A. Refer to Section 08800.

2.4 FABRICATION

A. Coordination of Fabrication:
   1. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.
   2. Fabricate units to withstand loads which will be applied when system is in place.

B. General
   1. Conceal fasteners wherever possible.
   2. Reinforce work as necessary for performance requirements, and for support to structure.

3. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators which will prevent contact and corrosion.
4. Comply with Section 08800 for glazing requirements.

C. Aluminum Framing:
1. Provide members of size, shape and profile indicated, designed to provide for glazing from exterior.
2. Fabricate frame assemblies with joints straight and tight fitting.
3. Reinforce internally with structural members as necessary to support design loads.
4. Maintain accurate relation of planes and angles, with hairline fit of contacting members.
5. Seal horizontals and direct moisture accumulation to exterior.
6. Provide flashings and other materials used internally or externally that are corrosive resistant, non-staining, non-bleeding and compatible with adjoining materials.
7. Provide manufacturer's extrusions and accessories to accommodate expansion and contraction due to temperature changes without detrimental to appearance or performance.
8. Make provisions in framing for minimum edge clearance, nominal edge cover and nominal pocket width for thickness and type of glazing or infill used in accordance with recommendations of manufacturer and FGMA Glazing Manual.

D. Welding:
1. Comply with recommendations of the American Welding Society.
2. Use recommended electrodes and methods to avoid distortion and discoloration.
3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

E. Flashings: Form from sheet aluminum with same finish as extruded sections. Material thickness as required to suit condition without deflection or "oilcanning".

2.5 FINISHES

A. Color Anodized:
1. Conforming to AA-M12C22A44 and AAMA 606.1 and 608.1.
2. Architectural Class II, dark bronze colored anodic coating, 0.7 mil minimum thickness.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.

3.2 INSTALLATION

A. Erection Tolerances:
1. Limit variations from plumb and level:

a. 1/8 inch in 10'-0" vertically.
b. 1/8 inch in 20'-0" horizontally.

2. Limit variations from theoretical locations: 1/4 inch for any member at any location.
3. Limit offsets in theoretical end-to-end and edge-to-edge alignment: 1/16 inch from flush surfaces not more than 2 inches apart or out-of-flush by more than 1/4 inch.

B. Set units plumb, level and true to line, without warp or rack of frame.

C. Anchor securely in place, allowing for required movement, including expansion and contraction.

D. Separate dissimilar materials at contact points, including metal in contact with masonry or concrete surfaces, with bituminous paint or preformed separators to prevent contact and corrosion.

E. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weathertight construction.

F. Coordinate installation of perimeter sealant and backing materials between assemblies and adjacent construction in accordance with requirements of Section 07920.

G. Glazing: Refer to requirements of Section 08800.

3.3 CLEANING

A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, foreign materials and other unsightly marks.

B. Clean metal surfaces exercising care to avoid damage.

END OF SECTION

SECTION 08 71 13

AUTOMATIC DOOR OPERATORS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.

B. If AIA Document 201 is included in this contract (refer to Section 01 11 00 Summary of Work to verify), it is part of this Section as though bound herein.

C. Related Sections:
1. Section 01 74 19 – Construction Waste Management
2. Section 08 41 13 – Aluminum-Framed Entrances & Storefronts
3. Division 16 – Electrical

1.2 SUMMARY

A. Section includes, but is not limited to:
1. Electromechanical low-energy powered door operators, opening force not exceeding 8.5 lb-force (38 N) Middle-Swing Operator by Dor-O-Matic

1.3 REFERENCES

A. Reference Standards:
1. ANSI/BHMA A156.19 – American National Standard for Power Assist & Low-Energy Power Operated Doors.
2. UL 325 – Standard for Door, Drapery, Gate, Louver and Window Operators and Systems.

1.4 BID REQUIREMENTS

A. If Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents, the Contractor shall include in their bid the most stringent and demanding, or highest cost requirement.

B. Pre-Bid Exceptions: If, for any reason, you deem the designed system is not appropriate or feasible, submit this concern, proposed modification, qualification and / or exception to the drawings and specifications with your bid proposal.

1.5 SUBMITTALS

A. In accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data: Manufacturer's catalog data, detail sheets and specifications.

C. Sample Warranty: Sample copy of manufacturer's warranty.

D. Close-Out Document Submittals
   1. Warranty: Signed warranty.
   2. Operations & Maintenance Data: Operating and maintenance instructions, parts lists and wiring diagrams. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility: Provide all door operators from a single manufacturer

B. Qualifications:
   1. Installer Qualifications: Factory-trained with minimum 3 years experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Accepted Manufacturers (* indicates the basis of design)
   1. Dor-O-Matic, an Ingersoll-Rand business*
   2. Stanley Door
   3. Or Architect approved equal.

2.2 OPERATORS

A. Operation: Push button, push plate, switch-activated, manual or field-programmable manual/electric power assisted Push N' Go opening; comply with ANSI A156.19 and UL 325.
   1. Manual opening force: 8.5 lb-force (38 N) maximum.
   2. Closing force: 5 lb-force (22 N).
   3. Factory-set door hold-open voltage.
   4. Manual "Off/Auto/Hold-Open" switch.
   5. Fail safe: In event of power failure, make door operate manually with controlled spring close as though equipped with a #3 manual door closer, without damage to operator components.
   6. Provide adjustment by microprocessor control in a self-contained housing for:
      a. Opening speed.
      b. Backcheck speed.
      c. Hold-open, from 1 to 30 seconds.
      d. Closing speed.
      e. Opening force.
      f. Acceleration during opening and recycling, for soft start.
      g. Door will safely stop and reverse if an object is encountered in the opening cycle.

B. Equipment: Completely electromechanical; comply with ANSI A156.19 and UL 325.

1. Control box and motor/gear box: Contained in aluminum housing; precision-machined gears and bearing seats and all-weather lubricant, mounted on vibration isolators. No exposed gears.
    a. Design for surface-applied application.
    b. Design for interior application.
    c. Design for exterior application.

C. Gears: Manufactured by operator manufacturer specifically for operators.

D. Motor: DC permanent magnet motor with shielded ball bearings. Stop motor when door stops or is fully open and when breakaway is operated.

E. Door operating arm: Forged steel, attached at natural pivot point of door.
    1. Exposed arms: Factory-painted and finished to match operator enclosure.

F. Overhead concealed butt hung. Provide concealing arm channel.

G. "Off/Auto/Hold-Open" switch: Three-position rocker or key type and slide arm for top of door.

H. Control circuits for actuators and safeties: Low-voltage, NEC Class II.

I. Service conditions: Satisfactory operation between -30 degrees F (-34 degrees C) and 160 degrees F (71 degrees C).

J. Power supply required: 115 VAC (15 amp circuit breaker, one per unit).

K. Microprocessor control: 115 VAC. Do not use microswitches.

L. Surface-Applied Mounting: On surface of door frame/wall, mounted 1" (25.4 mm) above top of door.

M. Provide bottom loading header for access to controls and removable components without removal of door or operator.

N. Finish of Exposed Headers: Clear Anodized.

2.3 ACTIVATORS

A. Make: PBS-1 by BEA

B. Dimensions: 4.75"x4.75"x0.625" square

C. Description: Handicap with PUSH TO OPEN

D. Material: Stainless steel.

2.4 MARKINGS

A. Decals: Visible from either side, instructing the user as to the operation and function of the door.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that door openings and doors are properly installed and ready for installation of
   1. Door operators.

B. Verify that electrical service is available, properly located and of proper type.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions; comply with ANSI A156.19.

B. Verify that electrical connections are made correctly and with dedicated grounding.

3.3 ADJUST

A. Adjust door operators for proper operation, without binding or scraping and without excessive noise.

B. Supply Owner/Contractor with keys if required.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.

B. If AIA Document 201 is included in this contract (refer to Section 01 11 00 Summary of Work to verify), it is part of this Section as though bound herein.

C. Related Sections:
1. Section 01 74 19 – Construction Waste Management
2. Section 10 28 13 – Toilet Accessories (mirror units generally in restrooms)

1.2 SUMMARY

A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
1. Doors; interior and exterior (less All-Glass Entrances).
2. Interior hollow metal frames.
3. Aluminum Windows
4. Curtain wall framing.
5. Storefront framing; interior and exterior.
6. Mirror glass.

1.3 DEFINITIONS

A. Manufacturers of Glass Products: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thickness: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.

D. Deterioration of Coated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications or deterioration in metallic coating.

E. Deterioration of Insulating Glass: Failure of hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written

instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surface of glass.

F. Specific Hazardous Locations: The following shall be considered specific hazardous locations for purposes of glazing.
   1. Glazing in ingress and means of egress doors.
   2. Glazing adjacent to a door and within the same wall plane as the door whose nearest vertical edge is within 24 inches of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface, unless an intervening interior permanent wall is between the door and the glazing.
   3. Glazing in fixed panels having a glazed area in excess of 9 square feet with the lowest edge less than 18 inches above the finish floor level or walking surface within 36 inches of such glazing, unless a horizontal member not less than 1-1/2 inches in width is located between 24 inches and 36 inches above the walking surface.

1.4 BID REQUIREMENTS

A. If Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents, the Contractor shall include in their bid the most stringent and demanding, or highest cost requirement.

B. Pre-Bid Exceptions: If, for any reason, you deem the designed system is not appropriate or feasible, submit this concern, proposed modification, qualification and / or exception to the drawings and specifications with your bid proposal.

1.5 SUBMITTALS

A. In accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's technical data for each glass type and glazing materials required, including installation and maintenance instructions.

C. Samples:
   1. 12-inch square, for each type of glass product indicated, other than monolithic clear float glass.
   2. 12-inch long samples of each color required for each type of sealant or gasket exposed to view.

D. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

E. Manufacturer's Certificates:
   1. Certificate on shading coefficient.
   2. Certificate on "R" value when value is specified.

F. Sample Warranty: Sample copy of manufacturer's warranty, as specified in this section.

G. Close-Out Document Submittals
   1. Warranty: Signed warranty.
   2. Operations & Maintenance Data: Operation & maintenance instructions. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance.

B. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances and regulations of Federal, State and Municipal authorities having jurisdiction. Obtain necessary approvals from all such authorities.

C. Source Limitations for Glass: Obtain the following through on source from a single manufacturer for each glass type: clear float glass, coated float glass, laminated glass and insulated glass.

D. Source Limitations for Glass Sputter-Coated with Solar-Control Low-E Coating: Where solar-control low-E coatings of a primary glass manufacturer that has established a certified fabricator program is specified, obtain sputter-coated solar-control low-E-coated glass in fabricated units from a manufacturer that is certified by coated-glass manufacturer.

E. Source Limitations for Glazing Accessories: Obtain glazing accessories through one source from a single manufacturer for each product and installation method indicated.

F. Safety Glazing Products: Comply with testing requirements in Consumer Product Safety Commission CPSC 16 CFR 1201.
   1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Certification Council or another certification agency acceptable to authorities having jurisdiction.
   2. Where glazing units, including Kind FT glass and laminated glass, are specified in Part 2 articles for glazing lites more than 9 sq. ft. in exposed surface area of one side, provide glazing products that comply with Category II materials, for lites 9 sq. ft. or less in exposed surface area of one side, provide glazing products that comply with Category I or II materials, except for hazardous locations where Category II materials are required by 16 CFR 1201 and regulations of authorties having jurisdiction.

G. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
   1. GANA Publications: GANA Laminated Division's "Laminated Glass Design Guide" and GANA's "Glazing Manual".
   2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."

3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Sloped Glazing Guidelines."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."

H. Thermal Movement: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on materials' actual surfaces temperatures due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

I. Insulating-Glass Certification Program: Permanently marked on either spacers or on at least one component lite of units with appropriate certification label of the following testing and inspection agency:
1. Insulating Glass Certification Council.

1.7 DELIVERY, STORAGE & HANDLING

A. Deliver glass to site in suitable containers that will protect glass from the weather and from breakage. Carefully store material, as directed, in a safe place where breakage can be reduced to a minimum. Deliver sufficient glass to allow for normal breakage. Glazing compounds shall arrive at the project site in labeled containers which have not been opened.

1.8 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing materials manufacturer or when glazing channel substrates are wet from rain, frost, condensation, or other causes.
1. Install liquid sealants at ambient and substrate temperatures above 40 degrees F.

1.9 PERFORMACE REQUIREMENTS

A. General: Provide glazing systems that are produced, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable), without failure including loss or glass breakage attributable to the following: defective manufacturer, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; and other defects in construction.

B. Glass Design: Glass thicknesses as indicated are for detailing only. Confirm glass thicknesses by analyzing Project loads and in service conditions. Provide glass lites for the various size openings in the thicknesses and strengths (annealed or heat-treated) to meet or exceed the following criteria:
a. Select glass thickness to withstand dead loads, winds loads and snow loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7.
b. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
c. Minimum glass thickness, nominally, of lites in exterior walls is 6.0 mm.

C. Mirror Glass:

1. Safety Glazing Standard: Where safety glass mirrors are indicated or required by authorities having jurisdiction, provide types or products indicated which comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II materials.

1.10 WARRANTY

A. See Section 01 77 00 – Closeout Procedures, for additional close out submittal information.

B. See Section 01 78 36 – Warranties, for additional warranty requirements.

C. General: Warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

D. Manufacturer's Warranty on Insulating Glass: Submit written warranty signed by manufacturer of insulating glass agreeing to furnish replacements for insulating glass units that deteriorate, f.o.b. point of manufacturer, freight allowed Project site, within specified warranty period indicated below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to glass manufacturer's published instructions.
   1. Warranty Period: Manufacturer's standard but not less than 10 years after date of Substantial Completion.

E. Manufacturer's Warranty on Laminated Glass: Submit written warranty signed by laminated glass manufacturer agreeing to furnish replacements for laminated glass units that deteriorate, f.o.b. point of manufacturer, freight allowed project site within specified warranty period indicated below. Warranty shall cover deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to glass manufacturer's published instructions.
   1. Warranty Period: 5 years from date of Substantial Completion.

F. Manufacturer's Warranty on Coated Glass: Submit written warranty signed by coated glass manufacturer agreeing to furnish replacements for coated glass units that deteriorate, f.o.b. point of manufacturer, freight allowed project site within specified warranty period indicated below. Warranty shall cover deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to glass manufacturer's published instructions.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Primary Glass; provide products from one of the following:
   1. Guardian Industries Corp.
   2. LOF / Pilkington
   3. PPG Industries, Inc.

4. AFG Industries, Inc.
5. Visteon Float Glass Operations

B. Laminated Glass: Provide laminated glass from one of the following:
1. Laminated Glass Corp.
2. Guardian Industries Corp.
3. Northwestern Industries, Inc.
4. AFG Industries, Inc.

C. Fabricators: Subject to compliance with requirements, provide glass from one of the following:
1. Guardian Industries Corp.
2. Interpane Glass Company
3. Pilkington
4. PPG Industries, Inc.
5. AFG Industries, Inc.
6. Viracon
7. Vitro

2.2 GLASS PRODUCTS

A. Primary Glass Products:
1. Primary Glass Standard: Provide primary glass which complies with ASTM C 1036 requirements, including those indicated by reference to type, class, quality, and, if applicable, form, finish, mesh and pattern.
2. Clear Float Glass: Type I (transparent flat glass), Class 1 (clear), Quality q3 (glazing select).

B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent flat glass), Quality q3, of class, kind, and condition indicated.
1. Fabrication process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
2. Provide Kind HS (heat-strengthened) float glass in place of annealed float glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.
3. For uncoated glass, comply with requirements for Condition A.
4. For coated vision glass, comply with requirements for Condition C (other uncoated glass).
5. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is required or indicated.

C. Pyrolytic-Coated Float Glass: ASTM C 1376, float glass with metallic-oxide coating applied by pyrolytic deposition process during initial manufacture, and complying with other requirements specified.

D. Laminated Glass Products:
1. General:

a. Laminated Glass Products: Comply with ASTM C 1172; Refer to primary and heat-treated glass requirements relating to glass products comprising laminated glass products.
b. Provide clear polyvinyl butyral (PVB) plasticized resin sheeting for laminating panes of glass showing no tendency to bubble, discolor or lose physical or mechanical properties after laminating and installation, clear, unless otherwise indicated, one piece, no seams.
c. Use 0.060 inch thick PVB for Acoustical Glazing.
d. Laminating Process: Fabricate by laminating lites with interlayer in autoclave with heat plus pressure.

E. Mirror Glass:
1. Safety Glass Mirrors
a. Tapeback: Provide annealed float glass mirrors with manufacturer applied safety tape applied to the back surface and complying with FS DD-G-1403, ANSIZ97.1-1984 CPSC 16 CFR 1201 Category II.
2. Mirror Glass Production and Fabrication
a. Glass coating: coat second surface of glass, unless otherwise indicated, with glass coating system complying with FS DD-M-00411 requirements and consisting of successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard protective organic coating.
3. Mirror Sizes: After application of glass coating, cut mirror glass to sizes as shown on Drawings and in ¼ inch glass thickness.
4. Edges: Seal edges after treatment to prevent chemical or atmospheric penetration of backing. Preform edge treatment and sealing in factory immediately after cutting to final size.
5. Mastic: Mirro-Mastic, Palmer Products Corp., Louisville, Kentucky.

F. Interior Glazing:
1. Glass for Vestibule Doors, Sidelights, Interior Windows and Transoms: ¼ inch thick clear safety glass.

G. Low-E Insulating Glass:
1. Overall thickness: 1" insulated glass
2. Outboard Lite: 1/4" VE1-2M Low E #2 Surface Heat-Strengthened
3. Air Space: 1/2" with black silicone seal
4. Inboard Lite: 1/4" Clear Heat-Strengthened
5. Performance Requirements:
a. Visible Lite Transmittance: 70%
b. Solar Engery Transmittance: 33%
c. U-V Transmittance: 10%
d. Visible Light Reflectance Exterior: 11%
e. Visible Light Reflectance Interior: 12%
f. Solar Energy Reflectance: 31%
g. Winter Nightime U-Value: 0.29
h. Summer Daytime U-Value: 0.26
i. Shading Coefficient: 0.44
j. Solar Heat Gain Coefficient: 0.38

2.3 GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements.
   1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
   2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
   3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Elastomeric Glazing Sealants: As recommended in writing by sealant and gasket manufacturers. Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrate. Refer to Division 7 – Section "Joint Sealants".

2.4 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based elastomeric tape with solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
   1. AAMA 804.3 tape, where indicated.
   2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
   3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

2.5 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
   1. Neoprene, ASTM C 864.
   2. EPDM, ASTM C 864.
   3. Thermoplastic polyolefin rubber, ASTM C 1115.
   4. Any material indicated above.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
   1. Neoprene.
   2. EPDM.
   3. Thermoplastic polyolefin rubber.
   4. Any material indicated above.

2.6 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Compressible Filler Rod: Shall be closed-cell or waterproof jacketed rodstock of synthetic rubber or plastic foam with proven compatibility with sealants used. Rod shall be flexible and resilient with 5-10 PSI compression strength for 25 percent deflection.

2.7 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine glass framing, with glazier present, for compliance with the following:
   1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
   2. Presence and functioning of weep system.
   3. Minimum required face or edge clearances.
   4. Effective sealing between joints of glass framing members.

3.2 PREPARATION FOR GLAZING

A. Clean the glazing channel or other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to the substrate. Remove lacquer from metal surfaces wherever elastomeric sealants are used.

B. Apply primer or sealer to joint surfaces wherever recommended by sealant manufacturer.

3.3 INSTALLATION

A. Watertight and airtight installation of each piece of glass is required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors) without failure, including loss or breakage of glass, failure of sealants or gaskets to remain watertight and air tight, deterioration of glazing materials, and other defects in the Work.

B. Protect glass from edge damage at all times during handling, installation, and operation of the building.

C. Glazing channel dimensions as shown are intended to provide for necessary minimum bite on the glass, minimum edge clearance, and adequate sealant thicknesses with reasonable tolerances. The glazier is responsible for correct glass size for each opening within the tolerances and necessary dimensions established.

D. Comply with combined recommendations of glass manufacturer and manufacturer of sealants and other materials used in glazing and their technical representatives except where more stringent requirements are shown or specified.

E. Comply with "Glazing Manual" by Flat Glass Marketing Association and the manufacturers of the glass and glazing materials except as shown and specified otherwise.

F. Inspect each piece of glass immediately before installation and eliminate those which have observable edge damage or face imperfections.

G. Unify appearance of each series of lights by setting each piece to match others as nearly as possible. Inspect each piece and set with pattern, draw, and bow oriented in the same direction as other pieces.

3.4 GLAZING

A. Install setting blocks of proper size at quarter points of sill rabbet. Set blocks in thin course of the heel bead compound.

B. Provide spacers insides and out and of proper size and spacing for glass sizes larger than 50 united inches, except where gaskets are used for glazing. Provides 1/8 inch minimum bite of spacers on glass and use thickness equal to sealant width; except with sealant tape, use thickness slightly less than final compressed thickness of tape.

C. Voids and Filler Rods: Prevent exudation of sealant or compound by forming voids or installing filler rods in the channel at the heel of jambs and head (do not leave voids in the sill channels) except as otherwise indicated, depending on light size, thickness and type of glass, and complying with manufacturer's recommendations.

D. Do not attempt to cut, seam, nip, or abrade glass which is tempered, heat strengthened or coated.

E. Force sealants into channel to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and channel surfaces.

F. Tool exposed surfaces of glazing liquids and compounds to provide a substantial "wash" away from the glass. Install pressurized tapes and gaskets to protrude slightly out of the channel, so as to eliminate dirt and moisture pockets.

G. Clean and trim excess glazing materials from the glass and stops or frames promptly after installation and eliminate stains and discoloration.

H. Where wedge shaped gaskets are driven into one side of the channel to pressurize the sealant or gasket on the opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when subjected to dynamic movement. Anchor gasket to stop with matching ribs or by proven adhesives including embedment of gasket tail in cured heel bead.

3.5 MIRROR INSTALLATION

A. Mirrors shall be butt mounted to unpainted wall with Mastic and mechanically fastened to comply with manufacturer's recommendations.

3.6 CURE, PROTECTION, AND CLEANING

A. Cure glazing sealants and compounds in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength, and surface durability.

B. Protect exterior glass from breakage immediately upon installation by attachment of crossed streamers to framing held away from glass. Do not apply markers to surfaces of glass.

C. Remove and replace glass which is broken, chipped, cracked, abraded, or damaged in other ways during the construction period including natural causes, accidents, and vandalism.

D. Maintain glass in a reasonably clean condition during construction, so that it will not be damaged by corrosive action and will not contribute (by wash-off) to the deterioration of glazing materials and other work.

E. Wash and polish glass on both faces not more than 4 days prior to Owner's acceptance of the work in each area. Comply with glass manufacturer's recommendations.

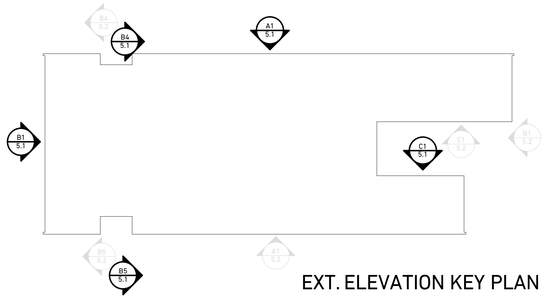
3.7 GLASS SCHEDULE

A. Exterior - Curtain Wall & "FG' Aluminum Doors:
   1. Solarscreen Radiant Low-E Insulating Glass:
   2. Insulating Spandrel Glass:

B. Interior:
   1. Glass for Vestibule Doors, Sidelights, and Transoms: ¼ inch thick clear safety glass.
   2. Glass for Interior Aluminum Storefront: ¼ inch clear safety glass.
   3. Glass for Interior Fire-Rated Frame Assemblies rated 60 minutes or more: See Section 08 81 01 – Fire-Rated Glass and Framing.
   4. Glass for Interior Non-Fire Rated Doors and Windows: ¼ inch clear safety glass.
   5. Large Mirrors: Where indicated.

6. Interior 1/4 inch thick Spandrel Glass: Where indicated. Custom color as selected by A/E.

END OF SECTION



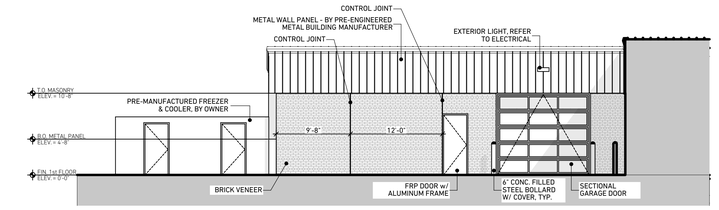
EXT. ELEVATION KEY PLAN

EXTERIOR ELEVATION NOTES/LEGEND

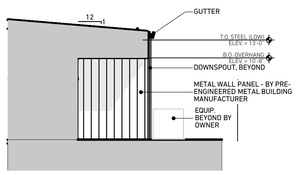
- BRICK VENEER **"TYPE B"**
- METAL WALL PANEL **"TYPE M"**
- STANDING SEAM METAL ROOFING **"C"**
- INDICATES FLOOR ELEVATIONS; TOP OF STEEL (T.O.S.); TOP OF MASONRY (T.O.M.) ELEVATIONS (REFER TO STEEL FRAMING DRAWINGS, BUILDING SECTIONS AND WALL SECTIONS ALSO FOR MORE INFORMATION)
- 4 / 12 — INDICATES ROOF PITCH / SLOPE
- INDICATED FINISH GRADE (SEE SITE DRAWINGS)

NOTES:

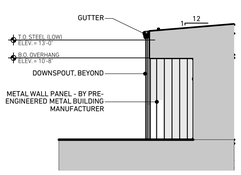
1. SEE '8' SERIES DRAWING FOR EXTERIOR WINDOW AND DOOR ELEVATIONS AND INFORMATION.
2. EXTERIOR ELEVATIONS INDICATE EXTENT OF MATERIALS AND BUILDING LAYOUT / ELEVATION ONLY. SEE '7' SERIES DRAWING FOR COMPLETE WALL SECTIONS / DETAILS.



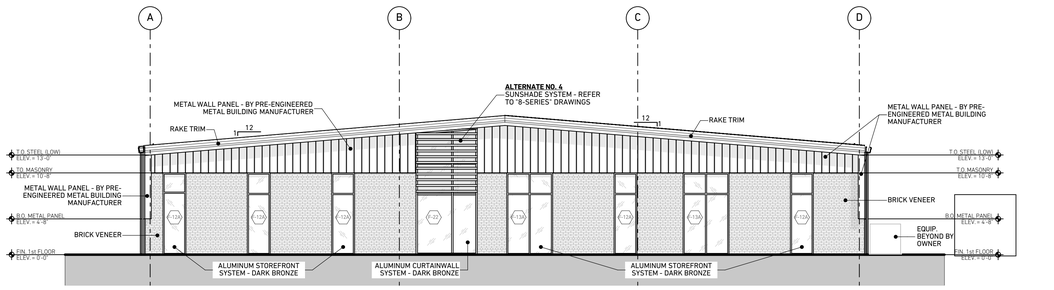
C1 PARTIAL NORTH ELEVATION
SCALE: 1/8" = 1'-0"



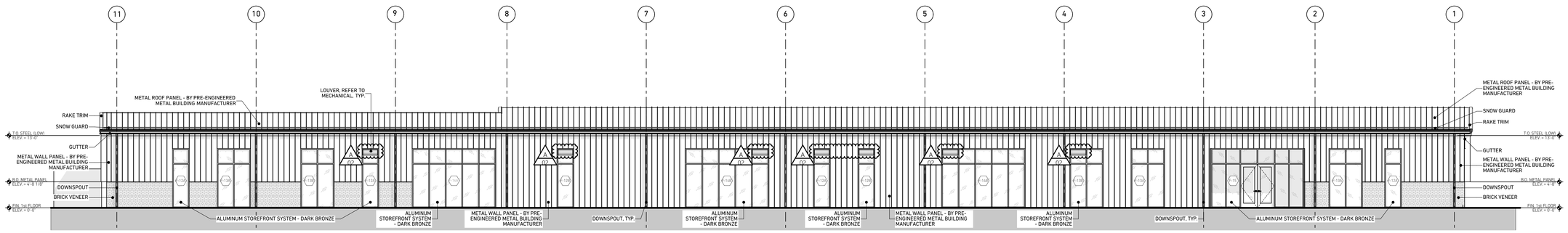
B5 PARTIAL WEST ELEVATION
SCALE: 1/8" = 1'-0"



B4 PARTIAL WEST ELEVATION
SCALE: 1/8" = 1'-0"



B1 WEST ELEVATION
SCALE: 1/8" = 1'-0"



A1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

SóL Harris/Day Architecture

STATE OF OHIO
JUSTIN GANTZ
1616769
REGISTERED ARCHITECT
JUSTIN GANTZ, LICENSE #1616769
EXPIRATION DATE: 12/31/2025

Belmont College Construction Trades Building

45869 Hammond Rd Connector
St Clairsville, OH, 43950

EDA AWARD NUMBER: 06-01-06458

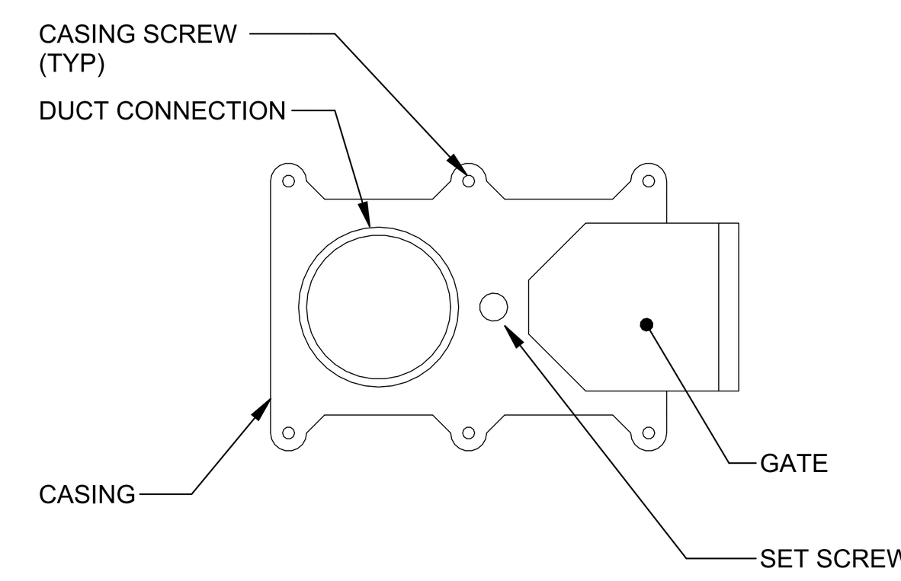
100% CONSTRUCTION DOCUMENTS: 05/21/2025

DRAWING UPDATES

1	ADDENDUM NO 2	7.24.2025

EXTERIOR ELEVATIONS

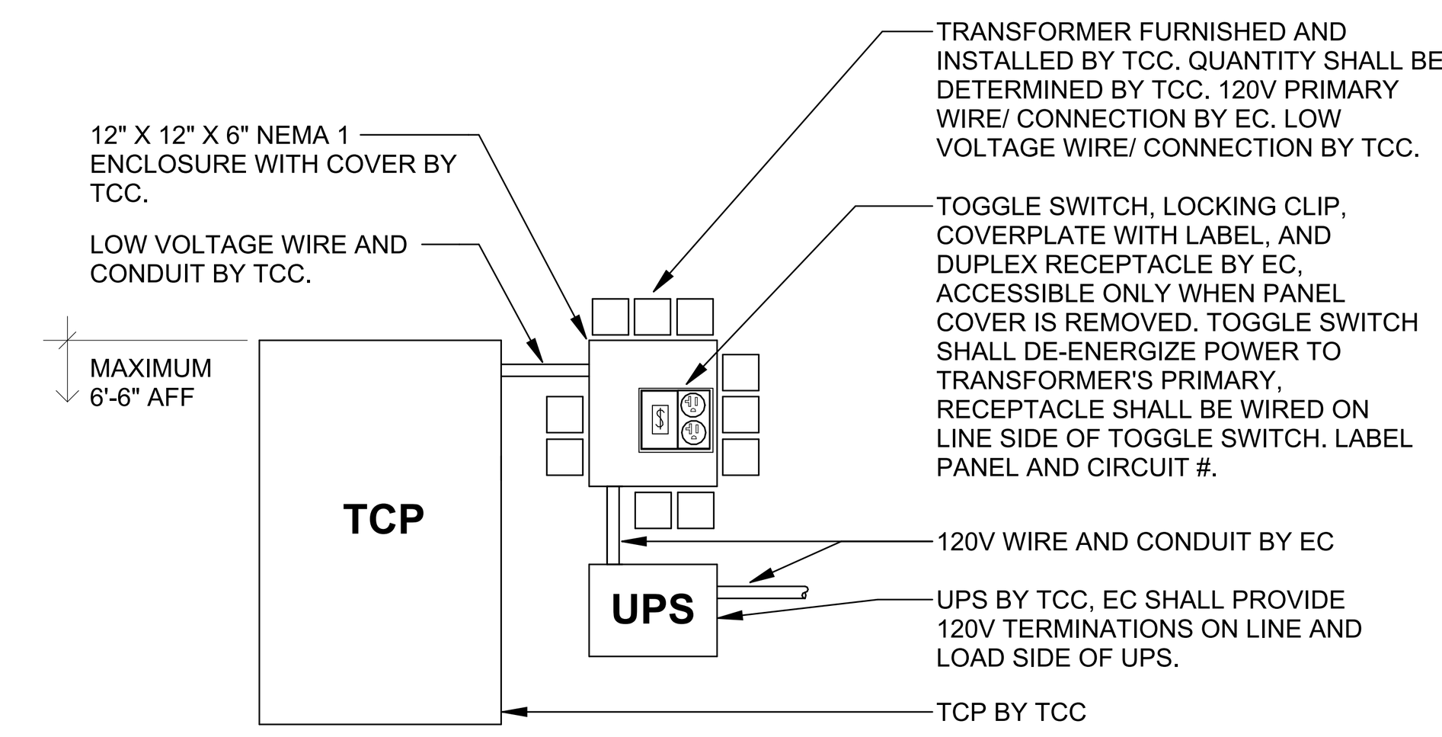
5.1



NOTES:
A. BLAST GATE MATERIALS SHALL MATCH MATERIAL OF CONNECTING DUCT.
B. BLAST GATES SHALL BE PROVIDED BY DUST COLLECTION DUCT MANUFACTURER.
C. BLAST GATES SHALL BE APPLIED AT ALL SHOP EQUIPMENT, SWEEP, AND HOOD CONNECTIONS TO THE DUST COLLECTION SYSTEM.

DUST COLLECTION BLAST GATE DETAIL

SCALE: NONE

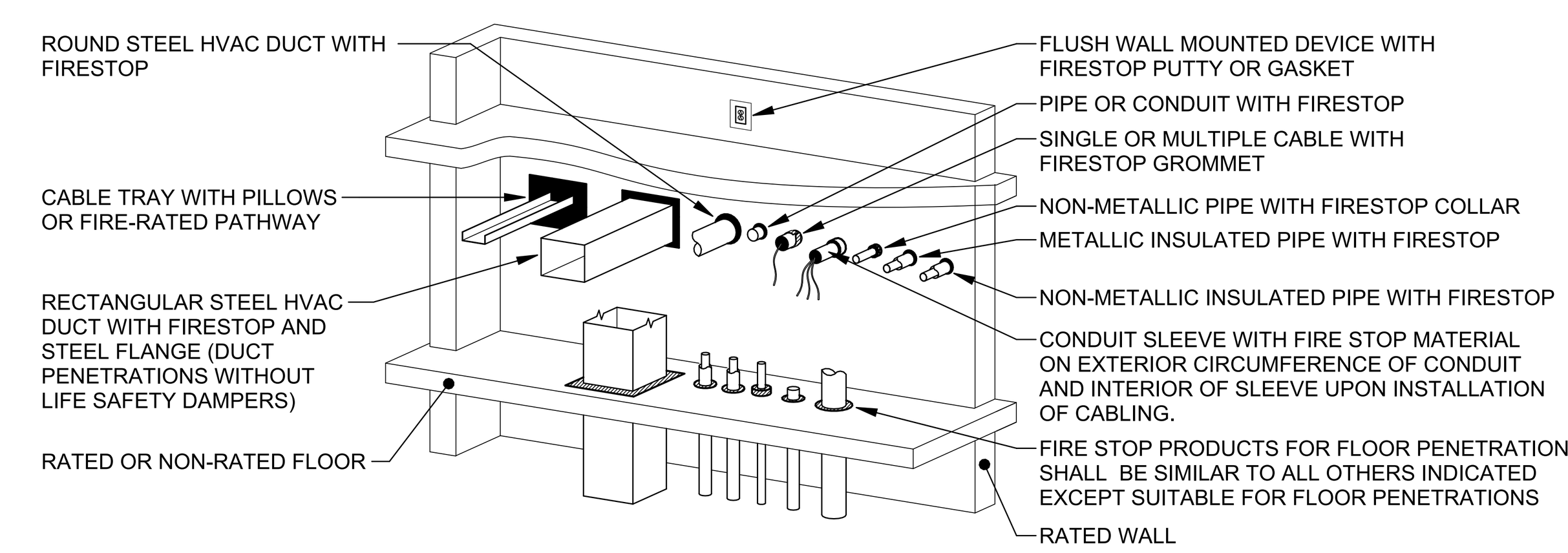


NOTES:
A. TCP SHALL ONLY CONTAIN LOW VOLTAGE DEVICES AND WIRE.
B. PROVIDE UPS AS SPECIFIED. REFER TO SPECIFICATION 23 09 00.
C. TCC SHALL PROVIDE LABELS AS FOLLOWS:
- NUMBER EACH TRANSFORMER (1,2,3,...)
- INSIDE COVER: LIST OF DEVICES SERVED BY EACH TRANSFORMER.

D. DETAIL IS FOR REFERENCE ONLY. FINAL LAYOUT/CONFIGURATION SHALL BE FIELD DETERMINED AND COORDINATED WITH EC.
E. WHEN TCP INCLUDES A DATA OUTLET, TCC SHALL PROVIDE ROUGH-IN BOX INSIDE PANEL AND 1" CONDUIT STUB OUT FOR TELECOMMUNICATIONS CABLE. CABLE SHALL BE TERMINATED ON BISCUIT JACK WITHIN PANEL ENCLOSURE - FINAL CONNECTION WITH PATCH CORD.

TEMPERATURE CONTROL PANEL (TCP) DETAIL

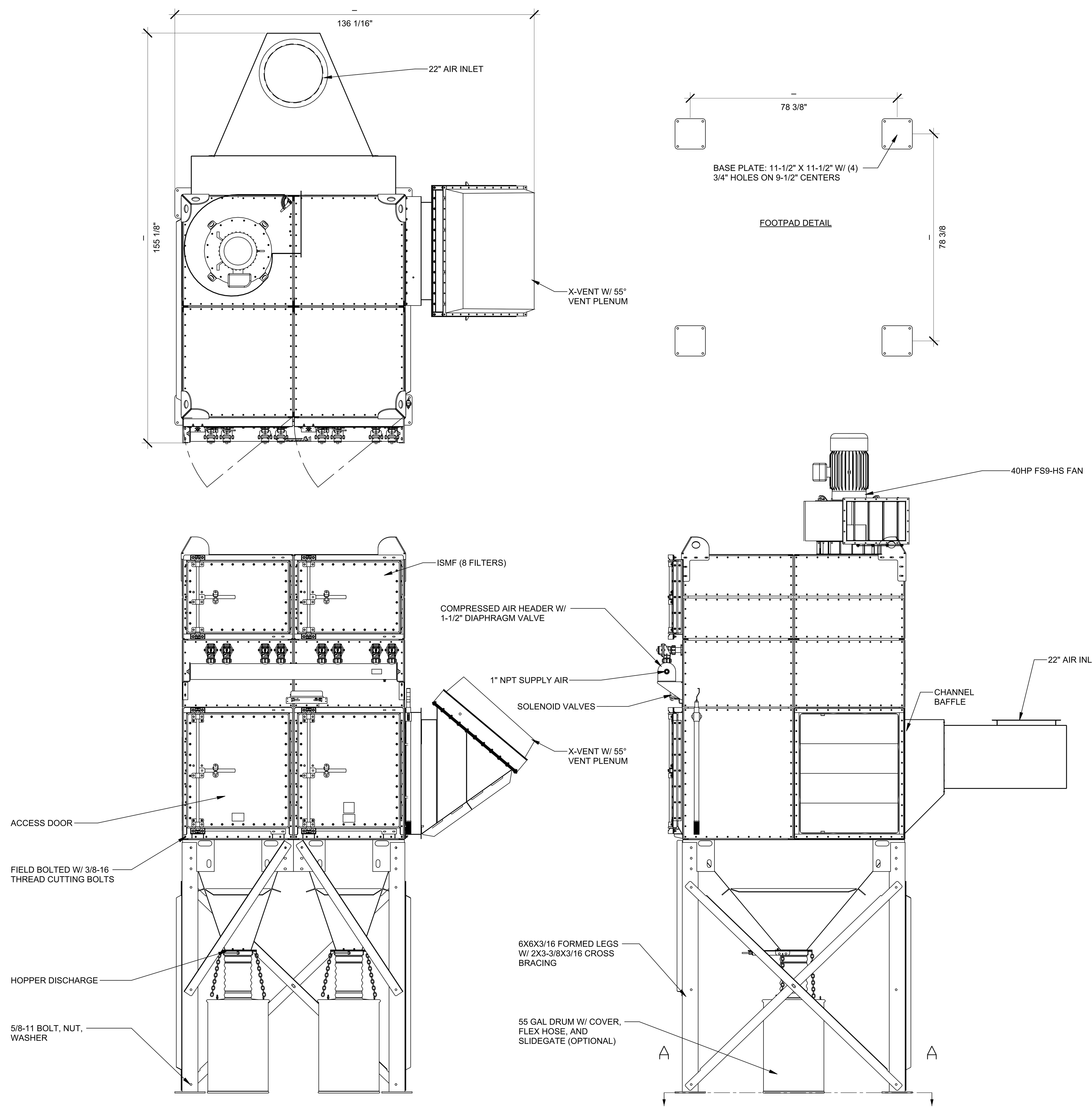
SCALE: NONE



NOTES:
1. REFER TO UL FIRE RESISTANCE DIRECTORY FOR COMPLETE INSTALLATION REQUIREMENTS.
2. IN AN OCCUPIED BUILDING, PERMANENT FIRESTOPPING SHALL BE INSTALLED WITHIN 24 HOURS OF PENETRATING A FIRE-RATED ASSEMBLY. IF PERMANENT FIRESTOPPING CANNOT BE INSTALLED WITHIN THIS TIME PERIOD, TEMPORARY FIRESTOP PILLOWS/ BLOCKS ARE PERMITTED, WHERE INSTALLATION ALLOWS, UNTIL PERMANENT FIRESTOP MATERIALS CAN BE PROPERLY INSTALLED.
3. THIS DETAIL IS A GENERAL DEPICTION OF FIRESTOPPING CONDITIONS. SOME CONDITIONS MAY NOT APPLY TO THE PROJECT SCOPE. REFER TO APPLICABLE SPECIFICATIONS AND LIFE SAFETY DRAWINGS AND REFERENCES FOR ADDITIONAL INFORMATION.

FIRESTOPPING DETAIL

SCALE: NONE

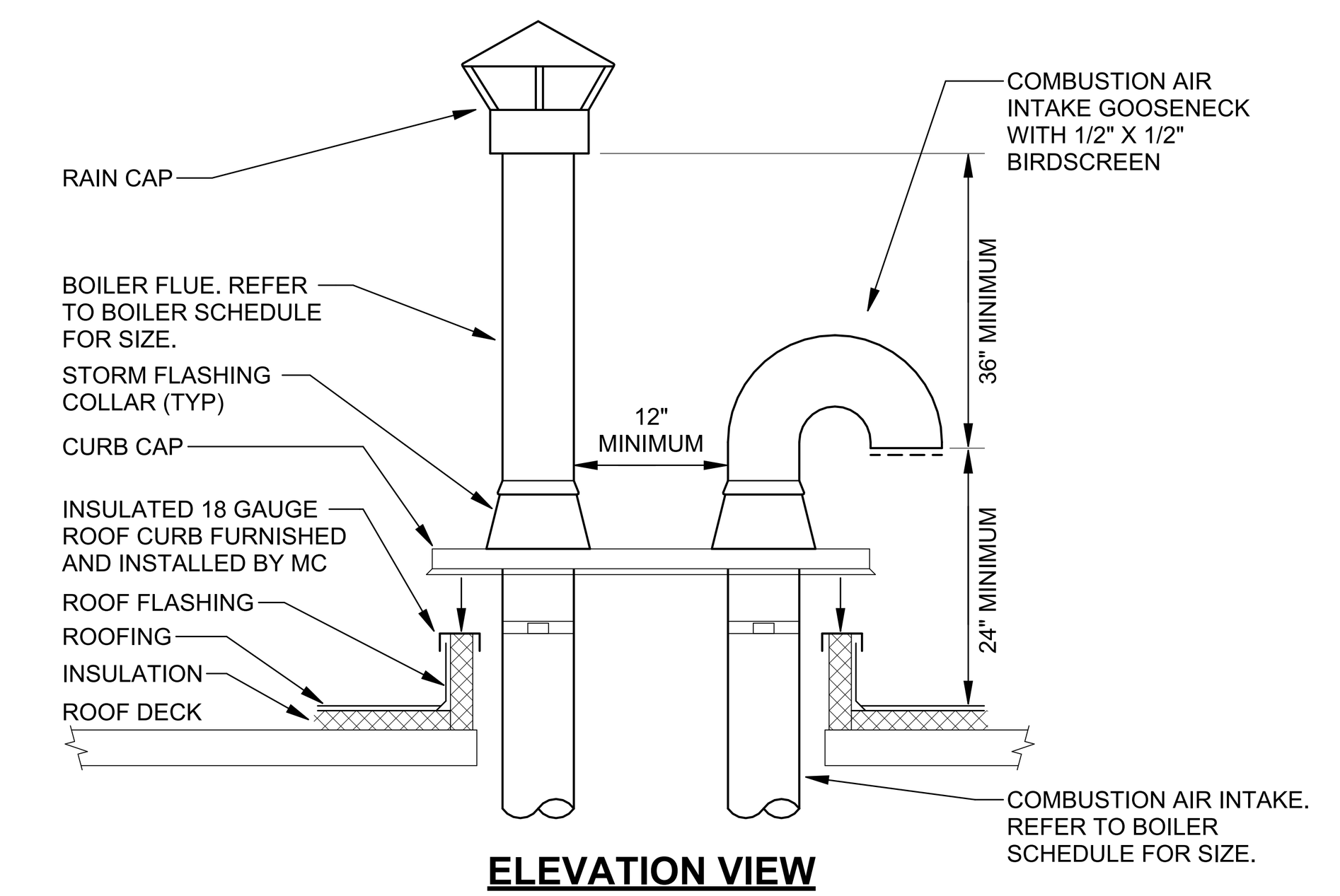


1. MODULAR CONSTRUCTION FROM 10 GA & 7 GA HRCS
2. SOLID STATE TIMER CONTROLS REQUIRE 120/240 VAC SINGLE PHASE 60HZ.
3. SOLENOIDS REQUIRE 120/1/60 VAC.
4. SOLENOID ENCLOSURE NEMA 4 RATED, INTEGRATED TIMER CONTROL ENCLOSURE NEMA 12 RATED, OTHER ELECTRICAL DEVICE ENCLOSURES & FARR DUST COLLECTOR TIMER ENCLOSURE NEMA 4X RATED.
5. IMPORTANT NOTE: FANS TYPICALLY EXPERIENCE FOUR TO TEN TIMES THE FULL LOAD AMPS DURING START-UP, CIRCUITS AND FUSES MUST BE ADJUSTED ACCORDINGLY.
6. CLEANING SYSTEM REQUIRES 30 SCFM OF CLEAN DRY COMPRESSED AIR WITH FACTORY SETTINGS AT 90 PSI.
7. OPERATING VESSEL PRESSURE: WITH X-VENT: -3 TO 0 PSIG
8. EXPLOSION VESSEL STRENGTH: 9.75 PSIG
9. WEIGHTS: COLLECTOR & FILTERS: 5,402 LBS; HOPPER & SUPPORT: 1,323 LBS; TOTAL WEIGHT: 6,725 LBS
10. ITEMS 2 & 3 MAY BE SHIPPED ASSEMBLED

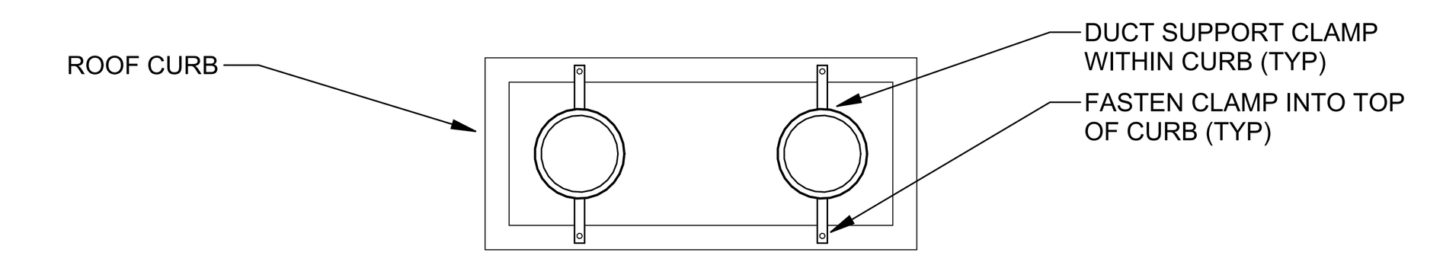
NOTE:
1. VERIFY AND ADJUST ALL DIMENSIONS PER THE INSTALLED APPLIANCE'S REQUIREMENTS.

DUST COLLECTOR DETAIL

SCALE: NONE



ELEVATION VIEW

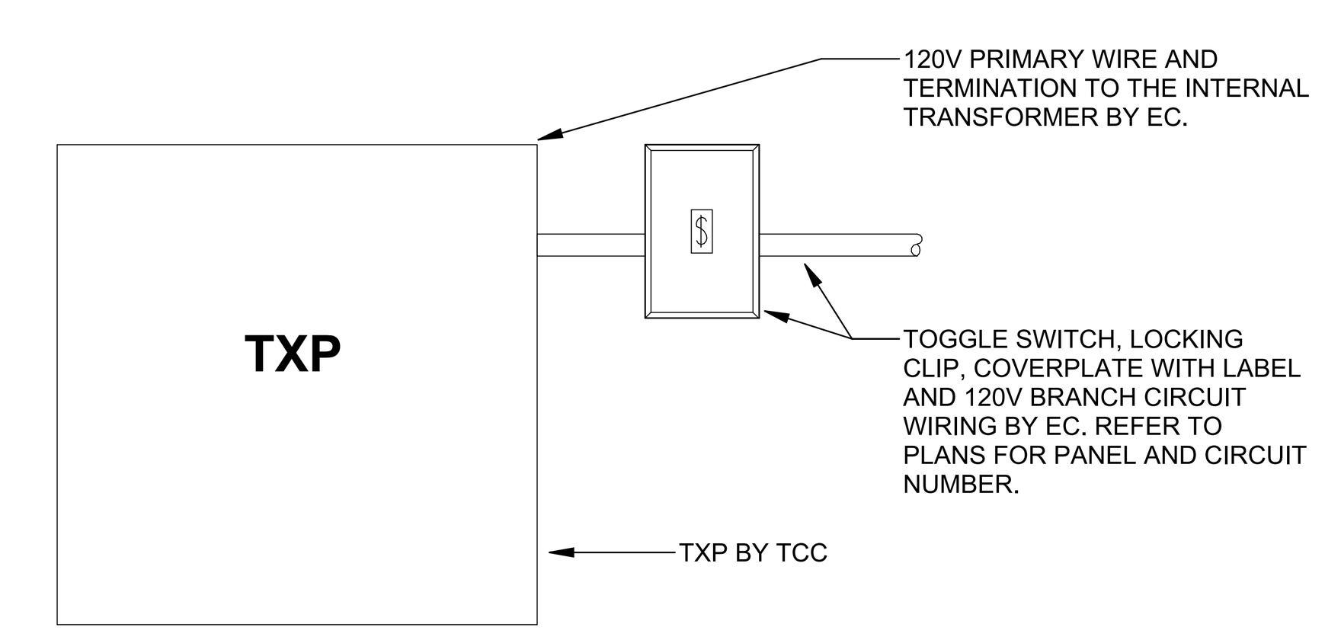


PLAN VIEW

NOTE:
1. VERIFY AND ADJUST ALL DIMENSIONS PER THE INSTALLED APPLIANCE'S REQUIREMENTS.

CONDENSING APPLIANCE FLUE/CAI ROOF TERMINATION DETAIL

SCALE: NONE



NOTES:
A. REFER TO SPECIFICATIONS SECTION 230900.
B. THE TXP SHALL BE NEMA 1 METAL ENCLOSURE WITH 120V INCOMING POWER SUPPLY WITH ONE TRANSFORMER SIZED TO ACCOMMODATE (5) OUTGOING LOW VOLTAGE OUTPUTS. (4) OUTPUTS SHALL BE UTILIZED FOR A MAXIMUM OF (4) VAV OR TERMINAL UNITS PER OUTPUT, (1) OUTPUT SHALL REMAIN AS A SPARE FOR FUTURE USE.
C. TCC SHALL BE RESPONSIBLE FOR VERIFYING POWER REQUIREMENTS AND MODIFYING AS REQUIRED. ANY MODIFICATION SHALL INCLUDE (1) SPARE OUTPUT FOR FUTURE USE.
D. TCC IS RESPONSIBLE FOR INSTALLING THE PROPER LOW VOLTAGE WIRE GAUGE AS REQUIRED FOR CURRENT AND VOLTAGE DROP. TCC SHALL PROVIDE LABELS AS FOLLOWS:
a. OUTSIDE COVER: LIST OF TERMINAL EQUIPMENT SERVED.
b. INSIDE: LIST OF TERMINAL EQUIPMENT SERVED BY EACH LOW VOLTAGE OUTPUT.

TEMPERATURE CONTROL TRANSFORMER PANEL (TXP) DETAIL

SCALE: NONE

Karpinski ENGINEERING
8800 Lyra Dr., Suite 530
Columbus, OH 43240
614-430-9820
karpinskieng.com

STATE OF OHIO FRANKLIN A. EISENHOWER E-65457 REGISTERED PROFESSIONAL ENGINEER

Belmont College Construction Trades Building

45869 Hammond Rd Connector
St Clairsville, OH, 43950

EDA AWARD NUMBER: 06-01-06458

100% CONSTRUCTION DOCUMENTS 05/21/2025

DRAWING UPDATES

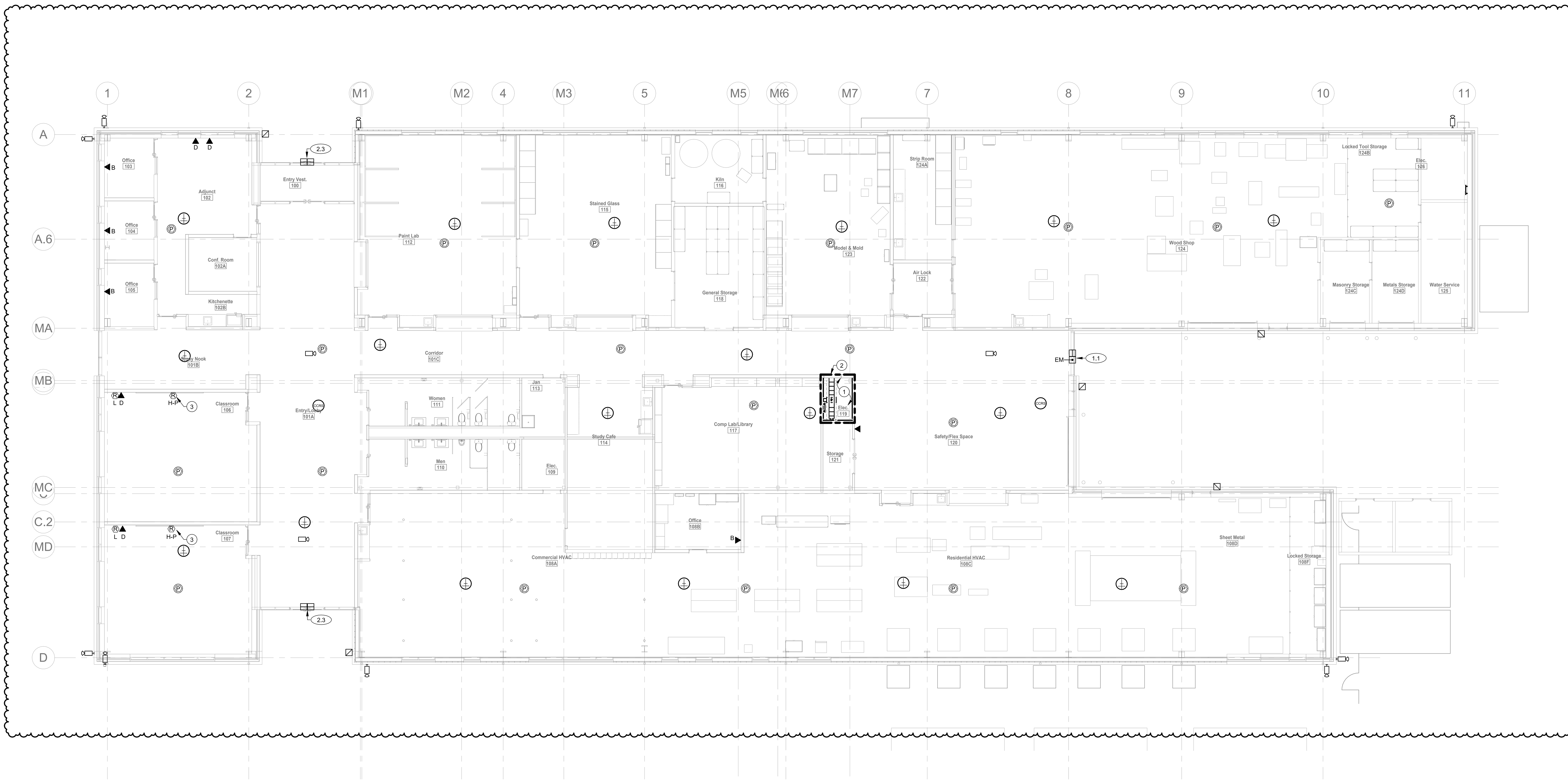
1	ADDENDUM 2	07/24/25

KEY PLAN

HVAC DETAILS AND DIAGRAMS

H62

Karpinski
ENGINEERING
8800 Lyra Dr., Suite 530
Columbus, OH 43240
614-430-9820
karpinskieng.com



#	PLAN NOTES
1	MAIN TECHNOLOGY ROOM. REFER TO ENLARGED PLANS IN TECHNOLOGY DETAILS FOR ADDITIONAL INFORMATION.
2	PROVIDE (4) 4" CONDUIT SLEEVES STUBBED ABOVE ACCESSIBLE CEILING.
3	FIELD COORDINATE FINAL AV ROUGH-IN ELEVATIONS WITH OWNER AND OWNER'S SYSTEM SUPPLIER.

BICSI
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Ryan P Smith
BICSI ID # 219281
Expires 12-31-26
RCDD

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1	ADDENDUM 2	07/24/25

KEY PLAN

SCALE: 1/8" = 1'-0"

FIRST FLOOR TECHNOLOGY PLAN

T11