Addendum

Project Number	*Client / Project Title*
LGA Project No. 21074	**A New School Facility: Horace Maynard Middle School**
Addendum Number	*Date*
Addendum 005	**Wednesday, June 19, 2024**

Addendum Compiled By

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Overview

To prime contractors and all others to whom drawings have been issued. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification. This addendum forms a part of the Contract Documents dated 3/15/2024.

Prior Addenda

ADD 001 stamped 31May2024
ADD 002 stamped 10June2024
ADD 003 stamped 14June2024
ADD 004 stamped 17June2024

This addendum supplements and modifies the Contract Documents as follows:

QUESTIONS

1. Q1: Specification Section 01 50 00 2.1 D & 3.4 B: Is a temporary 6' high chain link fence required around the full perimeter of the construction site?
   A1: The GC is to include in their base bid what is required to secure the construction site.
2. Q2: is builder's risk insurance required to be included by the GC in the base bid amount?
   A2: Yes
3. **Q3:** Please confirm all smartboards are furnished and installed by the Owner not the G.C. If by the G.C., please provide specifications and total number of smartboards required.
   A3: Confirmed, OFOI
4. Q4: Please confirm the entry-resistant film is required for all level one or basement windows and doors
   A4: Confirmed, see new glazing specification
5. **Q5:** Please confirm the AISC certified requirement for steel fabricators and erectors will be waived with independent testing and minimum 5 years of experience with similar projects as listed per drawing S0.02.
   A5: We would like them to be AISC certified as requested in our general notes. But if they are not, we waive that requirement as long as they do independent testing and show 5 years of relevant experience.
6. Q6: RE: concrete reinforcing, wire mesh is specified as galvanized in coiled rolls…Are non-galvanized flat sheets an acceptable alternate?
   A6: Yes, see revised spec section 03 30 00, attached
7. Q7: Are the vinyl wall / window graphics furnished and installed by the GC?
   A7: Yes, see revised sheet A9.12
8. Q8: Please confirm the (2) privacy curtains shown in Clinic A16 are the only privacy curtains scheduled for this project
   A8: Confirmed
9. Q9: Please provide the exact count and locations for the projection screens.
   A9: (1) on cafeteria stage / platform
10. Q10: The drawings for the stage curtains indicate there is (1) valance and (2) front curtain panels. Please clarify if this is the correct quantity.
    A10: This is correct
11. Q11: Is the concrete retaining wall located on the back side of the grandstands to be included in the base bid or alternate 1?
    A11: Base bid
12. Q12: Where is the location of the climbing rope specified in section 11 49 00 – Gymnasium Equipment?
    A12: There will be (1) climbing rope, located in the corner of the gymnasium, hung from the gym roof structure.
13. **Q13:** The South Canopy I see has structural Framing, but the North Canopy says it is pre-engineered. Is that correct? Is there only framing on the South Canopy? Please clarify what canopies are pre-engineered.
    A13: The north canopy is pre-engineered, and the south canopy is "custom".
14. Q14: Do the acoustical ceilings require seismic bracing?

A14: Ceilings to be installed per bracing requirements of seismic design category "C"

15. Q15: Where do the civil drawings indicate a depth for stone and asphalt for HD/LD asphalt?
    A15: Detail 8/C501 issued in ADD 004, indicates heavy duty paving depths with light duty paving thicknesses in parentheses
16. Q16: Specification 084113 does not have a section listing a finish. Please clarify.
    A16: Section 2.7 Aluminum Finishes calls out "Clear Anodic" (Clear anodized)
17. Q17: What is the substantial completion date on the project?
    A17: For those that were not at the pre-bid meeting, the school is to open in the fall of 2026, so CO needs to be in hand some time early summer to allow for owner/furniture move-in and systems training.

CHANGES TO THE PROJECT MANUAL

1. 00 01 10 – TABLE OF CONTENTS
   a. Updated to reflect new spec sections
2. 03 30 00 – CAST IN PLACE CONCRETE
   a. Revised per Q6 above
3. 08 11 13 – HOLLOW METAL DOORS AND FRAMES
   a. Remove existing section in its entirety and replace it with the attached. Spec previously called out interior and exterior doors/frames to be 14 ga. The spec has been revised to show exterior doors/frames at 16 ga and interior doors/frames at 18 ga.
4. 08 35 16 – FOLDING GRILLES
   a. New spec section
5. 08 44 13 – GLAZED ALUMINUM CURTAIN WALLS
   a. New spec section
6. 08 80 00 – GLAZING
   a. New spec section
7. 10 71 13 – EXTERIOR SUN CONTROL DEVICES
   a. New spec section

CHANGES TO THE DRAWINGS

1. COVER SHEET
   a. Updated to indicate revised drawings
2. A2.13 – BUILDING ELEVATIONS – EAST & WEST
   a. Sheet revised to better show extents of sunshades
3. A2.21 – BUILDING ELEVATIONS - ENLARGED –
   a. Sheet revised to better show extents of sunshades
4. S0.07 – TYPICAL STEEL DETAILS
   a. Accordion Partition details added
5. S0.11 – TYPICAL STEEL JOIST LOADING DETAILS
   a. Framing to accommodate new accordion partition added
6. S1.30 – FLOOR FRAMING PLAN – AREA 'E'
   a. Framing to accommodate new accordion partition added
7. S1.31 – ROOF FRAMING PLAN – AREA 'E'
   a. Accordion Partition details added
8. S2.24 – SECTIONS & DETAILS
   a. Accordion Partition details added

ATTACHMENTS

(07) Specification Sections
(08) Drawing Sheets

END OF ADDENDUM / ATTACHMENTS FOLLOW

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

A. Section 03 35 11 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings, and polishing.
B. Section 07 92 00 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.2 REFERENCE STANDARDS

A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).
C. ACI 301 - Specifications for Structural Concrete; 2016.
D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.
E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
F. ACI 305R - Guide to Hot Weather Concreting; 2010.
G. ACI 306R - Guide to Cold Weather Concreting; 2016.
H. ACI 308R - Guide to External Curing of Concrete; 2016.
I. ACI 318 - Building Code Requirements for Structural Concrete; 2019, with Errata (2021).
J. ACI 347R - Guide to Formwork for Concrete; 2014, with Errata (2017).
K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2020.
L. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.
M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.
N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.
O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2021b.
P. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.
Q. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
R. ASTM C150/C150M - Standard Specification for Portland Cement; 2021.
S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.
T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
U. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019.
V. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.
W. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2016.

X. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
Y. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete; 2010a (Reapproved 2015).
Z. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.
AA. ASTM D994/D994M - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 2011 (Reapproved 2022).
BB. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.
CC. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting; 2015.
DD. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.
EE. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover; 2008a (Reapproved 2019).
FF. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2020.
GG. ASTM E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers (Metric); 2014.
HH. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.
II. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.
JJ. COE CRD-C 513 - COE Specifications for Rubber Waterstops; 1974.
KK. COE CRD-C 572 - Corps of Engineers Specifications for Polyvinylchloride Waterstop; 1974.
LL. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
C. Mix Design: Submit proposed concrete mix design.
    1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
    2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
    3. Indicate proposed mix design complies with fiber reinforcing manufacturer's written recommendations.
    4. Indicate proposed mix design complies with admixture manufacturer's written recommendations.
D. Samples: Submit samples of underslab vapor retarder to be used.
E. Test Reports: Submit report for each test or series of tests specified.
F. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.4 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.
B. Follow recommendations of ACI 305R when concreting during hot weather.
C. Follow recommendations of ACI 306R when concreting during cold weather.

1.5 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.1 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.
B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.

2.2 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.
B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.
   1. Form: Flat Sheets.
C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches of weathering surfaces.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
B. Fine and Coarse Aggregates: ASTM C33/C33M.
C. Fly Ash: ASTM C618, Class F.
D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.
E. Blended Fiber Reinforcement: ASTM C1116/C1116M, engineered blend of two or more sizes of reinforcing fibers.
   1. Fiber Type: Alkali-resistant synthetic.
   2. Products:
      a. Master Builders Solutions; MasterFiber MAC 360 FF: www.master-builders-solutions.com/en-us/#sle.

2.4 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
B. Air Entrainment Admixture: ASTM C260/C260M.

2.5 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
   1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single ply polyethylene is prohibited.
   2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
   3. Water Vapor Permeance: Not more than 0.010 perms maximum
   4. Thickness: 15 mils (0.4m)
   5. Installation: Compy with ASTM E1643
   6. Products:
      a. Stego Industries, LLC; (15 mil): www.stegoindustries.com/#sle.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Grout: Comply with ASTM C1107/C1107M.
   2. Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
      a. Maximum: Plus 4 percent.
      b. Minimum: Plus 1 percent.
   3. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch.
   4. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.

2.6 BONDING AND JOINTING PRODUCTS

A. Waterstops: Rubber, complying with COE CRD-C 513.
   1. Configuration: As indicated on drawings.

B. Waterstops: PVC, complying with COE CRD-C 572.
   1. Configuration: As indicated on drawings.

C. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
   1. Material: ASTM D1751, cellulose fiber.

2.7 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
   1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

D. Fiber Reinforcement: Add to mix at rate of 3 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.

E. Normal Weight Concrete: Per Structural General notes in Construction Documents
   1. Water-Cement Ratio: Maximum 40 percent by weight.
   2. Maximum Aggregate Size: 5/8 inch.

2.8 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.
B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.1 EXAMINATION

3.2 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
B. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R, CSP 3.
C. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
    1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

3.3 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.4 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.
B. Place concrete for floor slabs in accordance with ACI 302.1R.
C. Notify Architect not less than 24 hours prior to commencement of placement operations.
D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
E. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.5 SLAB JOINTING

A. Locate joints as indicated on drawings.
B. Anchor joint fillers and devices to prevent movement during concrete placement.
C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
    1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
D. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.

E. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.6 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. An independent testing agency, as specified in Section 01 40 00, will inspect finished slabs for compliance with specified tolerances.
B. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
   1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15, on-grade only.
   2. Under Thick-Bed Tile: F(F) of 20; F(L) of 15, on-grade only.
   3. Under Carpeting: F(F) of 25; F(L) of 20, on-grade only.
   4. Under Thin Resilient Flooring and Thinset Tile: F(F) of 35; F(L) of 25, on-grade only.
C. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
D. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
E. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.7 CONCRETE FINISHING

A. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R; thick floor coverings include quarry tile, ceramic tile, and Portland cement terrazzo with full bed setting system.
   2. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
   3. Decorative Exposed Surfaces: Trowel as described in ACI 302.1R; take measures necessary to avoid black-burnish marks; decorative exposed surfaces include surfaces to be stained or dyed, pigmented concrete, surfaces to receive liquid hardeners, surfaces to receive dry-shake hardeners, surfaces to be polished, and all other exposed slab surfaces.
B. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.8 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.
C. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
   2. Final Curing: Begin after initial curing but before surface is dry.

3.9 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.
B. Provide free access to concrete operations at project site and cooperate with appointed firm.
C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
E. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
G. See Special Inspection Requirements in structural Construction Documents for testing requirements.

3.10 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.11 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION 03 30 00

SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Standard hollow metal frames.
   2. Provide doors and frames capable of receiving 1/4-inch glazing, where indicated on the drawings.

B. Related Sections:
   1. Section 01 25 00 - Substitution Procedures
   2. Section 01 33 00 - Submittal Procedures
   3. Section 01 60 00 - Product Requirement
   4. Section 04 20 00 - Unit Masonry" for embedding anchors for hollow metal work into masonry construction.

1.2 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings.

B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating, temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:
   1. Elevations of each door design.
   2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
   3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
   4. Locations of reinforcement and preparations for hardware.
   5. Details of each different wall opening condition.
   6. Details of anchorages, joints, field splices, and connections.
   7. Details of accessories.
   8. Details of moldings, removable stops, and glazing.
   9. Details of conduit and preparations for power, signal, and control systems.

C. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those in the Contract Documents. Coordinate with door hardware schedule.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C.

C. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

D. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non- vented plastic.
   1. Provide additional protection to prevent damage to finish of factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch-high wood blocking. Do not store in a manner that traps excess humidity.
   1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

1.8 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Amweld Building Products, LLC.

2. Ceco Door Products; an Assa Abloy Group company.
3. Curries Company; an Assa Abloy Group company.
4. Mesker Door Inc.
5. Steelcraft; an Ingersoll-Rand company.

1.9 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A1011, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A653, Commercial Steel (CS), Type B; with minimum A40 metallic coating.

D. Frame Anchors: ASTM A591, Commercial Steel (CS), 40Z coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A1008 or ASTM A1011, hot-dip galvanized according to ASTM A153, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153.

F. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.

G. Mineral-Fiber Insulation: ASTM C665, Type I and III (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 4- to 6 lb/cu.ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics. Acceptable products include;
1. Thermafiber Inc. - Safing Insulation.
2. Fibrex Insulations, Inc. - Safing Insulation.

H. Exterior Doors: Face sheets fabricated from 0.0538” thick, metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Level 2 and Physical Performance Level B (Heavy Duty), Model 2 Seamless.

I. Interior Doors: Face sheets fabricated from 0.0428” thick, cold-rolled steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Level 1 and Physical Performance Level C (Standard Duty), Model 1 Full Flush.
a. Width: 1-3/4 inches
b. Both door models in first subparagraph below are available in 1-3/4-inch (44.5-mm) thickness and have 0.042-inch- (1.0-mm-) 18 gage thick faces.

J. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

K. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

1.10 STANDARD HOLLOW METAL FRAMES

A. Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Interior Frames: Fabricated from cold-rolled steel sheet.
1. Fabricate frames with mitered or coped corners.
2. Fabricate frames as face welded unless otherwise indicated.
3. Frames:
Interior doors - 0.0428" thick steel sheet.
Exterior doors - 0.0538" thick steel sheet.

C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

1.11 FRAME ANCHORS

A. Jamb Anchors:
1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners. Weld to frame after adjustment.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

1.12 STOPS AND MOLDINGS

A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch thick, fabricated from same material as door face sheet in which they are installed.

B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, fabricated from same material as frames in which they are installed.

1.13 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

1.14 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.

C. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
   1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
   2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
   3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
   4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
   5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
   6. Jamb Anchors: Provide number and spacing of anchors as follows:
      a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
         1) Two anchors per jamb up to 60 inches high.
         2) Three anchors per jamb from 60 to 90 inches high.
         3) Four anchors per jamb from 90 to 120 inches high.
         4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
      b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
         1) Three anchors per jamb up to 60 inches high.
         2) Four anchors per jamb from 60 to 90 inches high.
         3) Five anchors per jamb from 90 to 96 inches high.
         4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
         5) Two anchors per head for frames above 42 inches wide and mounted in metal-stud partitions.
   7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
      a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-templated, mortised and surface-mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

F. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow metal work.
5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

1.15 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

1.16 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

1.17 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Drill and tap doors and frames to receive non-templated, mortised, and surface-mounted door hardware.

1.18 INSTALLATION

A. Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
   1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
      a. At fire-protection-rated openings, install frames according to NFPA 80.
      b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
      c. Install frames with removable glazing stops located on secure side of opening.
      d. Install door silencers in frames before grouting.
      e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
      f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
      g. Field apply bituminous coating to backs of frames that are filled with grout containing anti-freezing agents.
   2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
      a. Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.
   3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
   4. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
      a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
      b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
      c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
      d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

1.19 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION

SECTION 08 35 16 - FOLDING GRILLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Side-folding aluminum grilles.
   2. Operating hardware and supports.

B. Related Sections:
   1. Division 01: Administrative, procedural, and temporary work requirements.
   2. Section 087100 - Door Hardware.

1.2 PERFORMANCE REQUIREMENTS

A. Manufacturer’s pocket to fit flush within a 6 inch steel stud wall.

B. All locking posts shall allow for horizontal sway without pressure to side walls of track from trollies while opening and closing the curtain.

C. All post’s standard locking hardware and handles shall be flush within post with exceptions for exit hardware.

1.3 REFERENCES

A. ASTM International (ASTM) B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

1.4 SUBMITTALS

A. Submittals for Review:
   1. Shop Drawings: Indicate track layout and dimensions including pocket, required curves, types and locations of posts, required locking and hardware, options, finish and installation details.
   2. Product Data: Provide information on grille construction, components, materials, and finishes.

B. Sustainable Design Submittals:
   1. Recycled Content.
   2. Regional Materials – not applicable.

C. Closeout Submittals:
   1. Operation and Maintenance Data

1.5 WARRANTIES

A. Provide manufacturer’s 2 year warranty against defects in materials and workmanship.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of design: Dynamic Closures Corporation. (www.dynamicclosures.com)

B. Equivalent products by the following manufacturers are acceptable:
   1. CHI Overhead Doors. (www.chiohd.com)
   2. Overhead Door Corp. (www.overheaddoor.com)
   3. Wayne-Dalton Corp. (www.wayne-dalton.com)

C. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

A. Aluminum Extrusions: ASTM B221, 6063-T5 or T6 alloy and temper.

2.3 COMPONENTS

A. EZ Grille curtain:
   1. 4.25 inches (108mm) wide with 2 inch (51mm) high bottom and top plates, truss-like aluminum.
   2. Panels connected with 1/8 x 5/8 x 4-1/4 inch aluminum links vertically spaced 15 inches apart onto 5/16 inch aluminum horizontal rods spaced 3-1/2 inches on center and covered by 1/2 inch aluminum tubes. Curtain secured to pocket, not end post required.

B. Pattern: Straight

C. Pocket: To fit flush within a 6 inch (152mm) steel stud wall. Welded .5 inch (13mm) tubular steel frame forming 6 inch (152mm) exterior with 1 inch (25mm) vertical adjustment. Grilles to fit within 5 inch (127mm) clear opening of pocket. Pocket door clear anodized aluminum with full height integrated handle.

D. Operation: Manual push/pull. Provide pull straps on openings over 9 feet (2743mm) in height and countertop applications.

E. Curtain Carriers: Dual bearing trolleys with 1.125 inch (29mm) diameter tires.

F. Overhead Track: Extruded aluminum, 1.375 inches (35mm) wide x 1.675 inches (43mm) high, continuous profile seamed with alignment bars and track pins at splices.

G. Curves: Detailed type and location on drawing if required.

H. Locking Post: Extruded aluminum, all post’s standard locking hardware and handles shall be flush within post with exceptions for exit hardware. Locks may be on the public side, secure side or both except for intermediate posts. All lock rods engaging stainless steel floor or counter sockets shall be stainless steel. All locking posts shall allow for horizontal sway without pressure to side walls of track from trollies while opening and

closing the curtain. Refer to detailed drawing for location and type of posts. Post type and location detailed on drawing.

I. Wall Channel: A floor to track extruded aluminum channel that the hookbolt fits and locks into. This channel is secured permanently to the wall.

J. HookBolt Lead: This post has a hookbolt that secures it to the Wall Channel. Additional top locking or double hookbolt locking available.

K. Bi-Part: A pair of posts that lock together with a hookbolt with an added lock rod to keep the curtain in place. It is used to separate larger doors into manageable sections, or to split the door to stack in two different directions. The concealed lock rod engages into a floor or counter socket. Doors should have at least one Bi-Part for every 30 feet (9144mm) of width. Top Lock available.

L. Top & Bottom: Lead or Trailing End option. This post contains spring loaded lock rods that engage a floor or counter socket with the bottom rod and the top rod engages into the track and header. They are unlocked with a keyed cylinder, thumb turn or paddle, both disengaging in one motion. A rubber bumper is the standard leading edge but may also have a 4 inch (102mm) flange.

M. Intermediate: A middle post in a door located between door sections, containing a spring-loaded lock rod that engages a floor of counter socket to keep the door in place and unlocked by a keyed cylinder or a thumb turn. Maximum straight line spacing of all posts is 10 feet (3048mm). Curves and counter top applications will require closer spacing.

N. Traveling End: The Traveling End post terminates a door inside of a pocket (storage area). It is free to travel back and forth inside of the pocket. The post self-locks into permanent header and floor stops that prevent the door from fully leaving the pocket. A rear flange attached to the back of the post prevents reaching around.

O. Fixed End: Simply attaches the end of a door permanently to a wall of structure

P. Emergency Egress Door - Detailed latch type and location on drawing if required. Swing out 35.5 in. x 79.5 in. (902mm x 2019mm) emergency egress door within the curtain. Egress doors for open air Grilles are constructed with perforated panels. Egress doors for Closures are constructed of corresponding curtain material. Add 8 inches (203mm) to stack

2.4 FINISHES

A. Aluminum: Clear anodized standard. If required custom anodized detailed on drawing.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install assembly in accordance with manufacturer's instructions.

B. Anchor to adjacent construction without distortion or stress, level and plumb, to provide smooth operation.

3.2 ADJUSTING

A. Adjust grilles for smooth operation throughout full operating range.

SECTION 08 44 13 GLAZED ALUMINUM CURTAIN WALLS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of curtain wall framing.
B. Related Sections:
1. Section 01 25 00 Substitution Procedures
2. Section 01 30 00 - Submittals
3. Section 01 60 00 - Product Requirements
4. Section 01 63 00 - Substitution Procedures
5. Section 01 63 10 - Substitution Request Form
6. Section 07 27 26 – Fluid Applied Air and Water Barrier
7. Section 07 92 00 - Joint Sealants
8. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts
9. Section 08 80 00 – Glazing

1.2 DEFINITIONS

A. Definitions: For fenestration industry standard terminology and definitions refer to American Architectural Manufactures Association (AAMA) – AAMA Glossary (AAMA AG).

1.3 REFERENCES

A. Architectural Aluminum Manufactures Association
1. AAMA 1503 Voluntary Test Method for Thermal Transmittance & Condensation Resistance of Windows,

B. American Society for Testing Materials
1. ASTM B209-14 Standard Specification for Aluminum And Aluminum-Alloy Sheet And Plate
2. ASTM B 221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
3. ASTM B633-19 Standard Specification for Electrodeposited Coatings Of Zinc On Iron And Steel
4. ASTM B456-17 Standard Specification for Electrodeposited Coatings Of Copper Plus Nickel Plus Chromium And Nickel Plus Chromium (Standard + Redline PDF Bundle)
5. ASTM C864-2019 Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, And Spacers
6. ASTM E331-00(2016) Standard Test Method for Water Penetration Of Exterior Windows, Skylights, Doors, And Curtain Walls By Uniform Static Air Pressure Difference
7. ASTM E 283 NAAMM's Metal Finishes Manual for Architectural and Metal Products

8. ASTM E331-00(2016) Standard Test Method For Water Penetration Of Exterior Windows, Skylights, Doors, And Curtain Walls By Uniform Static Air Pressure Difference
9. ASTM E1105-15 Standard Test Method For Field Determination Of Water Penetration Of Installed Exterior Windows, Skylights, Doors, And Curtain Walls, By Uniform Or Cyclic Static Air Pressure Difference

1.3 PERFORMANCE REQUIREMENTS

A. Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
B. Glazed aluminum curtain walls shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads. Failure also includes the following:
   1. Thermal stresses transferring to building structure.
   2. Glass breakage.
   3. Loosening or weakening of fasteners, attachments, and other components.
   4. Failure of operating units.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
B. Shop Drawings: For glazed aluminum curtain walls. Include plans, elevations, sections, full-size details, and attachments to other work.
C. Manufacturer’s Installation Instructions.
D. Factory applied finish as selected by architect.
E. Samples for Initial Selection: For units with factory-applied color finishes.
F. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency, for glazed aluminum curtain walls, indicating compliance with performance requirements.
H. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed curtain wall systems, made from 12 inch lengths of full-size components and showing details of the following:
   1. Joinery
   2. Glazing
I. Shop Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
K. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.
L. Samples: Provide samples of typical product sections and finish samples in manufacturer's standard sizes.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer who has had successful experience with installation of the same or similar systems required for the project and other projects of similar size and scope.
B. Manufacturer Qualifications: A manufacturer capable of fabricating glazed aluminum curtain walls that meet or exceed performance requirements.
C. Source Limitations: Obtain aluminum curtain wall system through one source from a single manufacturer.
D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
E. Build mockups for type(s) of curtain wall elevation(s) indicated, in location(s) shown on Drawings.
F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section “Project Management and Coordination”.

1.6 DELIVERY, STORAGE AND HANDLING

A. Packing, Shipping, Handling: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
B. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle curtain wall material and components to avoid damage. Protect curtain wall material against damage from elements, construction activities, and other hazards before, during and after installation.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for glazed aluminum curtain walls by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 WARRANTY

A. Manufacturer’s Warranty: Submit, for Owner’s acceptance, manufacturer’s standard warranty.
B. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty begins in no event later than six months from date of shipment by manufacturer.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACUTRERS

A. Kawneer North America, subsidiary of Kawneer France, SAS
Norcross, Georgia
Telephone: 770-252-3090
B. Vistawall Architectural Products;
Newman, Georgia

Telephone: 770-252-3090

C, Tubelite
Walker, Michigan
Telephone: 800-866-2227

D. Substitutions: Under provisions of Section 01 25 00.

2.2 COMPONENTS

A. Basis-of-Design Product, as manufactured by Kawneer Company, Inc., or equivalent by another listed manufacturer, as follows:
1. 1600 Wall System 2 Curtain Wall
2. Sightline: 2 ½ inches
3. System depth: 6-inches
4. One Inch, double-glazed insulating glass
5. Outside-glazed pressure plate format
6. Concealed Fastener Joinery
7. Test to AAMA 501-04 and AAMA 501-06.

2.3 MATERIALS

A. Aluminum Extrusions:
1. Alloy and temper recommended by glazed aluminum curtain wall manufacturer for strength, corrosion resistance, and application of required finish.
2. Not less than 0.070" (1.8 mm) wall thickness at any location for the main frame
3. Complying with ASTM B221: 6063-T6 alloy and temper

B. Aluminum Sheet Alloy: Meet requirements of ASTM B209.

C. Fasteners: Aluminum, nonmagnetic stainless steel or other materials must be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.

D. Anchors, Clips, and Accessories:
1. Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating.
2. Anchors, clips, and accessories shall provide sufficient strength to withstand the design pressure indicated.

E. Pressure Plate: Provide aluminum, pressure plate, fastened to the mullion with stainless steel screws.

F. Reinforcing Members:
1. Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating.
2. Reinforcing members must provide sufficient strength to withstand the design pressure indicated.

G. Sealant: For sealants required within fabricated curtain wall system, provide permanently elastic, nonshrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

H. Thermal Barrier/Thermal Separator: Extruded of a silicone compatible elastomer that provides a minimum 1/4" separation.
I. Tolerances: References to tolerances for wall thickness and other cross-sectional dimensions of glazed curtain wall members are nominal and in compliance with AA Aluminum Standards and Data.

2.3 CURTAIN WALL FRAMING

A. Framing Members: Manufacturer's standard extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
   1. Glazing System: Four-sided captured
   2. Glazing Plane: Front
   3. Vertical Structural Silicone Glazed (SSG) Joints
B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with non-staining, non-ferrous shims for aligning system components.
D. Framing Sealants: Suitable for glazed aluminum curtain wall as recommended by sealant manufacturer.
E. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories must be compatible with adjacent materials. Where exposed, fasteners and accessories shall be stainless steel.
F. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
G. Packing, Shipping, Handling, and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

H. Storage and Protection: Store materials so that they are protected from exposure to harmful weather conditions.
   1. Handle material and components to avoid damage.
   2. Protect material against damage from elements, construction activities, and other hazards before, during, and after installation.

2.4 GLAZING

A. Refer to Section 08 80 00 - Glazing for glazing requirements.
B. Glazing Gaskets: Gaskets to meet requirements of ASTM C864.
C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type
D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
E. Glazing Sealants: As recommended by manufacturer for joint type.

2.5 OPERABLE UNITS

A. Doors comply with Division 08 Aluminum-Framed Entrances and Storefronts Section.

2.6 ACCESSORIES

A. Bituminous Paint: Cold-applied asphalt-mastic paint
   1. Complies with SSPC-Paint 12 requirements except containing no asbestos.
   2. Formulated for 30-mil (0.762 mm) thickness per coat

2.7 ALUMINUM FINISHES

A. Finish designations that are prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
B. Factory Finishing:
   1. Kawneer Permanodic® AA-M10C21A31, AAMA 611, Architectural Class II Clear Anodic.
   2. Finish to match entry doors specified in Section 08 41 13.

PART 3 EXECUTION

3.1 EXAMINATION
A. With installer present, examine areas for compliance with requirements for installation tolerances and other conditions affecting performance of the work.
B. Proceed with installation only after correcting unsatisfactory conditions.

3.2 INSTALLATION

A. Curtain Wall System Installation: Install curtain wall systems plumb, level, and true to line, without warp or rack of frames, within manufacturer's prescribed tolerances, and complying with installation instructions.
   1. Provide support and anchor in place.
B. Dissimilar Materials: Provide separation of aluminum materials from sources of corrosion or electrolytic action contact points.
C. Glazing:
   1. Glass shall be outside-glazed.
   2. Glass shall be held in place with extruded aluminum pressure plates anchored to the mullion using stainless steel fasteners that are spaced no more than 9" (228.6 mm) on center.
D. Water Drainage: Compartmentalize each light of glass using joint plugs and silicone sealant to divert water to the horizontal weep locations.
   1. Locate weep holes in the horizontal pressure plates and covers to divert water to the exterior of the building.

3.3 FIELD QUALITY CONTROL

A. Field Tests: Architect shall select curtain wall units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter-caulked, and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present.
   1. Tests that do not meet the specified performance requirements and units that have deficiencies shall be corrected as part of the contract amount.
   2. Testing shall be performed per AAMA 503 by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements.
B. Air Infiltration Tests:

1. Conduct tests in accordance with ASTM E 783.
2. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft2, whichever is greater.

C. Water Infiltration Tests:
1. Conduct tests in accordance with ASTM E 1105.
2. No uncontrolled water leakage is permitted when tested at a static test pressure of two thirds the specified water penetration pressure but not less than 8 psf (383 Pa).

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjusting: Not applicable.

B. Protect installed product's finish surfaces from damage during construction. Protect aluminum curtain wall system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.

C. Repair or replace damaged installed products.

D. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.

E. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

F. Remove construction debris from project site and legally dispose of debris.

END OF SECTION

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes glazing and accessories for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
   1. Windows.
   2. Doors.
   3. Glazed storefront.
   4. Glazed entrances.
   5. Interior borrowed lites.

B. Related Sections:
   1. Section 01 25 00 - Substitution Procedures
   2. Section 01 32 00 Project Meetings
   3. Section 01 33 00 – Administrative Requirements
   4. Section 01 60 00 - Product Requirements
   5. Section 01 43 49 – Mock-Up Wall Panel.
   6. Section 07 92 00 - Joint Sealants.
   7. Section 08 11 13 – Hollow Metal Doors and Frames.
   8. Section 08 14 16 – Flush Wood Doors.
   9. Section 08 41 13 – Aluminum Entrances and Storefront.

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 Thicknesses: Indicated by thickness designations in millimeters according to ASTM C1036.

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 of 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 surfaces of glass.

1.4 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
   1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E1300, according to the following requirements:
      a. Specified Design Wind Loads: not less than wind loads applicable to Project as required by ASCE 7 "Minimum Design Loads for Buildings and Other Structures" : Section 6.0 "Wind Loads."

C. Thermal Movements: 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 surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.5 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Product Data: For each glass product and glazing material indicated.

C. Samples: For the following products, in the form of 12”x12” square samples.
   1. Each type of insulated glass unit.
   2. Safety and security film.

D. Certificate: Certify that all products of this section meet or exceed specified requirements.

E. Shop Drawings: Glazing elevations shall include designation of tempered units as required by the Authorities Having Jurisdiction.

F. Shop drawings shall include the following note completed and signed by the Contractor:
   1. THE DATA SUBMITTED DOES NOT CONTAIN MATERIAL DEVIATIONS FROM REQUIREMENTS OF CONTRACT DOCUMENTS EXCEPT AS FOLLOWS:

G. Warranties: Special warranties specified in this Section.

1.6 QUALITY ASSURANCE

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, except where 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's "Glazing Manual."
   2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."
   3. IGMA Publication: SIGMA TM-3000 "Vertical Glazing Guidelines".

B. Safety Glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.
   1. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glazing Certification Council (SGCC) or other certification agency acceptable to authorities having jurisdiction.

C. Glazing for Fire-Rated Door Assemblies: Glazing for assemblies that comply with NFPA 80 and that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

D. Glazing for Fire-Rated Window Assemblies: Glazing for assemblies that comply with NFPA 80 and that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

E. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers or at least one component lite of units with appropriate certification label of inspecting and testing agency indicated below:
   1. Insulating Glass Certification Council (IGCC).
   2. Associated Laboratories, Inc. (ALI).
   3. National Certified Testing Laboratories (NCTL).

F. 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; and who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

G. Single-Source Responsibility for Glass: Obtain glass from one source for each product indicated below:
   1. Primary glass of each (ASTM C1036) type and class indicated.
   2. Heat-treated glass of each (ASTM C1048) condition indicated.
   3. Insulating glass of each construction indicated.
   4. Laminated glass.

H. Single-Source Responsibility for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

I. Pre-Installation Conference: Conduct conference at Project site to comply with requirements of Division 01 Section "Project Meetings."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
   1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F.

1.9 WARRANTY

A. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form, made out to Owner and signed by insulating-glass manufacturer agreeing to replace insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Basis-of-Design Product: The design for each glazing product is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 GLASS PRODUCTS

A. Annealed Float Glass: ASTM C1036, Type I (transparent flat glass), Quality-Q3; of class indicated.

B. Heat-Treated Float Glass: ASTM C1048; Type I (transparent flat glass); Quality-Q3; of class, kind, and condition indicated.
   1. 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.
      a. Provide Kind HS (heat-strengthened) float glass at all spandrel units unless tempered glass is required.
   2. For uncoated glass, comply with requirements for Condition A.
   3. For coated vision glass, comply with requirements for Condition C (other uncoated glass).
   4. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is required by authorities having jurisdiction.

C. Pyrolytic-Coated Float Glass: ASTM C1376, float glass with metallic-oxide coating applied by pyrolytic deposition process during initial manufacture, and complying with other requirements specified.

D. Sputter-Coated Float Glass: ASTM C1376, float glass with metallic-oxide or -nitride coating deposited by vacuum deposition process after manufacture and heat treatment (if any), and complying with other requirements specified.

2.4 INSULATING GLASS UNITS

A. Basis of Design Vitro Architectural Glass:
   1. Vision glazing with Low-E coating
   2. Application: Exterior insulating glass glazing
   3. Space between lites filled with argon
   4. Total Thickness: 1 inch
   5. Thermal Transmittance: VLT (U-value) Winter- Center of Glass: 0.24 Nominal
   6. Visible Light Transmittance (VLT): 50 p0ercent, nominal
   7. Solar Heat Gain Coefficient (SHGC): 0.30, nominal
   8. Glazing Method: Dry glazing method, gasketed glazing
   9. Durability: Certified by an independent testing agency to comply with ASTM
   10. Metal Edge Spacers: Aluminum bent and soldered corners
   11. Spacer Color: Black
   12. Edge Seal:
   13. Purge interpane space with dry air, hermetically sealed.
   14. Outboard Lite: Annealed or fully tempered float glass, ¼ inch thick.
      a. Low-E Coating: Vitro Architectural Glass (formerly PPG Glass, Solar ban 60 on #2 Surface
      b. Glass Tint: Solar (light Gray)
   15. Inboard Lite: Annealed or fully tempered float glass, ¼ inch thick
      a. Coating: No coating on inboard lite
      b. Glass: Clear

2.3 FIRE-RATED GLAZING PRODUCTS

A. Laminated Ceramic Glazing Material: Proprietary Category II safety glazing product in the form of 2 lites of clear ceramic glazing material laminated together to produce a laminated lite of 5/16 to 3/8inch nominal thickness; polished on both surfaces as follows:
   1. Fire-Protection Rating: As indicated for the assembly in which glazing material is installed, and permanently labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.
   2. Polished on both surfaces, transparent.
      a. Product: "FireLite Plus" by Nippon Electric Glass Co., Ltd., and distributed by Technical Glass Products.
      b. Product: Subject to compliance with requirements, "Pyran Platinum L" by SAFTI; a Division of O'Keeffe's Inc.

2.4 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 C864, Option II.
   2. EPDM, ASTM C864, Option II.
   3. Silicone, ASTM C1115.
   4. Thermoplastic polyolefin rubber, ASTM C1115.
   5. Any material indicated above.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C509, Type II, black; and of profile and hardness required to maintain watertight seal:
   1. Neoprene.
   2. EPDM.
   3. Silicone.
   4. Thermoplastic polyolefin rubber.
   5. Any material indicated above.

2.5 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 a 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. Safety and Security Window Film:
1. Applied translucent safety and security film applied to glazing types as indicated on the drawings. Film shall be optically clear, single, or multi-layer polyester film of thickness indicated below to provide security benefits.
2. Design Criteria: Product selection has been based on 3M TM Scotchshield TM Safety and Security Window Film Ultra 800. Provide film that meets or exceeds the design criteria of the selected product.
3. Provide film designed to hold broken glass in place and to help prevent flying shards of glass from harming people and damaging property. Provide film with the following characteristics:
   a. 8 mils (0.008”) minimum thickness.
   b. Mitigates hazards from shattered glass due to natural and/or human causes.
   c. Reduces risk from blast hazards and impact energy.
   d. Increases security and provides added protection against “smash and grab” burglaries.
   e. Helps provide protection from flying glass in natural disasters.
   f. Increases anti-spall protection for laminated glass.
   g. Reduces the amount of harmful UV rays.
4. Provide film that is designed for the following applications:
   a. Bomb blast mitigation.
   b. Deters break and entry.
   c. Safety glazing.
   d. Seismic preparedness.
   e. Spontaneous glass breakage.
5. Manufacturers
   a. 3M Safety and Security Window Film – Safety Series
   b. CJ Buffer
   c. Riot Glass

2.6 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.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with outdoor and indoor faces.

C. Grind smooth and polish exposed glass edges and corners.

2.7 MONOLITHIC FLOAT-GLASS UNITS

A. Uncoated Clear Float-Glass Units: Class 1 (clear).
1. Thickness: 6.0 mm.
2. Provide tempered units where required by code.
3.

2.8 INSULATED SANDWICH GLAZING PANELS

1. Glazed insulated metal sandwich panel units, designated on window elevations as “MP”
2. Design Criteria: Product selection has been based on Thermolite Glazing Panels. Provide a product that meets or exceeds the design criteria of the selected product and fully compatible with storefront window system.
3. Product consists of a foam plastic core bonded on both sides to a thermoplastic stabilizer with a smooth texture / clear anodized color finished sheet of aluminum on each face and is manufactured in a laminated batch (i.e. discontinuous) process using adhesive(s) between dissimilar materials.
4. Core: Polyisocyanurate (ISO): 2.0 pcf density (Type I)
5. Aluminum Sheets (in accordance with ASTM B209):
   a. Face Thickness: 0.015 inch nominal or thicker
   b. Backer Thickness: 0.0125 inch nominal or thicker
6. Thickness / R-Value (hr °F ft^2 / BTU) (tested in accordance with ASTM C518): 1 inch / R-3.9 (ISO)
7. Thermal Movement: Allow for free and noiseless horizontal and vertical thermal movement due to expansion and contraction of insulated glazing panels over a temperature range of -20°F to +180°F at the material surface.

   a. Buckling, opening of joints, failure of sealants, or any other detrimental effects of thermal movement are not permitted.

   b. Installation procedures shall consider the ambient temperature range at the time of the respective operation.

8. Fire Performance: [Noncombustible Material per IBC as tested in accordance with the following:]

   a. [Elementary materials (i.e. core) tested in accordance with ASTM E136]

   b. Composite materials (i.e. insulated glazing panel) tested in accordance with ASTM E84: Class A Material

      i. Insulated glazing panels shall have a Flame Spread Index (FSI) of not more than 25 in the maximum thickness as intended for use.

      ii. Insulated glazing panels shall have a Smoke Developed Index (SDI) of not more than 450 in the maximum thickness as intended for use.

2.81 FINISH

A. Exterior Finish: Finish shall meet the performance criteria of AAMA 2605.

1. Standard and Standard Metallic Finishes:

a. Selected from a Manufacturer's standard color chart

2. Standard Specialty Finish:

a. Selected by the architect from a Manufacturer's standard color chart

B. Exterior Finish: Finish shall meet the performance criteria of the AA.

1. Anodized:

a. Clear Coating: AA-M12C23A31 Architectural Class

b. Color Coating: AA-M12C23A34 Architectural Class

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:
1. Manufacturing and installation tolerances, including those for size, squareness, and 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.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass, and impair performance and appearance.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Spacers: Provide continuous gaskets between the glass and aluminum framing.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

I. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

J. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.5 LOCK-STRIP GASKET GLAZING

A. Comply with ASTM C716 and gasket manufacturer's written instructions. Provide supplementary wet seal and weep system, unless otherwise indicated.

3.6 SAFETY AND SECURITY WINDOW FILM

A. Install security film in accordance with film manufacturer’s written instructions. Install film so that patterns and lines are level and plumb, without bubbles, ripples, or waves. Where possible, install film in full length and width without seams. Where seams are required, lay out film starting at the center point of the glazed area scheduled to receive film.

3.7 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and spacers. Clean surfaces in accordance with manufacturer's recommendations.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION

SECTION 10 71 13: EXTERIOR SUN CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section covers Aluminum Sunshade Systems, including accessories, mountings, and shims. Sunshades are anchored directly to the vertical and/or horizontal mullions.

B. Types of Kawneer Sunshades include:
   1. Versoleil® SunShade Horizontal Single Blade System compatible with:
      a. 1600 Wall System®1 Curtain Wall System
      b. Trifab® VersaGlaze® (Center Glaze) 451
   2. Versoleil® SunShade Vertical Single Blade System compatible with:
      a. 1600 Wall System®1 Curtain Wall System

C. Related Sections:
   1. 072700: Air Barriers
   2. 079200: Joint Sealants
   3. 083213: Sliding Aluminum-Framed Glass Doors
   4. 084113: Aluminum-Framed Entrances and Storefronts
   5. 084413: Glazed Aluminum Curtain Walls
   6. 88000: Glazing

1.3 DEFINITIONS

A. For fenestration industry standard terminology and definitions, refer to the Fenestration & Glazing Industry Alliance (FGIA) Glossary (AAMA AG-13).

1.4 PERFORMANCE REQUIREMENTS

A. Structural Performance:
   1. Combined load on sunshade configurations to be determined in accordance with ASCE 7 or applicable code requirements. Combined load consists of wind, snow and ice loads.
   2. Design sunshade configurations to withstand stresses due to combined load. Stresses resulting from thermal expansion/contraction, shall not cause permanent deformation of sunshade assemblies or disengagement from the glazed system.
   3. The assembled sunshade shall be capable of supporting the specified combined load without damage, permanent deformation, or disengagement from the glazed system mullion.
   4. Blade deflection shall not exceed L/120 of span length.

5. Submit test reports verifying compliance with each test requirement required by the project.

B. Shading Performance:
1. Design shall allow for one-time adjustment of the aerofoil blade angle and size to optimize the shading performance based on project location, latitude, altitude, building orientation, surrounding conditions, and aesthetic requirements.
a. Blades shall be capable of orientations of:
1) Horizontal sunshade configurations: Clockwise is positive and anti-clockwise negative 0°, -15°
2) Vertical Sunshade configurations: Clockwise is positive and anti-clockwise negative --15°, -0°
2. Following blade sizes are available [Width in inches (in mm)]: 6” (152), 8” (203), 10” (254), 12” (305), 14” (356).

C. Thermal Movements: Allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures.
1. Temperature Change (Range): 120 deg F (49 deg C), ambient; 180 deg F (82 deg C), material surfaces.

D. Environmental Product Declaration (EPD): Shall have a Type III Product-Specific EPD.

1.5 SUBMITTALS

A. Product Data:
1. For each type of product indicated, include:
a. Construction details
b. Material descriptions
c. Dimensions of individual components and profiles
d. Finishes
2. Recycled Content:
3. Material Ingredient Reporting:
a. Include documentation for material reporting that has a complete list of chemical ingredients to at least 100 ppm (0.01%) that covers 100% of the product.

B. Shop Drawings:
1. Plans
2. Elevations
3. Sections
4. Blade angles
5. Blade spacing
6. Attachments to other compatible systems work

C. Samples for Initial Selection:
1. Provide samples for units with factory-applied color finishes.
2. Provide samples of hardware and accessories involving color selection.

D. Samples for Verification:
1. Provide a verification sample for each type of exposed finish required, in manufacturer's standard sizes.

E. LEED Submittals:
1. Materials and Resources: Provide product information and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
2. Optimize Energy Performance: Provide information confirming that products contribute to increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.
3. Daylighting 75 percent of Spaces: Provide information confirming that products provide the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:
1. Installer must have successfully installed the same or similar systemsrequired for the project and other projects of similar size and scope.

B. Manufacturer Qualifications:

C. Source Limitations:
1. Obtain aluminum exterior sunshades and glazed aluminum curtain walls and storefront system through one source from a single manufacturer.

D. Product Options:
1. Information on drawings and in specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
2. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Mockups:
1. Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

F. Pre-installation Conference:
1. Conduct conference at project site to comply with requirements in Division 01 Project Management and Coordination Section.

1.7 PROJECT CONDITIONS

A. Field Measurements:
1. Verify actual locations of structural supports for sunshades by field measurements before fabrication.
2. Indicate measurements on shop drawings.

1.8 WARRANTY

A. Submit manufacturer's standard warranty for owner's acceptance.

B. Warranty Period:
   1. Two years from Date of Substantial Completion of the project provided however that in no event shall the Limited Warranty begin later than six months from date of shipment by manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product:
   1. Kawneer Company, Inc.
      a. Versoleil® Single Blade Horizontal Sunshade
      b. Versoleil® Single Blade Vertical Sunshade

B. Subject to compliance with requirements, provide a comparable product by the following:
   1. Manufacturer: (CRL)
   2. Series: (8010 adjustable single blade sunshade)
   3. Profile Dimension: (4”, 12”)

C. Substitutions:
   1. Refer to Division 01 Substitutions Section for procedures and submission requirements.
   2. Pre-Contract (Bidding Period) Substitutions:
      a. Submit written requests ten (10) days prior to bid date.
   3. Post-Contract (Construction Period) Substitutions:
      a. Submit written request in order to avoid installation and construction delays.
   4. Product Literature and Drawings:
      a. Submit product literature and drawings modified to suit specific project requirements and job conditions.
   5. Certificates:
      a. Submit certificate(s) certifying that the substitute manufacturer (1) attests to adherence to specification requirements for sunshade performance criteria, and (2) has been engaged in the design, manufacture, and fabrication of sunshades for a period of not less than ten (10) years. (Company Name)
   6. Test Reports:
      a. Submit test reports verifying compliance with each test requirement required by the project.
   7. Samples:
      a. Provide samples of typical product sections and finish samples in manufacturer's standard sizes.

D. Substitution Acceptance:
   1. Acceptance will be in written form, either as an addendum or modification.
   2. Acceptance will be documented by a formal change order signed by the owner and contractor.

2.2 MATERIALS

A. Aluminum Extrusions:
   1. Alloy and temper recommended by glazed aluminum curtain wall and storefront manufacturer for strength, corrosion resistance, and application of required finish
   2. Not less than 0.070" (1.8 mm) wall thickness at any location for the main frame
   3. Complying with ASTM B221: 6063-T6 alloy and temper

B. Thermal Barrier:
   1. When applied on a thermally broken captured system, sunshade shall be thermally isolated from the interior aluminum mullions by a nominal 0.25" (6.3) thick low conductance material.

C. Aluminum Sheet Alloy:
   1. Shall meet the requirements of ASTM B209.

D. Sealant:
   1. For sealants required within fabricated sunshade system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

E. Tolerances:
   1. References to tolerances for wall thickness and other cross-sectional dimensions of glazed curtain wall and storefront members are nominal and in compliance with AA Aluminum Standards and Data.

F. Red List Free:
   1. Product does not contain PVC or Neoprene.

2.3 SUNSHADES

A. Sunshade Members:
   1. Manufacturer's standard extruded or formed-aluminum framing members of thickness and reinforced as required to support imposed loads.

B. Fasteners and Accessories:
   1. Nonmagnetic stainless steel to be non-corrosive and compatible with aluminum members, anchors, and other components.

C. Perimeter Anchors:
   1. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

D. Packing, Shipping, Handling, and Unloading:
   1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

E. Storage and Protection:
   1. Store materials so that they are protected from exposure to harmful weather conditions.
   2. Handle material and components to avoid damage.

3. Protect material against damage from elements, construction activities, and other hazards before, during, and after installation.

2.4 ACCESSORY MATERIALS

A. Bituminous Paint:
1. Cold-applied asphalt-mastic paint
2. Complies with SSPC-Paint 12 requirements except containing no asbestos
3. Formulated for 30-mil (0.762 mm) thickness per coat

2.5 FABRICATION

A. Extrude or form aluminum shapes before finishing.

B. Fabricate components that, when assembled, have the following characteristics:
1. Profiles that are sharp, straight, and free of defects or deformations
2. Accurately fitted joints that are flush, hairline, and weatherproof
3. Physical and thermal isolation of glazing from framing members
4. Accommodations for thermal and mechanical movements of glazing and framing that maintain required glazing edge clearances
5. Fasteners, anchors, and connection devices that are concealed from view to the greatest extent possible

C. Sunshade:
1. Fabricate components for assembly using manufacturer’s standard installation instructions.

D. After fabrication, clearly mark components to identify their locations in project according to shop drawings.

2.6 ALUMINUM FINISHES

A. Finish designations that are prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Factory Finishing:
1. Kawneer Permanodic® AA-M10C21A31, AAMA 611, Architectural Class II Clear Anodic Coating

PART 3 - EXECUTION

3.1 EXAMINATION

A. With installer present, examine areas for compliance with requirements for installation tolerances and other conditions affecting performance of the work.

B. Proceed with installation only after correcting unsatisfactory conditions.

3.2 INSTALLATION

A. General:
1. Comply with manufacturer's written instructions. Refer to installation instructions of the compatible curtain wall or storefront system.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure non-movement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.
7. Seal joints watertight where shown on approved shop drawings and/or manufacturer's standard installation instructions.

B. Metal Protection:
1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components plumb and true in alignment with established lines and grades.

D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjusting: Not applicable.

B. Protection:
1. Protect installed product’s finish surfaces from damage during construction.
2. Protect aluminum sunshade system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants

C. Cleaning:
1. Repair or replace damaged installed products.
2. Clean installed products in accordance with manufacturer’s instructions prior to owner’s acceptance.
3. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.
4. Remove construction debris from project site and legally dispose of debris.

END OF SECTION

THE LEWIS GROUP ARCHITECTS, INC.

Knoxville & Cleveland, Tennessee

A NEW FACILITY FOR:

UNION COUNTY PUBLIC SCHOOLS HORACE MAYNARD MIDDLE SCHOOL

CONSULTANTS:

LAND DEVELOPMENT SOLUTIONS
CIVIL ENGINEER

HAINES STRUCTURAL GROUP
STRUCTURAL ENGINEER

ENGINEERING SERVICES GROUP, INC.
MECHANICAL ENGINEER

VREELAND ENGINEERS, INC.
ELECTRICAL ENGINEER

DENNIS FORD FOOD CONSULTANT SERVICES
FOOD SERVICE CONSULTANT

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FP1.24	SECOND FLOOR PLAN - AREA D - FIRE PROTECTION	03/15/2024		
FP1.25	SECOND FLOOR PLAN - AREA E - FIRE PROTECTION	03/15/2024		
FP1.26	SECOND FLOOR PLAN - AREA F - FIRE PROTECTION	03/15/2024		
FP3.01	FIRE PROTECTION DETAILS	03/15/2024	04/26/2024	R1-SFMO RD 1
7				
FS100	FS EQUIPMENT LAYOUT PLAN	03/15/2024		
FS200	FS EQUIPMENT WASTE LAYOUT PLAN	03/15/2024		
FS300	FS EQUIPMENT PLUMBING LAYOUT PLAN	03/15/2024		
FS400	FS EQUIPMENT ELECTRICAL LAYOUT PLAN	03/15/2024		

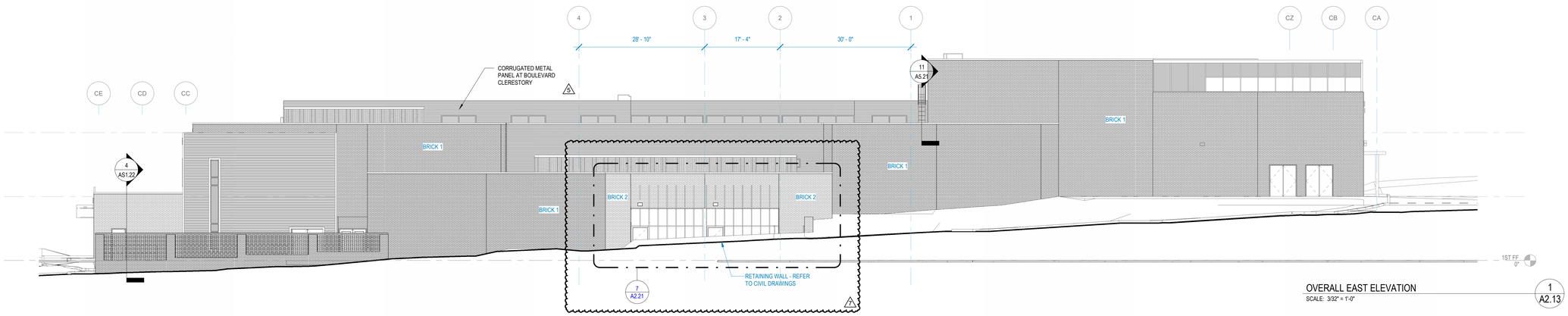
LEWIS GROUP ARCHITECTS
| KNOXVILLE, TN | 6512 DEANE HILL DR. 37919 - PH. 865.584.5000 | CLEVELAND, TN | 63 OCOEE ST. 37311 - PH. 423.476.0012
info@lewisgroup.net | www.lewisgroup.net

PROJECT REVISIONS

#	DATE	DESCRIPTION
1	04/26/2024	R1-SFMO RD 1
2	05/20/2024	R2
3	05/31/2024	ADD 001
4	06/10/2024	ADD 002
5	06/14/2024	ADD 003
6	06/17/2024	ADD 004
7	06/19/2024	ADD 005

PROJECT DATE
03/15/2024

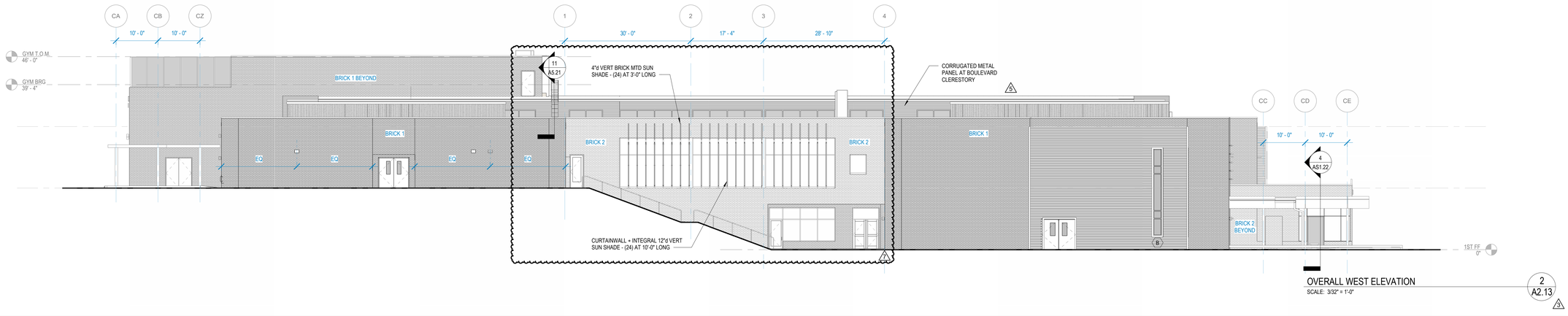
PROJECT NO.
21074



OVERALL EAST ELEVATION

SCALE: 3/32" = 1'-0"

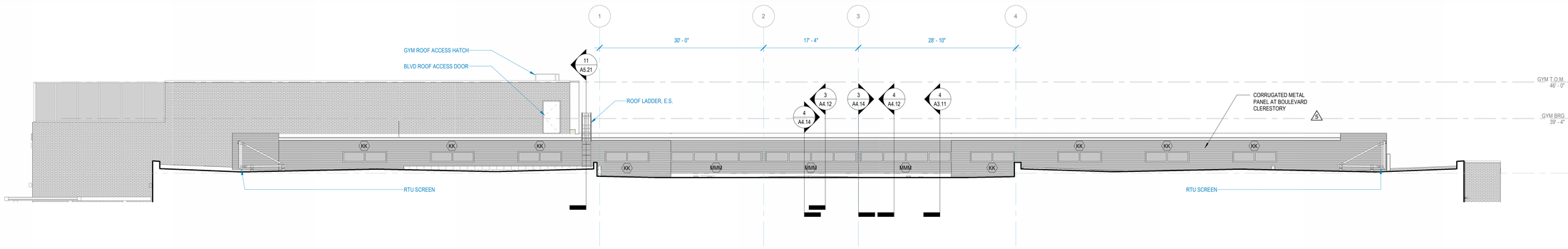
1 A2.13



OVERALL WEST ELEVATION

SCALE: 3/32" = 1'-0"

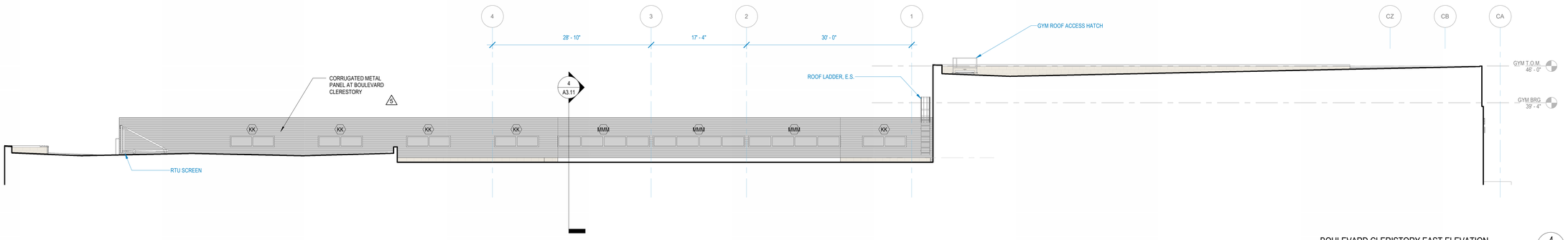
2 A2.13



BOULEVARD CLERISTORY WEST ELEVATION

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

3 A2.13



BOULEVARD CLERISTORY EAST ELEVATION

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

4 A2.13

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JACOB STAFFORD THOMAS REGISTERED ARCHITECT AGRICULTURE COMMERCE No. 104781 STATE OF TENNESSEE
Jacob Thomas 03/15/2024

A NEW SCHOOL FACILITY:
HORACE MAYNARD MIDDLE SCHOOL
UNION COUNTY PUBLIC SCHOOLS
MAYNARDVILLE, TN

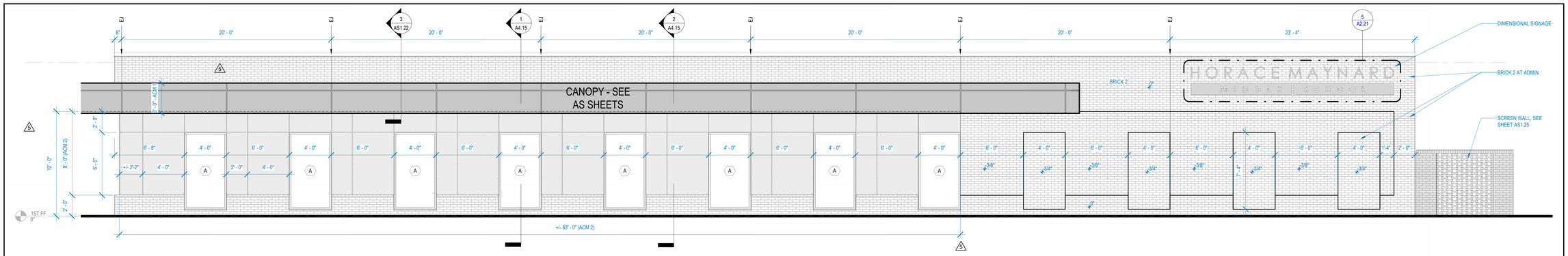
DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

PROJECT REVISIONS

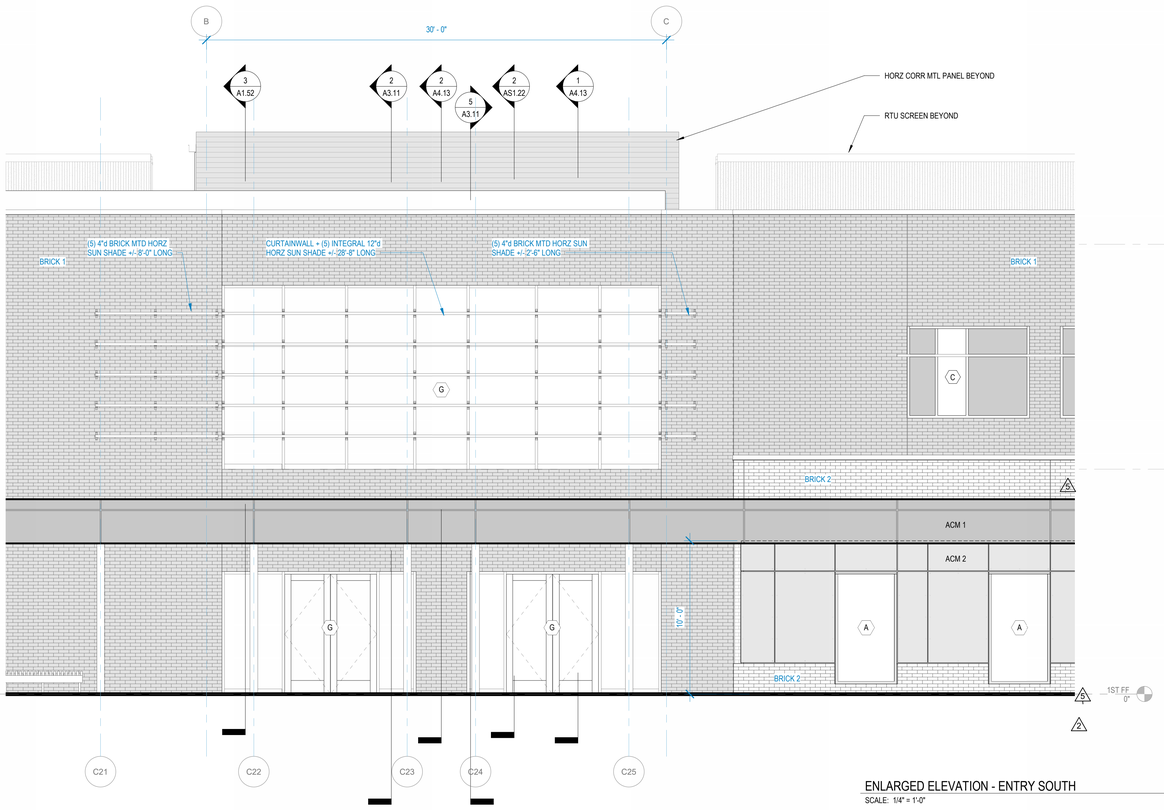
#	DATE	DESCRIPTION
3	05/31/2024	ADD 001
5	06/14/2024	ADD 003
7	06/19/2024	ADD 005

BUILDING ELEVATIONS - EAST & WEST

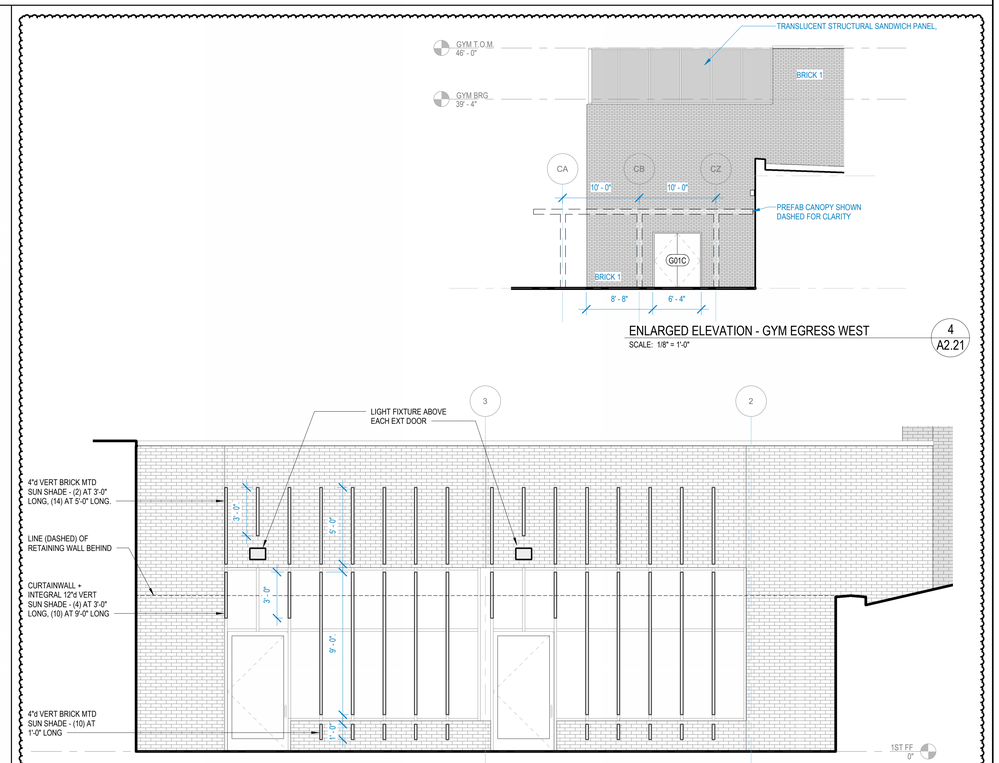
A2.13



ENLARGED ELEVATION - ADMIN SOUTH
SCALE: 1/4" = 1'-0"
1 A2.21

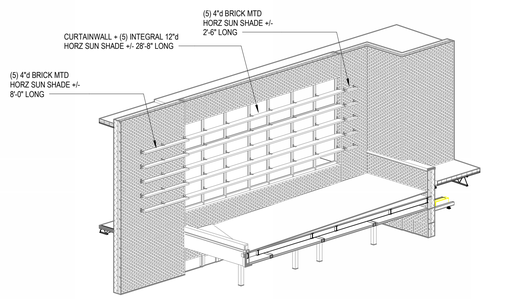


ENLARGED ELEVATION - ENTRY SOUTH
SCALE: 1/4" = 1'-0"
2 A2.21

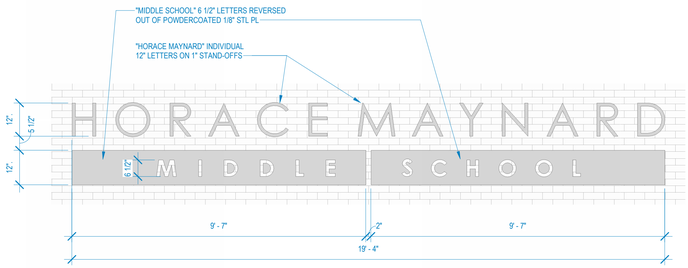


ENLARGED ELEVATION - GYM EGRESS WEST
SCALE: 1/8" = 1'-0"
4 A2.21

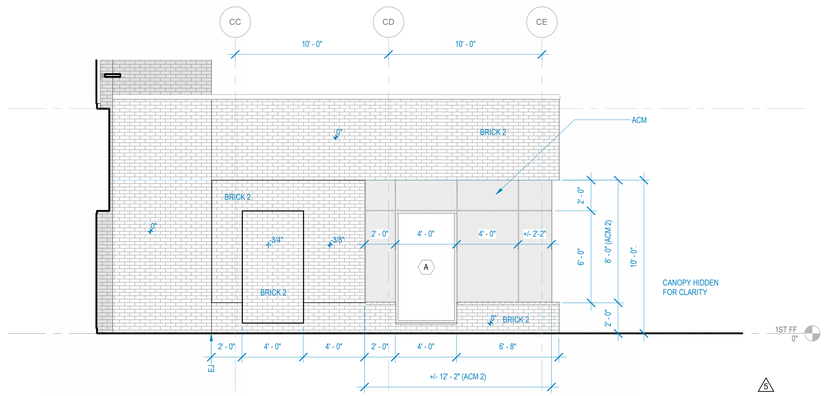
EAST ELEVATION - CAFETERIA GLAZING / FINS
SCALE: 1/4" = 1'-0"
7 A2.21



AXON- ENTRY SOUTH
SCALE:
6 A2.21



BUILDING SIGNAGE - ENLARGED ELEVATION
SCALE: 1/2" = 1'-0"
5 A2.21



ENLARGED ELEVATION - ADMIN WEST
SCALE: 1/4" = 1'-0"
3 A2.21

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info@lewisgroup.net | www.lewisgroup.net

JACOB STAFFORD THOMAS REGISTERED ARCHITECT AGRICULTURE COMMERCE No. 104784 STATE OF TENNESSEE 05/20/2024

A NEW SCHOOL FACILITY:
HORACE MAYNARD MIDDLE SCHOOL
UNION COUNTY PUBLIC SCHOOLS
MAYNARDVILLE, TN

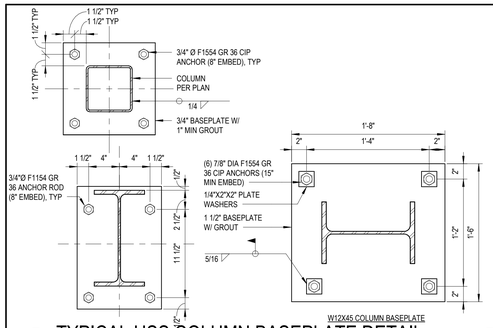
DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

PROJECT REVISIONS

#	DATE	DESCRIPTION
2	05/20/2024	R2
3	05/31/2024	ADD 001
5	06/14/2024	ADD 003
7	06/19/2024	ADD 005

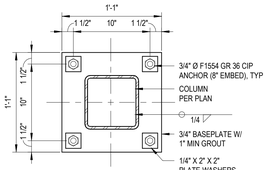
BUILDING ELEVATIONS - ENLARGED

A2.21



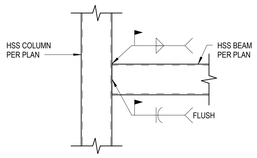
1 TYPICAL HSS COLUMN BASEPLATE DETAIL

1 1/2" = 1'-0"



2 HSS CANOPY COL BASEPLATE

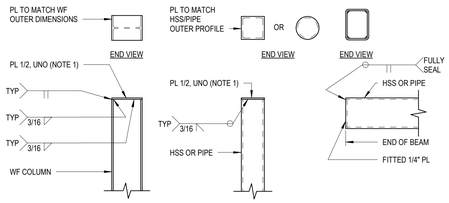
1 1/2" = 1'-0"



NOTES:
1. WELD SIZE TO MATCH THICKNESS OF THINNER TUBE WALL.
2. PROVIDE SIMILAR DETAIL WHEN BEAM IS CONTINUOUS OVER THE TOP OF THE COLUMN.

3 TYPICAL HSS-TO-HSS CONNECTION

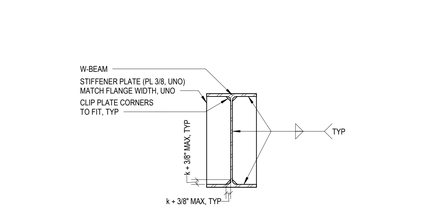
1" = 1'-0"



NOTES:
1. WHERE SLOPING BEAMS FRAME INTO TOP OF COLUMNS, SLOPE COLUMN CAP PLATES TO MATCH TOP OF BEAM, UNO.
2. ALL WELDS FINISHED FLUSH, UNO.
3. FLUSH FINISH REQUIREMENTS MAY BE WAIVED, SUBJECT TO ARCH AND ENGINEER WRITTEN APPROVAL.

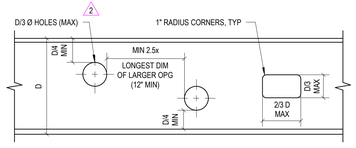
4 TYP COL/BEAM CAP AND CLOSURE PLATES

3/4" = 1'-0"



5 TYPICAL STIFFENER PLATE DETAIL

1 1/2" = 1'-0"



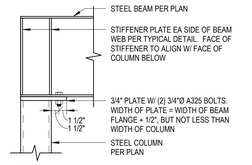
NOTES:
1. CONTRACTORS SHALL COORDINATE SIZES AND LOCATIONS OF ALL BEAM PENETRATIONS WITH MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS. ALL PENETRATIONS LARGER THAN 2" Ø SHALL BE SHOWN ON SHOP DRAWINGS OR SKETCHES AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. FIELD CUTTING IS NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.
2. OPENINGS MAY OCCUR IN MIDDLE HALF OF BEAM LENGTH ONLY, WITHOUT APPROVAL.
3. NO CUTTING MAY OCCUR IN TOP OR BOTTOM QUARTER OF BEAM DEPTH.
4. ADJACENT OPENINGS MAY BE SPACED NO CLOSER THAN THE LESSER OF 12" OR 2.5x LARGER OPENING SIZE, EDGE TO EDGE.
5. MAXIMUM SIZES OF OPENINGS SHALL BE D/3 Ø OF D/3 x 2D/3 AS SHOWN.
6. NO OPENINGS SHALL OCCUR WITHIN 12" OF AN ADJACENT BEAM CONNECTION.
7. REQUIRED OPENINGS NOT MEETING ABOVE CRITERIA SHALL BE SUBMITTED TO ENGINEER FOR REINFORCING DESIGN.

6 TYPICAL STEEL BEAM PENETRATION DETAIL

3/4" = 1'-0"

7 ACCORDION POST BASEPLATE DETAIL

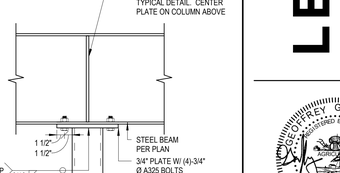
1 1/2" = 1'-0"



NOTE:
1. THIS DETAIL APPLIES AT ALL TOP OF COLUMN CONNECTIONS WITH A BEAM FRAMING INTO COLUMN FROM ONE SIDE ONLY

8 TYPICAL BEAM-COLUMN CONNECTION

1" = 1'-0"



9 TYP MOMENT CONNECTION AT HSS COLUMN

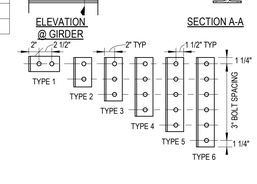
1" = 1'-0"

10 TYP STEEL BEAM OVER STEEL COLUMN

1" = 1'-0"

TYPE	CAPACITY	DOUBLE ANGLE SIZE	# OF BOLTS	BEAM SIZE
1	11 KIPS	L6X4X3/8	2	W6, C6
2	26 KIPS	L3-1/2X3-1/2X5/16	2	W8, W10, C8, C10
3	45 KIPS	L3-1/2X3-1/2X5/16	3	W12, W14, C12
4	75 KIPS	L3-1/2X3-1/2X5/16	4	W16, W18
5	136 KIPS	L3-1/2X3-1/2X5/16	5	W21
6	175 KIPS	L3-1/2X3-1/2X5/16	6	W24

NOTES:
1. ALL BOLTS SHALL BE 3/4" ASTM A325 BEARING TYPE BOLTS.
2. ALL HOLES SHALL BE STANDARD HOLES.
3. CONNECTION CAPACITIES ARE LRFD FACTORED CAPACITIES BASED ON THE SMALLEST COPED BEAM WEB THICKNESS OF EACH BEAM DEPTH.
4. ANGLES MAY BE SHOP WELDED TO SUPPORTED BEAM AT CONTRACTOR'S OPTION. IF CONNECTION IS WELDED, DO NOT PROVIDE BOLT HOLES IN ANGLE LEGS TO RECEIVE WELDS.
5. SINGLE CLIP ANGLE CONNECTIONS ARE NOT ALLOWED.
6. BEAM-TO-BEAM SHOWN. BEAM-TO-COLUMN SIMILAR.
7. CONNECTION DESIGN IGNORES ECCENTRICITY EFFECTS ON THE CONNECTION PER AISC IF CENTERLINE OF BOLT LINE IS LESS THAN 3" FROM GIRDER WEB

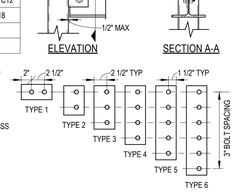


11 TYP DOUBLE ANGLE SHEAR CONNECTIONS

1" = 1'-0"

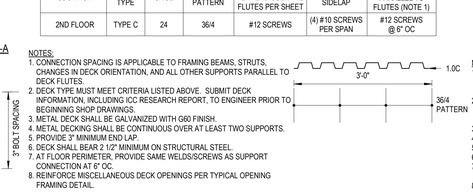
TYPE	CAPACITY	SINGLE SHEAR PLATE SIZE	# OF BOLTS	BEAM SIZE
1	7 KIPS	PL 1/2" x 6" x 3"	2	W6, C4, C6
2	18 KIPS	PL 3/8" x 4" x 5 1/2"	2	W8, W10, C8, C10
3	35 KIPS	PL 3/8" x 4" x 8 1/2"	3	W12, W14, C12
4	54 KIPS	PL 3/8" x 4" x 11 1/2"	4	W16, W18
5	74 KIPS	PL 3/8" x 4" x 1'- 2 1/2"	5	W21
6	93 KIPS	PL 3/8" x 4" x 1'- 5 1/2"	6	W24

NOTES:
1. ALL BOLTS SHALL BE 3/4" ASTM A325 BEARING TYPE BOLTS.
2. ALL HOLES SHALL BE STANDARD OR HORIZONTAL SHORT SLOTTED HOLES.
3. DO NOT COPE BEAMS AT STANDARD SHEAR TAB CONNECTIONS.
4. ALL CONNECTION CAPACITIES ARE LRFD FACTORED CAPACITIES BASED ON THE SMALLEST BEAM WEB THICKNESS OF EACH BEAM DEPTH.



12 TYP SHEAR TAB CONNECTION SCHEDULE

1" = 1'-0"



NOTES:
1. CONNECTION SPACING IS APPLICABLE TO FRAMING BEAMS, STRUTS, CHANGES IN DECK ORIENTATION, AND ALL OTHER SUPPORTS PARALLEL TO DECK FLUTES.
2. DECK TYPE MUST MEET CRITERIA LISTED ABOVE. SUBMIT DECK INFORMATION, INCLUDING ICC RESEARCH REPORT, TO ENGINEER PRIOR TO BEGINNING SHOP DRAWINGS.
3. METAL DECK SHALL BE GALVANIZED WITH G60 FINISH.
4. METAL DECKING SHALL BE CONTINUOUS OVER AT LEAST TWO SUPPORTS.
5. PROVIDE 3" MINIMUM END LAP.
6. DECK SHALL BEAR 2 1/2" MINIMUM ON STRUCTURAL STEEL.
7. AT FLOOR PERIMETER, PROVIDE SAME WELDS/SCREWS AS SUPPORT CONNECTION AT 6" OC.
8. REINFORCE MISCELLANEOUS DECK OPENINGS PER TYPICAL OPENING FRAMING DETAIL.

13 TYP NONCOMPOSITE FLR DECK ATTCHMNT

3/4" = 1'-0"

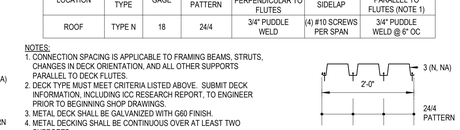
NOTES:
1. CONNECTION SPACING IS APPLICABLE TO FRAMING BEAMS, STRUTS, CHANGES IN DECK ORIENTATION, AND ALL OTHER SUPPORTS PARALLEL TO DECK FLUTES.
2. DECK TYPE MUST MEET CRITERIA LISTED ABOVE. SUBMIT DECK INFORMATION, INCLUDING ICC RESEARCH REPORT, TO ENGINEER PRIOR TO BEGINNING SHOP DRAWINGS.
3. METAL DECK SHALL BE GALVANIZED WITH G60 FINISH.
4. METAL DECKING SHALL BE CONTINUOUS OVER AT LEAST TWO SUPPORTS.
5. PROVIDE 3" MINIMUM END LAP.
6. DECK SHALL BEAR 2 1/2" MINIMUM ON STRUCTURAL STEEL.
7. AT ROOF PERIMETER, PROVIDE SAME WELDS/SCREWS AS SUPPORT CONNECTION AT 6" OC.
8. REINFORCE MISCELLANEOUS DECK OPENINGS PER TYPICAL ROOF OPENING FRAMING DETAIL.

14 TYPICAL METAL ROOF DECK ATTACHMENT

3/4" = 1'-0"

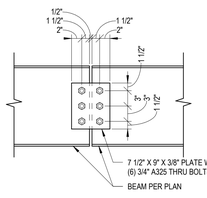
LOCATION	DECK TYPE	GAGE	FASTENER PATTERN	CONN AT SUPPORT PERPENDICULAR TO FLUTES PER SHEET	CONN AT SIDELAP	CONN AT SUPPORTS PARALLEL TO FLUTES (NOTE 1)
ROOF	TYPE N	18	24/4	3/4" PUDDLE WELD	(4) #10 SCREWS PER SPAN	3/4" PUDDLE WELD @ 6" OC

NOTES:
1. CONNECTION SPACING IS APPLICABLE TO FRAMING BEAMS, STRUTS, CHANGES IN DECK ORIENTATION, AND ALL OTHER SUPPORTS PARALLEL TO DECK FLUTES.
2. DECK TYPE MUST MEET CRITERIA LISTED ABOVE. SUBMIT DECK INFORMATION, INCLUDING ICC RESEARCH REPORT, TO ENGINEER PRIOR TO BEGINNING SHOP DRAWINGS.
3. METAL DECK SHALL BE GALVANIZED WITH G60 FINISH.
4. METAL DECKING SHALL BE CONTINUOUS OVER AT LEAST TWO SUPPORTS.
5. PROVIDE 3" MINIMUM END LAP.
6. DECK SHALL BEAR 2 1/2" MINIMUM ON STRUCTURAL STEEL.
7. AT ROOF PERIMETER, PROVIDE SAME WELDS/SCREWS AS SUPPORT CONNECTION AT 6" OC.
8. REINFORCE MISCELLANEOUS DECK OPENINGS PER TYPICAL ROOF OPENING FRAMING DETAIL.



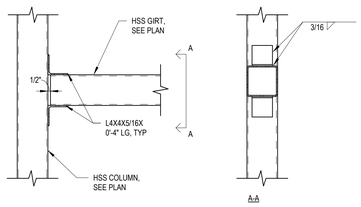
15 TYPICAL METAL ROOF DECK ATTACHMENT

3/4" = 1'-0"



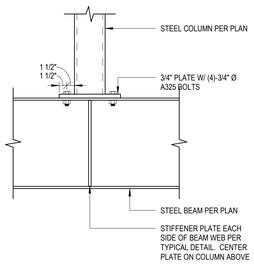
16 TYP BEAM SPLICE CONN

1" = 1'-0"



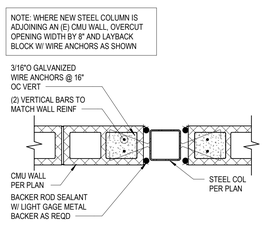
17 TYPICAL GIRT- COLUMN CONNECTION

1" = 1'-0"



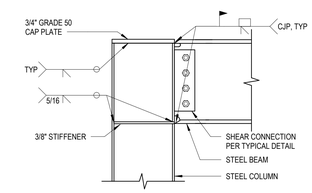
18 TYP STL COL BEARING ON STEEL BEAM

1" = 1'-0"



19 TYPICAL MASONRY ADJOINING STL COLUMN

1" = 1'-0"



20 TYP MOMENT CONNECTION AT WIDE FLANGE COLUMN

1" = 1'-0"

LEWIS GROUP ARCHITECTS
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info@lewisgroup.net | www.lewisgroup.net

A NEW SCHOOL FACILITY:

HORACE MAYNARD MIDDLE SCHOOL

UNION COUNTY PUBLIC SCHOOLS

MAYNARDVILLE, TN

DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

PROJECT REVISIONS

#	DATE	DESCRIPTION
2	05/31/2024	ADD 001
3	06/20/2024	ADD 005

TYPICAL STEEL DETAILS

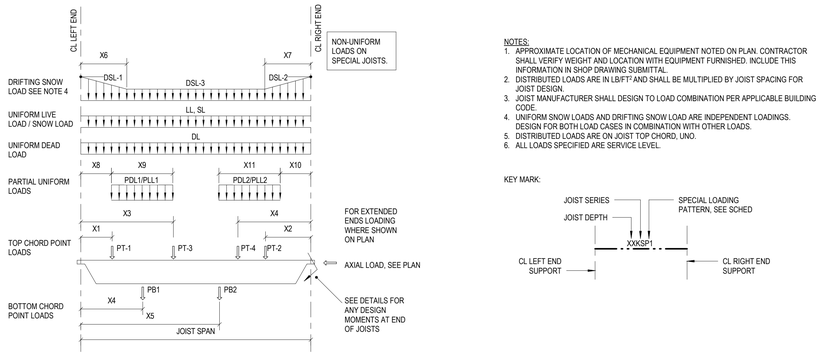
S0.07

HAINES STRUCTURAL GROUP
800 S. GAY STREET, STE. 1750 KNOXVILLE, TN 37929
(865) 329-9920 | WWW.HAINES-SG.COM
project no. 220837

SPECIAL JOIST LOADING PATTERN SCHEDULE

BAR JOIST LABEL	REQUIRED MOMENT OF INERTIA	DEAD LOAD (PSF)	LIVE LOAD (PSF)	SL (PSF)	DSL-1 (PSF)	DSL-2 (PSF)	DSL-3 (PSF)	PARTIAL DEAD LOAD (PDL1)		PARTIAL DEAD LOAD (PDL2)		PT1 (LB) - DEAD	PT2 (LB) - DEAD	PT3 (LB) - DEAD	PT4 (LB) - DEAD
					X6 (FT)	X7 (FT)		X8 (FT)	X9 (FT)	X10 (FT)	X11 (FT)	X1 (FT)	X2 (FT)	X3 (FT)	X4 (FT)
28KSP-1	475 IN^4	67.8 PSF	60.0 PSF	-	-	-	-	-		-		1995.00 LB	1995.00 LB	-	-
					-	-		-	-	-	-	12.25 FT	12.25 FT	-	-
28KSP-2	475 IN^4	67.8 PSF	60.0 PSF	-	-	-	-	249.38 PLF		-		997.50 LB	997.50 LB	-	-
					-	-		6.50 FT	20.00 FT	-	-	6.33 FT	6.33 FT	-	-
28KSP-3	475 IN^4	67.8 PSF	60.0 PSF	-	-	-	-	498.75 PLF		498.75 PLF		-	-	-	-
					-	-		0.00 FT	8.75 FT	8.75 FT	0.00 FT	-	-	-	-
28KSP-4	475 IN^4	67.8 PSF	60.0 PSF	-	-	-	-	-		-		1995.00 LB	1995.00 LB	-	-
					-	-		-	-	-	-	8.25 FT	8.25 FT	-	-
28KSP-5	475 IN^4	67.8 PSF	60.0 PSF	-	-	-	-	249.38 PLF		-		1995.00 LB	1995.00 LB	-	-
					-	-		6.50 FT	20.00 FT	-	-	12.25 FT	12.25 FT	-	-
28KSP-6	475 IN^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		249.4 PLF		1995.00 LB	1995.00 LB	1995.00 LB	-
					-	-		0.00 FT	8.20 FT	0.00 FT	6.67 FT	5.20 FT	6.25 FT	8.00 FT	-
12KSP-7	30.0 In^4	67.8 PSF	125.0 PSF	-	-	-	-	249.38 PLF		-		-	-	-	-
					-	-		0.00 FT	12.25 FT	-	-	-	-	-	-
22KSP-8	200.0 In^4	67.8 PSF	60.0 PSF	-	-	-	-	-		-		1995.00 LB	1995.00 LB	-	-
					-	-		-	-	-	-	6.33 FT	7.25 FT	-	-
22KSP-9	200.0 In^4	67.8 PSF	60.0 PSF	-	-	-	-	498.75 PLF		-		1995.00 LB	1995.00 LB	-	-
					-	-		0.00 FT	20.50 FT	-	-	6.33 FT	7.25 FT	-	-
22KSP-10	200.0 In^4	67.8 PSF	60.0 PSF	-	-	-	-	498.75 PLF		-		-	-	-	-
					-	-		0.00 FT	20.50 FT	-	-	-	-	-	-
28KSP-11	505.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1331.66 LB	-	-	-
					-	-		-	-	-	-	23.00 FT	-	-	-
28KSP-12	505.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1331.66 LB	-	-	-
					-	-		23.00 FT	34.33 FT	-	-	23.00 FT	-	-	-
28KSP-13	400.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1331.66 LB	-	-	-
					-	-		0.00 FT	20.00 FT	-	-	20.00 FT	-	-	-
28KSP-14	400.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1331.66 LB	-	-	-
					-	-		-	-	-	-	20.00 FT	-	-	-
28KSP-15	400.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1995.00 LB	-	-	-
					-	-		-	-	-	-	17.00 FT	-	-	-
28KSP-16	400.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1995.00 LB	-	-	-
					-	-		0.00 FT	17.00 FT	-	-	17.00 FT	-	-	-
28KSP-17	400.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1331.66 LB	-	-	-
					-	-		19.33 FT	36.33 FT	-	-	17.00 FT	-	-	-
28KSP-18	400 IN^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1331.66 LB	-	-	-
					-	-		22.83 FT	29.50 FT	-	-	23.00 FT	-	-	-
20KSP-19	150.0 In^4	67.8 PSF	125.0 PSF	-	-	-	-	498.75 PLF		-		-	-	-	-
					-	-		0.00 FT	2.33 FT	-	-	-	-	-	-
20KSP-20	150.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		1995.00 LB	-	-	-
					-	-		16.67 FT	6.67 FT	-	-	16.67 FT	-	-	-
20KSP-21	150.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1995.00 LB	-	-	-
					-	-		-	-	-	-	16.67 FT	-	-	-
28KSP-22	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	249.38 PLF		-		1995.00 LB	1995.00 LB	-	-
					-	-		0.00 FT	25.67 FT	-	-	13.10 FT	5.00 FT	-	-
28KSP-23	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1433.91 LB	1433.91 LB	-	-
					-	-		-	-	-	-	9.00 FT	9.75 FT	-	-
28KSP-24	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		997.50 LB	-	-	-
					-	-		0.00 FT	3.33 FT	-	-	3.33 FT	-	-	-
28KSP-25	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1995.00 LB	-	-	-
					-	-		-	-	-	-	3.33 FT	-	-	-
28KSP-26	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		997.50 LB	997.50 LB	997.50 LB	-
					-	-		0.00 FT	20.50 FT	-	-	3.00 FT	9.25 FT	12.42 FT	-
28KSP-27	380.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	249.38 PLF		-		1995.00 LB	1995.00 LB	-	-
					-	-		19.75 FT	29.50 FT	-	-	12.33 FT	9.33 FT	-	-
28KSP-28	375.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1331.66 LB	-	-	-
					-	-		-	-	-	-	13.33 FT	-	-	-
16KSP-29	60.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	-		-		1331.66 LB	-	-	-
					-	-		-	-	-	-	8.67 FT	-	-	-
16KSP-30	60.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	498.75 PLF		-		-	-	-	-
					-	-		0.00 FT	8.67 FT	-	-	-	-	-	-
16KSP-31	60.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	249.38 PLF		-		1331.66 LB	-	-	-
					-	-		0.00 FT	8.67 FT	-	-	8.67 FT	-	-	-
16KSP-32	325.0 In^4	67.8 PSF	40.0 PSF	-	-	-	-	142.50 PLF		-		-	-	-	-
					-	-		0.00 FT	29.33 FT	-	-	-	-	-	-
22KSP-33	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					7.2 PSF	-		-	-	-	-	25.50 FT	2.50 FT	-	-
22KSP-34	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					7.2 PSF	-		-	-	-	-	3.25 FT	25.67 FT	-	-
22KSP-35	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		333.33 LB	333.33 LB	-	-
					7.2 PSF	-		-	-	-	-	25.50 FT	2.50 FT	-	-
10KSP-36	N/A	21.0 PSF	20.0 PSF	12.7 PSF	-	-	7.7 PSF	-		-		256.67 LB	256.67 LB	-	-
					-	-		-	-	-	-	6.00 FT	1.50 FT	-	-
10KSP-37	N/A	21.0 PSF	20.0 PSF	12.7 PSF	-	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					-	-		-	-	-	-	2.75 FT	4.25 FT	-	-
12KSP-38	N/A	21.0 PSF	20.0 PSF	12.7 PSF	-	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					-	-		-	-	-	-	7.50 FT	9.00 FT	-	-
12KSP-39	N/A	21.0 PSF	20.0 PSF	12.7 PSF	-	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					-	-		-	-	-	-	7.50 FT	4.25 FT	-	-
10KSP-40	N/A	21.0 PSF	20.0 PSF	12.7 PSF	-	-	7.7 PSF	-		-		256.67 LB	256.67 LB	-	-
					-	-		-	-	-	-	7.50 FT	4.25 FT	-	-
22KSP-41	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		192.50 LB	326.67 LB	192.50 LB	326.67 LB
					7.2 FT	-		-	-	-	-	9.83 FT	6.25 FT	13.50 FT	10.75
22KSP-42	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		366.67 LB	366.67 LB	-	-
					7.2 FT	-		-	-	-	-	23.33 FT	6.42 FT	-	-
22KSP-43	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		183.33 LB	183.33 LB	-	-
					7.2 FT	-		-	-	-	-	23.33 FT	6.42 FT	-	-
22KSP-44	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					7.2 FT	-		-	-	-	-	25.50 FT	3.50 FT	-	-
22KSP-45	N/A	21.0 PSF	20.0 PSF	12.7 PSF	35.3 PSF	-	7.7 PSF	-		-		326.67 LB	326.67 LB	-	-
					7.2 FT	-		-	-	-	-	3.25 FT	25.83 FT	-	-
32LHSP-46	N/A	21.0 PSF	20.0 PSF	12.7 PSF	31.3 PSF	31.3 PSF	7.7 PSF	-		-		466.67 LB	466.67 LB	-	-
					6.2 FT	6.2 FT		-	-	-	-	41.67 FT	13.25 FT	-	-
16KSP-47	N/A	21.0 PSF	20.0 PSF	12.7 PSF	20.4 PSF	48.9 PSF	7.7 PSF	-		-		550.00 LB	550.00 LB	-	-
					3.3 FT	10.8 FT		-	-	-	-	11.25 FT	4.50 FT	-	-
16KSP-48	N/A	21.0 PSF	20.0 PSF	12.7 PSF	20.4 PSF	48.9 PSF	7.7 PSF	-		-		855.00 LB	855.00 LB	-	-
					3.3 FT	10.8 FT		-	-	-	-	11.20 FT	8.00 FT	-	-
16KSP-49	N/A	21.0 PSF	20.0 PSF	12.7 PSF	28.0 PSF	19.2 PSF	7.7 PSF	-		-		385.00 LB	385.00 LB	-	-
					5.3 FT	3.0 FT		-	-	-	-	11.67 FT	3.33 FT	-	-
22KSP-50	N/A	21.0 PSF	20.0 PSF	12.7 PSF	33.5 PSF	-	7.7 PSF	-		-		366.67 LB	366.67 LB	-	-
					6.7 FT	-		-	-	-	-	2.83 FT	47.00 FT	-	-
28KSP-51	475 IN^4	67.8 PSF	40 PSF	-	-	-	-	-		-		1500 LB	-	-	-
					-	-		-	-	-	-	2.7 FT	-	-	-
28KSP-52	475 IN^4	67.8 PSF	40 PSF	-	-	-	-	-		249 PLF		-	-	-	-
					-	-		-	-	0 FT	6.67 FT	-	-	-	-
18KSP-53	N/A	21 PSF	20 PSF	28 PSF	34.3 PSF	-	-	-		-		256.67 LB	366.67 LB	256.67 LB	366.67 LB
					7 FT	-		-	-	-	-	6.33 FT	2.00 FT	10.10 FT	6.33 FT
18KSP-54	N/A	21 PSF	20 PSF	12.7 PSF	34.3 PSF	-	-	-		-		366.67 LB	366.67 LB	-	-
					7 FT	-		-	-	-	-	17.2 FT	1.0 FT	-	-
18KSP-55	N/A	21 PSF	20 PSF	12.7 PSF	34.3 PSF	-	-	-		-		466.67 LB	466.67 LB	-	-
					7 FT	-		-	-	-	-	5.67 FT	12.00 FT	-	-
18KSP-56	N/A	21 PSF	20 PSF	12.7 PSF	34.3 PSF	-	-	-		-		256.67 LB	256.67 LB	-	-
					7 FT	-		-	-	-	-	17.83 FT	0.75 FT	-	-
18KSP-57	N/A	21 PSF	20 PSF	28 PSF	-	34.3 PSF	-	-		-		466.67 LB	466.67 LB	466.67 LB	466.67 LB
					-	7 FT		-	-	-	-	12.20 FT	9.20 FT	17.33 FT	14.33 FT
20KSP-58	125 IN^4	67.8 PSF	80 PSF	-	-	-	-	-		-		1,180 LB	1420.00 LB	-	-
					-	-		-	-	-	-	23.00 FT	18.67 FT	-	-
20KSP-59	125 IN^4	67.8 PSF	80 PSF	-	-	-	-	-		-		1420.00 LB	-	-	-
					-	-		-	-	-	-	18.67 FT	-	-	-

21 SPECIAL JOIST LOADING PATTERN SCHEDULE
1/2" = 1'-0"



NOTES:
1. APPROXIMATE LOCATION OF MECHANICAL EQUIPMENT NOTED ON PLAN. CONTRACTOR SHALL VERIFY WEIGHT AND LOCATION WITH EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION IN SHOP DRAWING SUBMITTAL.
2. DISTRIBUTED LOADS ARE IN LB/FT^2 AND SHALL BE MULTIPLIED BY JOIST SPACING FOR JOIST DESIGN.
3. JOIST MANUFACTURER SHALL DESIGN TO LOAD COMBINATION PER APPLICABLE BUILDING CODE.
4. UNIFORM SNOW LOADS AND DRIFTING SNOW LOAD ARE INDEPENDENT LOADINGS. DESIGN FOR BOTH LOAD CASES IN COMBINATION WITH OTHER LOADS.
5. DISTRIBUTED LOADS ARE ON JOIST TOP CHORD, UNO.
6. ALL LOADS SPECIFIED ARE SERVICE LEVEL.

KEY MARK:

3 SPECIAL JOIST LOADING PATTERN SCHEDULE
1 1/2" = 1'-0"

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A NEW SCHOOL FACILITY:
HORACE MAYNARD MIDDLE SCHOOL
UNION COUNTY PUBLIC SCHOOLS
MAYNARDVILLE, TN

DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

PROJECT REVISIONS

#	DATE	DESCRIPTION
2	05/31/2024	ADD 001
3	06/20/2024	ADD 005

HAINES STRUCTURAL GROUP
800 S. GAY STREET, STE. 1750 KNOXVILLE, TN 37929
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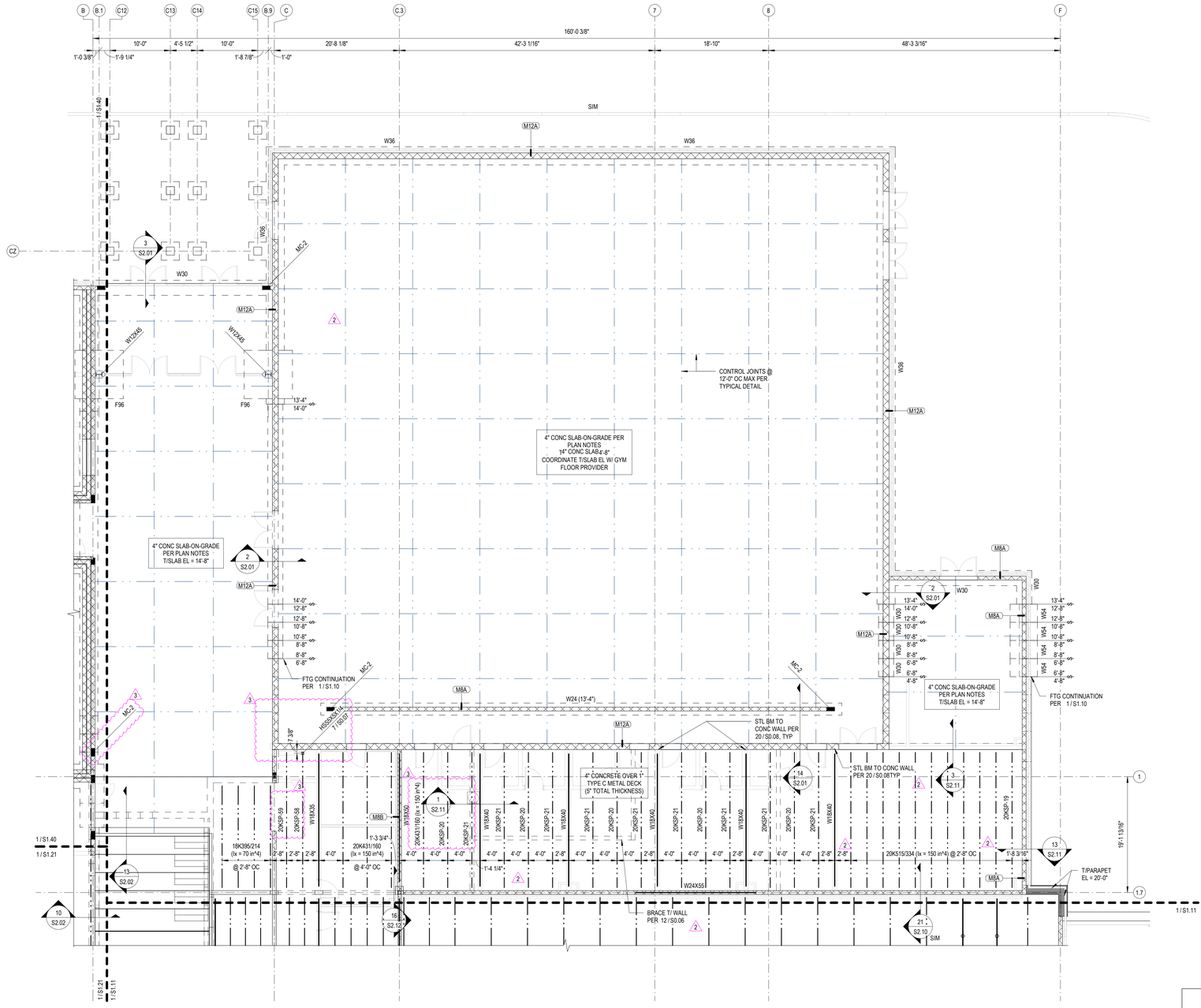
project no. 220337

TYPICAL STEEL JOIST LOADING DETAILS

S0.11



FLOOR FRAMING PLAN - AREA 'E'

1/8" = 1'-0"

COLUMN FOOTING SCHEDULE

MARK	LENGTH	WIDTH	DEPTH	REINFORCEMENT
F36	3'-0"	3'-0"	1'-0"	(4)-#5 EW BTM
F42	3'-6"	3'-6"	1'-0"	(4)-#5 EW BTM
F48	4'-0"	4'-0"	1'-0"	(5)-#5 EW BTM
F54	4'-6"	4'-6"	1'-0"	(5)-#5 EW BTM
F60	5'-0"	5'-0"	1'-0"	(6)-#5 EW BTM
F66	5'-6"	5'-6"	1'-0"	(6)-#5 EW BTM
F72	6'-0"	6'-0"	1'-6"	(7)-#5 EW TOP & BTM
F78	6'-6"	6'-6"	1'-6"	(7)-#5 EW TOP & BTM
F96	8'-0"	8'-0"	1'-6"	(10)-#5 EW TOP & BTM

WALL FOOTING SCHEDULE

MARK	WIDTH	DEPTH	REINFORCEMENT
TS18	1'-6"	1'-0"	(3)-#5 CONT W/ #5 X 1'-6" TRANS @ 1'-4" OC
W24	2'-0"	1'-0"	(3)-#5 CONT W/ #5 X 1'-6" TRANS @ 1'-4" OC
W30	2'-6"	1'-0"	(3)-#5 CONT W/ #5 X 2'-0" TRANS @ 1'-4" OC
W36	3'-0"	1'-0"	(4)-#5 CONT W/ #5 X 2'-6" TRANS @ 1'-4" OC
W42	3'-6"	1'-0"	(4)-#5 CONT W/ #5 X 3'-0" TRANS @ 1'-4" OC
W48	4'-0"	1'-0"	(5)-#5 CONT W/ #5 X 3'-6" TRANS @ 1'-4" OC
W54	4'-6"	1'-0"	(5)-#5 CONT W/ #5 X 4'-0" TRANS @ 1'-4" OC
W60	5'-0"	1'-0"	(6)-#5 CONT W/ #5 X 4'-6" TRANS @ 1'-4" OC
W78A	6'-6"	1'-6"	(7)-#6 CONT TOP & BTM W/ #6 X 6'-0" TRANS @ 1'-4" OC
W78B	6'-6"	1'-4"	(8)-#5 CONT W/ #5 X 6'-0" TRANS @ 1'-4" OC

FLOOR FRAMING PLAN NOTES

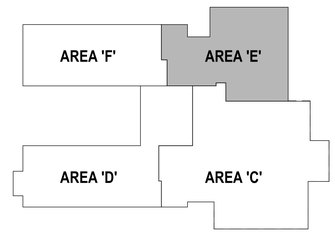
FLOOR FRAMING PLAN NOTES:

1. ELEVATIONS ARE BASED ON A REFERENCE FLOOR ELEVATION OF 0'-0", UNO.
2. T/ SLAB ELEVATION AT SECOND LEVEL= 14'-8", TYP, UNO
3. T/STEEL ELEVATION AT SECOND LEVEL = 14'-3", TYP, UNO
4. 4" CONCRETE OVER 1" 24 GA TYPE C METAL DECK (5" TOTAL THICKNESS) REINFORCED WITH WWF 6X6 W2.1XW2.1, TYP, UNO. SEE TYPICAL STEEL DETAILS FOR MORE INFORMATION.
5. [ ] INDICATES DEVIATION FROM TYPICAL TOP OF STEEL ELEVATION.
6. FOR ELEVATIONS, WALL SECTIONS, AND DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.

FOUNDATION PLAN NOTES

FOUNDATION PLAN NOTES:

1. ELEVATIONS ARE BASED ON A REFERENCE FLOOR ELEVATION OF 0'-0", UNO. TOP OF SLAB ON GRADE IS AT THE REFERENCE ELEVATION UNLESS NOTED OTHERWISE.
2. T/ INTERIOR FOOTING ELEVATION = 14'-0", TYP, UNO
3. T/ EXTERIOR FOOTING ELEVATION = 13'-4", TYP, UNO
4. SLAB ON GRADE IS 4 INCHES THICK AND REINFORCED WITH WWF 6X6 W2.1XW2.1. SLAB ON GRADE SHALL BE PLACED OVER A VAPOR BARRIER AND 4 INCHES (MIN) COMPACTED GRANULAR FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. SEE TYPICAL SLAB ON GRADE DETAILS FOR MORE INFORMATION.
5. EXTERIOR SLAB ON GRADE IS 4 INCHES THICK AND REINFORCED WITH WWF 6X6 W2.1XW2.1. SLAB ON GRADE SHALL BE PLACED OVER 4 INCHES (MIN) COMPACTED GRANULAR FILL. SEE TYPICAL SLAB ON GRADE DETAILS FOR MORE INFORMATION.
6. ( ) INDICATES TOP OF FOOTING ELEVATION AT NON-TYPICAL LOCATIONS.
7. "F60" INDICATES COLUMN OR ISOLATED SPREAD FOOTING MARK. SEE SCHEDULE FOR SIZE AND REINFORCEMENT.
8. "W24" INDICATES WALL OR CONTINUOUS FOOTING MARK. SEE SCHEDULE FOR SIZE AND REINFORCEMENT.
9. "TS24' & "TF24' INDICATE THICKENED SLAB AREAS TO BE POURED MONOLITHICALLY WITH SLAB ON GRADE. SEE SCHEDULE FOR SIZE AND REINFORCEMENT.
10. "TE" DENOTES TURN-DOWN SLAB EDGE. SEE TYPICAL DETAIL FOR SIZE AND REINFORCING.
11. "PT" INDICATES REINFORCED CONCRETE PEDESTAL. SEE SCHEDULE FOR SIZE AND REINFORCEMENT. TOP OF PEDESTAL IS TO ALIGN WITH ADJACENT WALL UNLESS NOTED OTHERWISE.
12. FOR ELEVATIONS, WALL SECTIONS, AND DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.
13. FOR SIDEWALKS, PAVING, AND SITE DETAILS AT THE BUILDING EXTERIOR, SEE ARCHITECTURAL AND CIVIL DRAWINGS.



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GEOFFREY GOOMIS
REGISTERED ENGINEER
No. 119715
STATE OF TENNESSEE
06/20/2024

A NEW SCHOOL FACILITY:

HORACE MAYNARD MIDDLE SCHOOL

UNION COUNTY PUBLIC SCHOOLS

MAYNARDVILLE, TN

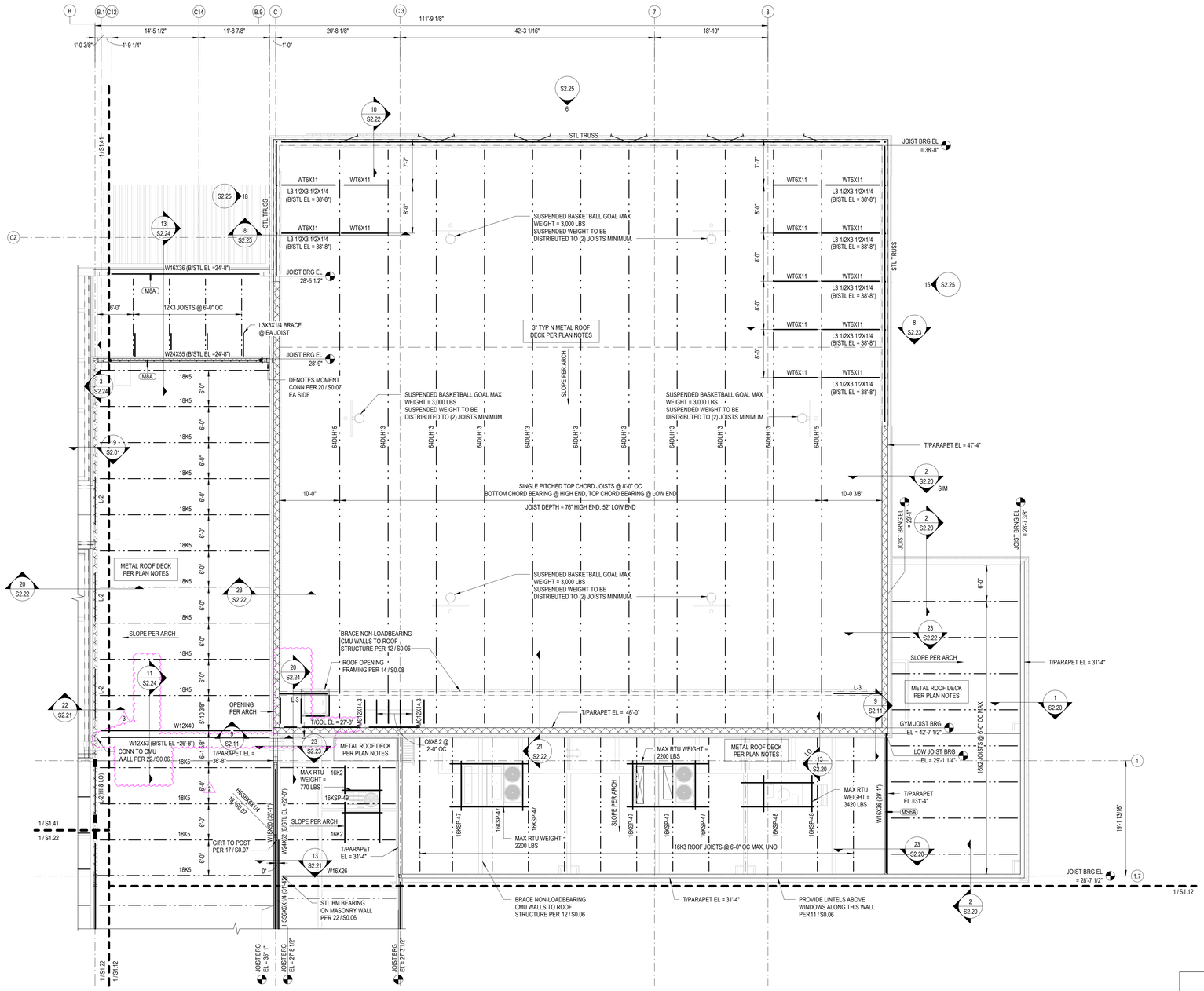
DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

PROJECT REVISIONS

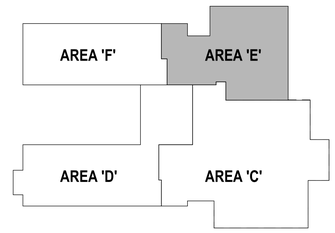
#	DATE	DESCRIPTION
2	05/31/2024	ADD 001
3	06/20/2024	ADD 005

FLOOR FRAMING PLAN - AREA 'E'

S1.30



1 ROOF FRAMING PLAN - AREA 'E'
1/8" = 1'-0"



ROOF FRAMING PLAN NOTES:

1. ELEVATIONS ARE BASED ON A REFERENCE FLOOR ELEVATION OF 0'-0", UNO.
2. T/STEEL ELEVATION AT SECOND LEVEL = 13'-6 1/2", TYP, UNO
3. TYPICAL ROOF DECK IS 1 1/2" 20 GA TYPE B METAL DECK, TYP, UNO. SEE TYPICAL STEEL DETAILS FOR MORE INFORMATION.
4. GYM ROOF DECK IS 3" 18 GA TYPE N METAL ROOF DECK, TYP, UNO. SEE TYPICAL STEEL DETAILS FOR MORE INFORMATION. 2
5. [ ] INDICATES DEVIATION FROM TYPICAL TOP OF STEEL ELEVATION.
6. FOR ELEVATIONS, WALL SECTIONS, AND DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.

ROOF FRAMING PLAN NOTES

LEWIS GROUP ARCHITECTS
| KNOXVILLE, TN | 6512 DEANE HILL DR. 37919 - PH. 865.584.5000 | CLEVELAND, TN | 63 OCOEE ST. 37311 - PH. 423.476.0012
info@lewisgroup.net | www.lewisgroup.net

GEOFFREY GOODMAN REGISTERED ENGINEER 119715 STATE OF TENNESSEE 06/20/2024

A NEW SCHOOL FACILITY:
HORACE MAYNARD MIDDLE SCHOOL
UNION COUNTY PUBLIC SCHOOLS
MAYNARDVILLE, TN

DATE: 03/15/2024
PROJECT NO: 21074
SBC NO:

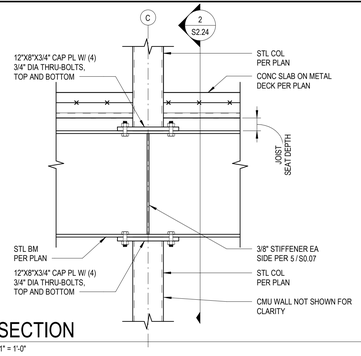
PROJECT REVISIONS

#	DATE	DESCRIPTION
2	05/31/2024	ADD 001
3	06/20/2024	ADD 005

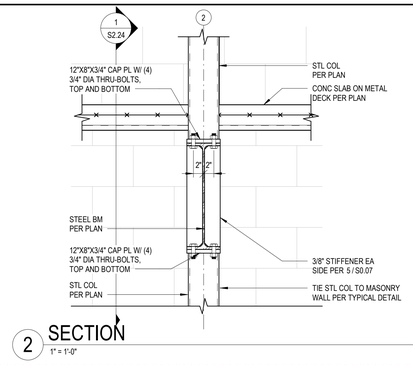
HAINES STRUCTURAL GROUP
800 S. GAY STREET, STE. 1750 KNOXVILLE, TN 37929
(865) 329-9920 | WWW.HAINES-SG.COM
project no. 220337

ROOF FRAMING PLAN - AREA 'E'

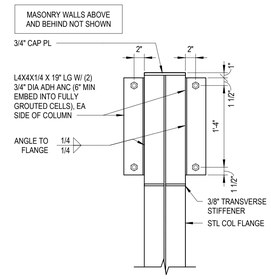
S1.31



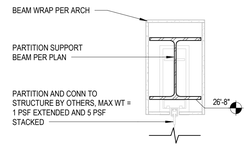
1 SECTION
1" = 1'-0"



2 SECTION
1" = 1'-0"

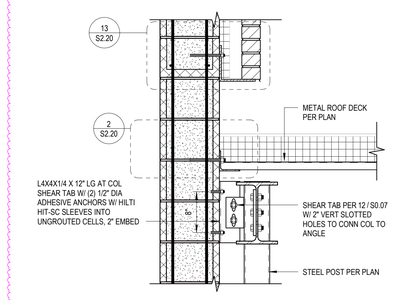


3 SECTION
1" = 1'-0"



11 SECTION
1" = 1'-0"

13 SECTION
1" = 1'-0"



20 SECTION
1" = 1'-0"

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JEFFREY GOOLSBY
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project no. 22037

SECTIONS & DETAILS

2

S2.24