# ADDENDUM NO. 5

May 16, 2022

Greenfield Central High School Auditorium Renovation and Addition – Bid Package No. 1 810 N. Broadway Greenfield, IN 46140

# TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated April 12, 2022, by Lancer+Beebe LLC. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 5-1 through ADD 5-2 and attached Lancer+Beebe LLC. Addendum No. 5, dated May 13, 2022, consisting of 2 pages, RFI Log consisting of 2 pages, Specification Sections 01 34 00 – BIM Requirements, 03 45 00 – Precast Architectural Concrete and Drawing Sheets: A112L, A113L, A142, A201, A202, A203, A511, A512, A513, A514, A515, and A516.

# A. SPECIFICATION SECTION 00 00 20 TABLE OF CONTENTS

1. Add the following specification sections:

Section 01 34 00 BIM Requirements Section 03 45 00 Precast Architectural Concrete

2. Delete the following specification sections:

Section	00 83 00	Schedule of Construction Wages
Section	03 41 00	Precast Structural Concrete

# B. SPECIFICATION SECTION 01 12 00 MULTIPLE CONTRACT SUMMARY

- 1. Paragraph 3.02 General Requirements
  - B. Provided By All Contractors as Applicable
    - 1. Add the following specification section:

Section 01 34 00 BIM Requirements

2. Paragraph 3.03A Bid Categories

# A. Bid Category No. 2 – Precast

1. Delete the following specification section:

Section 03 41 00 Precast Structural Concrete

2. Add the following specification section:

Section 03 45 00 Precast Architectural Concrete

# Add the following clarification:

8. The Contractor's BIM Coordinator is required to produce three-dimensional CAD file drawings formatted to be imported into Navisworks for 3D Coordination. These files are to include all components needed to coordination with 3D MEP Coordination files. These files are needed per the master schedule after approved shop drawings for specific areas of the building as scheduled. The Contractors BIM Coordinator and Site Forman are required to attend and participate in 3D Coordination Meetings and update their three-dimensional CAD file drawings from coordination through as-built.

# B. Bid Category No. 4 – Structural Steel

# Add the following clarification:

5. The Contractor's BIM Coordinator is required to produce three-dimensional CAD file drawings formatted to be imported into Navisworks for 3D Coordination. These files are to include all components needed to coordination with 3D MEP Coordination files. These files are needed per the master schedule after approved shop drawings for specific areas of the building as scheduled. The Contractors BIM Coordinator and Site Forman are required to attend and participate in 3D MEP Coordination Meetings and update their three-dimensional CAD file drawings from coordination through as-built.

# C. SPECIFICATION SECTION 01 32 00 SCHEDULES AND REPORTS

1. Add the following updated document:

Site Logistics Plan dated May 13, 2022

# SECTION 01 34 00 – BIM COORDINATION AND CLASH DETECTION

# PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies the requirements of Building Information Modeling and Clash Detection for major project components including but not limited to:
  - 1. Structural
  - 2. Mechanical
  - 3. Plumbing
  - 4. Fire Sprinkler
  - 5. Electrical
- B. General: The Contractor and Subcontractors shall prepare Building Information Models according to requirements established in the Building Information Modeling Protocol. All BIM models will be incorporated into one aggregate BIM file for reporting and resolving Model Element Clashes.
  - Each Contractor will be responsible for producing a model/models to represent the work of the Contractor in accordance with the requirements established in the Information Building Modeling Protocol and the BIM Coordination Plan provided by the Contractor.
  - 2. If the Contractor does not have the in-house capability to produce the required model/models, the Contractor may utilize the service of an outside entity to provide this service.
  - Each Contractor shall maintain their own model files as sole author.
     Subcontractors are responsible for providing the team with NavisWorks compatible files for their scope of work which will be used for coordination.
  - 4. The Contractor will be responsible for updating the BIM throughout duration of the project with changes to Work so that the BIM will accurately represent the Work as it was installed.
  - 5. It is the sole responsibility of the Contractor to ensure that space reservation through 3D Modeling is complete. If any part or piece of the system is not accurately represented in the BIM the Contractor will be responsible to install the work within the parameters of the project conditions at no additional cost or time extension to the Project.

# C. Model Management:

- The Contractor shall appoint a Modeling Manager responsible for working with the model and for guiding the 3D coordination process according to requirements established in the Building Information Modeling Protocol Exhibit.
- 2. The Contractor shall establish a BIM Coordination Plan to establish:
  - a. Model origin, coordinate system, and units
  - b. File storage location(s)
  - c. Processes for transferring and accessing Model files
  - d. Identification of design coordination and clash detection procedures
  - e. Model Access rights
  - f. Other Model Management responsibilities defined in the Building Information Modeling Protocol Exhibit.

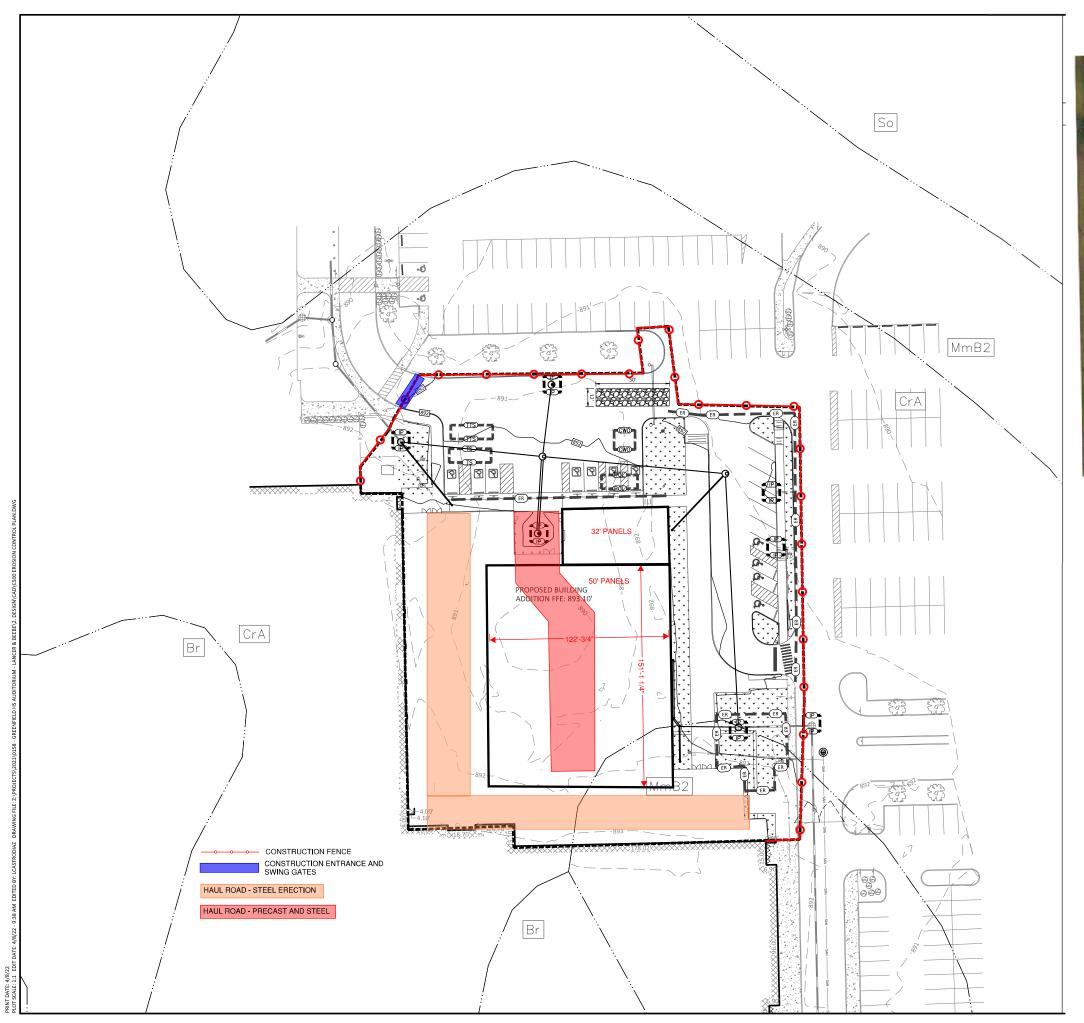
# D. BIM Coordination Meetings:

- 1. Each Contractor is required to take part in regular coordination review meetings. The time and place for these meetings will be established by Contractor. The purpose of the coordination meeting is to identify and resolve probable interferences between building systems.
- 2. The Schedule of BIM Coordination Meetings shall be coordinated with and inform Project Coordination activities, Submittals, and all other Project requirements.
- 3. Subcontractors shall supply a Contractor Model Element Author, authorized to act and make decisions on behalf of their organization.
- 4. If conflicts are identified and a resolution is agreed upon it is the Subcontractor's responsibility to have the necessary changes made in their model and republish said model to the coordination team in time for the next meeting unless another timeframe is agreed upon.

# PART 2 – IMPLEMENTATION

IMPLEMENTATION TABLE				
MEP Trades	3D coordination and clash detection			
Structural	3D coordination and clash detection			
Prefabrication	Trade partners encourage to take advantage of model for prefabrication,			
	coordination, and scheduling			
Pre-Installation	3D visualization to conduct preinstallation coordination.			
Site Logistics	Coordination of site logistics, and access			
Safety	3D visualization for assessing and documenting safety concerns			

QAQC	Verification of quality assurance and quality control issues and		
	documentation		
As built	Verification of as built condition for record set documentation, photo graphic		
	documentation.		





SITE LOGISTICS PLAN May 13, 2022

# LANCER + BEEBE, LLC

Project # 21107

# ADDENDUM NO. FIVE

PROJECT: GREENFIELD CENTRAL – AUDITORIUM RENOVATION AND

**ADDITION** 

PROJECT NUMBER: 21107

DATE OF ADDENDUM: MAY 13, 2022



THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND IS ISSUED IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING THE ADDENDUM ACKNOWLEDGMENT SECTION OF THE BID FORM.

**RFI LOG:** PLEASE REVIEW THE ATTACHED QUESTION AND ANSWER LOG.

# **SPECIFICATIONS:**

- 1. 00 01 10 INDEX
  - a. Remove 03 41 00 PRECAST STRUCTURAL CONCRETE
  - b. Add 03 45 00 PRECAST ARCHITECTURAL CONCRETE
- 2. 03 41 00 PRECAST STRUCTURAL CONCRETE
  - a. REMOVE ENTIRELY
- 3. 03 45 00 PRECAST ARCHITETURAL CONCRETE
  - a. ADDED SPEC

# **DRAWINGS:**

# LANCER + BEEBE, LLC

Project # 21107

- 4. A112L FLOOR PLAN SECOND FLOOR UNIT L
  - a. RE-ISSUED ENTIRE SHEET
  - b. UPDATED PLAN NOTES
- 5. A113L FLOOR PLAN CATWALK UNIT L
  - a. RE-ISSUED ENTIRE SHEET
  - b. ADDED AND MODIFIED NOTES FOR CATWALKS.
- 6. A142 CANOPY DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 7. A201 EXTERIOR ELEVATIONS
  - a. REVISED ELEVATIONS AND ADDED NOTE 31 FOR PRECAST REVEALS.
- 8. A202 EXTERIOR ELEVATIONS
  - a. REVISED ELEVATIONS AND ADDED NOTE 31 FOR PRECAST REVEALS.
- 9. A203 EXTERIOR ELEVATIONS
  - a. REVISED ELEVATIONS AND ADDED NOTE 31 FOR PRECAST REVEALS.
- 10. A511 SECTION DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 11. A512 SECTION DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 12. A513 SECTION DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 13. A514 SECTION DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 14. A515 SECITON DETAILS
  - a. RE-ISSUED ENTIRE SHEET
- 15. A516 SECTION DETAILS
  - a. RE-ISSUED ENTIRE SHEET

ATTACHMENTS: DRAWINGS LISTED ABOVE, RFI LOG.PDF

END OF ADDENDUM NO. FIVE

# **Greenfield Auditorium**

RFI Contact(s): RFI Due Date/Time: Bid Date/Time:

# **RFI LOG**

Published:05/13/2022

No.	DATE SUBMITTED	RESPONSIBLE PARTY	QUESTION	DATE RECEIVED	FROM	RESPONSE
1	4/28/2022	L+B	Please note Item 2.4, A., in specification 034100. Is the precast mix on all panels to be all structural gray concrete? All exterior panels appear to be covered with thin brick. For thin brick clad panels, it is recommended to acid etch/rinse the precast panels to clean the thin brick and to etch between the thin brick pieces for consistency. Do you want the brick clad precast panels to be acid etched/rinsed or the leave the finished surface with the cast thin brick unfinished?	4/28/2022	CORESLAB	Structural gray concrete is acceptable. Acid etched/rinsed is desired on the exterior.
2	4/28/2022	L+B	Please note Item 2.13, A. in specification 034100. The interior precast panel faces, are they to have a smooth as cast from the form finish? And, can the precast panel (all) back finishes be a two-pass hard hand steel trowel?	4/28/2022	CORESLAB	Precast panel back finishes can be a two-pass hand steel trowel.
3	4/28/2022	L+B	Please not Item 2.14, B., 3.(thin brick type 3), per the Exterior Elevation Notes on sheets A201, 202, and 203, Glen Gery Brick noted should be Pearl River, Wire Cut, not Brazilwood, Wire cut. Please confirm? Please be advised that thin brick lead times are not controlled by the precaster and could affect the project schedule if the thin brick material is not available/received at the precast plant in time to meet the casting schedule	4/28/2022	CORESLAB	See revised specification issued in Addendum No. 5.
4	4/28/2022	TSC	Are electrical boxes and conduits going to need to be cast into the precast panels? If so, please confirm that the electrical hardware will be furnished by others to the precast plant prior to casting by Others. Also, can we be given an estimated quantity of electrical hardware that will need to be cast in?	4/28/2022	CORESLAB	Yes, these items will be furnished by the Electrical/Low Voltage Contractor to the Bid Category No. 2 Contractor. Please refer to the bid documents to determine quantities and locations.
5	4/28/2022	TSC	Please confirm the steel ledge angels shown, attached to steel embed cast in precast embed plates, are to be furnished and installed by Others. (Ex. details 7, 9, 10 – S610). And the precaster in those similar details is to furnish and cast in the flat embed plates only cast into the precast panel backs?	4/28/2022	Geiger & Peters	All connection steel shapes, attched to precast embed plates, required for the proper support of the structural steel system shall be provided by Bid Category No. 4 Contractor
6	4/28/2022	L+B	Please reference specification 034100, page 7, Item 2.13, B. Can you confirm the size of all thin brick to be cast into the precast panels for the project is to be modular size, 2-1/4" x 7-5/8"?	4/28/2022	CORESLAB	See revised specification issued in Addendum No. 2.
7	5/13/2022	L+B	07 53 23 - The EPDM spec states the system is ballasted but also indicates the insulation is to be mechanically fastened. I assume this is a mistake and the insulation is to be loose laid. (fastening would defeat the cost advantage of ballast)	5/3/2022		Ballasted roof scope is limited to the Natatorium seating expansion (Unit K).

8	5/13/2022	L+B	07 53 23 - The EPDM spec lists Manville and Firestone as approved membrane manufacturers. I would assume Firestone and Manville would also be acceptable for the PVC membrane? I would think the school would prefer one manufacturer warranty.	5/3/2022	Foster Contracting	Yes - These manf. are acceptable. Manfacturers products must meet or exceed product performance and warranty listed in the specificaitons.
9	5/13/2022	L+B	07 54 19 - The PVC spec lists water based adhesive. Is solvent based adhesive also acceptable?	5/3/2022	Foster Contracting	Acceptable adhesives are per the manufactuer installation instructions/requirements.
10	5/13/2022	L+B	07 54 19 - The PVC spec lists light gray as the specified color for the membrane. This may / will significantly lengthen the lead time. I would advise proceeding with white membrane.	5/3/2022	Foster Contracting	Manufactuers standard white or grey is acceptable.
11	5/13/2022	L+B	Drawing A003 - Is R1c the only roof system that is the ballasted EPDM? I cannot tell which membrane goes where	5/3/2022	Foster Contracting	R1c is the only roof system that is ballasted. Roof types are labeled throughout the documents.
12	5/13/2022	TSC	What is the material for the wall rail (Note #46) and segmented handrail (note #49 and #59) on A112L? Are we responsible for these?" Reason I ask is because we are not responsible for the Decorative Rail which is commonly aluminum or stainless. This would lead me to believe that the rails in question would be aluminum or stainless to match the deco rail and the deco rail vendor would be responsible for these.	5/10/2022	Almet, Inc.	Items mentioned here should be considered by the decorative metal contractor.
13	5/13/2022	L+B/TSC	them.	5/10/2022	Almet, Inc.	AT THIS TIME WE DO NOT ANTICIPATE CAST IN NOSINGS.
14	5/13/2022	L+B	Where is detail 4/A517 cut? Its showing "Front of House" but I do not see where its cut. Also, it shows chain-link fencing along the "catwalk except as noted".  This is the only detail that shows where it is noted. Is fencing needed all around the catwalk?  Who is responsible for it? If we are, what is the spec for it? It's not listed anywhere.	5/10/2022	Almet, Inc.	See revised sheet A112L for sections.
15	5/13/2022	L+B	What is the spec or basis of design for the "Perforated Metal Riser"? Only thing listed is that I am to provide 14 GA if not stated elsewhere	5/10/2022	Almet, Inc.	Stairs in this project DO NOT have "Perforated Metal Risers"
16	5/13/2022	L+B	delivery date with 8' panels.	5/10/2022	FABCON	Design team does not recommend switching to an 8' panel as this will force redesign of exterior, interior structural, and MEP elements.
17	5/13/2022	TSC	Elevator Questions - who is responsible for the elevator accessories  1. Elevator sill angles  2. Elevator sump pit grating  We do plan on including the elevator hoist beam. This is common. The reason why we ask is that I see from the drawings that the elevator pit ladder is being supplied by the elevator MFG. (5/A402) Otherwise, we would add these with our bid.	5/10/2022	Almet, Inc.	Support angles for elevator sills by Elevator Subcontractor.     Elevator sump pit cover/grate by Bid Category No. 4 Contractor.     Hoist beams by Bid Category No. 4 Contractor.     Elevator pit ladders by Elevator Subcontractor.
18	5/13/2022	L+B/TSC	Is the Box Boom guardrail at detail 1 & 2/A517 the guardrail noted #61 on A112L? There are 6 total of different lengths. If its not Note #61, am I responsible for detail 1 & 2/A517 If so, how is it attached to the structure?	5/12/2022	Almet, Inc.	Bid Category No. 4 Contractor shall provide Box Boom and guard rail pipe assemblies. See revised plan notes on A112L in Addendum No. 5. Please refer to A303 for axon views of the areas in question.
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#### **SECTION 03 45 00**

# PRECAST ARCHITECTURAL CONCRETE

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Architectural precast concrete cladding and load-bearing units.

#### 1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site

#### 1.3 DEFINITION

A. Design Reference Sample: Sample of approved architectural precast concrete color, finish and texture, preapproved by Architect.

# 1.4 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide architectural precast concrete units and connections capable of withstanding the following design loads within limits and under conditions indicated:
  - 1. Loads: As indicated on structural drawings.

# 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each precast concrete mixture. Include compressive strength and waterabsorption tests.
- C. Shop Drawings: Detail fabrication and installation of architectural precast concrete units. Indicate locations, plans, elevations, dimensions, shapes, and cross sections of each unit. Indicate joints, reveals, and extent and location of each surface finish. Indicate details at building corners.
  - 1. Comprehensive engineering analysis signed and sealed by the qualified professional engineer registered in the state of Indiana responsible for its preparation. Show governing panel types, connections, and types of reinforcement, including special reinforcement.

# 1.6 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Material Certificates
- C. Material test reports: For aggregates.
- D. Field quality-control test reports.

# 1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm that assumes responsibility for engineering architectural precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
  - 1. Participates in PCI's plant certification program and is designated a PCI-certified plant for Group A, Category A1 Architectural Cladding and Load Bearing Units.
- B. Design Standards: Comply with ACI 318 and design recommendations of PCI MNL 120, "PCI Design Handbook Precast and Prestressed Concrete," applicable to types of architectural precast concrete units indicated.
- C. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 117, "Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products."
- D. Welding: Qualify procedures and personnel according to"
  - 1. AWS D1.1/D.1.1M, "Structural Welding Code Steel"
  - 2. AWS D1.4, "Structural Welding Code Reinforcing Steel."
- E. Mockups: After sample panel approval but before production of architectural precast concrete units, construct 4 x 4 mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for materials and execution.
  - 1. Provide a 15-16 SF mockup panel with full scale details and thin brick form liner.
  - 2. Build mockup architectural precast concrete complete with anchors, connections, flashings, and joint fillers.
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Viewing at the manufacturing plant is acceptable.

#### PART 2 - PRODUCTS

# 2.1 REINFORCING MATERIALS

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed.

- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- E. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 117.
- F. Prestressing Strand: ASTM A 416/A 416M, Grade 270 uncoated, 7-wire, low-relaxation strand.
  - 1. Coat unbonded post-tensioning strand with corrosion inhibitor passing ASTM D 1743 and sheath with polypropylene tendon sheathing. Include anchorage devices and coupler assemblies.

#### 2.2 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type III, gray, unless otherwise indicated.
  - 1. For surfaces exposed to view in finished structure, mix gray with white cement, of same type, brand, and mill source.
- B. Normal-Weight Aggregates: Except as modified by PCI MNL 117, ASTM C 33, with coarse aggregates complying with Class 5S. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
- C. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- D. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.
- E. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 116.

# 2.3 STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A 36/A 36M.
- B. Carbon-Steel Headed Studs: ASTM A 108, AISI 1018 through AISI 1020, cold finished, AWS D1.1/D1.1M, Type A or B, with arc shields and with minimum mechanical properties of PCI MNL 117, Table 3.2.3.
- C. Carbon-Steel Plate: ASTM A 283/A 283M.
- D. Malleable Iron Castings: ASTM A 47/A 47M.

- E. Carbon-Steel Castings: ASTM A 27/A 27M, Grade 60-30.
- F. High-Strength, Low-Alloy Structural Steel: ASTM A 572/A 572M.
- G. Carbon-Steel Structural Tubing: ASTM A 500, Grade C.
- H. Wrought Carbon-Steel Bars: ASTM A 675/A 675M, Grade 65.
- I. Deformed-Steel Wire or Bar Anchors: ASTM A 496 or ASTM A 706/A 706M.
- J. Carbon-Steel Bolts and Studs: ASTM A 307, Grade A; carbon-steel, hex-head bolts and studs; carbon-steel nuts, ASTM A 563; and flat, unhardened steel washers, ASTM F 844.
- K. High-Strength Bolts and Nuts: ASTM A 325, Type 1, heavy hex steel structural bolts; heavy hex carbon-steel nuts, ASTM A 563 and hardened carbon-steel washers, ASTM F 436.
- L. Zinc-Coated Finish: For exterior steel items, steel in exterior walls, and items indicated for galvanizing, apply zinc coating by hot-dip process according to ASTM A 123 or ASTM A 153.
  - 1. Galvanizing Repair Paint: High-zinc-dust-content paint with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035A or SSPC-Paint 20.
- M. Shop-Primed Finish: Prepare surfaces of nongalvanized steel items, except those surfaces to be embedded in concrete, according to requirements in SSPC-SP 3 and shop-apply SSPC-Paint 25 according to SSPC-PA 1.

#### 2.4 GROUT MATERIALS

- A. Sand-Cement Grout: Portland cement, ASTM C 150, Type I, and clean, natural sand, ASTM C 144 or ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time.
- C. Epoxy-Resin Grout: Two-component, mineral-filled epoxy resin; ASTM C 881/C 881M, of type, grade, and class to suit requirements.

# 2.5 INSULATED FLAT-WALL PANEL ACCESSORIES

- A. Extruded-Polystyrene Board Insulation: ASTM C578, Type IV, 1.55 lb/cu. ft. (26 kg/cu. m) ship-lap edges; with thickness as indicated.
- B. Wythe Connectors: Glass-fiber-reinforced vinylester connectors. manufactured to connect wythes of precast concrete panels.

# 2.6 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.
- B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at architectural precast concrete fabricator's option.
- C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 or PCI MNL 117 when tested according to ASTM C 1218/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion mixtures by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
  - 1. Compressive Strength (28 Days): 5000 psi minimum.
  - 2. Maximum water-cement ratio: 0.45.
- E. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 117.
- F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 117.
- G. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.

# 2.7 FABRICATION

- A. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
  - 1. Weld headed studs and deformed bar anchors used for anchorage according to AWS D1.1/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- B. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing architectural precast concrete units to supporting and adjacent construction.
- C. Cast-in reglets, slots, holes, and other accessories in architectural precast concrete units as indicated on the Contract Drawings.
- D. Cast-in openings larger than 10 inches in any dimension. Do no drill or cut openings or prestressing strand without Architect's approval.
- E. Reinforcement: Comply with recommendations in PCI MNL 117 for fabricating, placing, and supporting reinforcement.

- F. Reinforce architectural precast concrete units to resist handling, transportation, and erection stresses.
- G. Prestress tendons for architectural precast concrete units by either pretensioning or post-tensioning methods. Comply with PCI MNL 117.
- H. Comply with requirements in PCI MNL 117 and requirements in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.
- I. Place face mixture to a minimum thickness after consolidation of the greater of 1 inch or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.
- J. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units.
  - 1. Place backup concrete mixture to ensure bond with face-mixture concrete.
- K. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air on surfaces. Use equipment and procedures complying with PCI MNL 117.
  - 1. Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."
- L. Comply with PCI MNL 117 for hot- and cold-weather concrete placement.
- M. Identify pickup points of architectural precast concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each architectural precast concrete unit on a surface that will not show in finished structure.
- N. Cure concrete, according to requirements in PCI MNL 117, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.
- O. Discard and replace architectural precast concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 117 and Architect's approval.

# 2.8 FABRICATION TOLERANCES

A. Fabricate architectural precast concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished panel complies with PCI MNL 117 product tolerances as well as position tolerances for cast-in items.

# 2.9 FINISHES

- A. Panel faces shall be free of joint marks, grain, and other obvious defects. Corners, including false joints shall be uniform, straight, and sharp. Finish exposed-face surfaces of architectural precast concrete units to match approved and as follows:
  - 1. Design Reference Sample: Approved samples to be reviewed prior to start of panel production.
  - 2. Acid-Etched Finish: Use acid and hot-water solution, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces. Protect hardware, connections, and insulation from acid attach.
  - 3. Cast in Thin Brick Finish: ASTM C216, Type FBX, Grade SW.
    - 1. Metro Brick Brownstone Wirecut
    - 2. Glen Gery Brick Brazilwood Wirecut
    - 3. Glen Gery Brick Pearl River Wirecut
  - 4. Cast in Thin Brick: ASTM C216, PCI Compliant, Type FBX, Grade SW (<u>alternate acceptable</u> combination providing construction schedule can be met)

Size: Modular 2-1/4" x 7-5/8"

- 1. Belden: Modular Midland Blend A
- 2. Belden: Modular Seal Brown Velour A
- 3. Belden: Modular Sea Gray Velour
- B. Finish exposed surfaces of architectural precast concrete units by smooth, steel-trowel finish.

# 2.10 SOURCE QUALITY CONTROL

- A. Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."
- B. Owner will employ an independent testing agency to evaluate architectural precast concrete fabricator's quality-control and testing methods.

#### **PART 3 - EXECUTION**

#### 3.1 INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting architectural precast concrete units to supporting members and backup materials.
- B. Erect architectural precast concrete level, plumb, and square within specified allowable tolerances. Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.
  - 1. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  - 2. Unless otherwise indicated, provide for uniform joint widths of 3/4 inch.

- C. Connect architectural precast concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
- D. Welding: Comply with applicable AWS D1.1/D1.1M and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
- E. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
- F. Grouting Connections: Grout connections where required or indicated. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces. Keep grouted joints damp for not less than 24 hours after initial set. Promptly remove grout material from exposed surfaces before it affects finishes or hardens.
- G. Erect architectural precast concrete units level, plumb, square, true, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 117, Appendix I.

# 3.2 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Field welds will be subject to visual inspections and nondestructive testing according to ASTM E 165 or ASTM E 709. High-strength bolted connections will be subject to inspections.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- F. Prepare test and inspection reports.

#### 3.3 REPAIRS

- A. Repair damaged architectural precast concrete units if permitted by Architect. The Architect reserves the right to reject repaired units that do not comply with requirements.
- B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet.
- C. Prepare and repair damaged galvanized coatings with galvanizing repair paint according to ASTM A 780.

- D. Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.
- E. Remove and replace damaged architectural precast concrete units when repairs do not comply with requirements.

# 3.4 CLEANING

- A. Clean surfaces of precast concrete units exposed to view.
- B. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.
- C. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
  - 1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's recommendations. Clean soiled precast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
  - 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

END OF SECTION 034500

# **GENERAL NOTES - FLOOR PLAN**

 REFERENCE SHEET A002 FOR INTERIOR WALL TYPES INDICATED BY WALL TYPE TAGS.
 REFERENCE SHEET A003 FOR EXTERIOR WALL TYPES INDICATED BY WALL TYPE TAGS. 3. REFERENCE SHEETS A611 AND A612 FOR CURTAINWALL AND STOREFRONT TYPES INDICATED BY WALL TYPE TAGS. 4. REFERENCE SHEET A720 SERIES "INTERIOR FINISH LEGEND" AND INTERIOR FINISH PLANS FOR FINISHES SUCH AS FLOORING, PAINT OR COVERINGS APPLIED TO WALL AND FLOOR CONSTRUCTION. 5. PROVIDE FULL HEIGHT CORNER GUARDS AT ALL OUTSIDE CORNERS WITH GYPSUM BOARD FINISH. FLOOR TO CEILING HEIGHT 6. PROVIDE BULL-NOSE FINISH ON ALL OUTSIDE CORNERS OF CMU WALLS 7. PROVIDE SOLID SURFACE WINDOW SILLS @ ALL STOREFRONT GLAZING SILLS ABOVE

FINISHED FLOOR HEIGHT. WINDOW SILL TO EXTEND 1" PAST FINISHED WALL SURFACE, TYP. UNLESS OTHERWISE NOTED 8. REFERENCE A121 FOR ENLARGED PLANS 9. VIF ALL DIMENSIONS FOR CURTAINWALLS/STOREFRONTS AND CASEWORK

# FLOOR PLAN NOTES

1 PAPER TOWEL DISPENSER AND/OR WITH WASTE RECEPTACLE - REFER TO RESPONSIBILTY MATRIX 2 DRINKING FOUNTAIN - REF. P-SERIES

3 ELECTRIC HAND DRYER - REFER TO RESPONSIBILTY MATRIX 4 SOAP DISPENSER - REFER TO RESPONSIBILITY MATRIX BABY CHANGING STATION - REFER TO RESPONSIBILITY MATRIX 24"x36" WALL MOUNTED MIRROR - REFER TO RESPONSIBILITY MATRIX

8 GREENROOM VANITY MIRROR - REFER TO RESPONSIBILITY MATRIX 9 TOILET PLUMBING FIXTURE - REF. P-SERIES 10 ADA BUTTON. ATTACH TO BOLLARD. PROVIDE ASSOICATED ITEMS AND SYSTEMS.

11 SPLIT ADA BUTTON ATTACHED TO COLUMN. PROVIDE ASSOICATED ITEMS AND

SYSTEMS. REF. E-SERIES

12 TOILET PARTITION - REF. SPECS 13 TALL MIRROR - REFER TO RESPONSIBILITY MATRIX

14 WATER BOTTLE FILLER - REF. P-SERIES 15 HAND WASHING SINK - REF. P-SERIES 16 WALL MOUNTED TV - REFER TO RESPONSIBILITY MATRIX

ADA COMPLIANT GRAB BARS - REFER TO RESPONSIBILITY MATRIX 18 LINED SANITARY NAPKIN DISPOSAL - REFER TO RESPONSIBILITY MATRIX

19 BEVERAGE COOLER. - REFER TO RESPONSIBILITY MATRIX 20 TOILET PAPER DISPENSER - REFER TO RESPONSIBILITY MATRIX STAINLESS STEEL OPEN SHELVING - REFER TO RESPONSIBILITY MATRIX

22 URINAL PARTITION - REF. SPECS 23 ADA BUTTON ATTACH TO STOREFRONT. PROVIDE ASSOICATED ITEMS AND SYSTEMS. REF. E-SERIES

24 SEALANT JOINT AT MATERIAL TRANSITION 25 BOLLARD. REF. C-SERIES 26 BASTEEL EXTERIOR GRADE FENCING, REF. SPECIFICATIONS FOR ADDITIONAL INFORMATION. COLOR TO BE CHOSEN BY ARCHITECT.

27 WATER BIB, REF. P-SERIES FOR ADDITIONAL INFORMATION. 28 DOMESTIC WATER HEATER. REF. P-SERIES FOR ADDITIONAL INFORMATION.

30 FIRE PUMP - REF. \_-SERIES 31 TRANSFORMER - REF. E-SERIES

32 CONCESSION SINK - REF. P-SERIES 34 AUDITORIUM FEATURE WALL. REF. INTERIOR ELEVATIONS FOR MORE INFORMATION

36 FLOOR DRAIN - REF. P-SERIES 37 MOP SINK - REF. P-SERIES

38 SERVICE SINK - REF. P-SERIES 39 HALL OF FAME TV - REFER TO RESPONSIBILITY MATRIX

40 ORCHESTRA SHELL - REFER TO RESPONSIBILITY MATRIX 41 WHEELCHAIR LIFT - REFER TO RESPONSIBILITY MATRIX 42 ELECTRICAL EQUIPTMENT - REF. E-SERIES

43 HUMIDITY SENSOR - REF. M-SERIES 44 HALF DEPTH ORCHESTRA PIT REFER TO DETAILS FOR ADDITIONAL INFORMATION

45 DOWNSTAGE MASKING CURTAIN - REF. T-SERIES. COLOR TO BE SELECTED BY 46 CONTINUOUS WALL-MOUNTED HANDRAIL TO MEET ALL APPLICABLE CODES. REFER

TO SPECIFICATIONS. 47 CAST IN PLACE CONCRETE STEP DOWN (7"H x 11"D) MATCH ADJACENT DOOR WIDTH. COORDINATE WITH PORTABLE ADA MANUFACTURED RAMP

48 PORTABLE ADA RAMP FOR HALF DEPTH PIT. REFER TO THEATRE SPECIFICATIONS SEGMENTED HANDRAIL FROM TOP TO BOTTOM OF AISLE TO MEET ALL APPLICABLE

CODES. REFER TO SPECIFICATIONS 50 DEDICATION PLAQUE REFER TO SPECIFICATIONS

51 THEATRE EQUIPTMENT - REF. TL-SERIES 52 CHANGING ROOM PARTITIONS. INSTALL COAT HOOK ON BACK OF DOOR TYP. ADA CHANGING COAT HOOK TO BE INSTALLED ADJACENT TO DOOR. REFER TO ELEVATION

53 EXTENDED FRAMLESS GLASS GUARDRAIL REQUIRED AT BASE OF BALCONY AISLES ONLY. REFER TO DETAILS FOR ADDITIONAL INFORMATION

54 GYM FEATURE WALL. REF. A753 INTERIOR ELEVATIONS FOR MORE INFORMATION 56 CORRIDOR FEATURE WALL. REF. A753 INTERIOR ELEVATIONS FOR MORE 57 METAL PAN STAIR FILLED WITH CONCRETE, REF. A500 SERIES FOR DETAILS

58 MECHANICAL EQUIPTMENT - REF. M-SERIES 59 GUARDRAIL WITH INTEGRATED HANDRAIL. REFER TO ELEVATIONS/SECTIONS FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATIONS

60 12'-0" LIGHTING FIXTURE (PIPE) ASSEMBLY. REFER TO DETAILS FOR ADDITIONAL 61 GUARDRAIL. SEE SPECIFICATIONS. REFER TO S-SERIES FOR DESIGN CRITERIA

62 PLYWOOD ON BAR GRADING. REF. R-SERIES FOR ADDITIONAL INFORMATION 24"x60" MIRROR TO BE HUNG 1'-0" A.F.F.- REFER TO RESPONSIBILITY MATRIX LOOSE BENCHES - REFER TO RESPONSIBILITY MATRIX SHIPS LADDER WITH HAND RAILS - PAINT FINISH TO MATCH ADJACENT SURFACES

CAGE STARTING 7'-0" AFF. 67 LOCKABLE GATE (REFER TO DOOR HARDWARE) AND CHAIN LINK FENCE. EXTEND FENCE AND GATE TO THE BOTTOM OF THE INTERMEDIATE CATWALK FLOOR AND/OR

ROOF DECK ABOVE. PROVIDE COMPLIANT CHAINLINK CEILING COVER WHEN NECESSARY (ILO EXTENDING TO DECK).

68 RIGGING PIT. REFER TO TR-SERIES, S-SERIES FOR DETAILS 69 SAFTEY CAGE VERTICAL LADDER - PAINT TO MATCH ADJACENT SURFACES. CAGE STARTING AT 7'-0" AFF. EXTERIOR LADDERS TO BE GALVANIZED. ADA BUTTON ATTACHED TO COLUMN. PROVIDE ASSOICATED ITEMS AND SYSTEMS

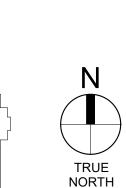
REF. E-SERIES WALL MOUNTED PAPER TOWEL DISPENSER - REFER TO RESPONSIBILITY MATRIX 72 RUBBER GLOVE DISPENSER - REFER TO RESPONSIBILITY MATRIX 73 CHAIN LINK FENCE ON THIS SIDE OF CATWALK. REFER TO DETAIL 4/A517. ALL OTHER

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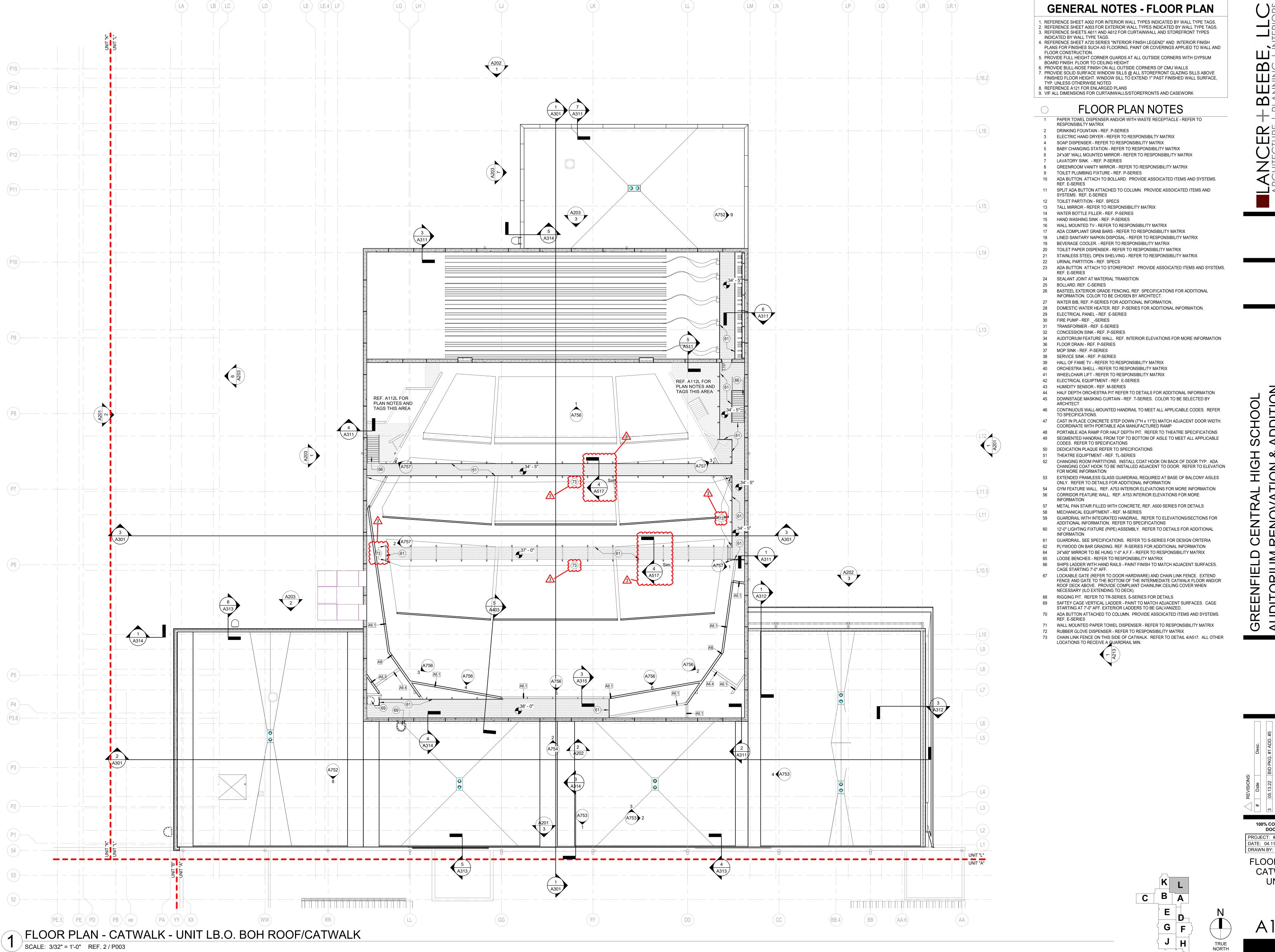
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100% CONSTRUCTION DOCUMENTS PROJECT: #21107 DATE: 04.11.2022 DRAWN BY: MC/BM

FLOOR PLAN -SECOND FLOOR - UNIT L

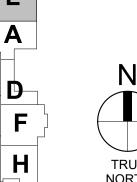


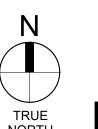
FLOOR PLAN - SECOND FLOOR - UNIT L SCALE: 3/32" = 1'-0"



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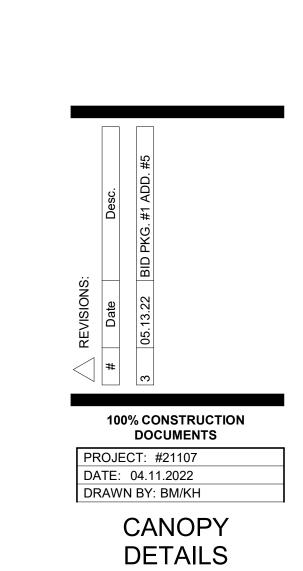
FLOOR PLAN -CATWALK -UNIT L

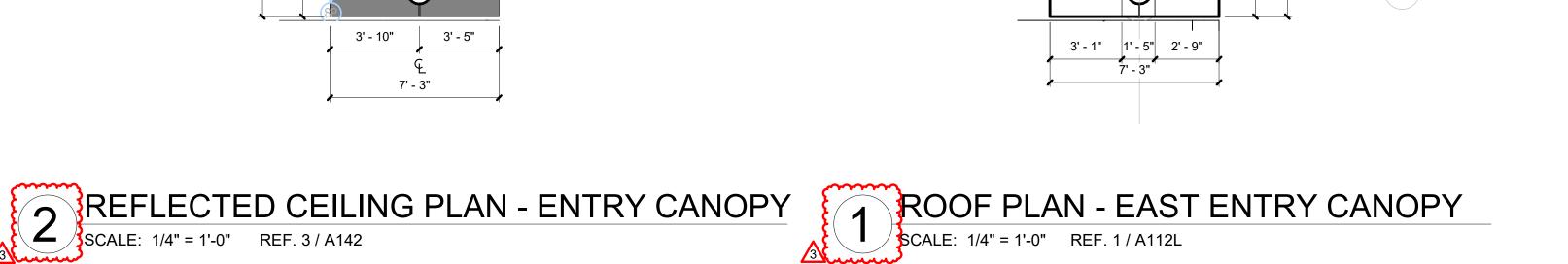


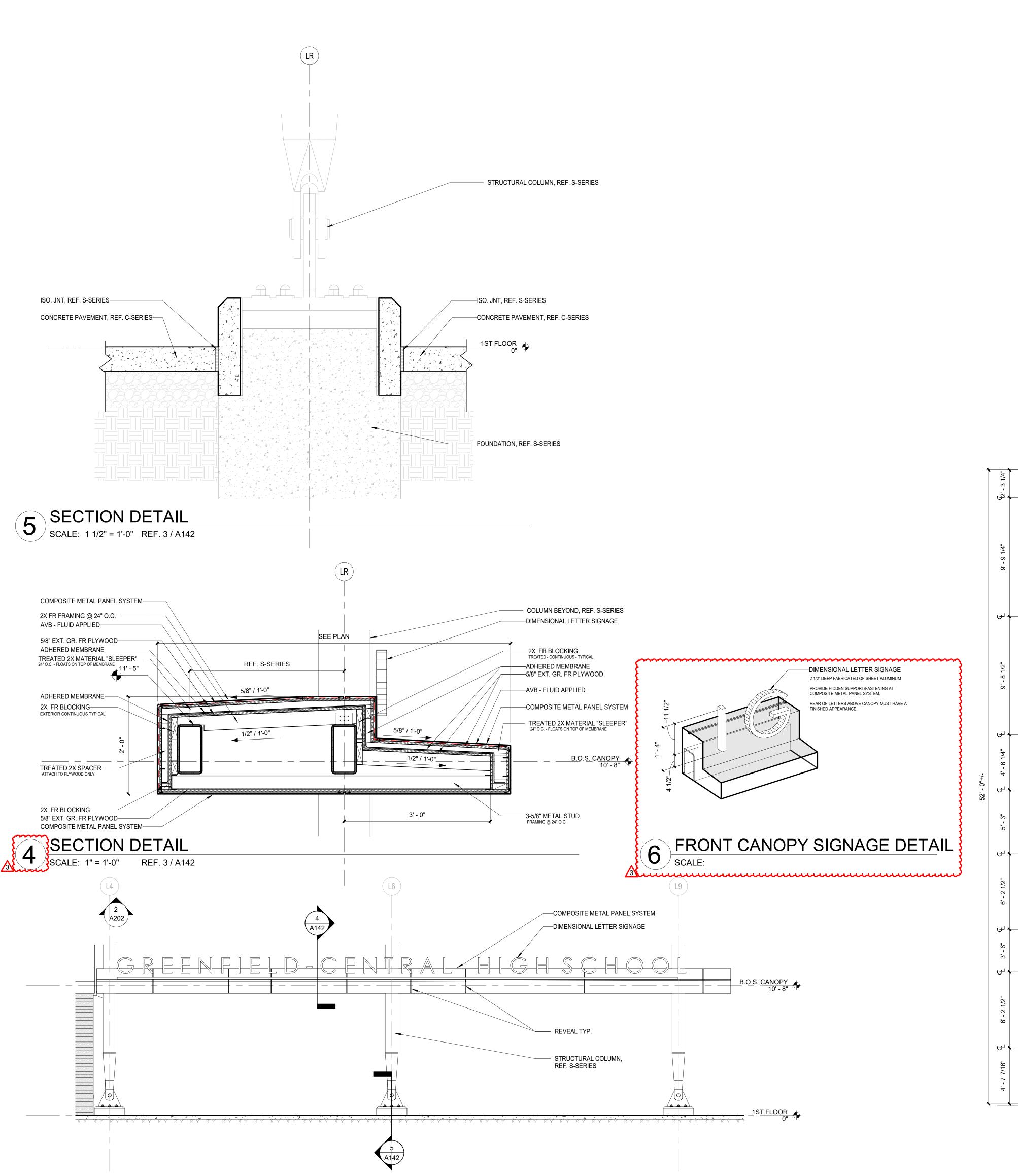


-DIMENSIONAL LETTER SIGNAGE

-COMPOSITE METAL PANEL SYSTEM





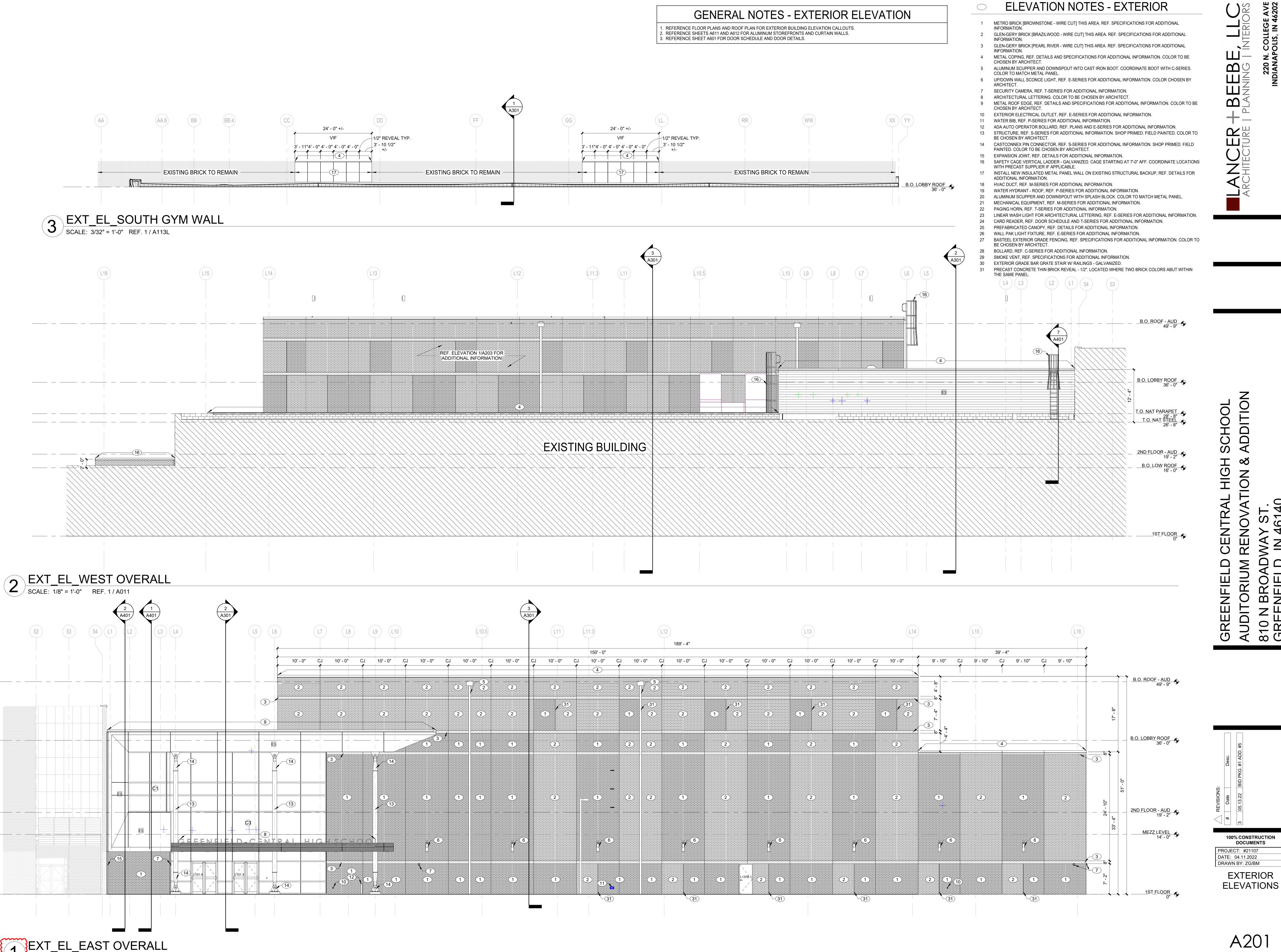


3 CANOPY ELEVATION - EAST
SCALE: 1/4" = 1'-0" REF. 1 / A011

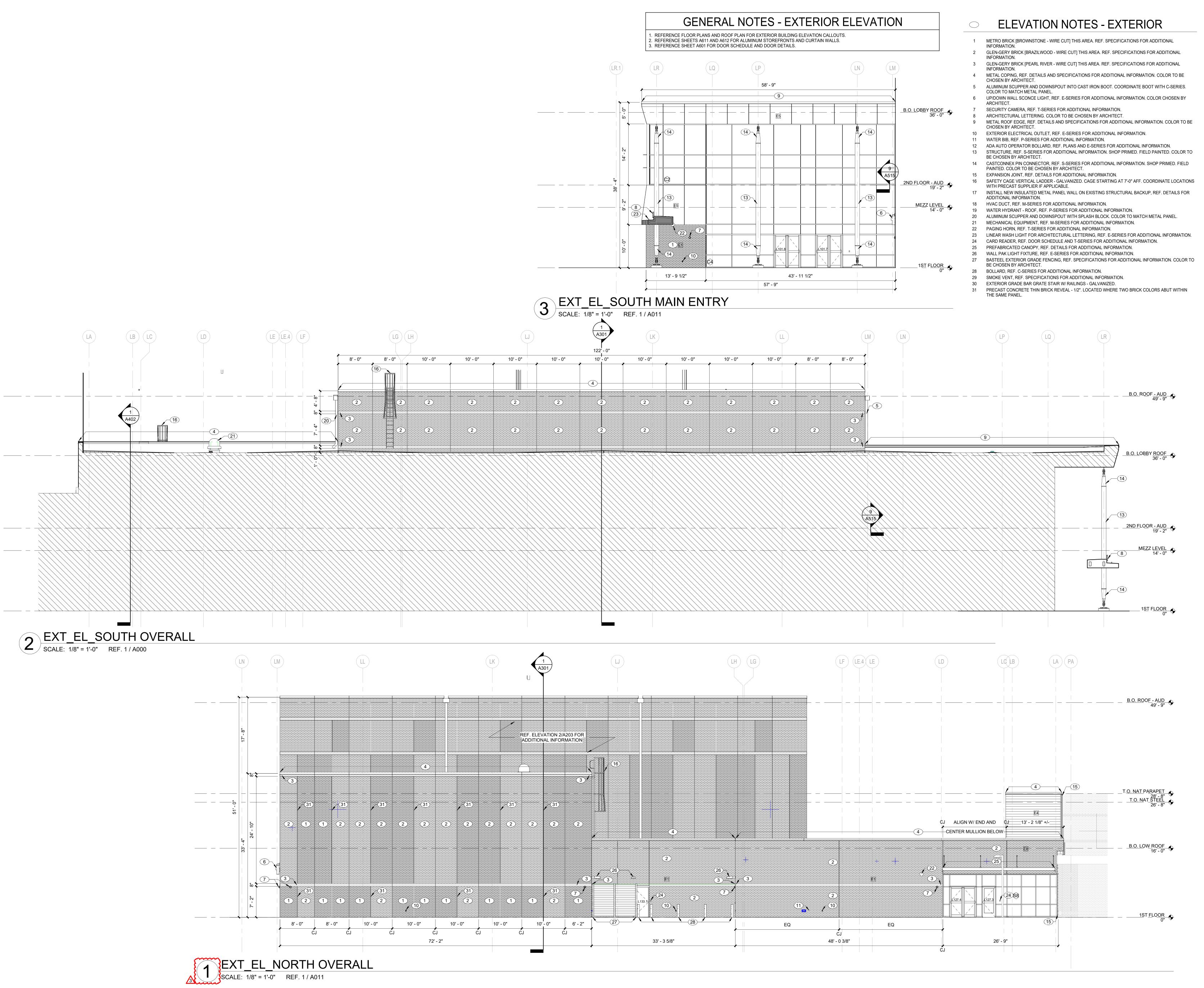
REVEAL TYP.

TUBE SHAPE, REF. S-SERIES

—COMPOSITE METAL PANEL SYSTEM



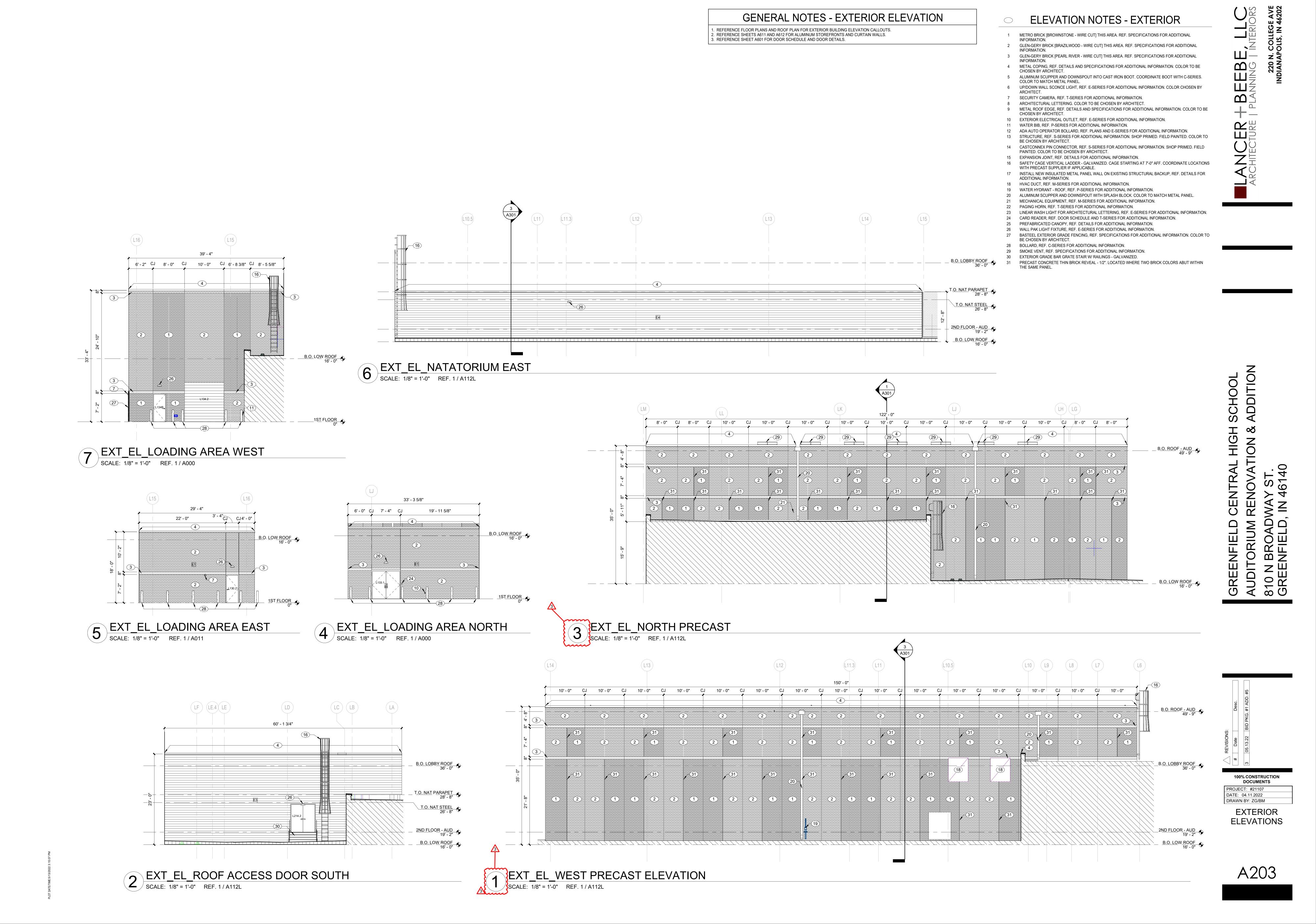
A201

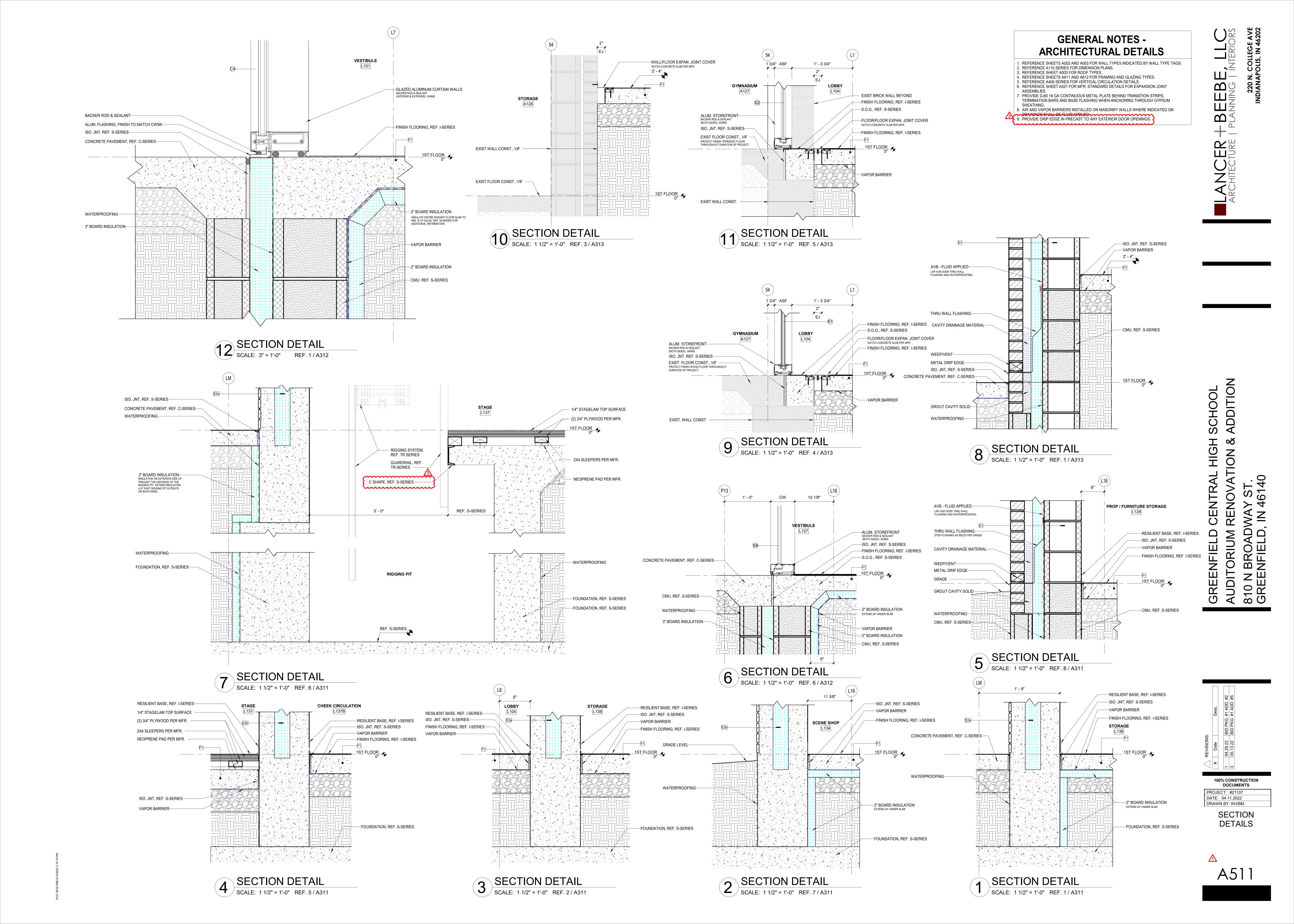


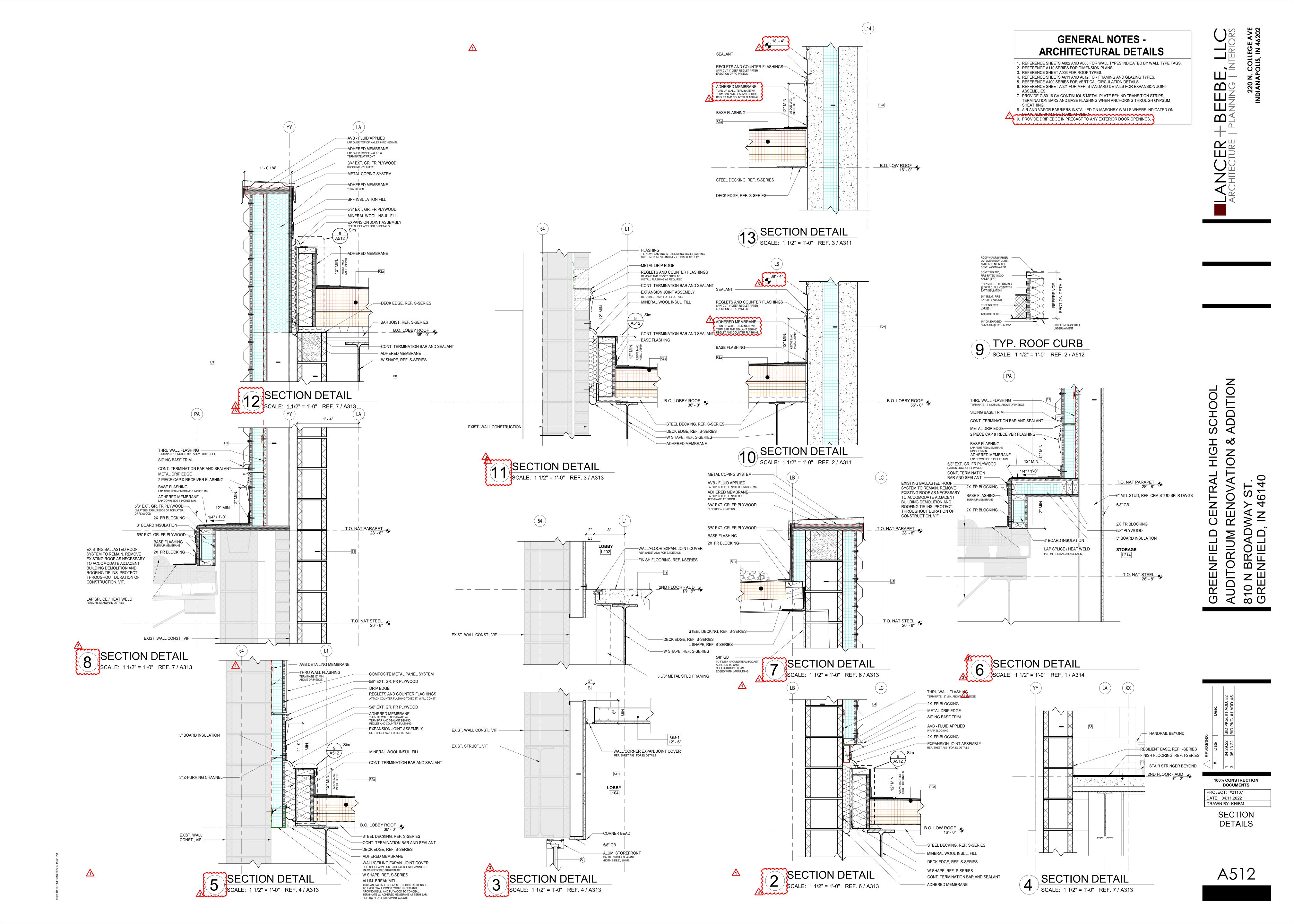
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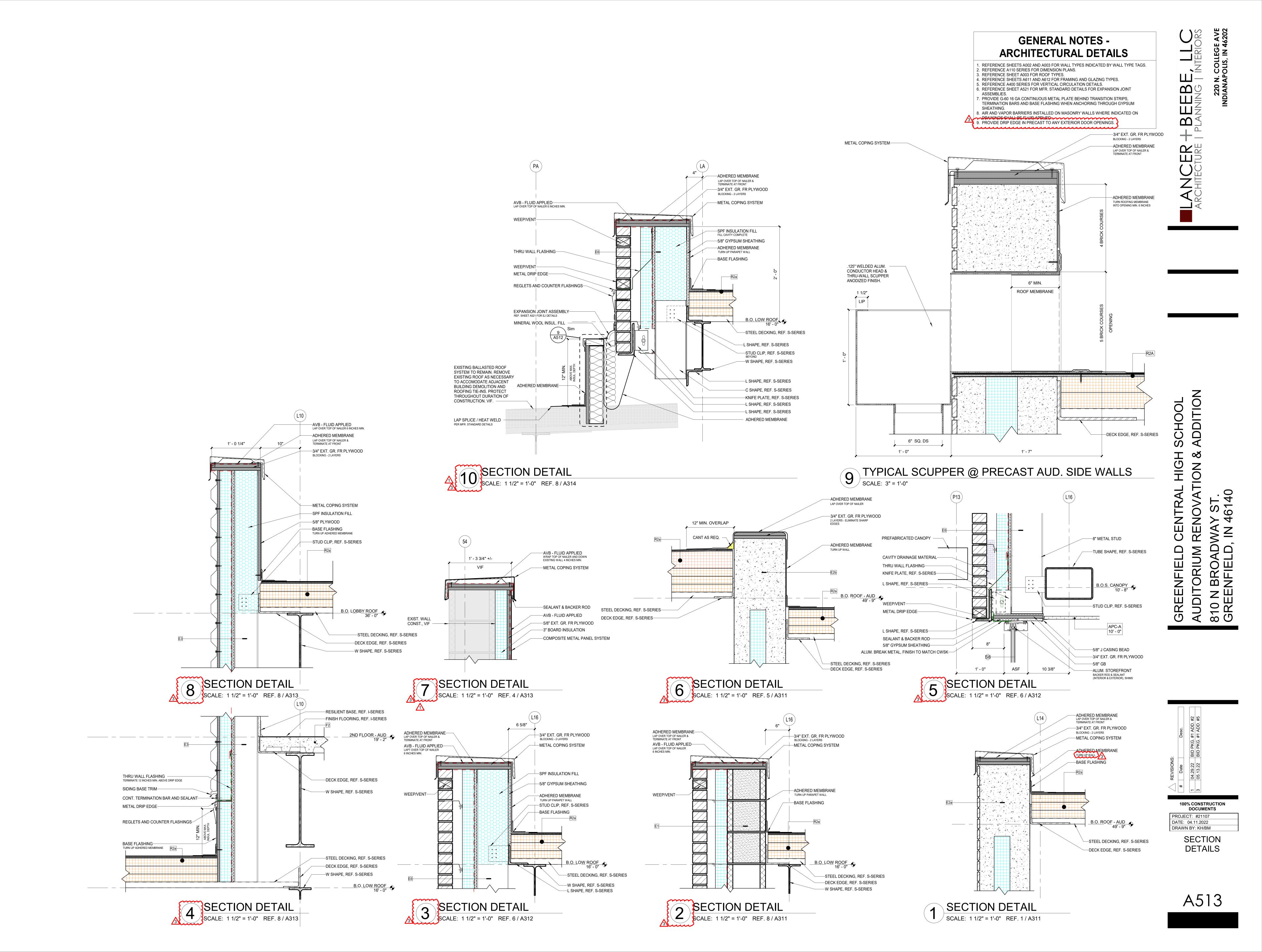
PROJECT: #21107 DATE: 04.11.2022 DRAWN BY: ZG/BM

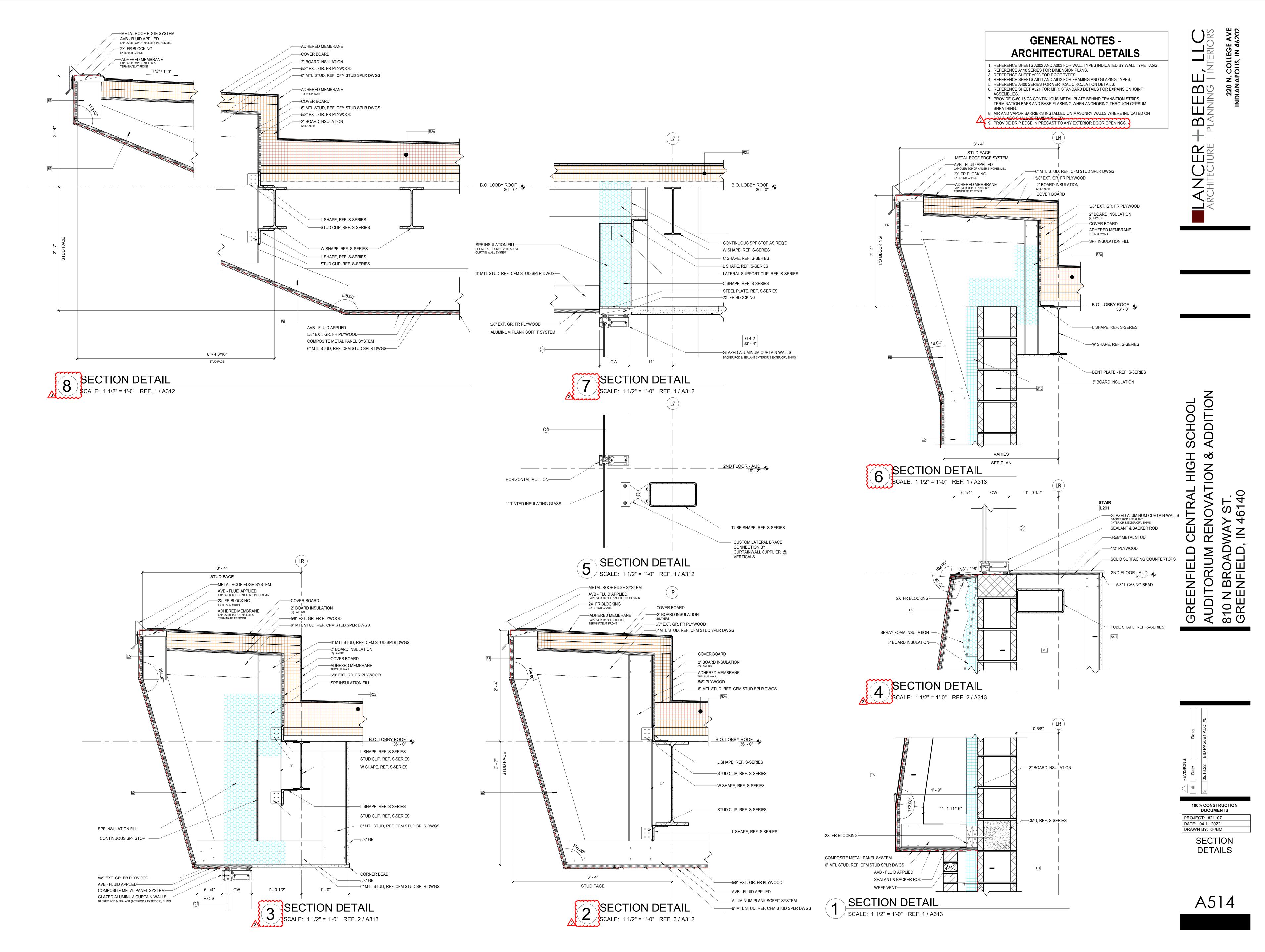
**EXTERIOR ELEVATIONS** 



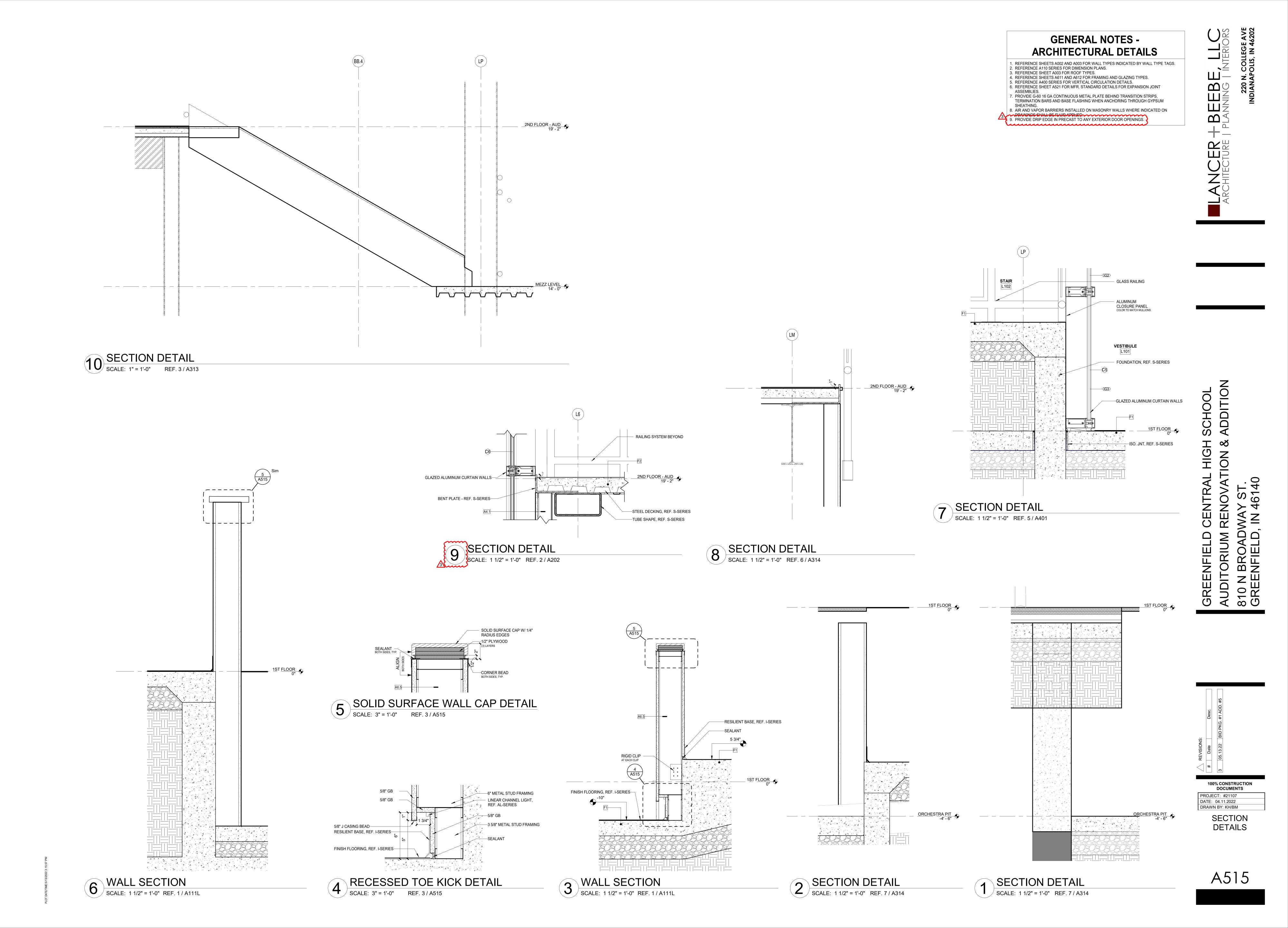








DATE/TIME:5/13/2022 3:15



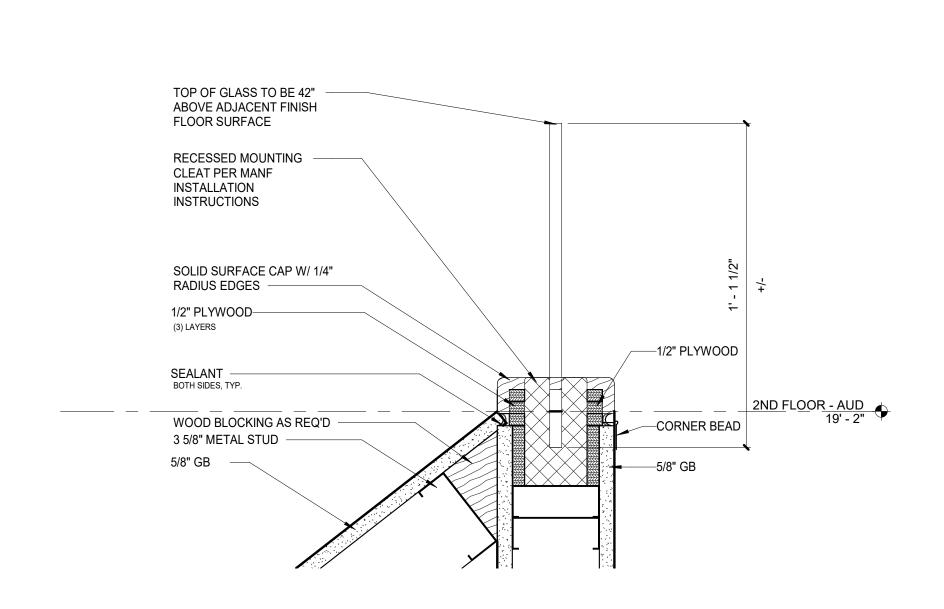
 REFERENCE SHEET A003 FOR ROOF TYPES.
 REFERENCE SHEETS A611 AND A612 FOR FRAMING AND GLAZING TYPES. 5. REFERENCE A400 SERIES FOR VERTICAL CIRCULATION DETAILS.

6. REFERENCE SHEET A521 FOR MFR. STANDARD DETAILS FOR EXPANSION JOINT ASSEMBLIES. 7. PROVIDE G-60 16 GA CONTINUOUS METAL PLATE BEHIND TRANSITION STRIPS,

TERMINATION BARS AND BASE FLASHING WHEN ANCHORING THROUGH GYPSUM SHEATHING.

8. AIR AND VAPOR BARRIERS INSTALLED ON MASONRY WALLS WHERE INDICATED ON DRAWINGS SHALL BE FLUID APPLIED.

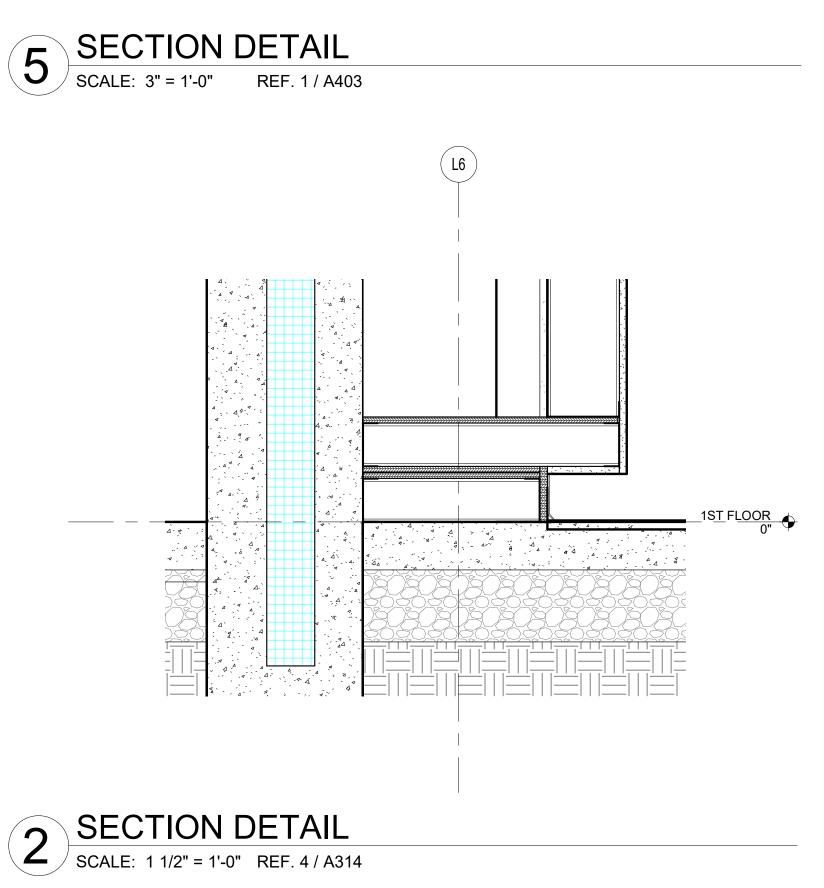
9. PROVIDE DRIP EDGE IN PRECAST TO ANY EXTERIOR DOOR OPENINGS.

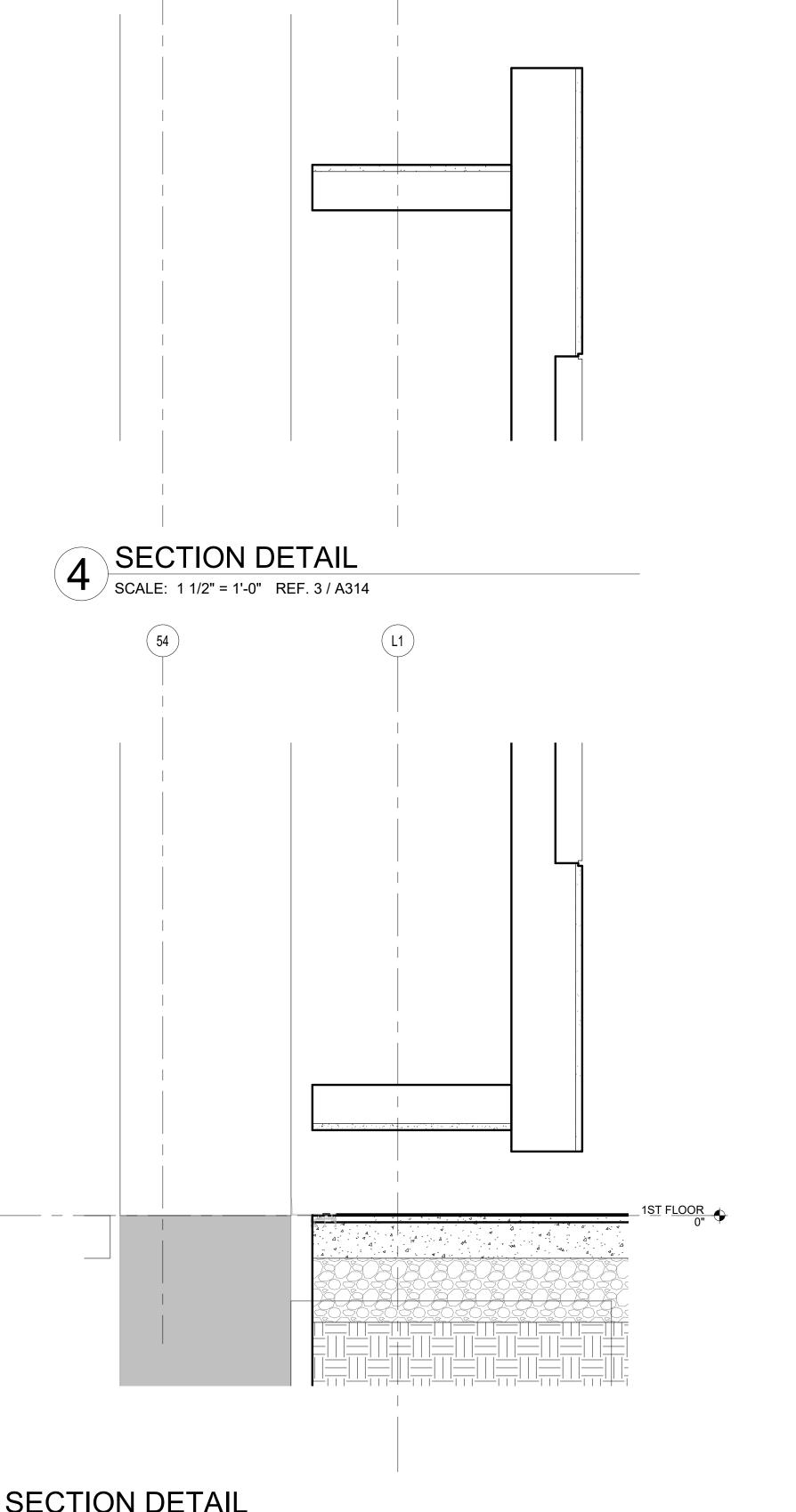




W-SHAPE, REF. S-SERIES, PAINT ALL EXPOSED STEEL PT-5.

GB-1 15' - 0"





SECTION DETAIL

SCALE: 1 1/2" = 1'-0" REF. 3 / A314

100% CONSTRUCTION DOCUMENTS PROJECT: #21107 DATE: 04.11.2022 DRAWN BY: KH/BM

SECTION **DETAILS** 

A516

3 SECTION DETAIL
SCALE: 1 1/2" = 1'-0" REF. 4 / A304

1 1/2" ID SCHEDULE 40
HORIZONTAL STEEL PIPE.
PAINT PT-5.

EDGE OF SLAB

FACE OF GYP.

5/8" GB, PAINT PT-5 WITHIN RECESS

3 5/8" METAL STUD FRAMING-STUD CLIP, REF. S-SERIES-3 5/8" METAL STUD FRAMING-