

October 25, 2024

ADDENDUM NO.: TWO

TO ALL BIDDERS:

REFERENCE:	IFB No:	2025-IFB-1007262
	Dated:	October 8, 2024
	Commodity:	New Construction High School Center II
	IFB Closing On:	November 7, 2024, at 2 PM

Please note the clarifications and/or changes made to this solicitation:

BIDDER QUESTIONS: See below

A signed acknowledgement of this addendum must be received by this office attached to your bid. Signature on this addendum does not constitute your signature on the original proposal document. The original proposal document must be signed also.

Sincerely,

Chris Beahm

Chris Beahm
Purchasing Agent
Phone: (434-296-5854)

Name of Firm

Signature/Title

Date

Printed Name



25 October 2024

ADDENDUM 02

PROJECT: New Construction High School Center II
Albemarle County Public Schools
IFB #2025-IFB-100 262
QE Project No: 41911390

The following items represent changes, modifications and/or clarifications to the Contract Documents for this project. This Addendum shall become a part of the Contract Documents and all Bidders shall acknowledge its inclusion in their bid.

Responses to Bidder Questions:

- 1** **QUESTION:** Section 05 1200, article 1.11 – D, e request that the AISC Fabricator Certification be waived, or revised to something similar to: Fabricator Qualifications: Fabricator shall participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant OR shall employ an approved independent inspection or quality control agency to conduct periodic, in plant inspections at the fabricator's plant at a frequency that will assure the fabricator's conformance to the requirements of the inspection agency's approved quality control program as required by the Building Code.

ANSWER: Refer to paragraph 1.11.D.2 which states the same suggested language in the question.

- 2** **QUESTION:** Opening 134.1 is schedule with an aluminum door and hollow metal frame. This is not typical and could lead to corrosion due to dissimilar metals. Please advise.

ANSWER: Door 134.1 material shall be HM (hollow metal)

- 3** **QUESTION:** Openings 109, 113 and 121.3 are missing door material. Please advise.

ANSWER: Door 109 material shall be D (wood); Door 113 material shall be D (wood); Door 121.3 material shall be D (wood)

- 4** **QUESTION:** Under Spec 015 19 (3.04 F) States, the building is to be tested to ASTM E 99, however; it does not provide the CFM to attain for the project and it has a pressure differential of 0.2 in w.g (50Pa). Typically, IECC 2018 provides for testing at .3 in wg (5Pa) and a .40cfm/sqft/ 5PA air leakage rate to pass.

ANSWER: Refer to revised Specification Section 015 19 – Temporary Environmental Controls contained herein. Envelope Leakage Testing will be carried out by Owner's third-party testing agency. Contractor shall be responsible for coordinating with testing agency and correction of deficiencies.

- 5** **QUESTION:** 095426-F Metal Suspension System for Suspended ood Ceilings are designated as aluminum, black. This is not an available product, please confirm heavy duty galvanized steel in black is acceptable.

ANSWER: Metal Suspension System shall be heavy-duty galvanized steel in color Black

- 6** **QUESTION:** 098430 calls for Feltworks Open Cell Ebbs Flows 48 x 48 modules, however A122A shows 48 x 96 modules. Please confirm desired size.

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ANSWER: Refer to Drawings for extents of product. 48x48 or 48x96 modules may be used at installer's option to provide most efficient use of materials and ease of installation.

7 **QUESTION:** Is there a standard Bid Bond Form

ANSWER: There is not a 'standard' Bid Bond Form that is required to be used. The requirements for the Bid Bond are indicated in Article 5. Bid Guarantee of the Instructions to Bidders. Procurement Officers reviewing the Bid Documents will check the Bid Bonds and check the Surety to ensure all items required are met to confirm the validity of the Bond.

The Performance Bond and Labor and Material Bond standard forms are included in the Project Manual.

8 **QUESTION:** Section 0 4213 subsections 2.01.B.6, 2.01.C.6, 2.01.D. , and 2.01.E.3 state the architect is to make color selection from manufacturer's full color line, the full color line includes premium and metallic finish choices both of which have additional cost impacts. Provide clarification of premium or metallic finish or revise to state manufacturer's full standard color line.

ANSWER: Refer to revised Section 0 4213 – Metal all Panels contained herein. Colors for all products specified in Section 0 4213 shall be selected by Architect from the Manufacturer's Standard Two-Coat 0 PVDF Fluoropolymer Finishes.

9 **QUESTION:** Section 0 5300 subsections 2.05.B and 2.06.A.1 state that both the deck sheathing and coverboard are to have a thickness of 5/8", Drawings Pg A106 details K9 and H9 state the deck sheathing and coverboard are to have a thickness of 1/2". Provide clarification on which thickness is to be used.

ANSWER: Thickness of Coverboard shall be 1/2"; Thickness of Deck Sheathing shall be 1/2"

9 **QUESTION:** Substitution Requests

ANSWER: Section 012500 – Substitution Procedures provides requirements for Substitutions. Substitutions are not considered prior to receipt of Bids.

10 **QUESTION:** Is the back parking lot/bus loop behind Albemarle High School, where the new SPED bus drop-off area will be, maintained by the state (VDOT)

ANSWER: To our knowledge this area is not. Other work taking place within the LOD are VDOT maintained and would require a Land Use Permit.

11 **QUESTION:** Who is doing the Albemarle High School 2nd Floor Connector Addition Project

ANSWER: Gilbane Building Company

12 **QUESTION:** Please provide a specification/designation for Acoustic Baffle Clouds shown on A121B, A122B, and A123

ANSWER: See SECTION 098430 - SOUND-ABSORBING ALL AND CEILING UNITS as updated in the Addendum 2 specifications documents.

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Revisions to Specification Sections

Section: Table of Contents

Add: Section 124813 – Entrance Floor Mats and Frames
Section 001800 - Albemarle County Service Authority Engineering Department As-Built Requirements

Section: 001800 – Albemarle County Service Authority Engineering Department As-Built Requirements

Add: New Reference Document contained herein

Section: 015719 – Temporary Facilities and Controls

Section: 017800 – Closeout Submittals

Add: Paragraph 3.01 H to read as-follows: ACSA Record Document Requirements: Refer to the Albemarle County Service Authority Engineering Department As-Built Requirements, included in this Project Manual as a Reference Document for requirements related record-keeping and record documents of work performed on ACSA water lines.

Replace: With revised section contained herein

Section: 042000 - Unit Masonry, Mortar and Grout

Replace: with revised section contained herein

Section: 074213 – Metal Wall Panels

Replace: with revised section contained herein

Section: 075300 – Elastomeric Membrane Roofing

Replace: with revised section contained herein

Section: 084313 - Aluminum-Framed Storefronts

Replace: with revised section contained herein

Section: 084413 - Glazed Aluminum Curtainwalls

Replace: with revised section contained herein

Section: 096813 – Tile Carpeting

Replace: with revised section contained herein

Section: 098430 – Sound-Absorbing Wall and Ceiling Units

Replace: with revised section contained herein

Section: 107113.43 – Fixed Sun Screens

Replace: with revised section contained herein

Section: 124813 – Entrance Floor Mats and Frames

Add: New specification section contained herein

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Revisions to Drawings

- Sheet:** **Sheet C1.2**
Replace: With revised Sheet C1.2 contained herein
- Sheet:** **Sheet C2.4**
Replace: With revised Sheet C2.4 contained herein
- Sheet:** **Sheet C4.0**
Replace: With revised Sheet C4.0 contained herein
- Sheet:** **Sheet C4.1**
Replace: With revised Sheet C4.1 contained herein
- Sheet:** **Sheet C4.2**
Replace: With revised Sheet C4.2 contained herein
- Sheet:** **Sheet C4.3**
Replace: With revised Sheet C4.3 contained herein
- Sheet:** **Sheet C5.0**
Replace: With revised Sheet C5.0 contained herein
- Sheet:** **Sheet C5.1**
Replace: With revised Sheet C5.1 contained herein
- Sheet:** **Sheet L102**
Replace: With revised Sheet L102 contained herein
Changes: Add annotation for privacy fence at southern property line
- Sheet:** **A104**
Replace: With revised Sheet A105 contained herein
- Changes:** H5/A105 –Finish Plan Basement
Change to Data Center Vestibule Floor Finish
- Sheet:** **A131A**
Replace: With revised Sheet A131A contained herein
Changes: Finish Legend
Change from OC to EG for Entrance Grille
Addition of OC for alk-Off Carpet
- Sheet:** **Sheet A211**
Replace: With revised Sheet A211 contained herein
Changes: Change to Storefront Curtainwall Types Legend
Addition of C -2
- Sheet:** **Sheet A532**
Replace: With revised Sheet A532 contained herein
Changes: Change to Exterior Curtainwall types w/outrigger sunshade details, Drawings A1 and A6
- Sheet:** **Sheet A601**
Replace: With revised Sheet A601 contained herein
Changes: Revisions to Door materials

END OF ADDENDUM 02

ALBEMARLE COUNTY SERVICE AUTHORITY
ENGINEERING DEPARTMENT
AS-BUILT REQUIREMENTS

GENERAL

- (1) Drawings shall not be larger than 30 inches by 42 inches. Drawings of standard size 24 inches by 36 inches are preferred.
- (2) Show the same information as the approved plans. Cross out any proposed information and write the as-built correction boldly adjacent to the corrected data.
- (3) Accurately redraw plan and profiles where changes in alignment of over three (3) feet horizontal or one (1) foot vertical occur between the proposed design and the actual installation.
- (4) Label the type, class, and size of pipe installed.
- (5) Show all physical appurtenances, sidewalks, curb and gutters, buildings, lot corners and property lines.
- (6) Label street names, whether public or private. Label block and building letters or numbers. Label unit letters or numbers.
- (7) Show the proper title on each page along with phase or section as applicable. Where only a portion of a phase or section is complete, label the limits of construction to which the as-built applies.
- (8) Show a vicinity map on the first sheet.
- (9) Show the appropriate scale on all drawings.
- (10) Number each page.
- (11) Show a north arrow on each page.
- (12) Provide a revision block on the drawings and show: (a) any revision made to the drawings; (b) date plans were approved; and (c) as-built date.

- (13) At stream crossings, state the type of pipe, the depth to top of pipe at the centerline of the stream, casing size and limits of casing, include any valves and sample taps installed, and show on both the plan and profile.
- (14) Show all easements where lines are not installed within existing public right-of-way.
- (15) Show the location of storm drains or other utilities encountered during construction on the plan and profile. Show the actual separation measured by the contractor.
- (16) Datum reference and bench mark shown.
- (17) Drawings are to be certified by Professional Engineer or a certified Land Surveyor.

WATER

- (1) Show water mains installed and any deviation from design of horizontal or vertical alignment greater than two (2) feet horizontal or one (1) foot vertical.
- (2) Show location of service lines and water meter boxes installed and indicate size of service line.
- (3) Show location of all bends, fittings, valves, hydrants, and other appurtenances installed.

SEWER

- (1) Show location of manholes within an accuracy of two (2) feet. Location measurements are to be made to center of manhole and not to center of manhole cover. Provide the horizontal length between manholes as installed.
- (2) Provide installed rim and invert elevations and slope grades. Centerline invert elevations are permissible when the drop through the manhole does not exceed 0.2 feet. Where the drop exceeds 0.2 feet and when drop connections are made show actual pipe inverts.
- (3) Show distance or provide stations and offsets from the downstream manhole to each upstream lateral wye or tee installed and for the location of the end of each lateral.

- (4) Show all stub-outs provided for future extension of the sewer main.
- (5) Note all watertight manhole covers installed and provide location and elevation of the top of the vents.

SECTION 015 19
TEMPORAR ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction procedures to promote adequate indoor air quality after construction.
- B. Building flush-out after construction and before occupancy.
- C. Testing indoor air quality before commencement of construction; existing building areas only.
- D. Testing indoor air quality after completion of construction.
- E. Testing air change effectiveness after completion of construction.

1.02 PRO ECT GOALS

- A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - 1. Cleaning of ductwork is not contemplated under this Contract.
 - 2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
 - 3. Establish condition of existing ducts and equipment prior to start of alterations.
- B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
 - 1. Furnish products meeting the specifications.
 - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 RELATED REQUIREMENTS

- A. Section 013329.02 - Sustainable Design Reporting - LEED v4 and v4.1.

1.04 REFERENCE STANDARDS

- A. ASHRAE Std 52.2 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size; 201 , with Addendum (2022).
- B. ASHRAE Std 129 - Measuring Air-Change Effectiveness; 199 (Reaffirmed 2002).
- C. ASTM D519 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2021.
- D. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 201 .
- E. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; 1990.

F. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; 1999, with Addendum (2000).

G. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 200 .

1.05 DEFINITIONS

A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.

B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.

C. Particulates: Dust, dirt, and other airborne solid matter.

D. et ork: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.06 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Sustainability Documentation: Submit documentation required in this section.

1. For LEED v4 certification system projects, submit in accordance with procedures specified in Section 013329.02 - Sustainable Design Reporting - LEED v4 and v4.1.

C. Indoor Air Quality Management Plan: Describe, in detail, measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.

1. Submit not less than 60 days before enclosure of building.
2. Identify potential sources of odor and dust.
3. Identify construction activities likely to produce odor or dust.
4. Identify areas of project potentially affected, especially occupied areas.
5. Evaluate potential problems by severity and describe methods of control.
6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
7. Describe cleaning and dust control procedures.
8. Describe coordination with commissioning procedures.

D. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.

E. Duct and Terminal Unit Inspection Report.

F. Air Contaminant Test Plan: Identify:

1. Testing agency qualifications.
 2. Locations and scheduling of air sampling.
 3. Test procedures, in detail.
 4. Test instruments and apparatus.
 5. Sampling methods.
- G. Air Contaminant Test Reports: Show:
1. Location where each sample was taken, and time.
 2. Test values for each air sample; average the values of each set of 3.
 3. HVAC operating conditions.
 4. Certification of test equipment calibration.
 5. Other conditions or discrepancies that might have influenced results.
- H. Ventilation Effectiveness Test Plan: Identify:
1. Testing agency qualifications.
 2. Description of test spaces, including locations of air sampling.
 3. Test procedures, in detail; state whether tracer gas decay or step-up will be used.
 4. Test instruments and apparatus; identify tracer gas to be used.
 5. Sampling methods.
- I. Ventilation Effectiveness Test Reports: Show:
1. Preliminary tests of instruments and apparatus and of test spaces.
 2. Calculations of ventilation effectiveness, variable E .
 3. Location where each sample was taken, and time.
 4. Test values for each air sample.
 5. HVAC operating conditions.
 6. Other information specified in ASHRAE Std 129.
 1. Other conditions or discrepancies that might have influenced results.

1.0 QUALITY ASSURANCE

- A. Testing and Inspection Agency Qualifications: Independent testing agency having minimum of 5 years experience in performing the types of testing specified.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Low VOC Materials: See other sections for specific requirements for materials with low VOC content.
- B. Auxiliary Air Filters: MERV of 8, minimum, when tested in accordance with ASHRAE Std 52.2.

PART 3 EXECUTION

3.01 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by adsorptive materials by:
 - 1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
 - 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
 - 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Begin construction ventilation when building is substantially enclosed.
- C. If extremely dusty or dirty work must be conducted inside the building, shut down HVAC systems for the duration; remove dust and dirt completely before restarting systems.
- D. When working in a portion of an occupied building, prevent movement of air from construction area to occupied area.
- E. Use of HVAC equipment and ductwork for ventilation during construction is not permitted:
 - 1. Provide temporary ventilation equivalent to 1.5 air changes per hour, minimum.
 - 2. Exhaust directly to outside.
 - 3. Seal HVAC air inlets and outlets immediately after duct installation.
- F. Do not store construction materials or waste in mechanical or electrical rooms.
- G. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
 - 1. Inspect duct intakes, return air grilles, and terminal units for dust.
 - 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
 - 3. Clean tops of doors and frames.
 - 4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
 - 5. Clean return plenums of air handling units.
 - 6. Remove intake filters last, after cleaning is complete.
- H. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.
- I. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.
 - . Sustainable Design Reporting: Comply with requirements of Section 013329.02.

3.02 AIR CONTAMINANT TESTING

- A. Perform air contaminant testing before occupancy.
- B. Do not start air contaminant testing until:
 - 1. All construction is complete, including interior finishes.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. New HVAC filtration media have been installed.
- C. Indoor Air Samples: Collect from spaces representative of occupied areas:
 - 1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
 - 2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet (2300 square meters); take samples from areas having the least ventilation and those having the greatest presumed source strength.
 - 3. Collect samples from height from 36 inches (915 mm) to 2 inches (1830 mm) above floor.
 - 4. Collect samples from same locations on 3 consecutive days during normal business hours; average the results of each set of 3 samples.
 - 5. Exception: Areas with normal very high outside air ventilation rates, such as laboratories, do not need to be tested.
 - 6. When retesting the same building areas, take samples from at least the same locations as in first test.
- D. Outdoor Air Samples: Collect samples at outside air intake of each air handler at the same time as indoor samples are taken.
- E. Analyze air samples and submit report.
- F. Particulate Matter and Inorganic Gases Limits:
 - 1. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
 - 2. PM10 Particulates: Not more than 50 micrograms per cubic meter.
 - 3. Regulated Pollutants: Measure in relation to outside air; not more than contained in outside air.
- G. Volatile Organic Compounds Limits:
 - 1. Formaldehyde: Not more than 2 parts per billion.
 - 2. Total Volatile Organic Compounds (TVOCs): Not more than 500 micrograms per cubic meter.

3. Chemicals Listed in CAL (CDPH SM) Table 4-1, other than Formaldehyde: Not more than allowable concentrations listed in Table 4-1.
 4. Airborne Mold and Mildew: Measure in relation to outside air; not higher than outside air.
 5. Regulated Pollutants: Measure in relation to outside air; not more than contained in outside air.
- H. Air Contaminant Concentration Test Methods:
1. Formaldehyde: ASTM D519 , EPA 625/R-96/010b Method TO-11A, or EPA 600/4-90/010 Method IP-6A.
 2. Particulates: EPA 600/4-90/010 Method IP-10.
 3. Total Volatile Organic Compounds (TVOC): EPA 625/R-96/010b Method TO-1, TO-15, or TO-1 ; or EPA 600/4-90/010 Method IP-1.
 4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: ASTM D519 , or EPA 625/R-96/010b Method TO-1, TO-15, or TO-1 .
 5. Carbon Monoxide: EPA 600/4-90/010 Method IP-3, plus measure outdoor air; measure in ppm; report both indoor and outdoor measurements.
- I. If air samples show concentrations higher than those specified, ventilate with 100 percent outside air and retest at no cost to Owner, or conduct full building flush-out specified above.

3.03 VENTILATION EFFECTIVENESS TESTING

- A. Perform ventilation effectiveness testing before occupancy.
- B. Do not begin ventilation effectiveness testing until:
 1. HVAC testing, adjusting, and balancing has been satisfactorily completed.
 2. Building flush-out or air contaminant testing has been completed satisfactorily.
 3. New HVAC filtration media have been installed.
- C. Test each air handler zone in accordance with ASHRAE Std 129.
- D. If calculated air change effectiveness for a particular zone is less than 0.9 due to inadequate balancing of the system, adjust, and retest at no cost to Owner.

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3.04 ENVELOPE LEAKAGE TESTING

- A. Building Owner will engage a third-party Testing Agency to carry out a whole Building Air Barrier Pressure Test per ASTM E 9 standards.
- B. Contractor shall coordinate with Testing Agency to facilitate carrying out ongoing testing and inspections during the course of the work.
- C. Contractor shall be responsible for:

1. Verification that the envelope has been sufficiently completed for testing to commence
2. Deficiencies: Contractor shall correct deficiencies found during inspections and testing. Corrections shall be made prior re-inspection or re-testing at no cost to Owner.

D. Test Pressure and Leakage Rate: Testing will be carried out at a pressure of 5Pa (0.3in C); Acceptable Leakage Rate shall be 0.25 CFM at 5 Pa or less.

END OF SECTION

ADD 02

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SECTION 01 800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.

3. For items of work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the work:
 1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress. Record data on installations before they are concealed.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
 4. Specification Deliverable: Submit annotated PDF, highlighting changes. Bookmark each annotated section.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Field changes of dimension and detail.
 4. Details not on original Contract drawings.
 5. Confirmed depth of foundations below finish floor.
 6. Inverts and locations of underground utilities.
 - . Actual equipment locations shown diagrammatically on drawings.

8. Duct routing and size if different than design.
9. Other items useful to Owner for maintenance and access.
- G. Drawing Deliverable: Mark each Drawing as PROJECT RECORD DRAWING and include date completed.

ADD 02

1. Scan and transmit as PDF file.
2. Bookmark each sheet of Record Drawing PDF.

H. ACSA Record Document Requirements: Refer to the Albemarle County Service Authority Engineering Department As-Built Requirements, included in this Project Manual as a Reference Document for requirements related record-keeping and record documents of work performed on ACSA water lines.

3.02 OPERATION AND MAINTENANCE DATA

- A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Additional information as specified in individual product specification sections.
- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Include performance curves, with engineering data and tests.

4. Complete nomenclature and model number of replaceable parts.
- B. here additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - . Provide control diagrams by controls manufacturer as installed.
 - . Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports.
- O. Additional Requirements: As specified in individual product specification sections.

3.05 FACILITIES REQUIREMENTS AND OPERATIONS AND MAINTENANCE PLAN (LEED)

- A. A Current facilities requirements and operations and maintenance plan that contains the information necessary to operate the building efficiently.
- B. In accordance with LEED credit Fundamental Commissioning and Verification, include the following information:
 1. A Sequence of Operations for the building
 2. The building occupancy schedule

3. Equipment run-time schedules
4. Setpoints for all HVAC equipment
5. Set lighting levels throughout the building
6. Minimum outside air requirements
 - . Changes in schedules or setpoints for different seasons, days of the week and times of day
8. A systems narrative describing the mechanical and electrical systems and equipment
9. A preventative maintenance plan for building equipment described in the systems narrative
10. A commissioning program that includes periodic commissioning requirements, ongoing commissioning tasks and continuous tasks for critical facilities

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Provide digital PDF format copy of binder contents on USB flash drive in addition to hard copies.
- C. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- D. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- E. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- F. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect/Contractor and subcontractors, with names of responsible parties.
- G. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

- H. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- I. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
 - . Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
 - . Arrangement of Contents: Organize each volume in parts as follows:
 1. Project Directory.
 2. Table of Contents, of all volumes, and of this volume.
 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Photocopies of warranties and bonds.

3.0 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 29 mm) three D side ring binders with durable plastic covers.
- F. Provide digital PDF format copy of binder contents on USB flash drive in addition to hard copies.
- G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

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SECTION 042000
UNIT MASONRY, MORTAR AND GROUT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Clay facing brick.
- B. Common brick.
- C. Special shapes.
- D. Mortar and grout.
- E. Reinforcement and anchorage.
- F. Flashings.
- G. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 042200 - Concrete Unit Masonry.
- B. Section 09200 - Joint Sealants: Sealing control and expansion joints.

1.03 DEFINITIONS

- A. High-lift grouting; Maximum lifts of 4 feet (1.2 m) each for a maximum height of 24 feet (7.3 m).
- B. Low-lift grouting; Maximum lifts of 12 inches (305 mm).

1.04 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications; 2023a.
- C. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- D. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.
- E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- F. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.
- G. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.

- H. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale); 2023.
- I. ASTM C6 /C6 M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2023.
 - . ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2023.
 - . ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.
- L. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- M. ASTM C20 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.
- N. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); 2023.
- O. ASTM C20 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.
- P. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2024.
- Q. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- R. ASTM C919/C919M - Standard Specification for Pigments for Integrally Colored Concrete; 2016.
- S. ASTM C114/C114M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry; 2019a.
- T. BIA Technical Notes No. 12 - Water Penetration Resistance – Design and Detailing; 2011.
- U. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls; 2011.
- V. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls; 2005.
 - . BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2011.
- X. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.06 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Samples: Submit four samples of each color of facing brick units to illustrate color, texture, and extremes of color range.

- D. Veneer Anchors: Provide manufacturer's engineering design calculations for anchors used in varying widths of cavity walls shown in project based on wind loads indicated.
- E. Air Barrier Coordination: Provide methods and materials required to maintain continuity of air barrier at time of veneer anchor installation.
- F. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- G. Manufacturer's Qualification Statement.
- H. Installer's Qualification Statement.
- I. Testing Agency Qualification Statement.

1.0 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of the codes, specifications, and standards, listed above in the Reference Standards article, except where more stringent requirements are shown or specified.
- B. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
- C. Designer Qualifications: Engineer licensed in project jurisdiction.
- D. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- E. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
- F. Testing Agency Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.08 MOC -UPS

- A. Construct a masonry wall as a mock-up(s) sized 8 feet (2.4 m) long by 6 feet (1.8 m) high each; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam) in mock-up. Include the following:
 - 1. Demonstration of air barrier seal at veneer anchors.
 - 2. Integration of precast banding.
 - 3. Two examples of brick patterning as directed by Architect.
 - 4. Integration of typical storefront flashing and framing. Show integration of air barrier with storefront.
- B. Locate where directed.
- C. Mock-up may remain as part of work.

1.09 DELIVER , STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Store all materials above ground on level platforms that allow air circulation.
- C. Maintain materials clean, dry, and protected against dampness, wetness, freezing and foreign matter. Monitor continuity of cover at all times.
- D. Deliver, store and install materials in such a manner as to not exceed the floor design live loads specified on the structural drawings.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS - SUSTAINABLIT

- A. Recycled Content: Provide steel reinforcement with minimum 90 percent total recycled content, including at least 60 percent post-consumer recycled content.

2.02 CONCRETE MASONR UNITS - SEE SECTION 042200 CONCRETE UNIT MASONR

2.03 BRIC UNITS

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide bricks from Belden Brick, or comparable bricks from one of the following;
 - 1. Endicott Clay Products Co; Face Brick - FBX: www.endicott.com/#sle.
 - 2. Taylor Clay Products, Inc.; FBX Face Brick.
 - 3. Substitutions: See section 016000 - Product Requirements.
- B. Facing Brick: ASTM C216, Type FBX, Grade S , all colors except Color 1.
 - 1. Actual Size: Ambassador 3 5/8 x 2 1/4 x 15 5/8 inches.
 - a. Applications: Field brick. Blend colors in patterns indicated on Drawings. Colors shown are from BOD manufacturer:
 - 1) Brick Color 1: 8520A 16-04.
 - 2) Brick Color 2: Landmark Gray Velour A 16-51.
 - 3) Brick Color 3: Goldenrod 20-16.
 - 4) Brick Color 4: Mayo Clear Light.
 - 2. Actual Size -: Modular 3 5/8 x 2 1/4 x 5/8 inches.
 - a. Applications: Soldier courses.
 - 1) Match Brick Color 3.
 - 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect without sawn surfaces being exposed to view. Shapes include, but are not limited to, special corners, lipped bricks, and solid units, and as indicated on Drawings.
- C. Building (Common) Brick: ASTM C62, Grade S ; solid units.

1. Actual size: Match face brick in height.

2.04 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: Not Permitted.
- B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- C. Hydrated Lime: ASTM C20 , Type S
- D. Mortar Aggregate: ASTM C144.
 1. Sand Mix: Use Acres (orange) Sand local to project location, or comparable similar color sand.
- E. Grout Aggregate: ASTM C404.
- F. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C9 9/C9 9M.
- G. Water: Clean and potable.
- H. Admixtures, General: As approved by Architect. Conform to ACI 212.3R. Admixtures shall not contain calcium chloride.
- I. Grout Admixtures: Grout installed using high-lift techniques shall contain shrinkage compensating, water reducing and set retarding admixture.
 1. Products: Subject to compliance with requirements, provide one of the following products;
 - a. E- Mix, Inc., Grout Additive.
 - b. Orco Blended Products, GA213 R-Grout Aid.
 - c. Sika Corporation, Sika Grout Aid.
 - d. Substitutions: See Section 016000 - Product Requirements.
 2. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1 14/C1 14M and capable of producing mortar of the specified strength in accordance with ASTM C2 0 with the addition of water only.
 1. Type: Types as scheduled on Structural Drawings.
 2. Color: Mineral pigments added as required to produce approved color sample.
 3. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide one of the following:
 - a. Argos USA LLC.
 - b. Heidelberg Materials.
 - c. Oldcastle APG.

- . Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C4 6 with the addition of water only.

1. Type: Fine.

2.05 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following;
1. Blok-Lok Limited: www.blok-lok.com/#sle.
 2. Heckmann Building Products;
 3. Hohmann Barnard, Inc: www.h-b.com/#sle.
 4. TruFast Walls, a division of Altenloh, Brinck Co. US, Inc: www.trufastwalls.com/#sle.
 5. IRE-BOND: www.wirebond.com/#sle.
 6. Substitutions: See Section 016000 - Product Requirements.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa), deformed billet bars; uncoated.
- C. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- D. Single Joint Reinforcement: ASTM A951/A951M.
1. Type: Ladder.
 2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
 - a. Provide hot-dip galvanized reinforcement at all exterior walls or walls exposed to 5 relative humidity.
 3. Size: 0.1875 inch (4.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.
- E. Strap Anchors: Bent steel shapes, 1-1/2 inch (38 mm) width, 0.105 inch (2.6 mm) thick, 24 inch (610 mm) length, with 1-1/2 inch (38 mm) long, 90 degree bend at each end to form a U or S shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.
- F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch (16 mm) of mortar coverage from masonry face.

1. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch (6.3 mm) thick, with trapezoidal wire ties 0.18 5 inch (4. 5 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

2.06 AD USTABLE MASONR VENEER ANCHORS

- A. General: Provide anchors that allow vertical differential movement between veneer and substrate but resist minimum 100 lbf load in tension and compression perpendicular to plane of wall without deforming or allowing play in excess of 1/16 inch.
 1. Continuous Insulation: Size anchors to accommodate thickness of continuous insulation in each location indicated.
 2. Embedment: Size wire ties for embedment in veneer a minimum of 1-1/2 inches, maintaining a minimum 5/8 inch coverage of mortar at outer face of veneer.
 3. Anchor Plate Type: Use anchor plate designed for each type of structural backup:
 - a. Masonry Backup: Flat plate.
 - b. Cold Form Metal Framing and Sheathing: Plate with prongs or similar shape engineered to make contact with steel framing to resist crushing of sheathing under compressive loads.
- B. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, stainless steel.
 1. Anchor plates: Not less than 12 ga., 0.105 inch (2.6 mm) thick, designed for fastening to masonry, concrete, or panel backup. Anchor plate designed and engineered to accommodate depth of cavity and insulation indicated.
 2. ire ties: Manufacturer's standard shape, thickness required to resist loads indicated, but not less than 3/16 inch diameter, stainless steel.
 3. Vertical adjustment: Maximum 1-1/4 inches (31. mm).
 4. Manufacturers: Subject to compliance with requirements, provide products from one of the following. Adjust plate type for each structural backup as noted in 2.06.A.3 above:
 - a. Block-Lok; HB-200-X (sheathing); HB-213 (masonry backup).
Heckmann Building Products; #213.
 - b. Hohmann and Barnard, Inc.; HB-200-X (sheathing); HB-213 (masonry backup).
 - c. ire Bond; HCL- 11 (sheathing); R - 11 (masonry backup).

- C. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.
 - 1. Subject to compliance with requirements, provide fasteners with highest level of corrosion resistance recommended by anchor manufacturer for intended use.

2.0 FLASHINGS

- A. Metal Flashing Materials:
 - 1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gauge, 0.018 inch (0.48 mm) thick; finish 2B to 2D.
- B. Combination Non-Asphaltic Flashing Materials - Stainless Steel:
 - 1. ~~Stainless Steel Flashing—Self-adhering: ASTM A240/A240M; 2 mil (0.05 mm)-type 304 stainless steel sheet with 8 mil (0.20 mm) of butyl adhesive and a removable release liner.~~
 - 2. Stainless Steel/Polymer Fabric Flashing: ASTM A240/A240M; 2 mil (0.05 mm) type 304 stainless steel sheet bonded on one side to one sheet of polymer fabric.
 - a. Manufacturers: Subject to compliance with requirements, provide one of the following products:
 - 1) Hohmann Barnard, Inc; Mighty-Flash Stainless Flashing: www.h-b.com/#sle.
 - 2) IRE-BOND; Bond-N-Flash: www.wirebond.com/#sle.
 - 3) ork Manufacturing, Inc; Multi-Flash SS: www.yorkmfg.com/#sle.
 - 4) Substitutions: See Section 016000 - Product Requirements.
- C. Factory-Fabricated Flashing Corners and End Dams: Stainless steel.
- D. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.
 - 1. ~~Manufacturers, Synthetic Rubber Products: Subject to compliance with requirements, provide one of the following;~~
 - a. ~~Mortar Net Solutions; BTL-1 Butyl Sealant: www.mortarnet.com/#sle.~~
 - b. ~~Substitutions: See Section 016000 - Product Requirements.~~
- E. Termination Bars: Stainless steel; compatible with membrane and adhesives.
 - 1. Manufacturers: Subject to compliance with requirements, provide one of the following;
 - a. Hohmann Barnard, Inc; Termination Bar: www.h-b.com/#sle.
 - b. Mortar Net Solutions; Termination Bars: www.mortarnet.com/#sle.
 - c. ire Bond; Termination Bar.
 - d. ork Manufacturing, Inc; Termination Bar: www.yorkmfg.com/#sle.

- e. Substitutions: See Section 016000 - Product Requirements.
- F. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
 - 1. Manufacturers: Subject to requirements, provide one of the following;
 - a. Hohmann Barnard, Inc: www.h-b.com/#sle.
 - b. Mortar Net Solutions; Metal Drip Edges: www.mortarnet.com/#sle.
 - c. [ire Bond; Drip edge flashing.](#)
 - d. York Manufacturing, Inc: www.yorkmfg.com/#sle.
 - e. Substitutions: See Section 016000 - Product Requirements.
- G. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.08 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 - 1. Manufacturers: Subject to compliance with requirements, provide one of the following products;
 - a. Blok-Lok Limited: www.blok-lok.com/#sle.
 - b. Hohmann Barnard, Inc: www.h-b.com/#sle.
 - c. IRE-BOND: www.wirebond.com/#sle.
 - d. Substitutions: See Section 016000 - Product Requirements.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 - 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
 - a. Manufacturers: Subject to compliance with requirements, provide one of the following products;
 - 1) Advanced Building Products, Inc; Mortar Break DT: www.advancedbuildingproducts.com/#sle.
 - 2) Advanced Building Products Inc; Mortar Break: www.advancedbuildingproducts.com/#sle.
 - 3) Mortar Net Solutions; MortarNet: www.mortarnet.com/#sle.
 - 4) York Manufacturing, Inc.; Deep-Net: www.yorkmfg.com/#sle.
 - 5) Substitutions: See Section 016000 - Product Requirements.
- D. Weeps:

1. Type: Extruded propylene with honeycomb design.
2. Color(s): As selected by Architect from manufacturer's full range.
3. Manufacturers: Subject to compliance with requirements, provide one of the following products;
 - a. Advanced Building Products, Inc; Mortar Maze:
www.advancedbuildingproducts.com/#sle.
 - b. Blok-Lok Limited; CellVent: www.blok-lok.com/#sle.
 - c. Masonry Technology, Inc; Cavity seep: www.mtidry.com/#sle.
 - d. Mortar Net Solutions; seepVent: www.mortarnet.com/#sle.
 - e. Substitutions: See Section 016000 - Product Requirements.

E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.09 MORTAR AND GROUT MIXING

- A. Mortar Schedule for Unit Masonry: ASTM C200, using the Property Specification.
 1. Masonry below grade and in contact with earth: Type S.
 2. Exterior, loadbearing masonry: Type S.
 3. Exterior, non-loadbearing masonry: Type N.
 4. Interior, loadbearing masonry: Type N.
 5. Interior, non-loadbearing masonry: Type O.
- B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
 1. Use sand mix color noted in Mortar and Grout Materials article above.
 2. Basis-of-Design Colors:
 - a. At Brick Colors 1 and 2: Raw Umber # R2246.
 - b. At Brick Color 3: Burnt Sienna # R2242.
 - c. At Brick Color 4: Morning Mist # R224a.
- C. Grout: ASTM C476; 3,000 psi (20.68 MPa) strength at 28 days, unless indicated otherwise with 8-10 inches (203-254 mm) slump (before admixtures) and consistency required to fill completely volumes indicated for grouting;
 1. Fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less.
 2. Course grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
 3. Add admixtures in accordance with manufacturer's instructions; mix uniformly.
- D. Sand: Maintain sand uniformly damp immediately before the mixing process.

- E. Admixtures: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure consistent mortar color.
- F. Mixing: Use mechanical batch mixer, in accordance with ASTM C2 0 and in quantities needed for immediate use. Comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Clean reinforcement of loose rust.
- C. Ensure that units are clean and free of dust, including dust from cutting, dirt and other foreign materials.
- D. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Do not use frozen mortar and grout materials.
- B. Maintain materials and surrounding air temperature to minimum 40 degrees F (5 degrees C) prior to, during, and 48 hours after completion of masonry work.
- C. Maintain materials and surrounding air temperature to maximum 90 degrees F (32 degrees C) prior to, during, and 48 hours after completion of masonry work.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running, except where indicated on drawings.

2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
3. Mortar joints: Concave.

D. Brick Units:

1. Bond: As indicated for different locations.
2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
3. Mortar joints: Concave.

3.05 PLACING AND BONDING

- A. Do not use anti-freeze compounds to lower the freezing point of mortar.
- B. Use mortar within two hours of mixing.
 1. If water is lost by evaporation, re-temper only within the two hour limit of initial mixing.
- C. Do not wet masonry units, except in hot, dry weather when units are warm to the touch. Wetting of units with light fog spray is permitted.
- D. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- E. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- F. Remove excess mortar and mortar smears as work progresses.
- G. Interlock intersections and external corners, except for units laid in stack bond.
- H. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- I. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
 - . Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
 - . Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- L. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.06 EEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.0 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking

weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch (16 mm) mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches (150 mm).
- F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 24 inches (600 mm) horizontally and 16 inches (400 mm) vertically.
- G. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches (38 mm) with at least 5/8 inch (16 mm) mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1. sq ft (0.16 sq m) of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.
- B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches (400 mm) on center vertically and 16 inches (400 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

3.10 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 - 1. Extend flashings full width at such interruptions and at least 6 inches (152 mm), minimum, into adjacent masonry or turn up flashing ends at least 1 inch (25.4 mm), minimum, to form watertight pan at nonmasonry construction.
 - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 - 3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 8 inches (203 mm) minimum on vertical surface of backing:

1. ~~Install vertical leg of flashing behind water resistive barrier sheet over backing.~~
 2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
 3. Anchor vertical leg of flashing into backing with a termination bar and sealant.
 4. ~~Apply cap bead of sealant on top edge of self-adhered flashing.~~
- C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. .
- D. Extend metal flashings to within 1/2 inch (12 mm) of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
 - E. Support flexible flashings across gaps and openings.
 - F. Extend laminated flashings to within 1/2 inch (12 mm) of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
 - G. Lap end joints of flashings at least 6 inches (152 mm), minimum, and seal watertight with flashing sealant/adhesive.
- 3.11 LINTELS
- A. Comply with Section 042200 Concrete Unit Masonry.
- 3.12 GROUTED COMPONENTS
- A. Comply with Section 042200 Concrete Unit Masonry.
- 3.13 CONTROL AND EXPANSION JOINTS
- A. Do not continue horizontal joint reinforcement through control or expansion joints.
 - B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
 - C. Size control joints as indicated on drawings; if not indicated, 3/4 inch (19 mm) wide and deep.
 - D. Form expansion joint as detailed on drawings.
- 3.14 BUILT-IN OR
- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
 - B. Install built-in items plumb, level, and true to line.
 - C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 1. Fill adjacent masonry cores with grout minimum 12 inches (300 mm) from framed openings.
 - D. Do not build into masonry construction organic materials that are subject to deterioration.

3.15 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).
- C. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- D. Maximum Variation from Plane of all: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.
- E. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
- F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).
- G. Maximum Variation of Mortar Joint Thickness: 1/8 inch in 3 feet.
- H. Maximum Variation from Cross Sectional Thickness of all: 1/4 inch (6 mm).

3.16 CUTTING AND FITTING

- A. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.1 FIELD QUALITY CONTROL

- A. Comply with Section 042200 Concrete Unit Masonry and as follows:
- B. Engage an independent testing agency to perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- C. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C6 /C6 M requirements, sampling 5 randomly chosen units for each 50,000 installed.

3.18 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.19 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

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SECTION 0 4213
METAL ALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured metal panels for exterior wall panels, soffit panels, and equipment screens, with fascia, trim and related flashings and accessory components.

1.02 RELATED REQUIREMENTS

- A. Section 054000 - Cold-Formed Metal Framing: all and soffit panel substrate.
- B. Section 055000 - Metal Fabrications: all panel substrate.
- C. Section 0 2100 - Thermal Insulation: Cavity insulation.
- D. Section 0 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA 609 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- C. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior all Assemblies Containing Combustible Components; 2023.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data - all System: Manufacturer's data sheets on each product to be used, including:
 - 1. Physical characteristics of components shown on shop drawings.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions and recommendations.
- C. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, girts, and methods of anchorage.
- D. Samples: Submit two samples of wall panel and soffit panel, 12 inches by 12 inches (305 mm by 305 mm) in size illustrating finish color, sheen, and texture.
- E. Test Reports: Submit test report verifying compliance with NFPA 285 for previously-tested exterior wall assembly.
- F. Manufacturer's qualification statement.
- G. Installer's qualification statement.

- H. Testing agency's qualification statement.
 - I. Warranty Documentation for Installation of Building Rainscreen Assembly: Submit installer warranty and ensure that forms have been completed in Owner's name and registered with installer.
- 1.05 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
 - B. Installer Qualifications: Company specializing in installing products specified in this section with minimum three years of documented experience.
 - C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- 1.06 MOC -UPS
- A. See Section 014000 - Quality Requirements for additional requirements.
 - B. Construct mock-up, 10 feet (3.3 m) long by 10 feet (3.3 m) wide; include panel and soffit system, glazing, attachments to building frame, associated vapor retarder and air seal materials, weep drainage system, sealants and seals, and related insulation in mock-up.
 - C. Locate as directed by Architect.
 - D. Mock-up may remain as part of work.
- 1.0 DELIVERY, STORAGE, AND HANDLING
- A. See Section 01 419 - Construction Waste Management and Disposal for packaging waste requirements.
 - B. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
 - C. Store prefabricated material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
 - D. Prevent contact with materials that may cause discoloration or staining of products.
- 1.08 FIELD CONDITIONS
- A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.
- 1.09 WARRANTY
- A. See Section 01 800 - Closeout Submittals for additional warranty requirements.

- B. Finish Warranty: Provide 10-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.
- C. Special Warranty: Provide 5-year warranty covering water tightness and integrity of seals of metal wall panels. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 METAL WALL PANEL SYSTEM

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled, with concealed clips and fasteners.
 - 1. Provide exterior wall panels, soffit panels, and girt assembly.
 - 2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
 - 3. Design Pressure: In accordance with applicable codes.
 - 4. Fire Performance: Tested in accordance with, and complying with acceptance criteria of NFPA 285.
 - 5. Maximum Allowable Deflection of Panel: $L/180$ for length(L) of span.
 - 6. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
 - 7. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
 - 8. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
 - 9. Corners: Factory-fabricated in one continuous piece with minimum 2-inch (51 mm) returns.
- B. Exterior Wall Panels, Type FM P-1:
 - 1. Profile: Vertical; Flat-seamed style.
 - 2. Side Seams: Mechanically Double-interlocked, tight-fitting, sealed with concealed continuous bead of sealant.
 - 3. Material: Precoated aluminum sheet, 20 gauge, 0.032 inch (0.81 mm) minimum thickness.

ADD 02

4. Panel width: 12 inches (305 mm).
5. Panel Depth: 1 inch (25 mm).
6. Color: As selected by Architect from manufacturer's Standard Two-Coat PVDF Fluoropolymer Finishes.
7. Fasteners: Concealed.
8. Trim, Closure Pieces, and Facias: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
9. Product: Subject to compliance with requirements, provide Morin (a Kingspan Group Company) #F-8-0 panel system or comparable product.
 - a. Substitutions: See Section 016000-Product Requirements.

C. Exterior Wall Panels, Type FM P-2:

1. Profile: Vertical; Standing-seamed style.
2. Side Seams: Mechanically interlocked seamed, sealed with concealed continuous bead of sealant.
3. Material: Precoated aluminum sheet, 20 gauge, 0.032 inch (0.81 mm) minimum thickness.
4. Panel width: 16 inches (406 mm).

ADD 02

5. Panel Depth: 2 inches (51 mm).
6. Color: As selected by Architect from manufacturer's Standard Two-Coat PVDF Fluoropolymer Finishes.
7. Fasteners: Concealed.
8. Trim, Closure Pieces, and Facias: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
9. Product: Subject to compliance with requirements, provide Morin (a Kingspan Group Company) #SLR-16-0 panel system or comparable product.
 - a. Substitutions: See Section 016000-Product Requirements.

D. Exterior Equipment and Generator Screen Panels, Type FM P-3:

1. Profile: Vertical; Fluted style.
2. Side Seams: Mechanically interlocked seamed.
3. Material: Perforated precoated aluminum sheet, 0.040 inch (1.02 mm) minimum thickness.
4. Panel width: 12 inches (305 mm).
5. Panel Depth: 1/8 inch (22 mm).
6. Perforation Pattern: 1/8 inch (3.1 mm) hole, 1/4 inch (6.3 mm) spacing, 23 percent open area.

Color: As selected by Architect from manufacturer's Standard Two-Coat 0
PVDF Fluoropolymer Finishes.

ADD 02

8. Fasteners: Concealed.
9. Trim, Closure Pieces, and Facias: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
10. Product: Subject to compliance with requirements, provide Morin (a Kingspan Group Company) Integrity #X-12 panel system or comparable product.
 - a. Substitutions: See Section 016000-Product Requirements.

E. Soffit Panels:

1. Profile: flush, with venting provided where indicated on Drawings.
2. Material: Precoated aluminum sheet, 20 gauge, 0.032 inch (0.81 mm) minimum thickness.

ADD 02

3. Color: As selected by Architect from manufacturer's Standard Two-Coat 0
PVDF Fluoropolymer Finishes.
4. Product: Subject to compliance with requirements, provide Morin (a Kingspan Group Company), Primo Soffit #PS-12 panel system or comparable product.
 - a. Substitutions: See Section 016000-Product Requirements.

F. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.

G. Expansion Joints: Same material, thickness and finish as exterior sheets; manufacturer's standard brake formed type, of profile to suit system.

H. Trim, Closure Pieces, and Facias: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

I. Anchors: Galvanized steel or Stainless steel.

2.02 MATERIALS

A. Precoated Aluminum Sheet: ASTM B209/B209M, 3105 alloy, O temper, with smooth surface texture; continuous-coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

B. Select materials with surface flatness, smoothness, and lack of surface blemishes where exposed to view in finished system.

2.03 FINISHES

A. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

- B. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 0 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch (0.023 mm); color and gloss to match sample.
1. Products:
 - a. Arkema, Inc; ynar 500: www.arkema.com/#sle.
 - b. PPG; Duranar: www.ppgmetalcoatings.com/#sle.
 - c. Sherwin-Williams Company; Fluropon: www.coil.sherwin.com/#sle.
 - d. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

- A. Support for Cladding and Continuous Insulation: Continuous thermal girts.
1. Fiberglass reinforced plastic (FRP) girts that provide cladding attachment support for metal wall panels.
 2. Depth: As required for thickness of insulation.
 3. Length: 6 inches (152 mm) for clips and 96 inches (2438 mm) for girts.
 4. Spacing: 16 inches (406 mm) on center, vertically.
 5. Fasteners: As recommended by clip manufacturer.
 6. Products: Subject to compliance with requirements provide one of the following or comparable products;
 - a. Cladiator; Slotted- FG: www.cladiator.com/#sle.
 - b. exo Surfaces; exoGIRT: www.exo-surfaces.com/#sle.
 - c. Substitutions: See Section 016000 - Product Requirements.
- B. Support for Equipment and Generator Screen Cladding:
1. Horizontal Rail: Cladding support, extruded aluminum with 0.094-inch (2.4 mm) minimum thickness and unique profile, 118-1/8 inches (3000 mm) long; attached to vertical structure, See Section 054000.
 2. Fasteners: Provide support system and cladding attachment fasteners as recommended by system manufacturer in accordance with requirements.
- C. Concealed Sealants: Non-curing butyl sealant or tape sealant, see Section 09200
- D. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
1. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws.
- E. Field Touch-up Paint: As recommended by panel manufacturer.
- F. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building framing members are ready to receive panels.

3.02 PREPARATION

- A. Install subgirts perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane, and spaced at intervals indicated.
- B. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

3.03 INSTALLATION

- A. Install panels on walls and soffits in accordance with manufacturer's instructions.
- B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow to dry prior to wall panel installation.
- C. Fasten panels to structural supports; aligned, level, and plumb.
- D. Locate joints over supports.
- E. Lap panel ends 2 inches (51 mm), minimum.
- F. Provide expansion and control joints where indicated.
- G. Use concealed fasteners unless otherwise indicated by Architect.
- H. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.04 TOLERANCES

- A. Offset From True Alignment Between Adjacent Members Abutting or In Line: 1/16 inch (1.6 mm), maximum.
- B. Variation from Plane or Location As Indicated on Drawings: 1/4 inch (6.4 mm), maximum.

3.05 CLEANING

- A. See Section 01 000 - Execution and Closeout Requirements for additional requirements.
- B. Remove site cuttings from finish surfaces.
- C. Remove protective material from wall panel surfaces.
- D. Upon completion of installation, thoroughly clean prefinished aluminum surfaces in accordance with AAMA 609 610.

3.06 PROTECTION

- A. Protect metal wall panels until completion of project.
- B. Touch-up, repair, or replace damaged wall panels or accessories before Date of Substantial Completion.

END OF SECTION

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SECTION 0 5300
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Elastomeric roofing membrane application.
- B. Insulation, flat and tapered.
- C. Vapor retarder.
- D. Deck sheathing.
- E. Cover boards.
- F. Roofing stack boots and walkway pads.

1.02 REFERENCE STANDARDS

- A. ASTM C110 /C110 M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2011.
- B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.
- C. ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method; 1983 (Reapproved 2018).
- D. ASTM D463 /D463 M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
- C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, mechanical fastener layout, and tie-in with air barrier.
- D. Sustainable Design Submittals:

1. Health Product Declaration (HPD): Provide documentation confirming product compliance with one of the following:
 - a. Inventory or HPD to at least 0.01 percent by weight, with at least 95 percent assessed using GreenScreen Benchmark assessment.
 - b. Cradle to Cradle v3 certification with minimum Silver level of Material Health.
 - c. Living Product Challenge certification indicating achievement of Imperative 09, Transparent Material Health .
 - E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
 - F. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
 - G. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
 - H. Manufacturer's Field Representative qualification statement.
 - I. Installer's qualification statement.
 - . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- 1.05 QUALITY ASSURANCE
- A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.
 - B. Manufacturer Field Representative: Individual(s) with thorough knowledge of manufacturer's products and and installation requirements.
- 1.06 DELIVERY, STORAGE, AND HANDLING
- A. See Section 01 419 - Construction Waste Management and Disposal for packaging waste requirements.
 - B. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
 - C. Store materials in weather protected environment, clear of ground and moisture.
 - D. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
 - E. Protect foam insulation from direct exposure to sunlight.
- 1.0 FIELD CONDITIONS
- A. Do not apply roofing membrane during unsuitable weather.

- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 90 degrees F (32 degrees C).
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.08 ARRANT

- A. See Section 01 800 - Closeout Submittals for additional warranty requirements.
- B. Contractor's workmanship warranty: Correct defective work within a two year period after Date of Substantial Completion.
- C. Special warranty: Manufacturer's total system, non-prorated, without monetary limitation, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes roof membrane, flashings, roof insulation, fasteners, cover boards, and other components of roofing system.
 - 2. Warranty Period: 20 years from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and base flashings to withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings to remain watertight.
- B. Material Compatibility: Roofing materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
 - 1. Air Barrier: Provide transition materials compatible with roofing and air barrier.
- C. Wind Uplift Resistance: Design roofing system to resist wind uplift pressures indicated on Drawings.

2.02 MANUFACTURERS

- A. EPDM Membrane Materials:
 - 1. Carlisle SynTec Systems; Sure-Tough EPDM: www.carlisle-syntec.com/#sle.

2. Elevate; RubberGard Max (Reinforced) EPDM Membrane:
www.holcimelevate.com/#sle.
 3. Johns Manville; M EPDM: www.jm.com/#sle.
 4. Versico Roofing Systems; VersiGard EPDM: www.versico.com/#sle.
 5. Substitutions: See Section 016000 - Product Requirements.
- B. Insulation: Subject to compliance with requirements, insulation compatible with roofing system(s) specified.
- C. Cover Boards: Subject to compliance with requirements, cover boards compatible with roofing system(s) specified.

2.03 ROOFING

- A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over cover board and insulation.
- B. Acceptable Insulation Types - Constant Thickness Application: Any of types specified.
- C. Acceptable Insulation Types - Tapered Application: Any of types specified.

2.04 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane: Ethylene-propylene-diene-monomer (EPDM); internally reinforced with fabric or scrim; complying with minimum properties of ASTM D463 /D463 M.
 1. Thickness: 60 mil, 0.060 inch (1.5 mm), minimum.
 2. Sheet width: 120 inches (3,048 mm), maximum.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Vapor Retarder: 40-mil composite self-adhering rubberized asphalt laminated to a woven polypropylene film.; compatible with roofing and insulation materials.
- D. Flexible Flashing Material: Same material as membrane.

2.05 DECK SHEATHING

ADD 02

- A. General: Apply deck sheathing only where roofing is on metal decking.
- B. Deck Sheathing: Glass mat faced gypsum panels, ASTM C11 /C11 M, fire resistant type, 1/2 inch (12. mm) thick.

2.06 COVER BOARDS

ADD 02

- A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C11 /C11 M.
 1. Thickness: 1/2 inch (12. mm), moisture and mold resistant core and facer, fire-resistant.

2.0 INSULATION

- A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.

1. Classifications:
 - a. Type II: Faced with either cellulosic facers or glass fiber mat facers on both major surfaces of the core foam.
 - 1) Class 1 - Faced with glass fiber reinforced cellulosic facers on both major surfaces of the core foam.
 - 2) Compressive Strength: Classes 1-2-3, Grade 3 - 25 psi (1.72 kPa), minimum.
 - 3) Thermal Resistance, R-value (RSI-value): At 1-1/2 inches (38 mm) thick; Class 1, Grades 1-2-3 - 8.4 (1.48) at 5 degrees F (24 degrees C).
2. Board Size: 48 by 96 inches (1220 by 2440 mm).
3. Board Thickness: Minimum 2.6 inch (66 mm). Achieve roof system R-value indicated on Drawings with minimum of 2 layers of insulation installed with staggered edges.
4. Tapered Board: Slope as indicated; minimum thickness 1/2 inch (12.7 mm); fabricate of fewest layers possible.
5. Board Edges: Square.

2.08 ACCESSORIES

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
- B. Termination Bars: Stainless steel; compatible with membrane and adhesives.
 1. Manufacturers: Subject to compliance with requirements, provide one of the following;
 - a. Hohmann Barnard, Inc; Termination Bar: www.h-b.com/#sle.
 - b. Mortar Net Solutions; Termination Bars: www.mortarnet.com/#sle.
 - c. York Manufacturing, Inc; Termination Bar: www.yorkmfg.com/#sle.
 - d. Substitutions: See Section 016000 - Product Requirements.
- C. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
 1. Length as required for thickness of insulation material and penetration of deck substrate, with metal washers.
- D. Membrane Adhesive: As recommended by membrane manufacturer.
- E. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
- F. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.
- G. Insulation Adhesive: As recommended by insulation manufacturer.
- H. Sealants: As recommended by membrane manufacturer.

- I. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
 1. Composition: Roofing membrane manufacturer's standard.
 2. Size: 18 by 18 inches (460 by 460 mm).
 3. Surface Color: Roofing manufacturer's standard.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - CONCRETE DEC

- A. Fill surface honeycomb and variations with latex filler.
- B. Do not begin work until elevated concrete substrate has cured at least 28 days and moisture content is five percent or less.
 1. Test as Follows:
 - a. Concrete Moisture Content: No beading water under plastic after 16 hours when tested in accordance with ASTM D4263.
 - b. Relative Humidity in Concrete: Not greater than 5 percent when tested in accordance with ASTM F210.

3.03 INSTALLATION - VAPOR RETARDER AND INSULATION, UNDER MEMBRANE

- A. Install vapor retarder to substrate surface with adhesive in accordance with manufacturer's instructions.
 1. Extend vapor retarder under cant strips and blocking to deck edge.
 2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.
- B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.
- C. Attachment of Insulation:
 1. Mechanically fasten first layer of insulation to deck in accordance with roofing manufacturer's instructions.

2. Embed second layer of insulation into full bed of adhesive in accordance with roofing and insulation manufacturers' instructions.
- D. Cover Boards: Adhere cover boards in accordance with roofing manufacturer's instructions.
- E. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.
- F. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- G. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- H. Do not apply more insulation than can be covered with membrane in same day.

3.04 INSTALLATION - MEMBRANE

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Fully Adhered Application: Apply adhesive to substrate at rate recommended by manufacturer. Fully embed membrane in adhesive except in areas directly over or within 3 inches (6 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
- D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (6 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
- E. At intersections with vertical surfaces:
 1. Extend membrane over cant strips and up a minimum of 6 inches (152 mm) onto vertical surfaces.
 2. Fully adhere flexible flashing over membrane and up to reglets and counterflashing.
- F. Around roof penetrations, seal flanges and flashings with flexible flashing.
- G. Coordinate installation of roof drains and related flashings.
- H. Install walkway pads. Space pad joints to permit drainage.

3.05 FIELD QUALIT CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Coordinate with manufacturer representative to observe initial placement of insulation layer, initial placement of membrane and edge metal, a progress review at midpoint of roof installation, and review of completed roof installation.

3.06 CLEANING

- A. See Section 01 000 - Execution and Closeout Requirements for additional requirements.
- B. Remove bituminous markings from finished surfaces.
- C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- D. Repair or replace defaced or damaged finishes caused by work of this section.

3.0 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 084313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. ~~Aluminum-framed storefront, reinforced, sunshade brackets, with vision glass.~~
- C. Operable glazed units set in storefront system.
- D. Aluminum doors and frames.
- E. weatherstripping.

1.02 RELATED REQUIREMENTS

- A. Section 08 100 - Door Hardware: Hardware items other than specified in this section.
- B. Section 088000 - Glazing: Glass and glazing accessories.
- C. ~~Section 10 113.43 - Fixed Sun Screens: Sunshades attached to storefront where indicated.~~

1.03 REFERENCE STANDARDS

- A. AAMA C -10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2015.
- C. AAMA 609 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- E. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- F. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

- I. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- . ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- . ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. ~~Coordinate sunshade design and finish with storefront where indicated. See Section 10-113.43 - Fixed Sun Screens.~~

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
- C. Shop Drawings: Indicate system dimensions for each size storefront, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
 1. ~~Indicate sunshade bracket locations and required framing reinforcement.~~
- D. Design Data - System with Sun Shades: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.
- E. Field Quality Control Submittals: Report of field testing for water penetration.
- F. Designer's qualification statement.
- G. Specimen warranty.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.0 MOC -UPS

- A. Provide window system ~~complete with sunshade brackets and sun shades indicating air barrier integration, flashings, and attachments to structure.~~
- B. Locate where directed.
- C. Mock-up may remain as part of work.

1.08 DELIVER , STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA C -10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.09 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C). Maintain this minimum temperature during and 48 hours after installation.

1.10 WARRANT

- A. See Section 01 800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING

~~Center-Set Style, Thermally-Broken: Reinforced, with sun shade brackets. Subject to compliance with requirements, provide the following:~~

~~Basis of Design, SF-2: awneer; Trifab VersaGlaze 451T Framing System.~~

- A. Front-Set Style, Thermally-Broken: Subject to compliance with requirements, provide the following:
 - 1. Basis of Design, SF-1: awneer; Trifab VersaGlaze 451T Framing System.
 - 2. Basis of Design, SF-2: Not Used.
 - 3. Basis of Design, SF-3: awneer; Trifab VersaGlaze 601T Framing System.
 - 4. Basis of Design, SF-4: awneer; Trifab VersaGlaze 451T Framing System configured to create butt-glazed corners integrated into standard framing system as indicated in Drawings.
- B. Other Manufacturers: Provide either the product identified as Basis of Design or an equivalent product of one of the manufacturers listed below:
 - 1. EFCO LLC
 - 2. AP

2.02 BASIS OF DESIGN -- S LIDING DOORS

- A. Slide Stile, Monolithic Glazing (Interior): Subject to compliance with requirements, provide the following:
 - 1. Basis of Design: Kawneer.
 - 2. Thickness: 1-3/4 inches (43 mm).
- B. Slide Stile, Insulating Glazing, Thermally-Broken: Subject to compliance with requirements, provide the following:
 - 1. Basis of Design: Kawneer; Insulpour 500T Thermal Entrance
 - 2. Thickness: 1-3/4 inches (43 mm).
- C. Other Manufacturers: Provide either the product identified as Basis of Design or an equivalent product of one of the manufacturers listed below:
 - 1. EFCO LLC
 - 2. AP America

2.03 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Glazing Position: Varies as indicated in Drawings and Basis-of-Design article.
 - 2. Vertical Mullion Dimensions; SF-1, SF-4: 2 inches wide by 4-1/2 inches deep (50 mm wide by 114 mm deep).
 - 3. ~~Vertical Mullion Dimensions; SF-2: 2-1/4 inches wide (verticals only for reinforcing) by 4-1/2 inches deep (56 mm wide by 114 mm deep).~~
 - 4. Vertical Mullion Dimensions; SF-3: 2 inches wide by 6 inches deep (50 mm wide by 152 mm deep).
 - 5. Finish: Superior performing organic coatings.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - 6. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 7. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent stack effect in internal spaces.
 - 8. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

9. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 1 0 degrees F (95 degrees C) over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
10. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
11. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
12. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel, and heel bead of glazing compound.

B. Performance Requirements

1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of ASCE for wind pressures indicated.
 - b. Member Deflection: Limit member deflection to 1/1 5 in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8 psf (390 Pa).
3. Air Leakage: 0.03 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 6.2 psf (300 Pa) pressure difference.

2.04 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 1. Framing members for interior applications need not be thermally broken.
 2. Glazing Stops: Flush.
 3. Subsill: Manufacturer's standard aluminum extrusion.
 - a. End Dams: Provide aluminum end dams for each length of subsill.
- B. Glazing: See Section 088000.
- C. Swing Doors: Glazed aluminum.

1. Thickness: 1-3/4 inches (43 mm).
 2. Top Rail: 8-1/2 inches (215 mm) wide.
 3. Vertical Stiles: inches (1 8 mm) wide.
 4. Intermediate Rail: Match height of top rail.
 5. Bottom Rail: 12 inches (305 mm) wide.
 6. Glazing Stops: Square.
 - . Finish: Same as storefront.
- D. ~~Sunshades: See Section 10-113.43—Fixed Sun Screens for sunhsades and extension plates.~~
- E. ~~Sunshade Outrigger Brackets:~~
1. ~~Manufacturer's standard brackets designed to attach to face of storefront system and support sunshade element.~~
 2. ~~Basis of Design Sun Shade Brackets: Subject to compliance with requirements, provide awneer Outrigger Bracket, 494200, or an approved comparable bracket compatible with and designed for specified system.~~
 3. ~~Color and Coating: Match storefront finish and color.~~
- F. Operable Sash: Aluminum project-out awning and casement style; finished to match storefront; turn handle latch with manufacturer's standard insect screen.
1. Size: As indicated on Drawings
 2. Glazing: 1 IGU, Type as indicated on Drawings
 3. Basis of Design: awneer Glassvent indows or equal as determined by Architect
 4. System Dimensions: 2 3/4 Overall System Depth
 5. Hardware: Stainless Steel 4-bar hinges; Cast hite Bronze Cam Lock
- G. Transaction indow: Vertical Sliding Service indow
1. Size: 24 x 36 , or as indicated on Drawings
 2. Material: Anodized Aluminum, color to be selecte
 3. Orientation: Vertical Sliding
 4. Glazing: 1/4 tempered
 5. Basis of Design Product: CR Laurence Vertical Sliding Service indow Model # V2436NS

2.05 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Stainless steel.

- C. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- D. Reinforcement: Manufacturer's standard reinforcing required to accommodate ~~sunshade attachment and~~ structural loads.

2.06 FINISHES

- A. High Performance Organic Coating - Interior: AAMA 2604; multiple coats, thermally cured fluoropolymer system.
- B. Superior Performing Organic Coatings System - Exterior: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 0 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch (0.030 mm).
- C. Color: As selected by Architect from manufacturer's full range.

2.0 HARD ARE

- A. Other Door Hardware: See Section 08 100.
- B. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
- C. Sill Sweep Strips: Resilient seal type, of neoprene; provide on all doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install subsill with sill and perimeter flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate subsill and sill flashings, make watertight by seating and sealing fastener heads to sill flashing.

- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Install operating sash.
 - . Set thresholds in bed of sealant and secure.
 - . Install glass and infill panels using glazing method required to achieve performance criteria; see Section 088000.
- L. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet (1.5 mm per m) non-cumulative or 0.06 inch per 10 feet (1.5 mm per 3 m), whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch (0.8 mm).

3.04 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for general testing and inspection requirements.
- B. Water-Spray Test: Provide water spray quality test of installed storefront components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
- C. Repair or replace storefront components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.05 ADJUSTING

- A. Adjust operating hardware and sash for smooth operation.

3.06 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 - 610.

3.0 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

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SECTION 084413
GLAZED ALUMINUM CURTAIN WALLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed curtain wall, with vision glazing and infill panels.
- B. Associated operable sashes.

1.02 RELATED REQUIREMENTS

- A. Section 051200 - Structural Steel Framing: Steel attachment members.
- B. Section 084229 - Automatic Entrances.
- C. Section 088000 - Glazing.
- D. Section 10 113.43 - Fixed Sun Screens attached to curtain wall where indicated.

1.03 REFERENCE STANDARDS

- A. AAMA C-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2015.
- C. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems; 2014.
- D. AAMA 609-610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- E. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- F. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- G. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- H. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- I. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2011.
- J. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- K. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

- L. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).
- M. ASTM C 93 - Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants; 2023.
- N. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- O. ASTM C108 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2023.
- P. ASTM C1135 - Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants; 2019.
- Q. ASTM C1184 - Standard Specification for Structural Silicone Sealants; 2023.
- R. ASTM C1249 - Standard Guide for Secondary Seal for Sealed Insulating Glass Units for Structural Sealant Glazing Applications; 2018 (Reapproved 2023).
- S. ASTM C1401 - Standard Guide for Structural Sealant Glazing; 2023.
- T. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- U. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- V. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).
- W. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- X. ASTM E1105 - 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; 2015 (Reapproved 2023).
- Y. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, internal drainage details, glazing, and infill.

- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
 - 1. Provide details of proposed structural sealant glazing (SSG) at indicated locations and weather sealant joints indicating dimensions, materials, bite, thicknesses, profile, and support framing.
 - 2. Provide details of proposed operable sashes showing no-sightline configuration.
- D. Samples: Submit two samples 12 by 12 inches (305 by 305 mm) in size illustrating finished aluminum surface, glazing, and glazing materials.
- E. Design Data: Provide framing member structural and physical characteristics and engineering calculations, and identify dimensional limitations; include load calculations at points of attachment to building structure.
- F. Test Reports: Submit results of full-size mock-up testing. Reports of tests previously performed on the same design are acceptable.
- G. Field Quality Control Submittals: Report of field testing for water penetration.
- H. Designer's Qualification Statement.
- I. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design curtain wall and its structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.
- B. Verify that each component is appropriate for use in structural sealant glazing (SSG) application in regards to at least the following properties: size, shape, dimensions, material, durability, storage conditions, and color.
- C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than three years of documented experience.
 - 1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
 - a. Insulating Glass Certification Council (IGCC).
 - b. Safety Glazing Certification Council (SGCC).
- D. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.0 MOC -UPS

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Construct mock-up, 6 feet (2 m) long by 4 feet (1.25 m) wide, indicating each component being used on the project. Assemble to illustrate component assembly including glazing materials, weep drainage system, attachments, anchors, and perimeter sealant.
 - 1. Include mockup of sunshade bracket and sunshade indicating attachment methods, finish compatibility with curtain wall.
- C. Mock-up may not remain as part of work.

1.08 DELIVER , STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA C -10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.09 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C). Maintain this minimum temperature during and 48 hours after installation.

1.10 WARRANT

- A. See Section 01 800 - Closeout Submittals for additional warranty requirements.
- B. Assembly warranty: The manufacturer agrees to repair or replace any components of the glazed aluminum curtain wall that fail to meet the requirements or exhibit defects in materials or workmanship within the warranty period. Failures include, but are not limited to:
 - 1. Structural failures such as excessive deflection or related failures.
 - 2. Deterioration of metals and other materials beyond normal weathering.
 - 3. Water penetration through curtain wall system.
 - 4. Warranty Period: Two years from date of Substantial Completion of the project.
- C. Finish warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN - CURTAIN WALL SYSTEMS

- A. Basis-of-Design Curtain Wall System Manufacturer: Subject to compliance with requirements, provide products from ~~awneer-1600-System-Curtain—all System.~~

~~System to consist of a combination of standard glazed system with SSG system in select locations.~~

1. C -1: awneer 1600 System Curtain all. System to consist of a combination of standard glazed system with SSG system in select locations indicated on Drawings.
 2. C -2: awneer 1600UT, at sunshade locations indicated on Drawings.
- B. Other Manufacturers: Provide either product identified as Basis-of-Design or an approved comparable product of one of the manufacturers listed below.
1. Pittco Architectural Metals Inc: www.pittcometals.com/#sle.
 2. ..
- C. Substitutions: See Section 016000 - Product Requirements.
1. For any product not identified as Basis of Design , submit information as specified for substitutions.

2.02 CURTAIN ALL

- A. Aluminum-Framed Curtain all: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Structural sealant glazing (SSG) adhesive on two (2)-sides, with temporary glazing stops, and pressure plate and mullion cover on 2-sides, where indicated on drawings.
 - a. SSG Glazing locations indicated on Drawings.
 2. Glazing Method: Field glazed system.
 3. Vertical Mullion Face width: 2-1/2 inches (63.5 mm).
 4. Vertical Mullion Depth From Face of Glazing to Back of Frame: ~~6-1/2 inches.~~
 - a. C -1: -1/2 inches.
 - b. C -2: 4-3/4 inches.
 5. Finish: Superior performing organic coatings.
 - a. Factory finish surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 6. Provide flush joints and corners, weathersealed, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for imposed loads.

- . Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent stack effect in internal spaces.
 - 8. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 9. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel and heel bead of glazing compound.
- B. Structural Performance Requirements: Design and size components to withstand the following load requirements without damage or permanent set.
- 1. Design Wind Loads: Comply with the requirements of ASCE and loads indicated on Drawings.
 - a. Member Deflection: For spans less than 13 feet 6 inches (4115 mm), limit member deflection to flexure limit of glass in any direction, and maximum of $L/15$ of span or 3/4 inch (19 mm), whichever is less and with full recovery of glazing materials.
 - b. Member Deflection: For spans over 13 feet 6 inches (4115 mm) and less than 40 feet (12.2 m), limit member deflection to flexure limit of glass in any direction, and maximum of $L/240$ of span plus 1/4 inch ($L/240$ of span plus 6.4 mm), with full recovery of glazing materials.
 - 2. Movement: Accommodate the following movement without damage to components or deterioration of seals:
 - a. Expansion and contraction caused by 180 degrees F (82 degrees C) surface temperature.
 - b. Expansion and contraction caused by cycling temperature range of 10 degrees F (5 degrees C) over a 12 hour period.
 - c. Movement of curtain wall relative to perimeter framing.
 - d. Deflection of structural support framing, under permanent and dynamic loads.
 - 3. Structural Sealant Glazing (SSG) System: For individual glass lites, design framing members to not exceed a deflection normal to the wall of $L/15$ between supports with 3/4 inch (19 mm) maximum, and a deflection parallel to the wall of $L/360$ with 1/8 inch (3.2 mm) maximum, whichever is less.
- C. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on indoor face when tested as follows:

1. Test Pressure Differential: 10 psf (480 Pa).
 2. Test Method: ASTM E331.
- D. Air Leakage: 0.06 cfm/sq ft (0.3 L/sec sq m) maximum leakage of wall area when tested in accordance with ASTM E283/E283M at 6.24 psf (300 Pa) pressure difference across assembly.
- E. Thermal Performance Requirements:
1. Condensation Resistance Factor of Framing: 0, minimum, measured in accordance with AAMA 1503.
 2. Overall U-value Including Glazing: 0.3 Btu/(hr sq ft deg F) (/ (sq m)), maximum.
- F. Acoustical Performance Requirements:
1. Sound Attenuation: STC of 34, minimum, from exterior to interior.
 2. Test Method: ASTM E90, with calculation in accordance with ASTM E413.

2.03 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Cross-Section: As indicated on drawings.
- B. Glazing: See Section 088000.
- C. Sunshades: See Section 10 113.43 - Fixed Sun Screens for sunhsades and extension plates.
- D. Sunshade Outrigger Brackets:
1. Manufacturer's standard brackets designed to attach to face of storefront system and support sunshade element.
 2. Basis-of-Design Sun Shade Brackets: Subject to compliance with requirements, provide awneer Outrigger Bracket, 818- 82, or an approved comparable bracket compatible with and designed for specified system.
 3. Color and Coating: Match storefront finish and color.
- E. Operable Sash: Aluminum Outswing Casement; finished to match curtain wall; turn handle latch.
1. Curtain wall manufacturer's premium thermally improved flush vent design.
 2. No exterior framing sightline allowed.
 3. Performance tested to match curtain wall class and grade.
 4. Concealed stainless steel hinges.

5. Basis-of-Design Product: Subject to compliances with requirements, provide awneer Glassvent windows, or comparable curtain wall manufacturer's standard no-sightline window insert.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Structural Steel Sections: ASTM A36/A36M; galvanized in accordance with requirements of ASTM A123/A123M.
- C. Structural Supporting Anchors: See Section 051200.
- D. Structural Supporting Anchors Attached to Structural Steel: Design for bolted attachment.
- E. Exposed Flashings: Aluminum sheet, 20-gauge, 0.032-inch (0.81 mm) minimum thickness; finish to match framing members.
- F. Concealed Flashings: Stainless steel, 26-gauge, 0.018 -inch (0.48 mm) minimum thickness.
- G. Structural Sealant Glazing (SSG) Adhesive: Neutral curing, silicone sealant formulated for SSG applications in compliance with ASTM C1184 and structural glazing industry guidelines, ASTM C1401.
 1. SSG adhesive in compliance with ASTM C920; Type S - Single-component, Grade NS, Class 50, Use NT, G, and A.
 2. Ultimate Tensile Strength: Minimum of 50 psi (345 kPa) as determined by test method ASTM C1135 under the following conditions.
 - a. Exposure to air temperatures of 190 degrees F (88 degrees C) and minus 20 degrees F (minus 29 degrees C).
 - b. Water immersion for seven (7) days, minimum.
 - c. Exposure to weathering for 5,000 hours, minimum.
 3. Sealant Design Tensile Strength: 20 psi (139 kPa), maximum.
 4. Hardness: 20 to 60 with Type A-2 durometer in compliance with test method ASTM C661.
 5. Color: Black.
 6. SSG sealant tested for compatibility with glazing accessories in compliance with ASTM C108 , tested for accelerated weathering in compliance with ASTM C 93, and in compliance with insulating glass secondary sealant design standards of ASTM C1249.
- H. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

- I. Glazing Accessories: See Section 088000.
- . Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

2.05 FINISHES

- A. Superior Performing Organic Coatings System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 0 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch (0.030 mm).
- B. Color: To be selected by Architect from manufacturer's custom range.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install curtain wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- H. Pressure Plate Framing: Install glazing using glazing method required to achieve performance criteria; see Section 088000.
- I. Structural Sealant Glazing (SSG) Adhesive: Install structural sealant glazing adhesive and weatherseal sealant in accordance with manufacturer's instructions.
 - . Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.02 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet (1.5 mm/m) noncumulative or 0.5 inches per 100 feet (12 mm/30 m), whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch (0.8 mm).

- C. Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 3/4 inch (19 mm) and minimum of 1/4 inch (6 mm).

3.03 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.
- B. Water-Spray Test: Provide water spray quality test of installed curtain wall components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as indicated on drawings.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
- C. Provide field testing of installed curtain wall system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as indicated on drawings.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
 - 3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 4.18 psf (200 Pa).
 - a. Maximum allowable rate of water penetration in 15-minute test is 0.5 ounce (14 gram) that is not contained in an area with provisions to drain to exterior, or collected on surface of interior horizontal framing member.
- D. Repair or replace curtain wall components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.04 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, take care to remove dirt from corners, and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 - 610.

END OF SECTION

SECTION 096813
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

1.02 RELATED REQUIREMENTS

- A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 01 419 - Construction Waste Management and Disposal:
Reclamation/Recycling of new carpet tile scrap.
- C. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied flooring.

1.03 REFERENCE STANDARDS

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016 (Reapproved 2021).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2023.
- C. ASTM F 10 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.
- D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.
- E. ASTM F2100 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.
- F. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Current Edition.
- G. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Shop Drawings: Indicate layout of joints, direction of carpet pile, location of edge moldings, and carpet tile types.
- D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- E. Sustainable Design Submittal: Submit VOC content documentation for adhesives.

- F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- G. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- H. Installer's Qualification Statement.
- I. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- . Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 016000 - Product Requirements, for additional provisions.
 - 2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.
- B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.06 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Tile Carpeting, Types TXCP-1, TXCP-2, TXCP-3 and TXCP-4: Textile Composite, manufactured in one color dye lot for each type.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Flooring inetex carpet tile or an approved comparable product .
 - a. Substitutions: See Section 016000-Product Requirements.
 - 2. Tile Size: 24 by 24 inch (609 by 609 mm), nominal.
 - 3. Overall Thickness: 0.205 inch (5.2 mm).
 - 4. Color:
 - a. Type TXCP-1: Flooring inetex, Put A Cork In It #1830 .
 - b. Type TXCP-2: Flooring inetex, Network Modular - Encryption .
 - c. Type TXCP-3: Flooring inetex, Network Modular - Directory .
 - d. Type TXCP-4: Flooring inetex, Network Modular - Fiber .
 - 5. Installation Pattern:

- a. Type TXCP-1: Brick.
 - b. Types TXCP-2, TXCP-3 and TXCP-4: Quarter turn.
 6. Pile: 100 percent solution dyed polyester.
 - . Face weight: 12 oz per square yard (40 grams per square meter).
 8. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
 9. Surface Flammability Ignition: Pass ASTM D2859 (the pill test).
 10. VOC Content: Comply with Section 016116.
 11. VOC Content: Provide CRI (GLP) certified product; in lieu of labeling, independent test report showing compliance is acceptable.
 12. Primary Backing Material: Polyester Felt Cushion.
 13. Total weight: 40.5 to 46.8 oz/sq yd (13.3 to 158 g/sq m).
 14. Abrasion and Wear Resistance: 4.0 or greater appearance retention per ASTM D5252.
- B. Tile Carpeting - Walk-Off, Type VOC, manufactured in one color dye lot for each type.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Shaw Welcome II Tile, 5T031 walk-off tile, or an approved comparable product from one of the following:
 - a. Interface, Inc;
 - b. Mannington Commercial;
 - c. Milliken Company;
 - d. Mohawk Group;
 - e. Substitutions: See Section 016000-Product Requirements.
 2. Tile Size: 24 by 24 inch (609 by 609 mm), nominal.
 3. Tufted weight: Minimum 49 oz./sq. yd.
 4. Dye Method: 100 percent solution dyed.
 5. Backing: Manufacturer's standard high performance fiberglass backing.
 6. Color: To be selected from manufacturer's full range.

2.02 ACCESSORIES

- A. Subfloor Filler: white premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Type as indicated, color as selected by Architect.
 1. Stainless steel, brushed, Schuler-Systems SCHIENE.
 2. Rubber

C. Adhesives:

1. Compatible with materials being adhered; maximum VOC content as specified in Section 016116.

D. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
 1. Test as Follows:
 - a. Alkalinity (pH): ASTM F 10.
 - b. Internal Relative Humidity: ASTM F21 0.
 - c. Moisture Vapor Emission: ASTM F1869.
 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in pattern indicated, with pile direction alternating to next unit, set parallel to building lines.
- F. Locate change of color or pattern between rooms under door centerline.

- G. Fully adhere carpet tile to substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. See Section 01 000 - Execution and Closeout Requirements for additional requirements.
- B. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- C. Clean and vacuum carpet surfaces.

END OF SECTION

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SECTION 098430
SOUND-ABSORBING WALL AND CEILING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

ADD 02

- A. Sound-absorbing panels.
- B. Sound-absorbing ceiling baffles - "Acoustic Baffle Wave".
- C. Sound-absorbing ceiling baffles - "Acoustic Baffle Clouds".
- D. Mounting accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2023.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2022.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. ASTM E795 - Standard Practices for Mounting Test Specimens during Sound Absorption Tests; 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's printed data sheets for products specified.
- C. Shop Drawings: Fabrication and installation details, panel layout, fabric orientation, and wood grain orientation.
- D. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available.
- E. Verification Samples: Fabricated samples of each type of panel specified; 12 by 12 inch (305 by 305 mm), showing construction, edge details, and fabric covering.
- F. Test Reports: Certified test data from an independent test agency verifying that panels meet specified requirements for acoustical and fire performance.
- G. Manufacturer's qualification statement.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Panels: Quantity equal to 5 percent of total installed, but not less than one of each type.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect acoustical units from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until units are needed for installation.
- B. Store units flat, in dry, well-ventilated space; do not stand on end.
- C. Protect edges from damage.

PART 2 PRODUCTS

2.01 FABRIC-COVERED SOUND-ABSORBING UNITS - WALLS

- A. Manufacturers: Basis-of-Design; Subject to compliance with requirements, provide Conwed Designscape; Respond Ultimate 1500 Panels or comparable product by one of the following;
 1. Egan Visual Corporation: www.egan.com/#sle.
 2. Fresch: www.frasch.com/#sle.
 3. Kinetics Noise Control, Inc: www.kineticsnoise.com/#sle.
 4. NetWell Noise Control: www.controlnoise.com/#sle.
 5. RPG Acoustical Systems, Inc: www.rpgacoustic.com/#sle.
 6. Substitutions: See Section 016000 - Product Requirements.
- B. General:
 1. Prefinished, factory assembled fabric-covered panels.
 2. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- C. Fabric-Covered Acoustical Panels for Walls:
 1. Panel Core: Manufacturer's standard rigid or semi-rigid fiberglass core.
 2. Panel Size: As indicated on drawings..
 3. Panel Thickness: 2 inches (25.4 mm).
 4. Edges: Perimeter edges reinforced by a formulated resin hardener.
 5. Corners: Square.
 6. Fabric: Woven polyester, Maharam Muse #466487.

a. Application: Railroad.

7. Color: As selected by Architect from manufacturer's full range.

8. ~~Mounting Method: Back-mounted with Z-clips and mechanical fasteners.~~

2.02 SOUND-ABSORBING CEILING BAFFLES - ACOUSTIC BAFFLE WAVE

A. Products: Subject to compliance with requirements, provide Armstrong World Industries, Inc., FELTWORKS Open Cell Ebbs and Flows system or comparable product.

1. Substitutions: See Section 016000 - Product Requirements.

B. Polyester Baffles for Ceilings:

1. Material: Non-woven layered and formed Polyester felt (PET) fiber.

2. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.

3. Sound Absorption: Noise Reduction Coefficient (NRC) or Sound Absorption Average (SAA) of _____ when tested in accordance with ASTM C423 for Type A mounting, complying with ASTM E795.

4. Module Size: 48 by 48 inches (1220 by 1220 mm).

5. Mounting: suspended from ceiling.

6. Edge Profile: Square.

7. Light Reflectance: 0.80 per ASTM E1477

8. Color: As selected by Architect from manufacturer's full range.

2.03 SOUND-ABSORBING CEILING BAFFLES - ACOUSTIC BAFFLE CLOUD

A. Acoustic pendant with sound absorbing, narrow aperture panels in 'Y' shaped configuration.

B. Products: Subject to compliance with requirements, provide Focal Point LLC Seem 1 Acoustic Trio, Unlit or equal product, as determined by Architect.

C. Coordination: Lit version of Seem 1 product is specified in Division 26.

D. Polyester Baffles:

1. Housing Material: 100% polyester, containing up to 50% recycled materi

2. Baffle thickness: 9mm

3. Surface Burning Characteristics: ASTM E84 Class A; Flame Spread 0; Smoke Development Index: 300

4. Acoustic Performance: 12.24 Sabins in Y configuration

E. Size: 4'-0" diameter

F. Height: 12" nominal

ADD 02

- G. Mounting: cable suspension. refer to Drawings for mounting height above finished floor
- H. Color: as selected by Architect from manufacturers Standard and Premium color options.

2.04 FABRICATION

- A. Panels and Baffles, General: Fabricate to sizes and configurations as indicated.
- B. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 inch (1.6 mm) for thickness, overall length and width, and squareness from corner to corner.
- C. Factory-applied finishes on wood veneer panels to be uniform, smooth, and without blemishes.

2.05 ACCESSORIES

- A. Back-Mounting Accessories: Manufacturer's standard accessories for concealed support, designed to allow panel removal, and as follows:
 - 1. Two-part clip and base-support bracket system; brackets designed to support full weight of panels and clips designed for lateral support, with one part mechanically attached to back of panel and the other attached to substrate.
- B. Ceiling-Suspended Accessories: Manufacturer's standard accessories at locations as indicated on each acoustical unit, sized appropriately for weight of acoustical unit.
 - 1. Through-threaded eyelets bolted through concealed perimeter frame.
 - 2. Provide woven stainless steel wire cable for suspension from ceiling at heights as indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates for conditions detrimental to installation of acoustical units. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install acoustical units in locations as indicated, following manufacturer's installation instructions.
- B. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- C. Install mounting accessories and supports in accordance with shop drawings.
- D. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.
- E. Suspend ceiling baffles at locations and heights as indicated.

- F. Install acoustical units to construction tolerances of plus or minus 1/16 inch (1.6 mm) for the following:
 - 1. Plumb and level.
 - 2. Flatness.
 - 3. Width of joints.

3.03 CLEANING

- A. Clean sound-absorptive panels upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

3.04 PROTECTION

- A. Provide protection of installed acoustical panels until Date of Substantial Completion.
- B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

END OF SECTION

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SECTION 10 113.43
FIXED SUN SCREENS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Modular, shop fabricated, extruded aluminum sun screens to be mounted on aluminum ~~storefront curtainwall~~ system using brackets provided by ~~storefront curtainwall~~ manufacturer.

1.02 RELATED REQUIREMENTS

~~Section 084313 - Aluminum Framed Storefronts: Mounting substrates and finishes.~~

- A. ~~Section 084413 - Glazed Aluminum Curtain walls: Mounting substrates.~~

1.03 REFERENCE STANDARDS

- A. ASTM A30 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- D. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- E. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2022.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Prior to commencement of fabrication, submit detailed shop drawings, showing all profiles, sections of all components, finishes, fastening details, and manufacturer's technical and descriptive data. Include field dimensions of openings and elevations on shop drawings.
 - 1. Coordination: Submit shop drawings for sun shades with reinforced aluminum ~~storefront curtainwall~~ system shop drawings showing coordinated design between sun shades and storefront system.
- C. Design Data: Submit comprehensive structural analysis of design for the specified loads. Stamp and sign calculations by professional engineer.
- D. Samples: 10 inches (254 mm) by 10 inches (254 mm) minimum illustrating design, perforation pattern, workmanship, and finish color.
- E. Designer's Qualification Statement.

1.05 MOC UP

~~See Section 084313 - Aluminum Framed Storefronts for coordinated mockup requirements.~~

- A. See Section 084413 - Glazed Aluminum Curtain walls for coordinated mockup requirements.

1.06 QUALIT ASSURANCE

- A. Designer Qualifications: Perform structural design under direct supervision of a Professional Engineer experienced in design of this type of work licensed in the State in which the Project is located.

1.0 DELIVER , STORAGE, AND HANDLING

- A. Deliver materials to project site ready for erection.
B. Package using methods that prevent damage during shipping and storage on site.
C. Store materials under cover and elevated above grade.

1.08 WARRANT

- A. See Section 01 800 - Closeout Submittals, for additional warranty requirements.
B. Sun Screens: Correct defective work within a two year period after Date of Substantial Completion.
C. Finish warranty: Provide manufacturer's ten year warranty on factory finish against cracking, peeling, and blistering.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fixed Perforated Aluminum Sun Screens:
1. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide sunshades from Architectural Grilles and Sunshades, Stanley Series, Tampa , or a comparable product from one of the following:
 2. Arcadia, Inc: www.arcadiainc.com/#sle.
 3. DAMS Incorporated: www.damsinc.com/#sle.
 4. Substitutions: See Section 016000 - Product Requirements.

2.02 SUN SCREENS

- A. Aluminum Sun Screens: Shop fabricated, shop finished, extruded aluminum outriggers, louvers, and fascia, free of defects impairing strength, durability or appearance.
1. Configuration: As indicated on drawings.
 2. Screen Type: Perforated Panel, gradient pattern.

- a. Perforation Pattern: Perforation pattern to consist of rows of increasing diameter holes in 1/8 inch increments, up to 10 different hole sizes.
Patterns vary by panel size as indicated in Drawings.
3. Support Bracket: See Section ~~084413 - Glazed Aluminum Curtain~~ ~~alls -084313-~~ ~~Aluminum-Framed-Storefronts.~~
4. Extension Plate: Straight.
 - a. Color and Finish: Match Sunshade.
5. Design Criteria: Design and fabricate to resist the following loads without failure, damage, or permanent deflection: As indicated on Drawings and as follows:
 - a. Wind: As indicated on Drawings.
 - b. Snow: As indicated on Drawings.
 - c. Thermal Movement: Plus/minus 1/8 inch (3.1 5 mm), maximum.
6. Sizes: As indicated on drawings.
7. Exposed Aluminum Finish: Manufacturer's AAMA 2605 factory applied superior performing organic coating, 0 percent PVDF.
 - a. Color: Match Buried Treasure by Trinar-Ultra.
 - b. Primer: Provide primer recommended by topcoat manufacturer.
8. Provide a complete system ready for erection at project site, coordinated with brackets provided by storefront manufacturer.
9. Shop fabricate to the greatest extent possible; disassemble if necessary for shipping.

2.03 MATERIALS

- A. Aluminum Extrusions: ASTM B209/B209M or ASTM B221 (ASTM B221M).
- B. Concealed Structural Supports: Aluminum, or steel coated for corrosion resistance and dissimilar metal isolation.
- C. Fasteners: ASTM F593 stainless steel or ASTM A30 carbon steel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and site area for conditions that might prevent satisfactory installation.
- B. Verify that dimensions of supporting structure are within plus/minus 1/8 inch (3.1 5 mm) of dimensions indicated on shop drawings.
- C. Verify that all adjacent painting, roofing, masonry work, and other work that might damage sun screen finish has been completed prior to installation of sun screens.

- D. Do not install until after all adjacent painting, roofing and masonry have been completed.
- E. Do not proceed with installation until all conditions are satisfactory.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's installation instructions.
- B. Set units level, plumb, with uniform joints, and aligned with building elements.
- C. Separate dissimilar metals using concealed bituminous paint or non-absorbent gasket.
- D. Anchor units to structure as indicated on drawings.
- E. Do not cut or trim aluminum members without approval of manufacturer; do not install damaged members.

3.03 TOLERANCES

- A. Maximum Variation from Level: Plus/Minus 1/8 inch (3.1 5 mm).

3.04 CLEANING

- A. Clean exterior surfaces units of dust and debris; follow manufacturer's cleaning instructions for the finish used.

3.05 PROTECTION

- A. Protect units after installation to prevent damage due to other work until Date of Substantial Completion.

END OF SECTION

SECTION 124813
ENTRANCE FLOOR MATS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Recessed roll-up entrance mat systems.

1.02 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating properties of walk-off surface, component dimensions and recessed frame characteristics.
 - 1. Sustainability: Include written confirmation from manufacturer entrance floor mats provided meet Indoor Air Quality requirements indicated.
- C. Shop Drawings: Indicate dimensions.
- D. Samples: Submit two samples, manufacturer's standard, minimum 6 by 6 inch (152 by 152 mm) in size illustrating pattern, color, finish, and edging.
- E. Maintenance Data: Include cleaning instructions, and stain removal procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Floor Mats:
 - 1. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide Activar Construction Products, Activ-Mat 800 Series, or comparable product from one of the following:
 - 2. Construction Specialties, Inc; Pedimat, M1: www.c-sgroup.com/#sle.
 - 3. Pawling Corporation; EM-800: www.pawling.com/#sle.

2.02 ROLL-UP ENTRANCE FLOOR MATS

- A. Roll-Up Entrance Floor Mats: Shallow recess mounted mat system with extruded aluminum rail treads, tread inserts, and perforated aluminum connectors.
 - 1. Sustainability: Roll-up entrance floor mats must meet Indoor Air Quality standard indicated for project.
- B. Materials:
 - 1. Rail: ASTM B221, Extruded 6063-T6 alloy aluminum.
 - 2. Rail Finish: Clear anodized.
 - 3. Rail Spacing: 2 inches on center.
 - 4. Rail Connectors: Perforated aluminum extrusion.
 - 5. Load Capacity: Minimum 350 lb. rolling load.
 - 6. Tread Insert: Manufacturer's standard solution dyed nylon carpet.

- a. Color: As selected from manufacturer's full range.
- b. Carpet weight: Minimum 30 oz. per sq. yd.
- C. Mat Frame: Recess Mounted
 - 1. Provide aluminum frame, shallow recess flush with adjacent flooring.
 - a. Color: Anodized, clear.

2.03 FABRICATION

- A. Construct recessed mat frames square, tight joints at corners, rigid. Coat surfaces with protective coating where in contact with cementitious materials.
- B. Fabricate mats in single unit sizes; fabricate multiple mats where indicated on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Recessed Mats: Verify floor surface to receive mats meets tolerance of maximum 1/8 inch (3.2mm) over 10 feet (3.28M) in accordance with ACI 302.
- B. Threshold Installation: Verify appropriate door threshold(s) are properly installed and ready to accept floor mat system.
- C. Verify that floor opening for mats are ready to receive work.

3.02 PREPARATION

- A. Mats: Verify size of floor recess before fabricating or cutting mats.
- B. Vacuum clean floor recess.

3.03 INSTALLATION

- A. Install frames to achieve flush plane with finished floor surface.
- B. Install floor mat system only after heavy or wheeled construction traffic, wet operations, and adjacent finishes are complete.
- C. Install walk-off surface as indicated after cleaning of adjacent finish flooring.

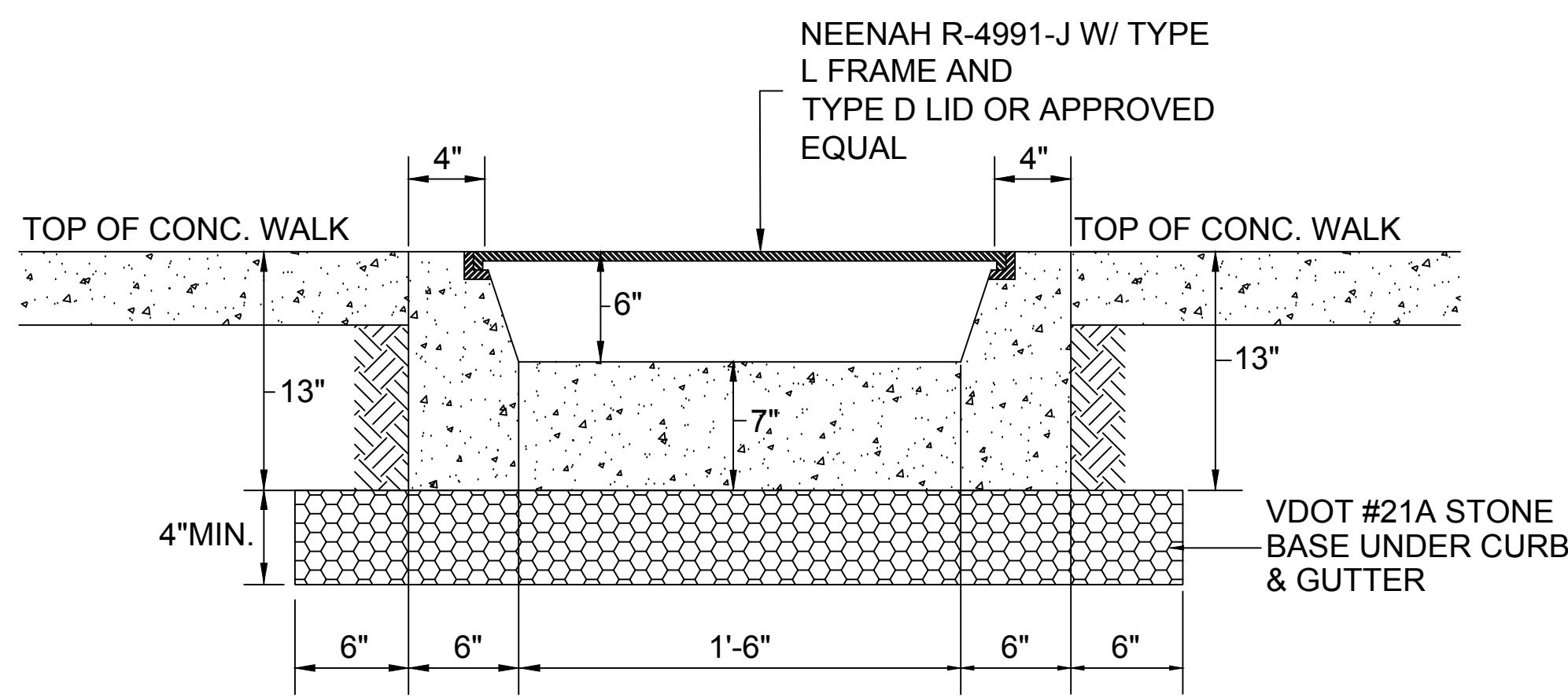
3.04 PROTECTION

- A. Cover floor mat installation with plywood protective flooring for duration of construction activities.

3.05 TOLERANCES

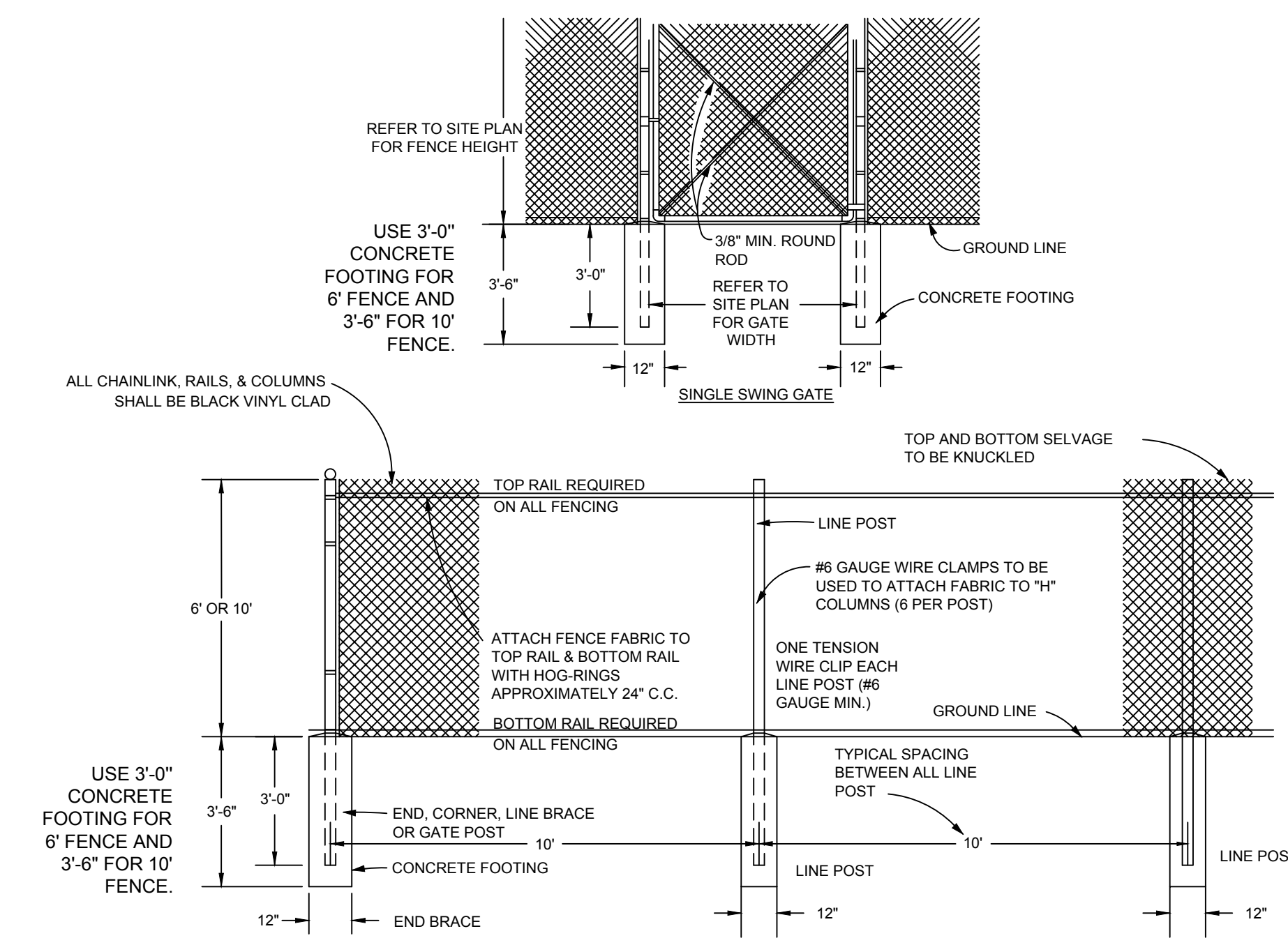
- A. Maximum Gap Formed at Recessed Frame From Mat Size: 1/4 inch (6 mm).

END OF SECTION



NOTE: THIS ITEM MAY BE PRECAST OR CAST IN PLACE. IF CAST IN PLACE, CONCRETE TO BE CLASS A3. IF PRECAST, CONCRETE TO BE 4000PSI.

FLUME WITH STEEL PLATE
NOT TO SCALE



STANDARD VINYL-COATED CHAIN LINK FENCE
No Scale

SUMMARY OF PARKING REQUIREMENTS FROM ZMA202300008

Parking locations are indicated on illustrations 2.

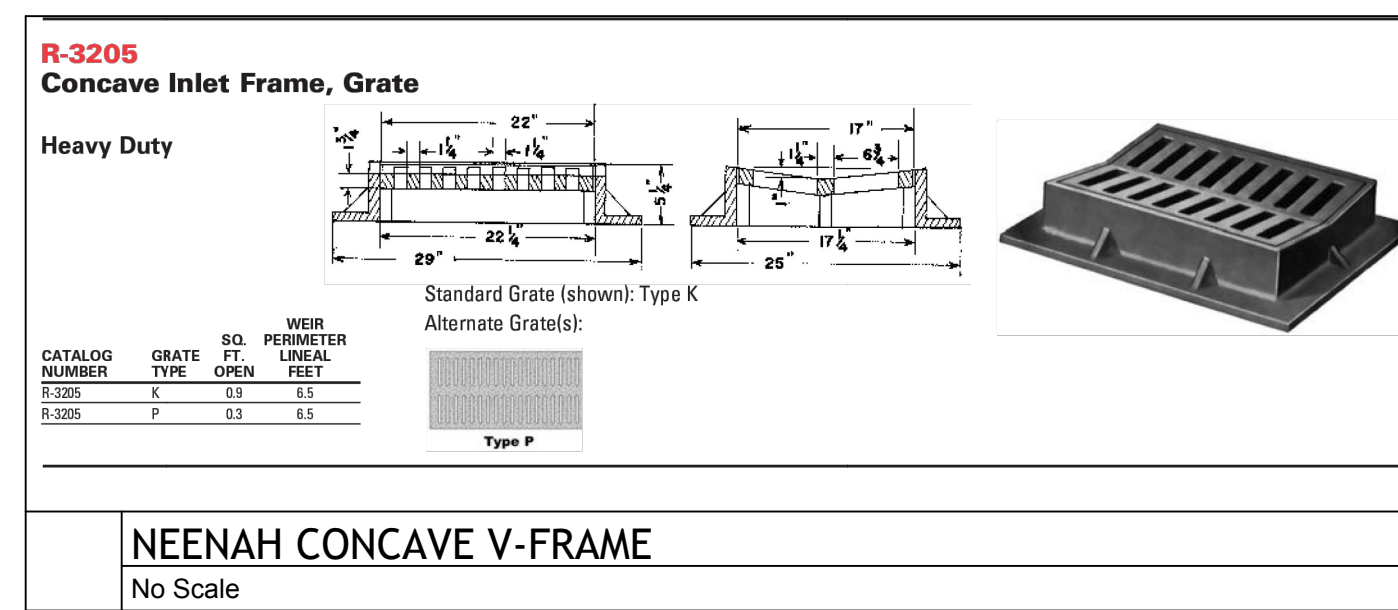
As the new building is proposed on an existing parking lot, the following summary outlines the parking required for High School Center II and Albemarle High School.

We are assuming 45% of students attending HSCII will be from AHS due to the location and programs planned to be offered at the center. Transportation estimates that approximately 140 students would drive to HSCII based on current driving numbers that exist at Center one and the other high schools. Therefore we expect 77 student drivers (140*55%) at HSCII.

- 35 staff
- 15 visitor
- 77 students will drive from other home high schools (assuming 63 will attend from AHS)
- 200 students will arriving by bus
- 20 walking/bicycling
- 40 parent drop off by car

To address any loss of parking spots, and required parking needed due to the placement of the Center II building, ACPS will be building a new parking lot where the current basketball and tennis courts are near the AHS stadium. This parking lot is planned to be able to add up to an additional 200 parking spaces. New tennis courts will be built north of the AHS stadium and just south of Lambs Lane.

NOTE: ALL ACSA SEWER AND WATER ITEMS INCLUDING WATER MAINS, FIRE HYDRANT ASSEMBLIES (FHA), WATER METER VAULTS, SEWER MANHOLES, ETC. SHALL COMPLY WITH THE CURRENT EDITION OF THE ACSA GENERAL WATER AND SEWER CONSTRUCTION SPECIFICATIONS.



NEENAH CONCAVE V-FRAME
No Scale

PROFFER STATEMENT

ZMA No. ZMA202300008 High School Center II at Albemarle High School

Tax Map and Parcel Number(s): 06000-00-00-078A0 (portion)

Owner(s) of Record: School Board of Albemarle County, Virginia

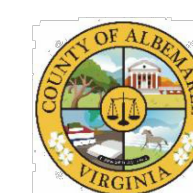
Date of Proffer Signature: January 3, 2024

9.9 acres to be rezoned from RA to R10

School Board of Albemarle County, Virginia, is the owner (the "Owner") of Tax Map and Parcel Number 06000-00-00-078A0 (the "Property") which is the subject of rezoning application ZMA No. ZMA202300008, a project known as "High School Center II at Albemarle High School" (the "Project").

Pursuant to Section 33.3 of the Albemarle County Zoning Ordinance, the Owner hereby voluntarily proffers the conditions listed below which shall be applied to the Property if it is rezoned to the zoning district identified above. These conditions are proffered as a part of the requested rezoning and the Owner acknowledges that the conditions are reasonable.

- FUTURE USES:** Residential R-10: The use of the Property shall allow for all by right uses pursuant to Section 17.2.1 of the Albemarle County Zoning Ordinance except for the following listed uses:
 - Detached single-family dwellings.
 - Semi-detached and attached single-family dwellings such as two-family dwellings, triplexes, quadplexes, and townhouses, provided that density is maintained, and provided further that buildings are located so that each unit could be provided with a lot meeting all other requirements for detached single-family dwellings except for side yards at the common wall.
 - Multiple-family dwellings such as garden apartments.
 - Cluster development of permitted residential uses.
 - Rental of permitted residential uses and guest cottages; provided that yard, area and other requirements of this ordinance shall be met for each such use whether or not such use is on an individual lot.
 - Group home (reference 5.1.07). (Amended 8-9-17).
 - Boarding houses.
 - Homestays (reference 5.1.48).
 - Family day homes (reference 5.1.56). (Added 9-11-13).
- SETBACK:** Construction of High School Center II shall have a minimum setback from Georgetown Green property line (TMP 060F0-00-00-00200) of 50-feet.



County of Albemarle
Community Development Department - Planning

Rebecca Ragsdale
rragsdale@albemarle.org
Telephone: (434) 294-5832 ext.3226

January 30, 2024

Lindsay Snoddy
County of Albemarle School Board
2751 Hydraulic Rd
Charlottesville, VA 22901
ljsnoddy@k12albemarle.org

RE: SE202300039 High School Center II at Albemarle High School Special Exception Action Letter

Dear Ms. Snoddy,

On January 17, 2024, the Board of Supervisors took action on the above noted Special Exception on Tax Map Parcel Number 06000-00-00-078A0 in the Jack Jouett.

The Special Exception was approved by the Board's adoption of the attached Resolution.

Please be advised that although the Albemarle County Board of Supervisors took action on the project noted above, no uses on the property may lawfully begin until all applicable approvals have been received and conditions have been met. This includes:

- compliance with the approved SPECIAL EXCEPTION; and
- approval of and compliance with a SITE PLAN.

Should you have questions regarding the above-noted action, please contact me.

Sincerely,
Rebecca Ragsdale
Planning Manager

WWW.ALBEMARLE.ORG
401 McIntire Road, North Wing | Charlottesville, VA 22902-6579

OWNER:
School Board of Albemarle County, Virginia

OWNER:

By: Judy Le
Title: Chair of School Board, Rivanna Magisterial District
School Board of Albemarle County, Virginia

Judy Le

**RESOLUTION TO APPROVE
SE 2023-00039 HIGH SCHOOL CENTER II
AT ALBEMARLE HIGH SCHOOL**

WHEREAS, upon consideration of the staff reports prepared for SE2023-00039 High School Center II at Albemarle High School and the attachments thereto, including staff's supporting analysis, any comments received, and all relevant factors in Albemarle County Code §§ 18-4.19 and 18-33.9, the Albemarle County Board of Supervisors hereby finds that:

- The maximum front setback should be waived by special exception to accommodate unique parking or circulation plans on the subject parcel; and
- The proposed special exception is consistent with the intent of the R-10 Residential zoning district and the Neighborhood Model Principles of the Comprehensive Plan.

NOW, THEREFORE, BE IT RESOLVED that the Albemarle County Board of Supervisors hereby approves a special exception to waive the 25-foot maximum front setback requirement of County Code § 18-4.19 on Parcel 06000-00-00-078A0.

I, Claudette K. Borgersen, do hereby certify that the foregoing writing is a true, correct copy of a Resolution duly adopted by the Board of Supervisors of Albemarle County, Virginia, by a vote of six to zero, as recorded below, at a meeting held on January 17, 2024.

Claudette K. Borgersen
Clerk, Board of County Supervisors

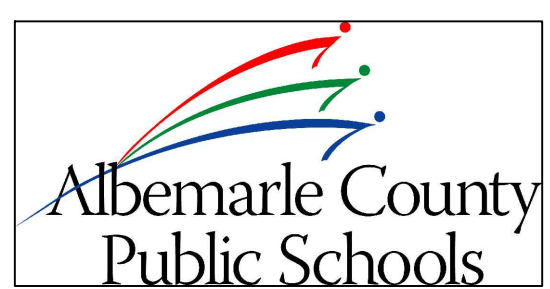
	Aye	Nay
Mr. Andrews	Y	---
Mr. Galloway	Y	---
Ms. LaPisto-Kirtley	Y	---
Ms. Mallek	Y	---
Ms. McKeel	Y	---
Mr. Pruitt	Y	---

**QUINN
EVANS**

1840 WEST BROAD STREET
SUITE 400
RICHMOND, VA 23220
v 804.788.4774

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TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.



**NEW
CONSTRUCTION
HIGH SCHOOL
CENTER II**

IFB No. 2025-IFB-1007262
STATE PROJECT NO.
002-88-01-100

Albemarle County
Public Schools

2775 Hydraulic Rd.
Charlottesville, VA 22901

1 10/25/2024 ADDENDUM 2

No.	Date	Description
PROJECT MANAGER:	J. Showalter	DRAWN BY: S. Kirby/A. Flint

QEA No.41911390

BID DOCUMENTS
10/08/2024

NOTES & DETAILS

C1.2

**NEW
CONSTRUCTION
HIGH SCHOOL
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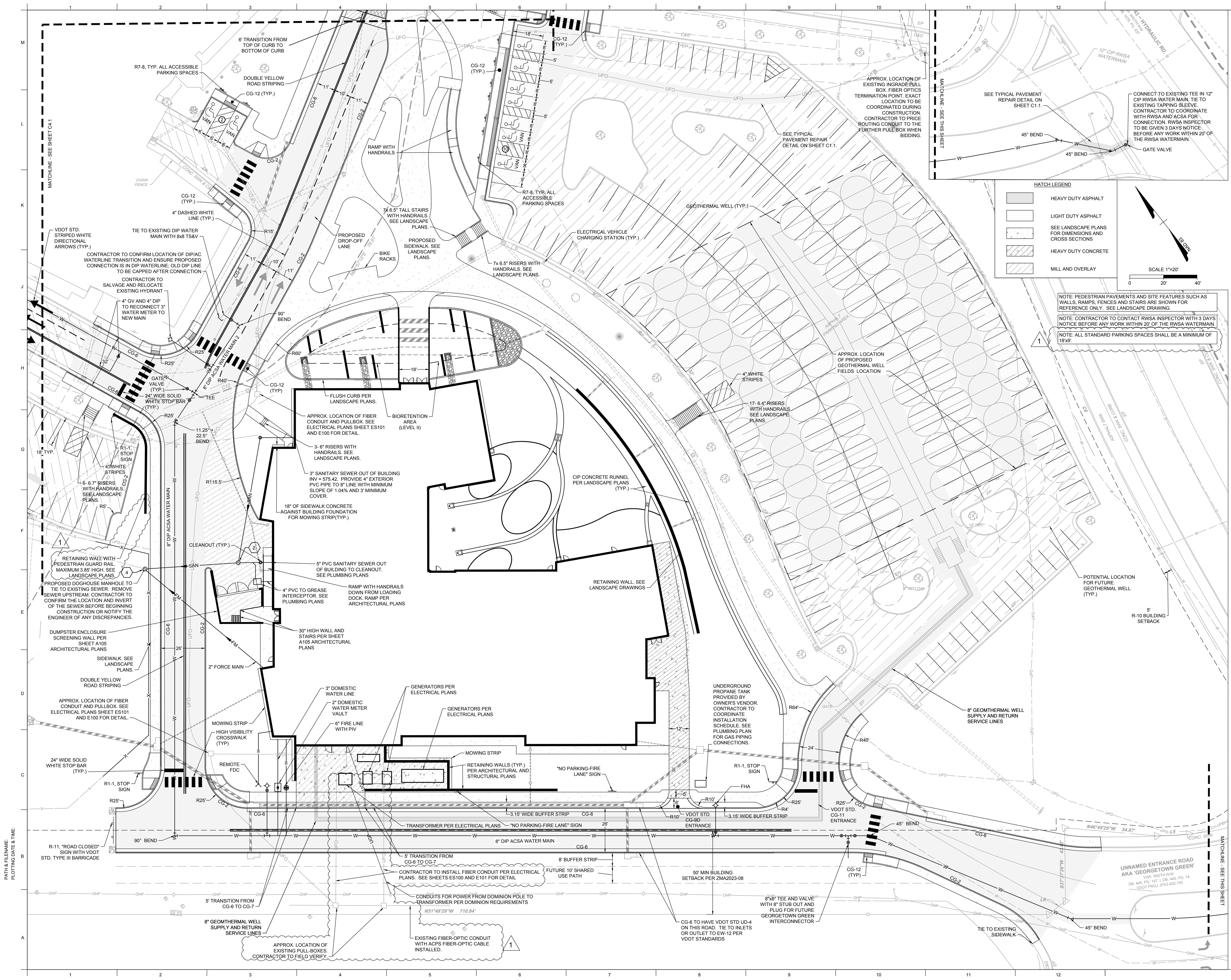
No.	Date	Description
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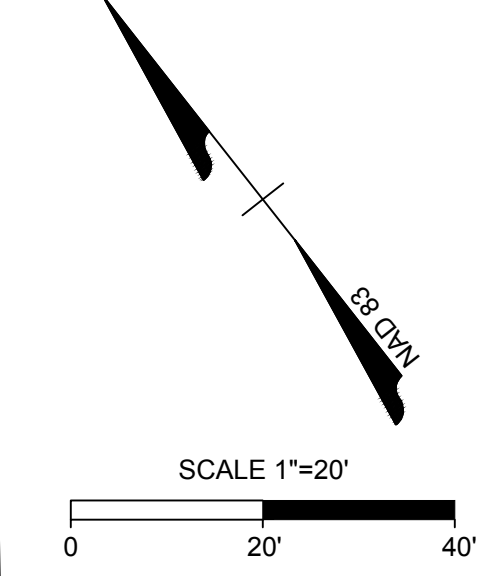
SITE PLAN

C4.0



HATCH LEGEND

- HEAVY DUTY ASPHALT
- LIGHT DUTY ASPHALT
- SEE LANDSCAPE PLANS FOR DIMENSIONS AND CROSS SECTIONS
- HEAVY DUTY CONCRETE
- MILL AND OVERLAY



NOTE: PEDESTRIAN PAVEMENTS AND SITE FEATURES SUCH AS WALLS, RAMPS, FENCES AND STAIRS ARE SHOWN FOR REFERENCE ONLY. SEE LANDSCAPE DRAWING.

NOTE: CONTRACTOR TO CONTACT RWSA INSPECTOR WITH 3 DAYS NOTICE BEFORE ANY WORK WITHIN 20' OF THE RWSA WATERMAIN.

NOTE: ALL STANDARD PARKING SPACES SHALL BE A MINIMUM OF 18'x9'.

PATH & FILENAME:
PLOTTING DATE & TIME:

MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE SHEET C4.1

**NEW
CONSTRUCTION
HIGH SCHOOL
CENTER II**

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Albemarle County
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1 10/25/2024 ADDENDUM 2

No. Date Description

PROJECT MANAGER: J. Showalter

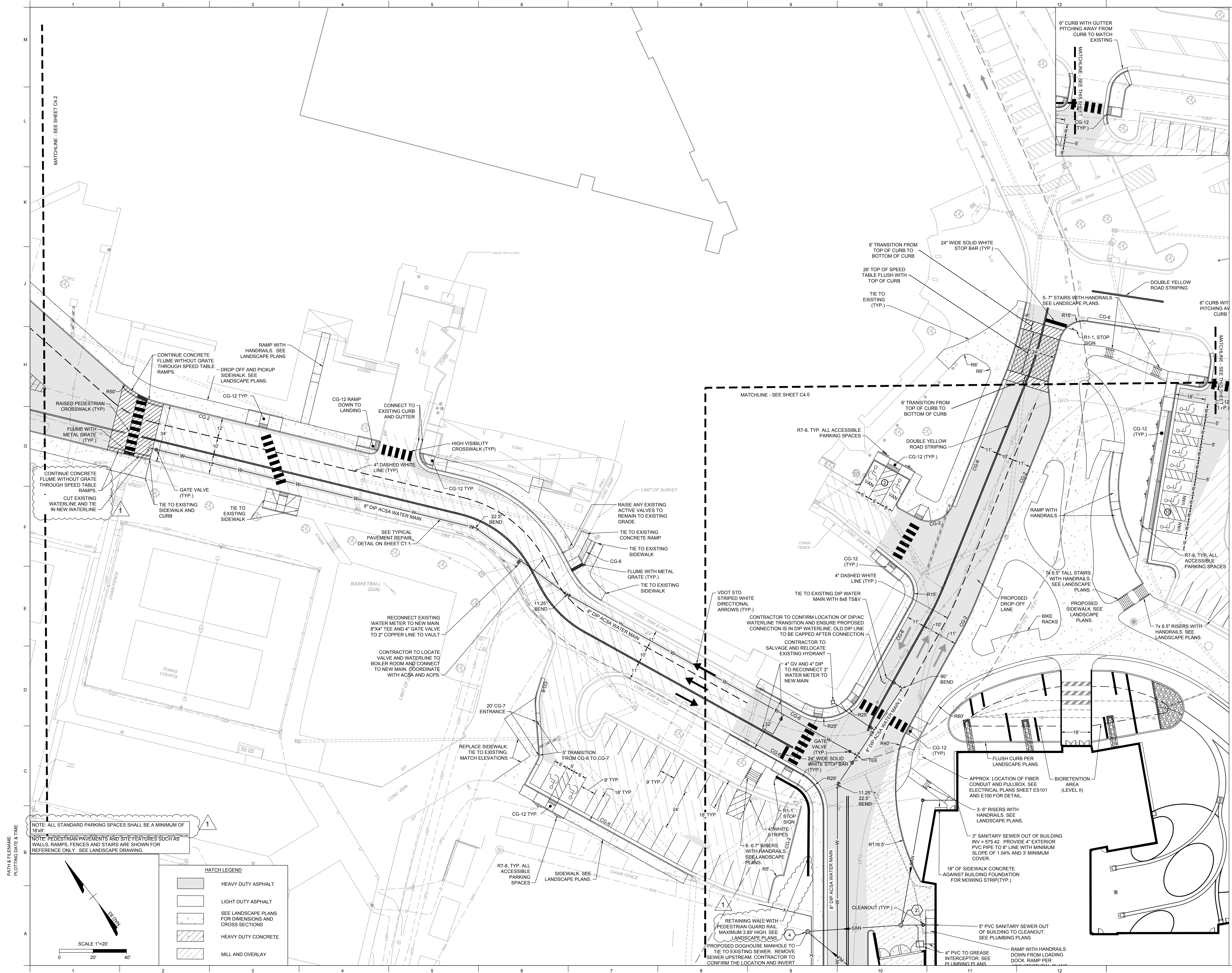
DRAWN BY: S. Kirby/A. Flint

QEA No.4191390

BID DOCUMENTS
10/08/2024

SITE PLAN

C4.1



HATCH LEGEND

	HEAVY DUTY ASPHALT
	LIGHT DUTY ASPHALT
	SEE LANDSCAPE PLANS FOR DIMENSIONS AND CROSS SECTIONS
	HEAVY DUTY CONCRETE
	MILL AND OVERLAY

NOTE: ALL STANDARD PARKING SPACES SHALL BE A MINIMUM OF 18'x9'

NOTE: PEDESTRIAN PATHTWAYS AND SITE FEATURES SUCH AS WALLS, RAMPS, FENCES AND STAIRS ARE SHOWN FOR REFERENCE ONLY. SEE LANDSCAPE DRAWING.

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No.	Date	Description
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PROJECT MANAGER: J. Showalter

DRAWN BY: S. Kirby/A. Flint

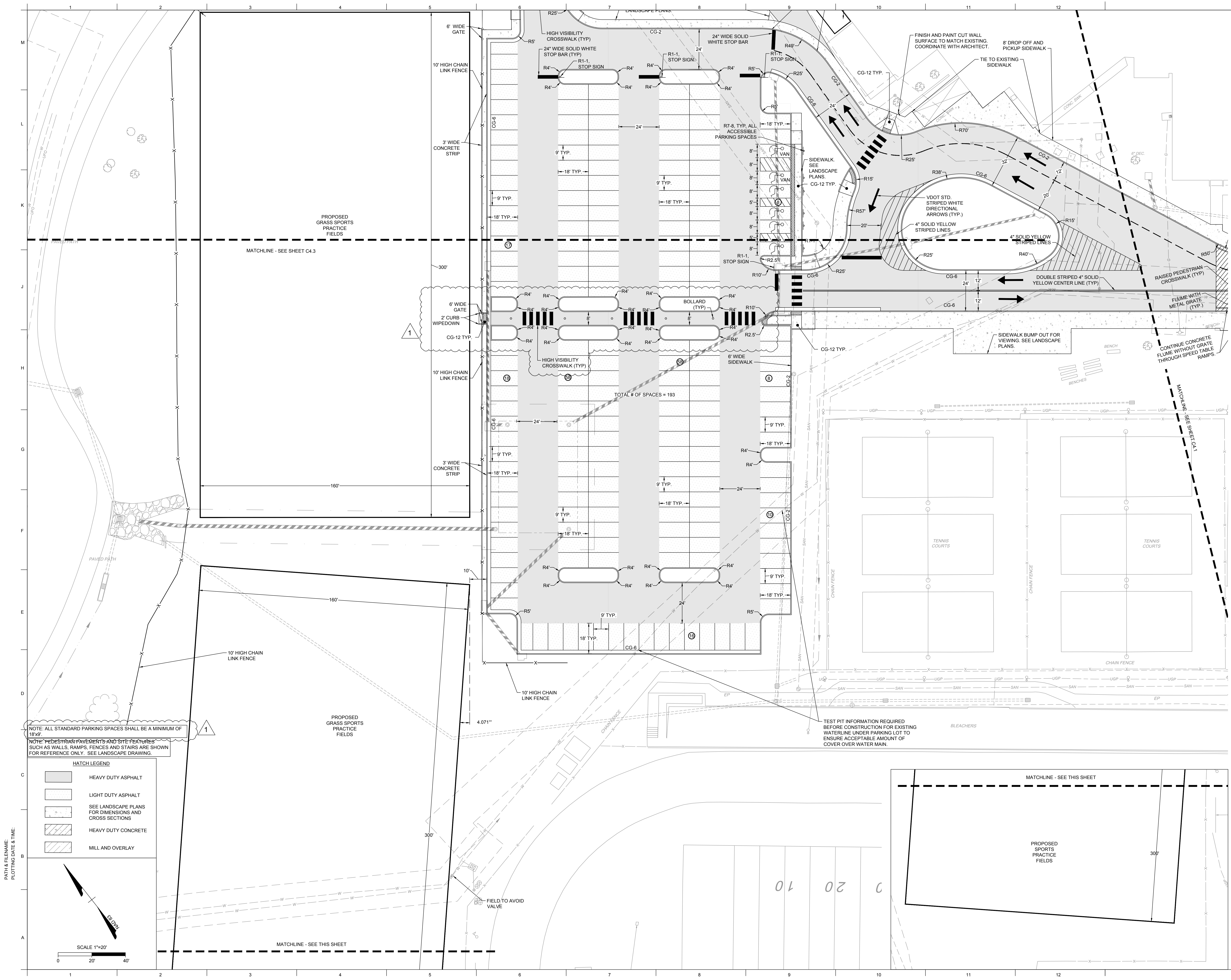
QEA No.41911390

BID DOCUMENTS

10/08/2024

SITE PLAN

C4.2

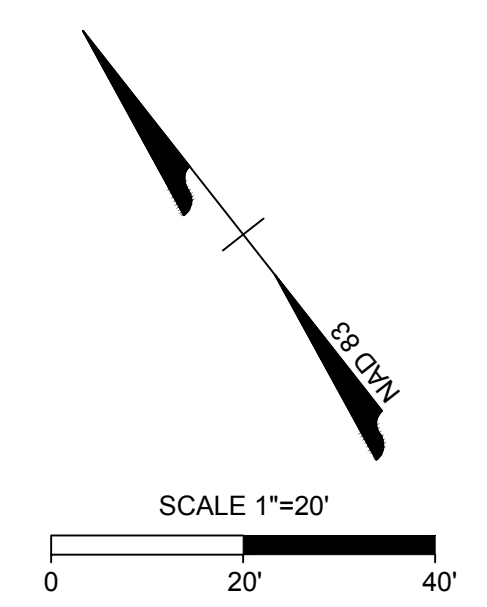


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HATCH LEGEND

[Hatched Pattern]	HEAVY DUTY ASPHALT
[Hatched Pattern]	LIGHT DUTY ASPHALT
[Hatched Pattern]	SEE LANDSCAPE PLANS FOR DIMENSIONS AND CROSS SECTIONS
[Hatched Pattern]	HEAVY DUTY CONCRETE
[Hatched Pattern]	MILL AND OVERLAY



TEST PIT INFORMATION REQUIRED BEFORE CONSTRUCTION FOR EXISTING WATERLINE UNDER PARKING LOT TO ENSURE ACCEPTABLE AMOUNT OF COVER OVER WATER MAIN.

CONTINUE CONCRETE FLUME WITHOUT GRATE THROUGH SPEED TABLE RAMPS.

PATH & FILENAME:
PLOTTING DATE & TIME:

MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE SHEET C4.3

MATCHLINE - SEE SHEET C4.1

TOTAL # OF SPACES = 193

PROPOSED GRASS SPORTS PRACTICE FIELDS

PROPOSED SPORTS PRACTICE FIELDS

FIELD TO AVOID VALVE

BLEACHERS

TENNIS COURTS

TENNIS COURTS

TENNIS COURTS

TENNIS COURTS

TENNIS COURTS

TENNIS COURTS

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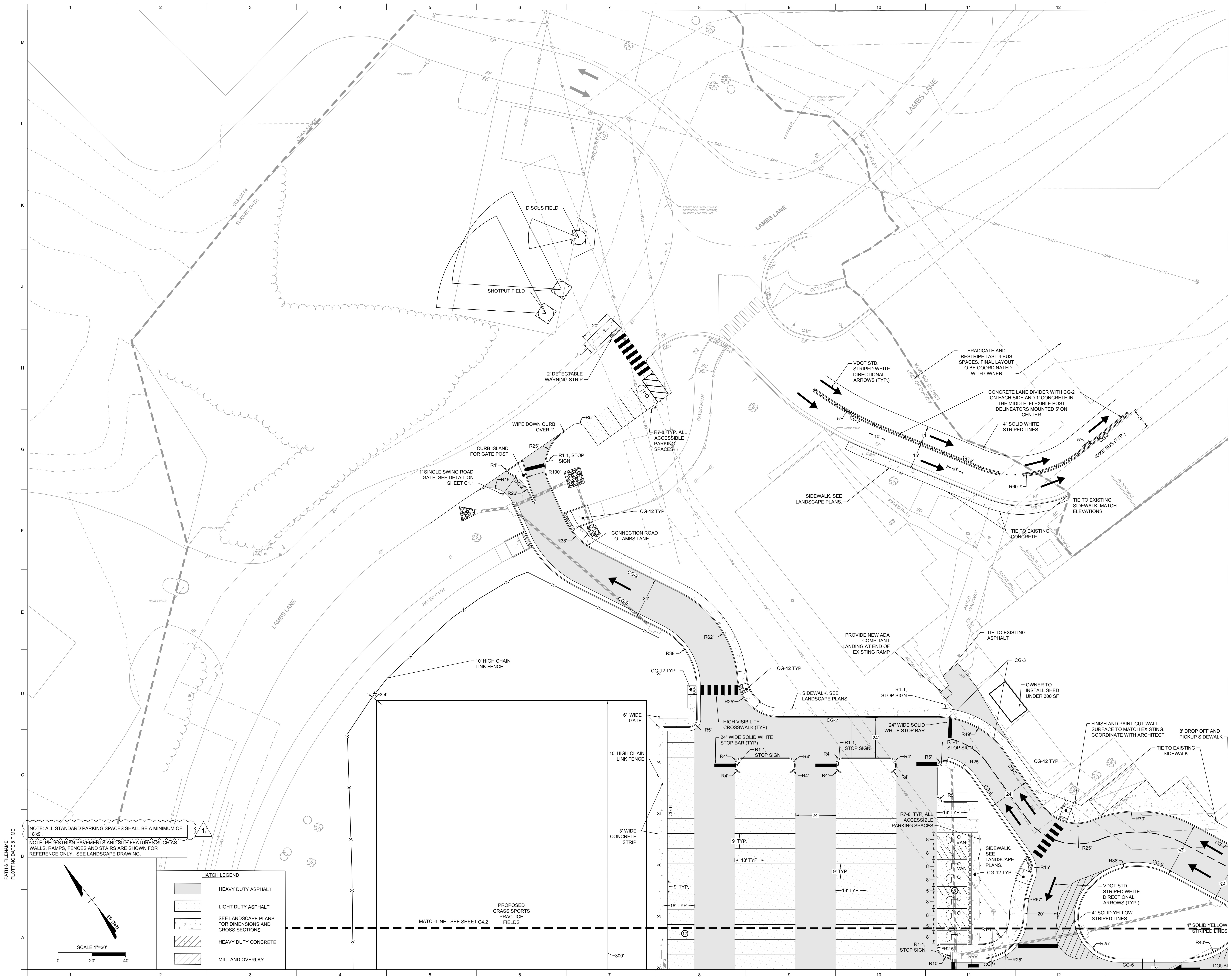
No.	Date	Description
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QEA No.41911390

BID DOCUMENTS
10/08/2024

SITE PLAN

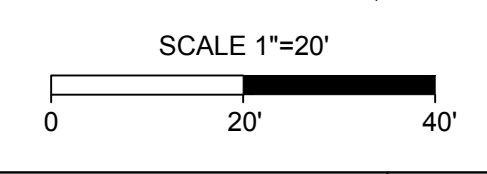
C4.3



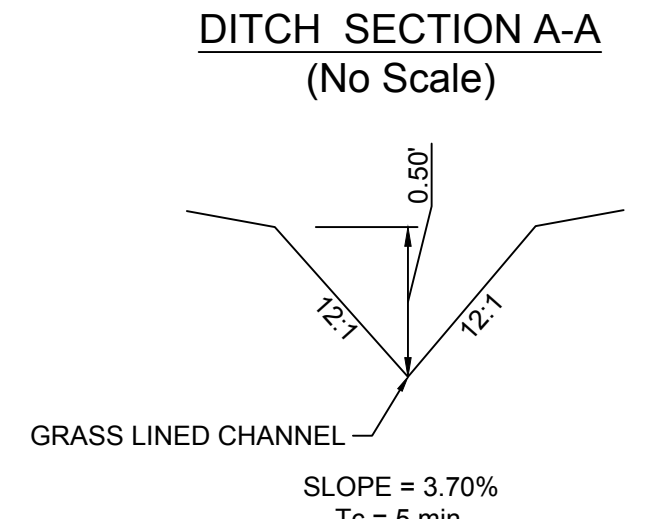
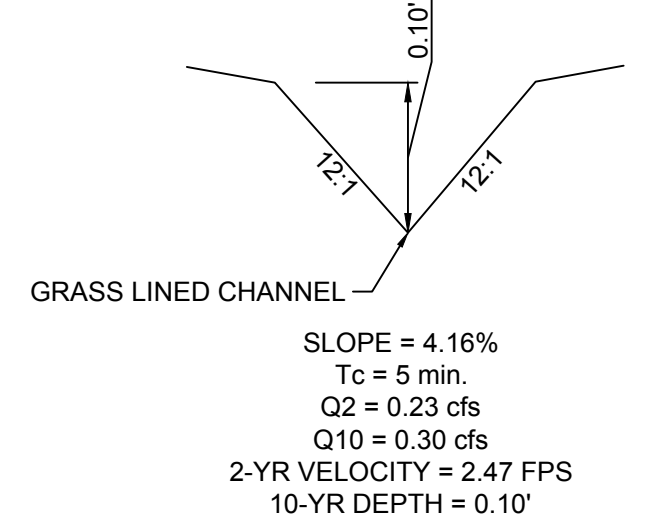
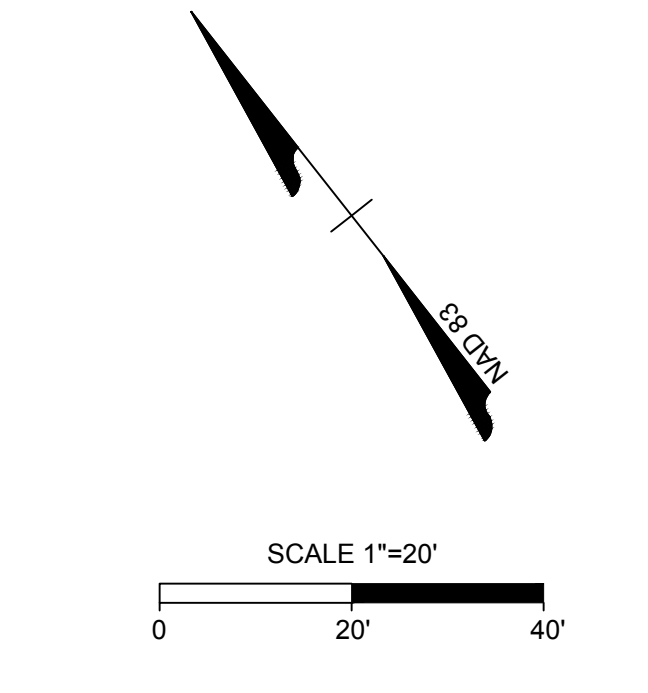
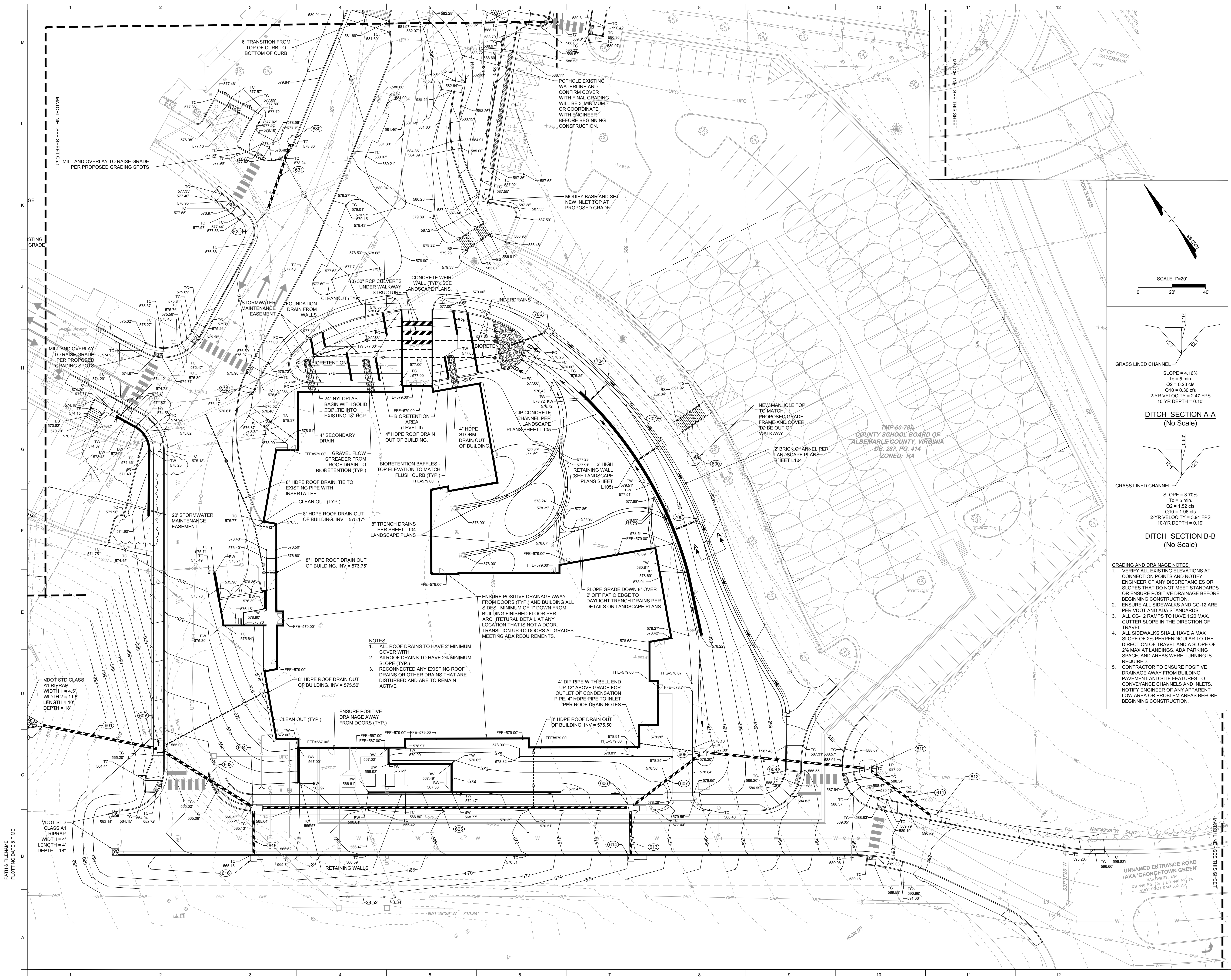
NOTE: ALL STANDARD PARKING SPACES SHALL BE A MINIMUM OF 18'x9'
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HATCH LEGEND

	HEAVY DUTY ASPHALT
	LIGHT DUTY ASPHALT
	SEE LANDSCAPE PLANS FOR DIMENSIONS AND CROSS SECTIONS
	HEAVY DUTY CONCRETE
	MILL AND OVERLAY



PATH & FILENAME:
PLOTTING DATE & TIME:



- GRADING AND DRAINAGE NOTES:**
1. VERIFY ALL EXISTING ELEVATIONS AT CONNECTION POINTS AND NOTIFY ENGINEER OF ANY DISCREPANCIES OR SLOPES THAT DO NOT MEET STANDARDS OR ENSURE POSITIVE DRAINAGE BEFORE BEGINNING CONSTRUCTION.
 2. ENSURE ALL SIDEWALKS AND CG-12 ARE PER VDOT AND ADA STANDARDS.
 3. ALL CG-12 RAMPS TO HAVE 1:20 MAX. GUTTER SLOPE IN THE DIRECTION OF TRAVEL.
 4. ALL SIDEWALKS SHALL HAVE A MAX SLOPE OF 2% PERPENDICULAR TO THE DIRECTION OF TRAVEL AND A SLOPE OF 2% MAX AT LANDINGS. ADA PARKING SPACE, AND AREAS WHERE TURNING IS REQUIRED.
 5. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING. PAVEMENT AND SITE FEATURES TO CONVEYANCE CHANNELS AND INLETS. NOTIFY ENGINEER OF ANY APPARENT LOW AREA OR PROBLEM AREAS BEFORE BEGINNING CONSTRUCTION.

- NOTES:**
1. ALL ROOF DRAINS TO HAVE 2\"/>

PATH & FILENAME:
PLOTTING DATE & TIME:



GRADING AND DRAINAGE NOTES:

1. VERIFY ALL EXISTING ELEVATIONS AT CONNECTION POINTS AND NOTIFY ENGINEER OF ANY DISCREPANCIES OR SLOPES THAT DO NOT MEET STANDARDS OR ENSURE POSITIVE DRAINAGE BEFORE BEGINNING CONSTRUCTION.
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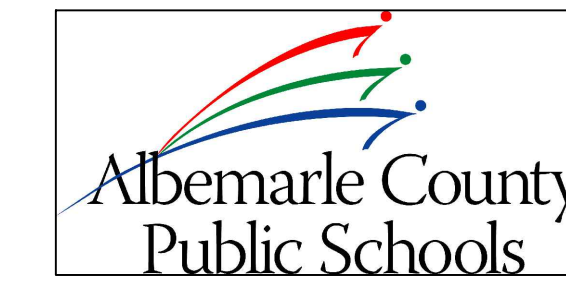


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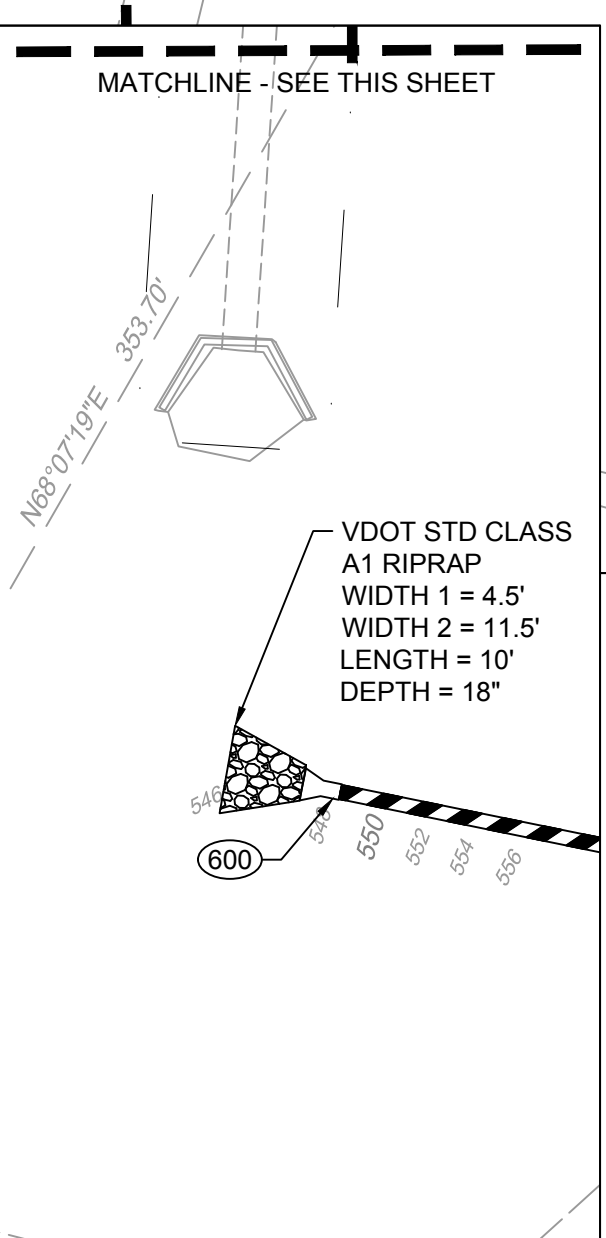
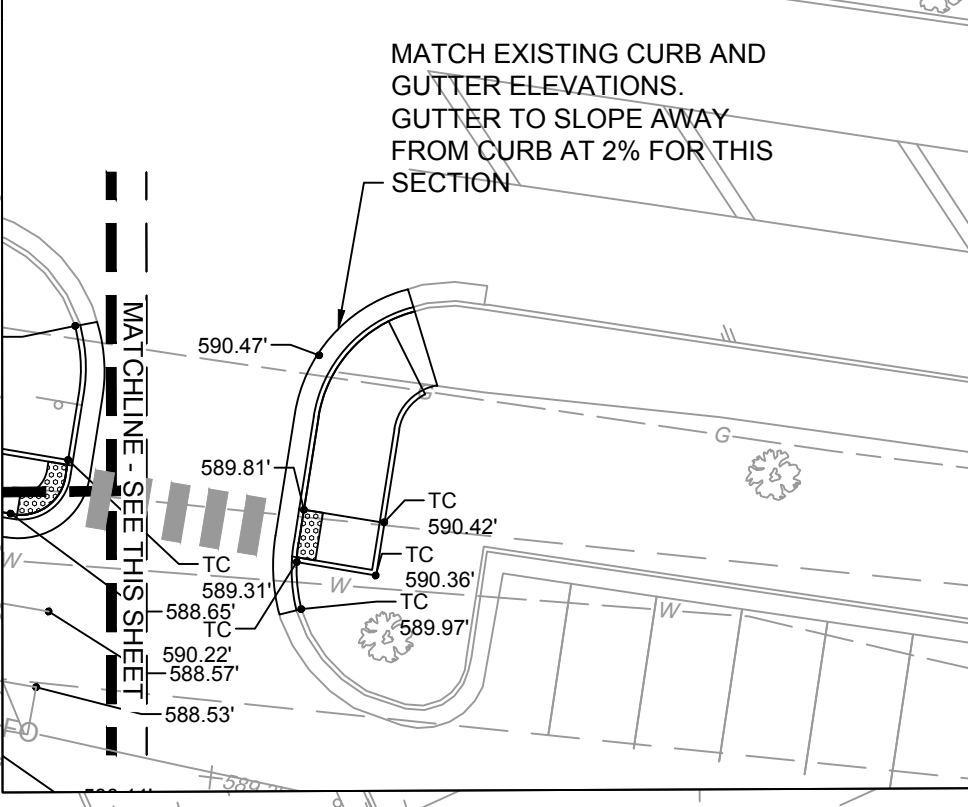
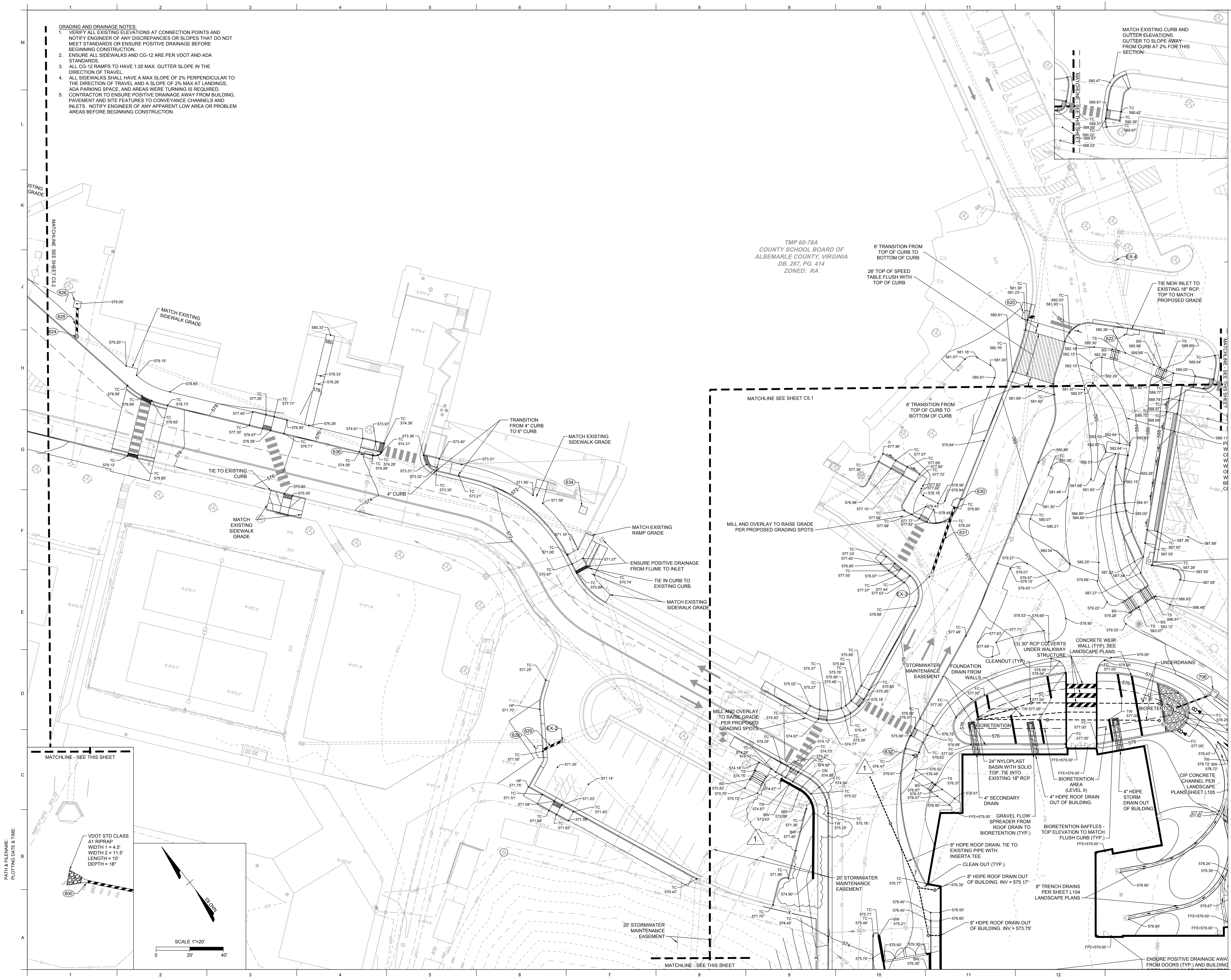


**NEW CONSTRUCTION
HIGH SCHOOL
CENTER II**

IFB No. 2025-IFB-1007262
STATE PROJECT NO.
002-88-01-100

Albemarle County
Public Schools

2775 Hydraulic Rd.
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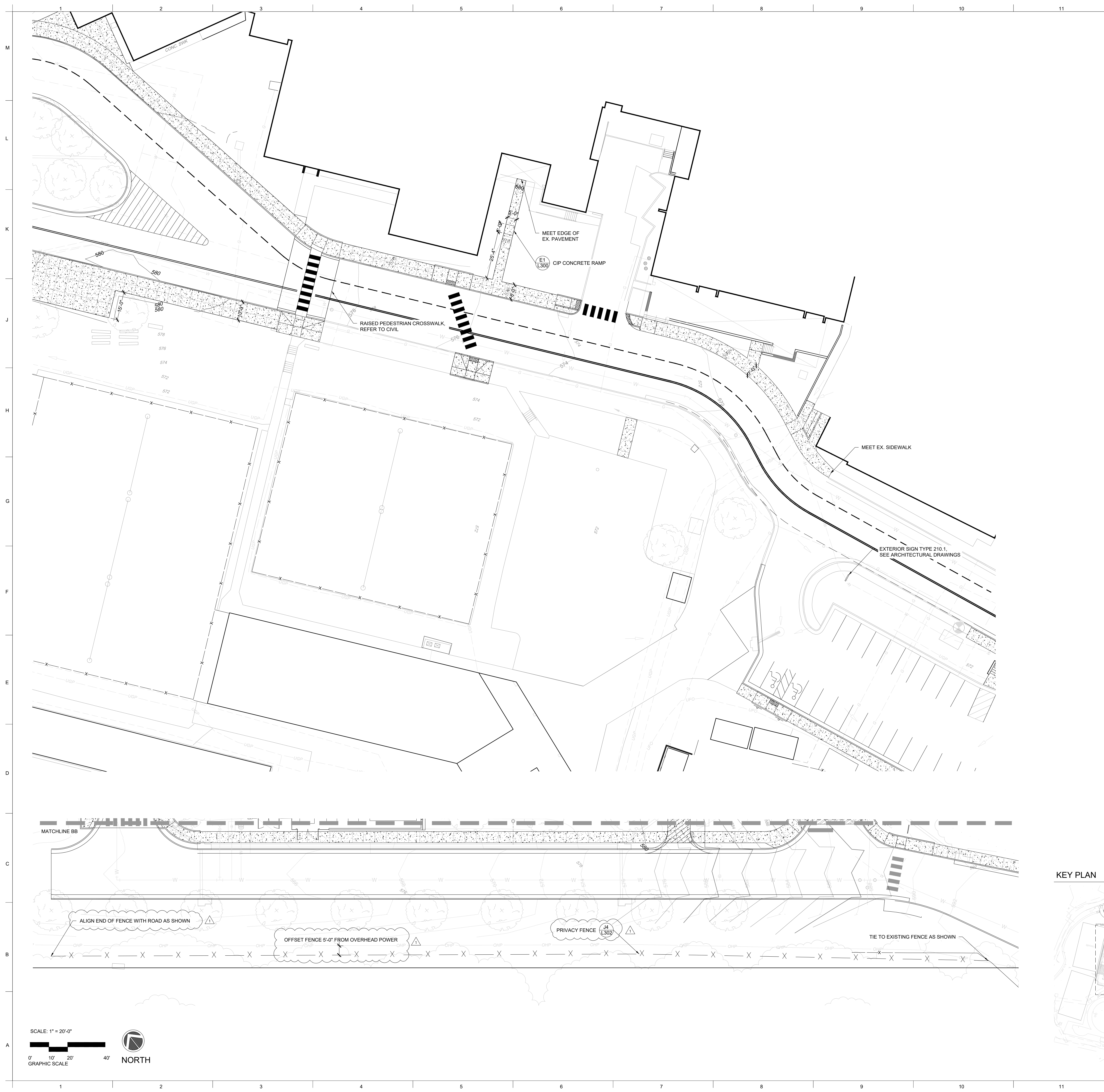
No.	Date	Description
1	10/25/2024	ADDENDUM 2

PROJECT MANAGER: J. Showalter
DRAWN BY: S. Kirby/A. Flint

QEA No.4191390
BID DOCUMENTS
10/08/2024

GRADING & DRAINAGE
PLAN

C5.1



- GENERAL NOTES**
1. SEE CIVIL DRAWINGS FOR ALL VEHICULAR ELEMENTS INCLUDING BUT NOT LIMITED TO PAVEMENTS, CURBS, CURB RAMPS, CROSSWALKS, AND PAVEMENT MARKINGS.
 2. UNDERGROUND UTILITIES ARE SHOWN FOR REFERENCE ONLY. SEE CIVIL DRAWINGS.
 3. SITE LIGHTING IS SHOWN FOR REFERENCE ONLY. SEE ELECTRICAL DRAWINGS.
 4. PROPOSED GRADING IS SHOWN FOR REFERENCE ONLY. SEE CIVIL DRAWINGS.
 5. SEE CIVIL DRAWINGS FOR TOP AND BOTTOM ELEVATIONS OF STAIRS, RAMPS, AND SITE WALLS UNLESS OTHERWISE NOTED.
 6. WHERE APPLICABLE, SIDEWALK DIMENSIONS ARE MEASURED FROM BACK OF CURB.
 7. INSTALL CONCRETE MOW STRIPS AT ALL LOCATIONS WHERE NEW BUILDING ABUTS TURF LAWN. SEE DETAIL 86, DRAWING L300.
 7. SEE ARCHITECTURAL DRAWINGS FOR ALL EXTERIOR SIGN TYPES AND DETAILS.

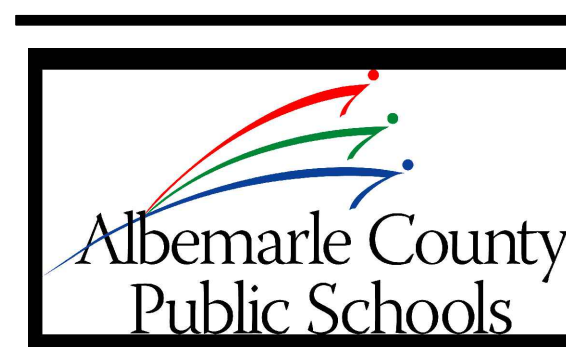
LEGEND AND ABBREVIATIONS

	CIP CONCRETE SIDEWALK. SEE DETAIL L1, DRAWING L300
	CIP HEAVY CONCRETE SIDEWALK. SEE DETAIL L1, DRAWING L300
	BRICK PAVEMENT. SEE DETAIL J1, DRAWING L300
	CONCRETE UNIT PAVEMENT. SEE DETAIL J1, DRAWING L300
P.C	POINT OF CURVATURE
P.C.C	POINT OF COMPOUND CURVATURE



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RICHMOND, VA 23220
v 804.788.4774

QUINNEVANS.COM

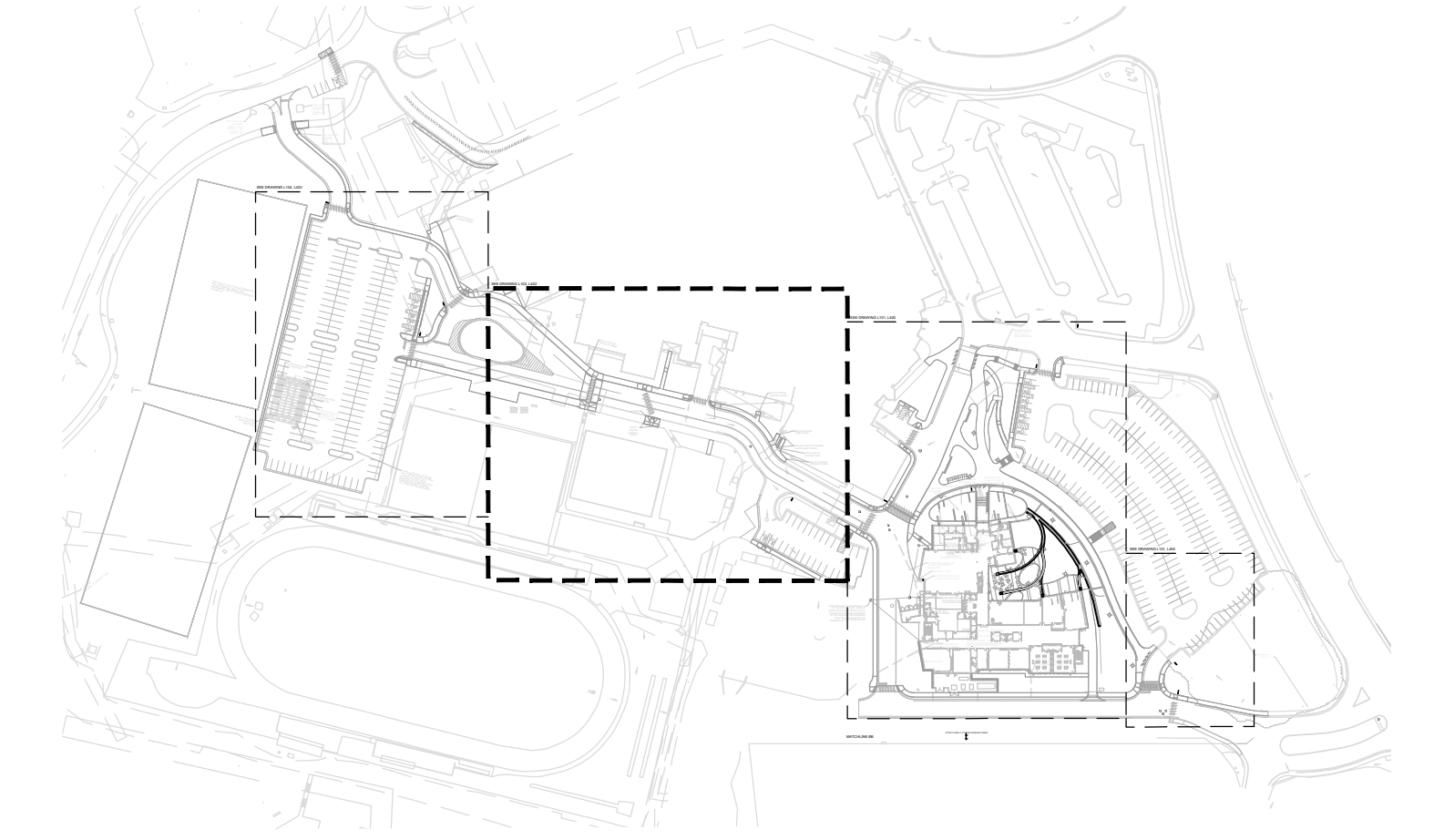


NEW CONSTRUCTION HIGH SCHOOL CENTER II

IFB No. 2025-IFB-1007262
STATE PROJECT NO. 002-88-01-100

Albemarle County Public Schools
2775 Hydraulic Rd.
Charlottesville, VA 22901

KEY PLAN



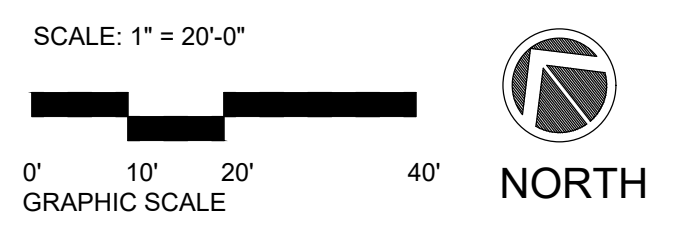
	10/25/2024	ADDENDUM 2
No.	Date	Description
PROJECT MANAGER:	JSK	DRAWN BY: HR

QEA No.41911390
BID DOCUMENTS
10/08/2024

LAYOUT AND MATERIALS PLAN

L102

PLOT FILE NAME: \\arch01\docs\albemarle county high school center\ARCH\HSCCL_L102.rvt
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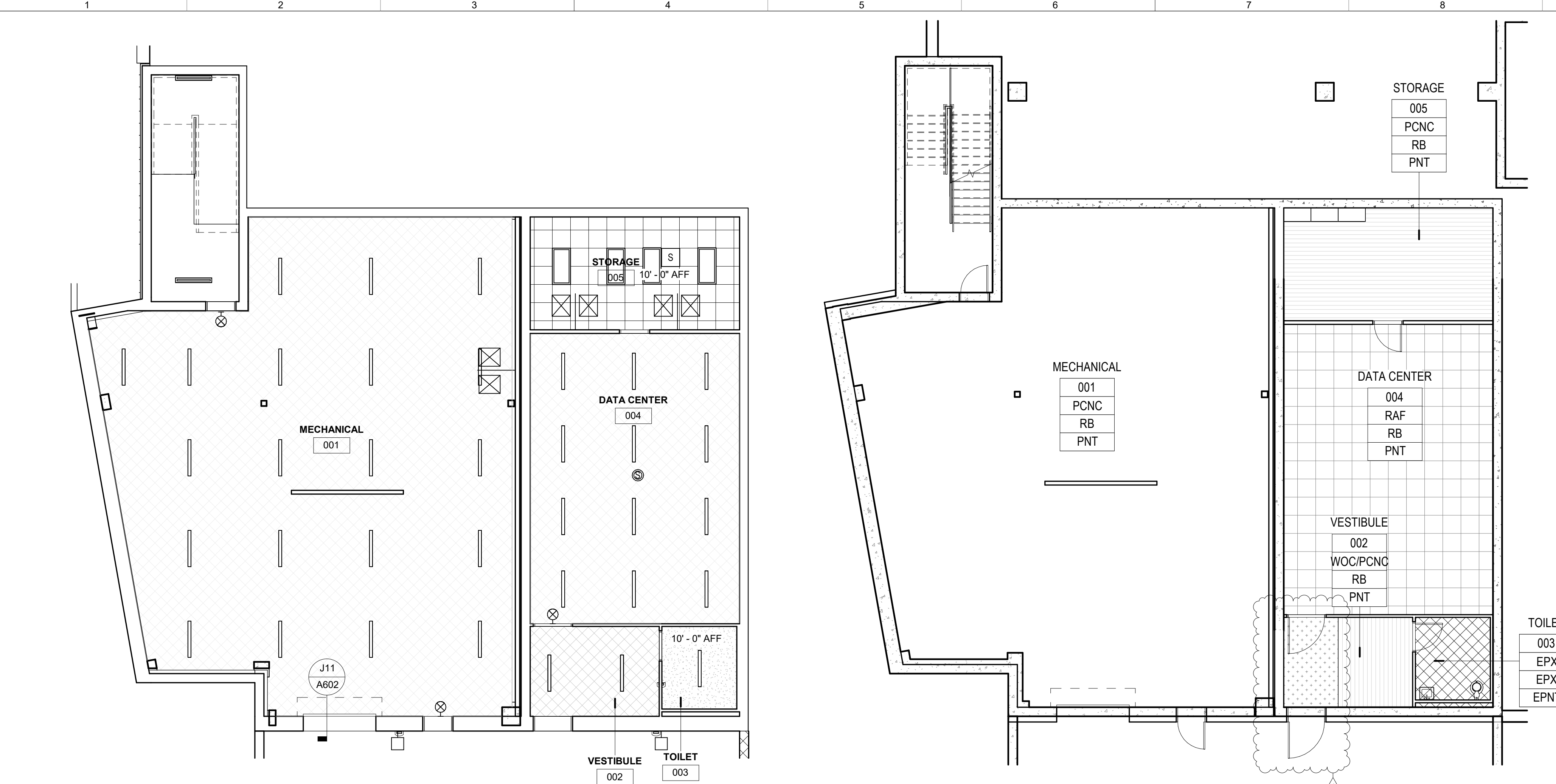
GENERAL NOTES

- REFER TO REFLECTED CEILING PLAN SHEETS FOR RCP LEGEND.
- REFER TO FINISH PLAN SHEETS FOR FINISH LEGEND.

FINISH TAG LEGEND

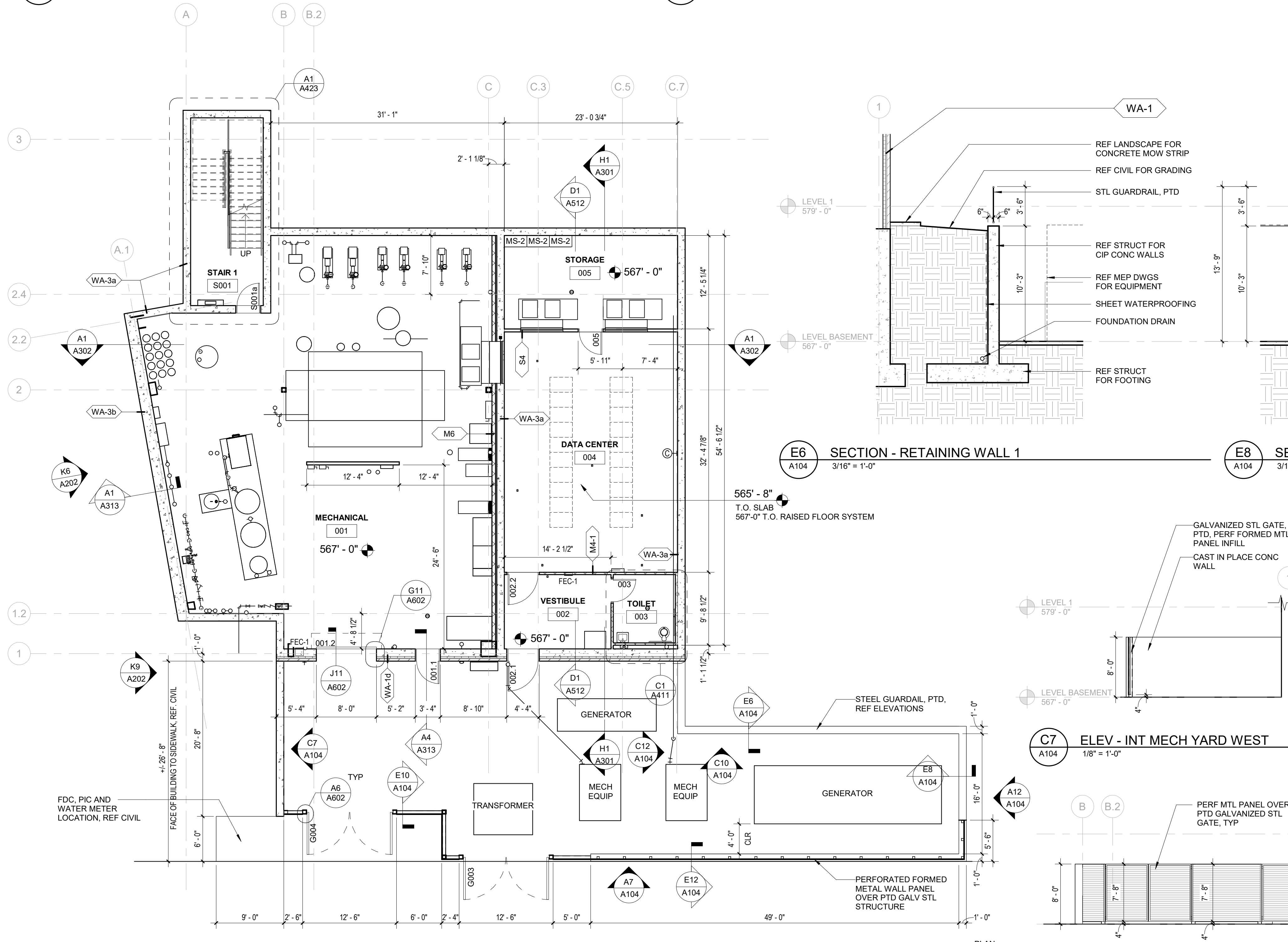
ROOM NAME
ROOM #
FLOOR FINISH
BASE FINISH
WALL FINISH

REFER TO PLAN NOTES FOR ACCENT AREAS AND OTHER SPECIFIC INFORMATION.



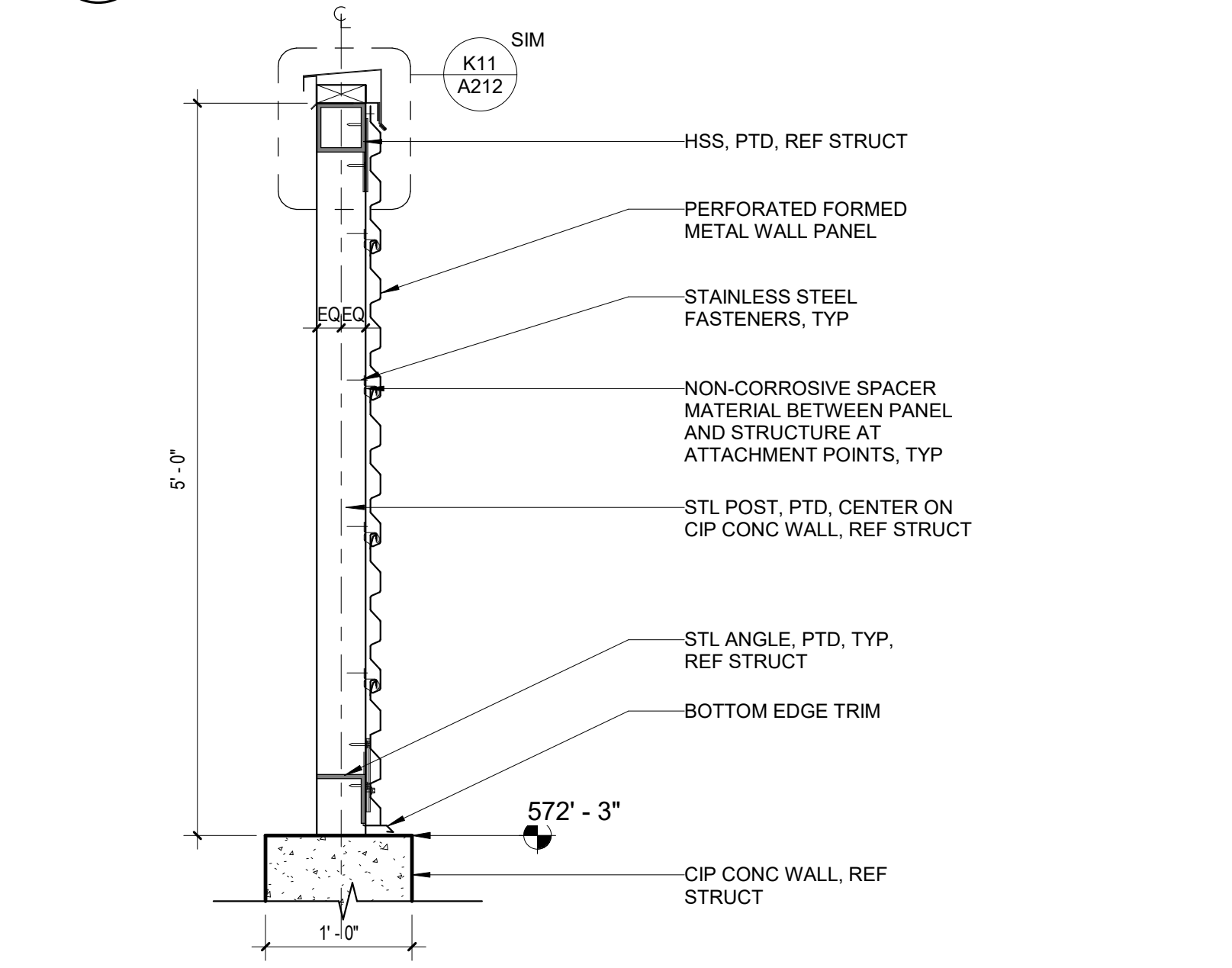
H1 REFLECTED CEILING PLAN - BASEMENT
1/8" = 1'-0"

H5 FINISH PLAN - BASEMENT
1/8" = 1'-0"

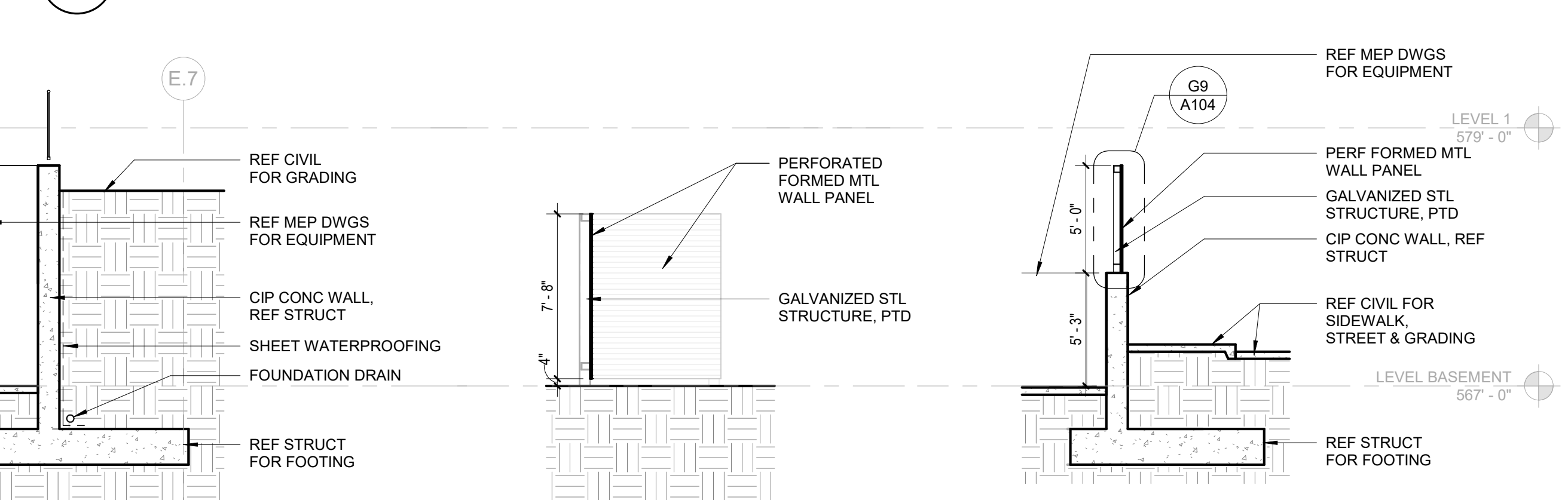


A1 FLOOR PLAN - BASEMENT
1/8" = 1'-0"

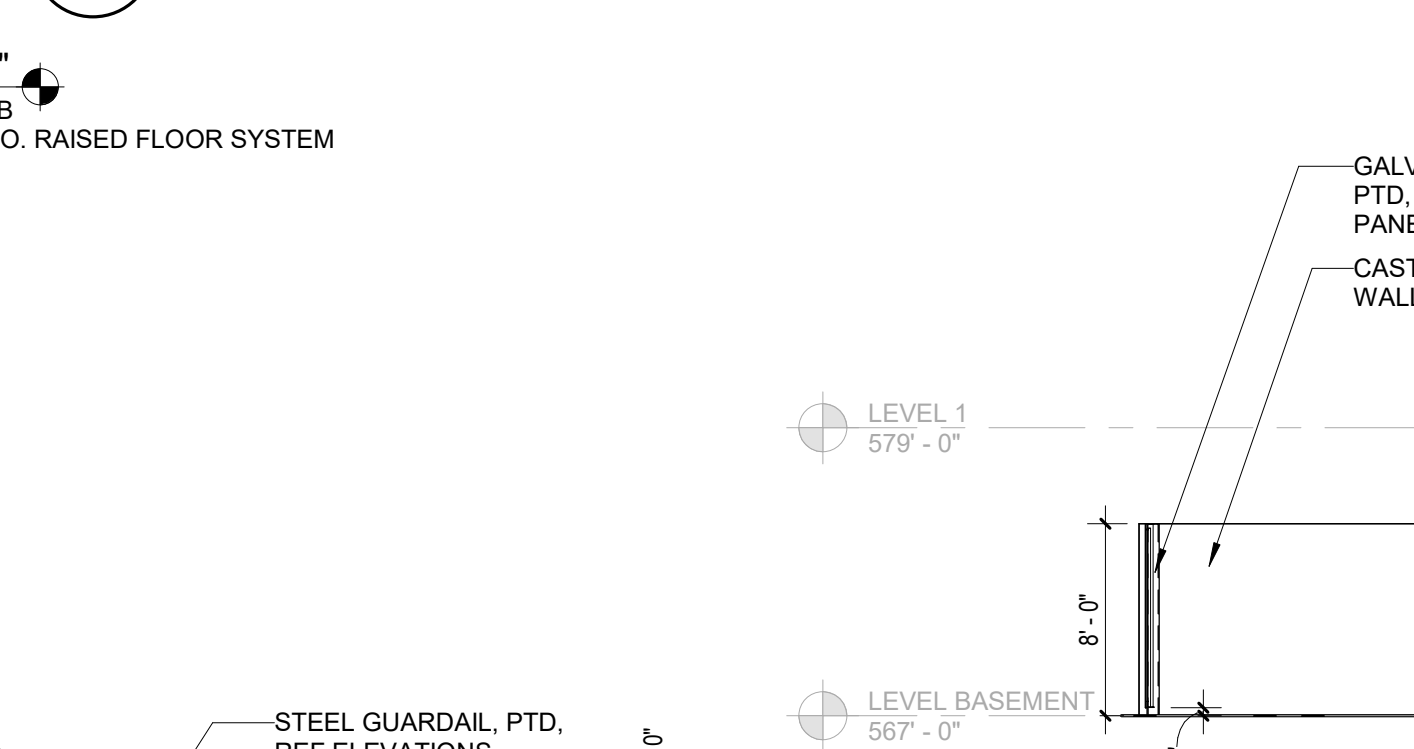
K9 BASEMENT KEY PLAN - PERIMETER DRAINS & MUD SLAB EXTENTS
1" = 20'-0"



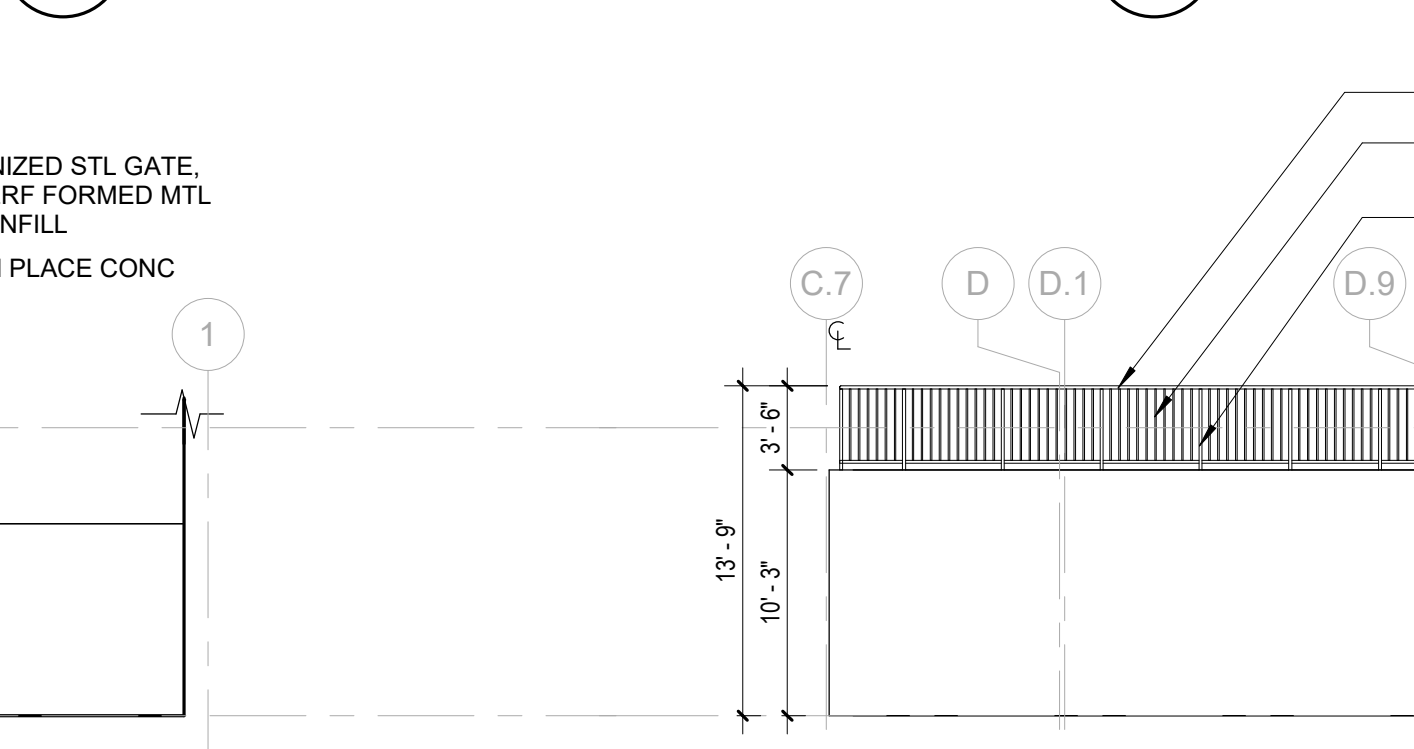
G9 DETAIL - MECH YARD PERF SCREEN
1" = 1'-0"



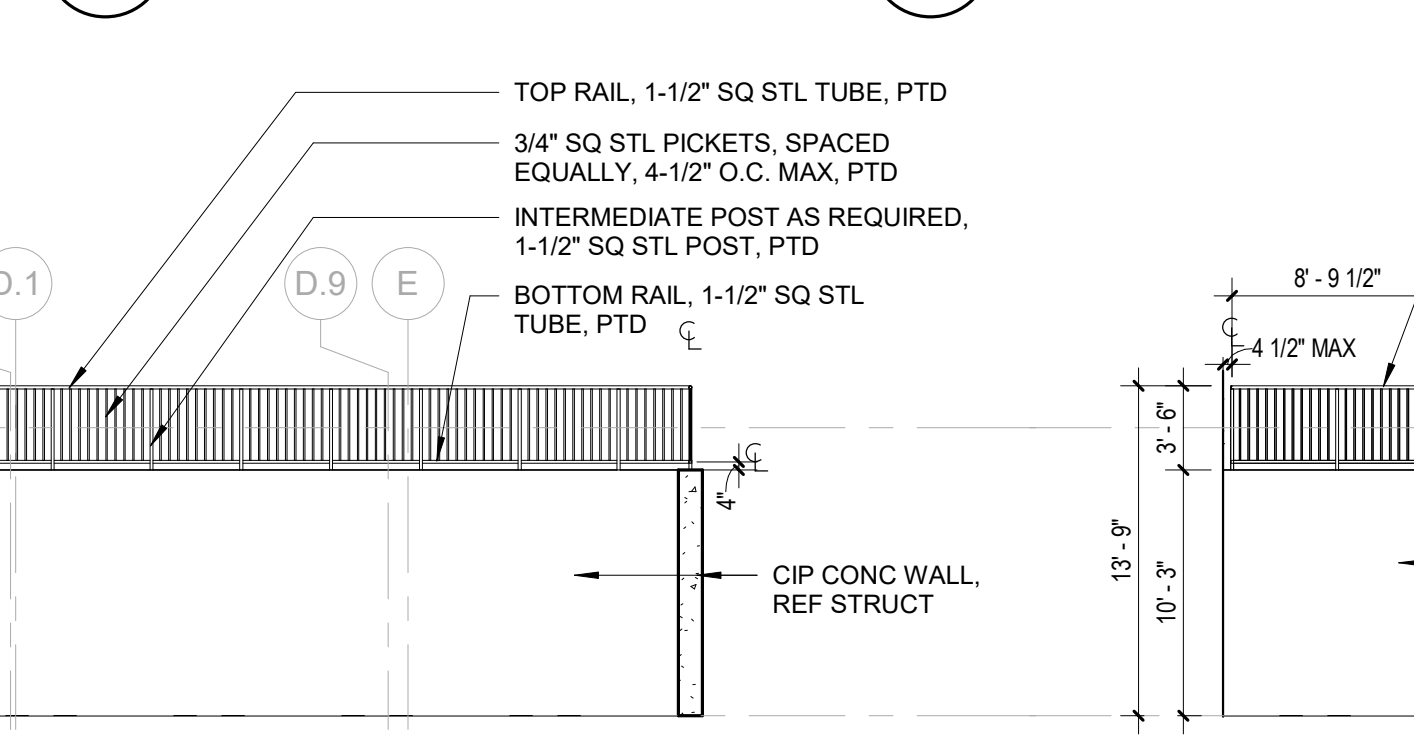
E6 SECTION - RETAINING WALL 1
3/16" = 1'-0"



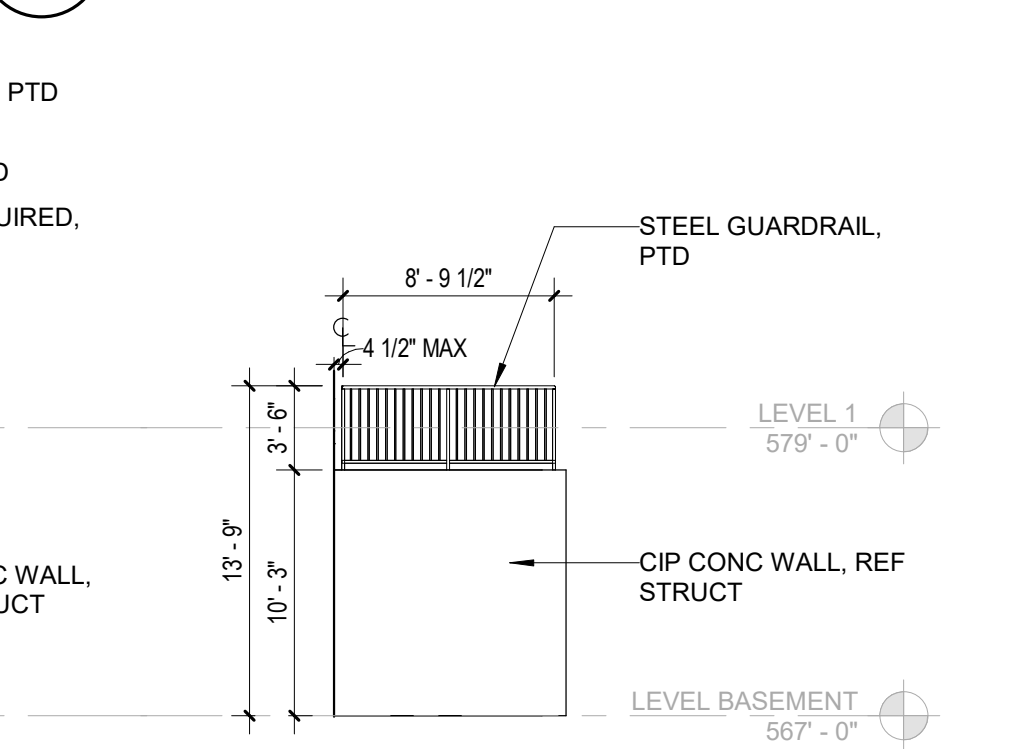
E8 SECTION - RETAINING WALL 2
3/16" = 1'-0"



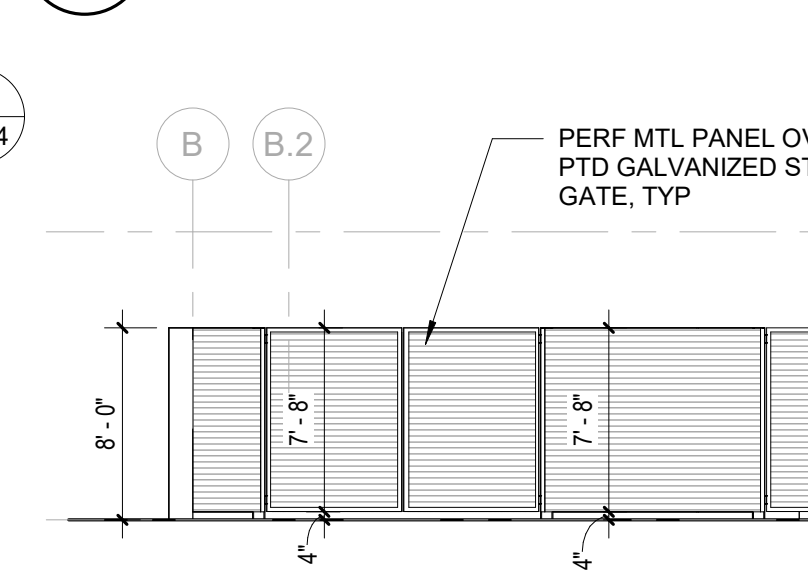
E10 SECTION - PERF SCREEN 1
3/16" = 1'-0"



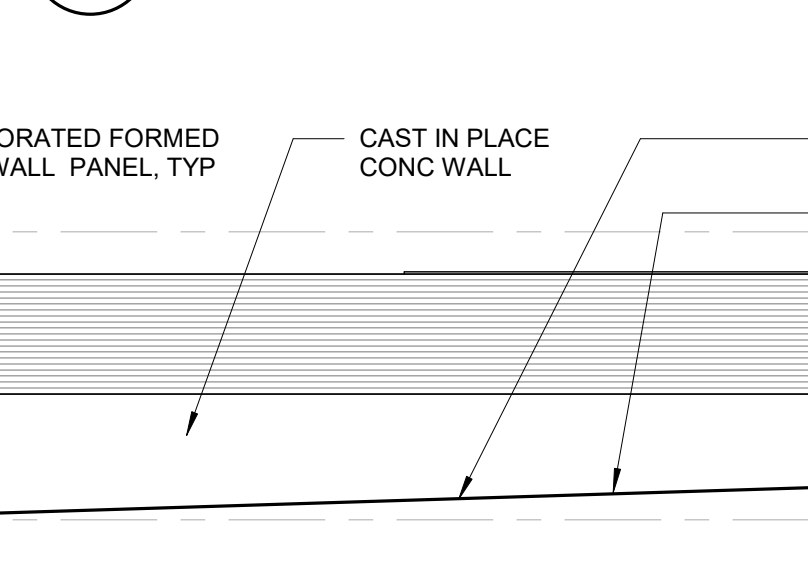
E12 SECTION - PERF SCREEN 2
3/16" = 1'-0"



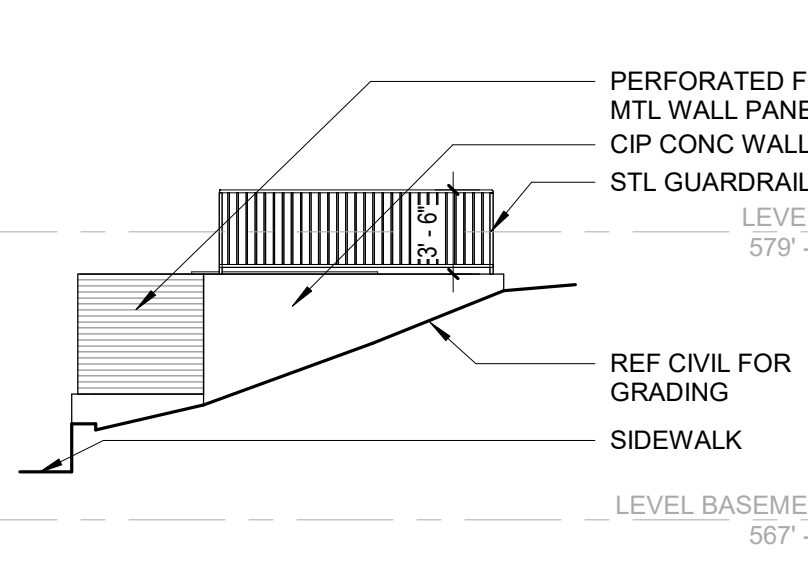
C7 ELEV - INT MECH YARD WEST
1/8" = 1'-0"



C10 ELEV - INT MECH YARD NORTH
1/8" = 1'-0"



C12 ELEV - INT MECH YARD EAST
1/8" = 1'-0"



A7 ELEVATION - MECH YARD SCREEN WALL SOUTH
1/8" = 1'-0"



A12 ELEVATION - MECH YARD SCREEN WALL EAST
1/8" = 1'-0"



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GENERAL NOTES

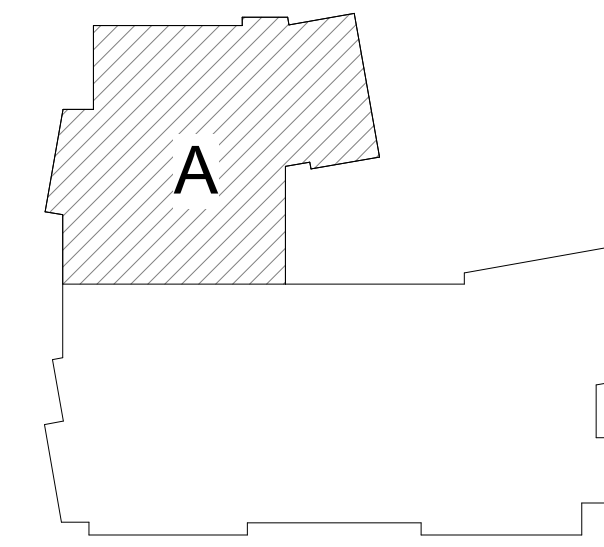
- WHERE NO HATCH SHOWN, FLOORING SHALL BE FIELD COLOR ("FINISH-1) OF FINISH NOTED IN ROOM TAG.
- FLOOR FINISH CHANGES AT THRESHOLDS SHALL OCCUR AT INSIDE DOOR FRAME CORNER, UNDER DOOR PANEL. FLOOR FINISHES SHALL CONTINUE INTO THRESHOLD.
- CWT SHALL BE INSTALLED FULL HEIGHT UIO. CWT SHALL BE INSTALLED UP TO 4" AFF WHERE SHOWN AT CUSTODIAL SINKS. REFER TO INTERIOR ELEVATIONS FOR EXTENTS AND LOCATIONS OF CERAMIC TILE WAINSCOT IN CORRIDORS.
- REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL TILING INFORMATION.
- WHERE SOFFITS NOTED TO BE ACCENT COLOR, PAINT ALL SIDES UNLESS INDICATED OTHERWISE.
- TYPICAL PAINT FINISHES:
 - ALL TOILETS, CUSTODIAL CLOSETS/ROOMS, LAUNDRY ROOMS, KITCHENS, MECHANICAL ROOMS, AND ELECTRICAL ROOMS SHALL BE EPNT-1 ALL WALLS UIO.
 - HM FRAMES SHALL BE PNT-16 UIO WHEN ADJACENT WALL IS FIELD COLOR; SHALL MATCH ACCENT COLOR WHERE ADJACENT WALL IS ACCENT COLOR.
 - GWB CEILINGS SHALL BE PNT-11 UIO.
 - ALL EXPOSED STEEL COLUMNS AND STRUCTURE SHALL BE PAINTED PNT-17 UIO.
 - PAINTED METAL AT STAIRS (STRINGERS, RAILINGS, ETC.) SHALL BE PNT-15 UIO.
- WHERE SOFFITS NOTED TO BE ACCENT COLOR, PAINT ALL SIDES UNLESS INDICATED OTHERWISE.
- VINYL WALLCOVERING SHALL EXTEND TO THE CEILING UNLESS INDICATED OTHERWISE.
- ALL ROOMS WITH EPNT WALLS SHALL HAVE EPNT ON GWB CEILINGS AND SOFFITS UIO.
- PROVIDE TXCP IN ELEVATOR CAB.
- WHERE NO CONTROL JOINTS SHOWN IN CONCRETE FLOORING, SUBMIT RECOMMENDED CJ PATTERN TO BE APPROVED BY ARCH.
- SWP SHALL BE INSTALLED FULL HEIGHT UIO. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
- ALL GWB AND CMU WALLS AND CEILINGS TO BE PAINTED UIO.
- ALL EXPOSED STRUCTURE, PIPING, AND DUCTWORK TO BE PAINTED UIO, INCLUDING ABOVE OPEN WOOD GRILLE AND BAFFLE CEILINGS.
- RUBBER BASE SHALL BE PROVIDED AT ALL LOCATIONS UNLESS INDICATED OTHERWISE.
- REFER TO INTERIOR WALL ELEVATIONS AND PANEL DETAILS FOR WALL BASE TRIM WHERE WALL PANELING IS PROVIDED.
- REFER TO INTERIOR ELEVATIONS AND DETAILS FOR EXTENTS AND PATTERNING OF WALL FINISHES.
- CWT SHALL BE INSTALLED IN A VERTICAL ORIENTATION, OFFSET ASHLAR PATTERN UIO.
- UIO, PNT SHALL BE PNT-1.
- TYPICAL WALL BASE AT PRP: METAL BASE, REF DETAILS AND SPEC.
- TYPICAL WALL BASE AT CWT: CWT UIO, REF SPEC.

FINISH TAG LEGEND

ROOM NAME
ROOM #
FLOOR FINISH
BASE FINISH
WALL FINISH

REFER TO PLAN NOTES FOR ACCENT AREAS AND OTHER SPECIFIC INFORMATION.

KEY PLAN

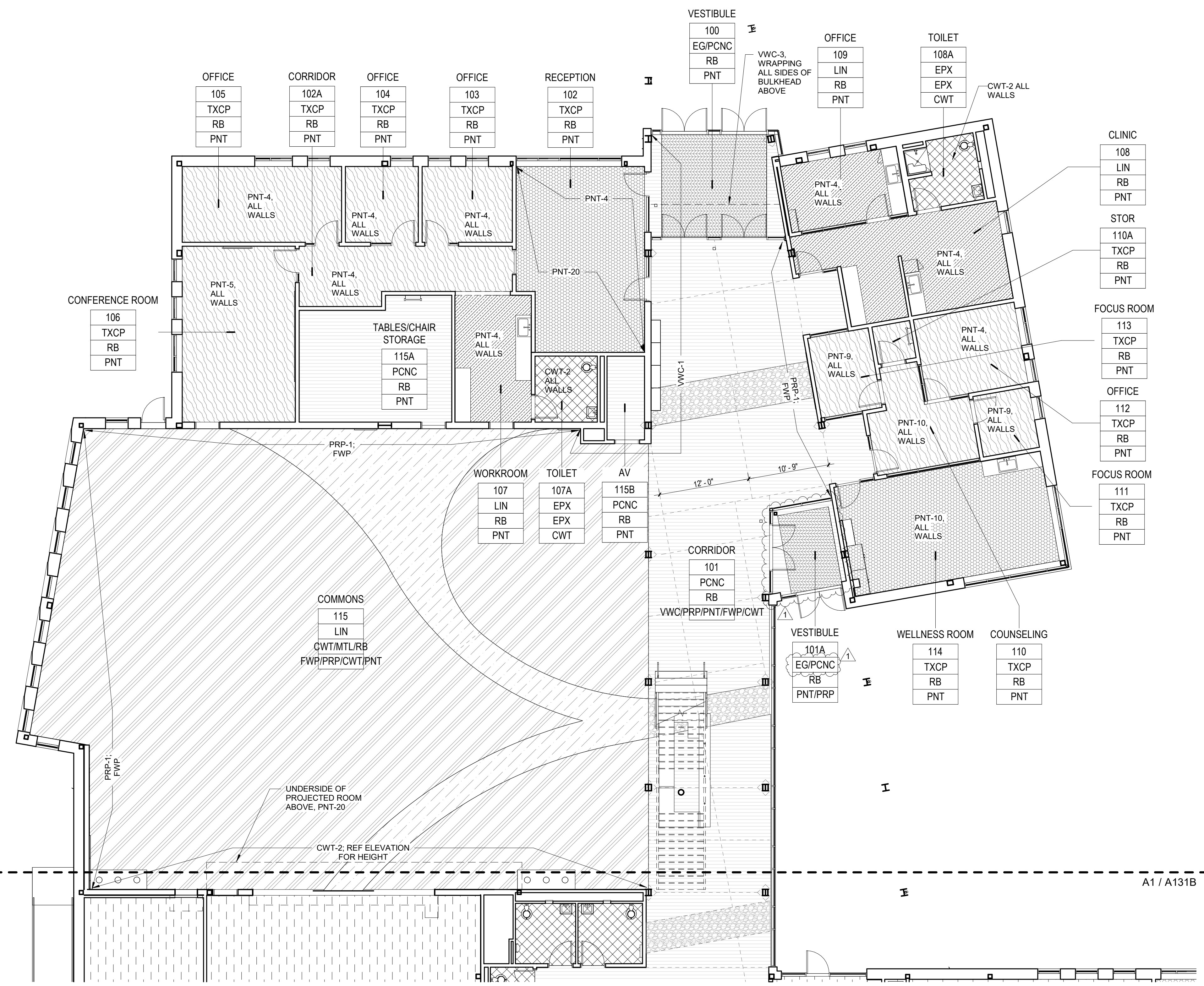
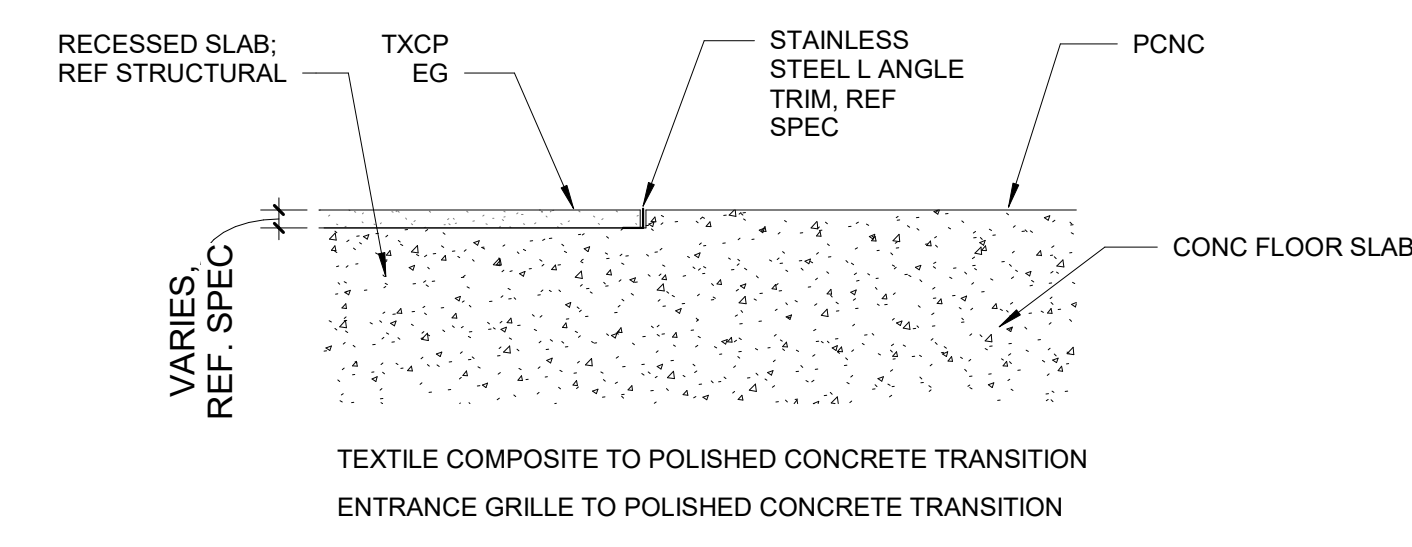
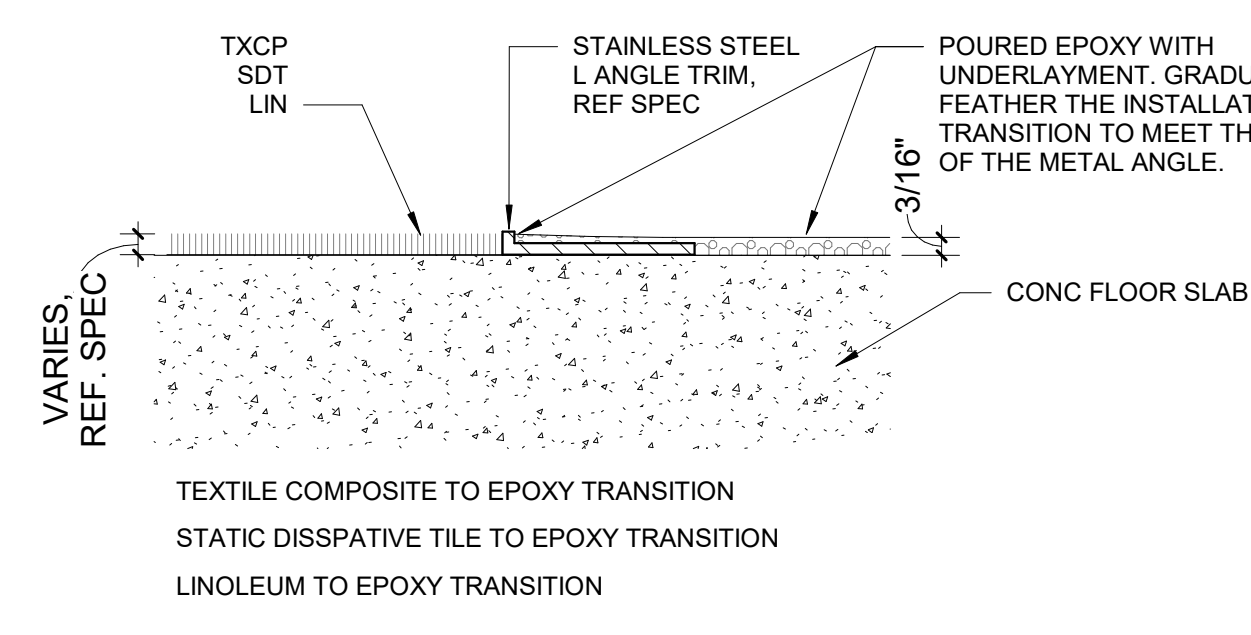
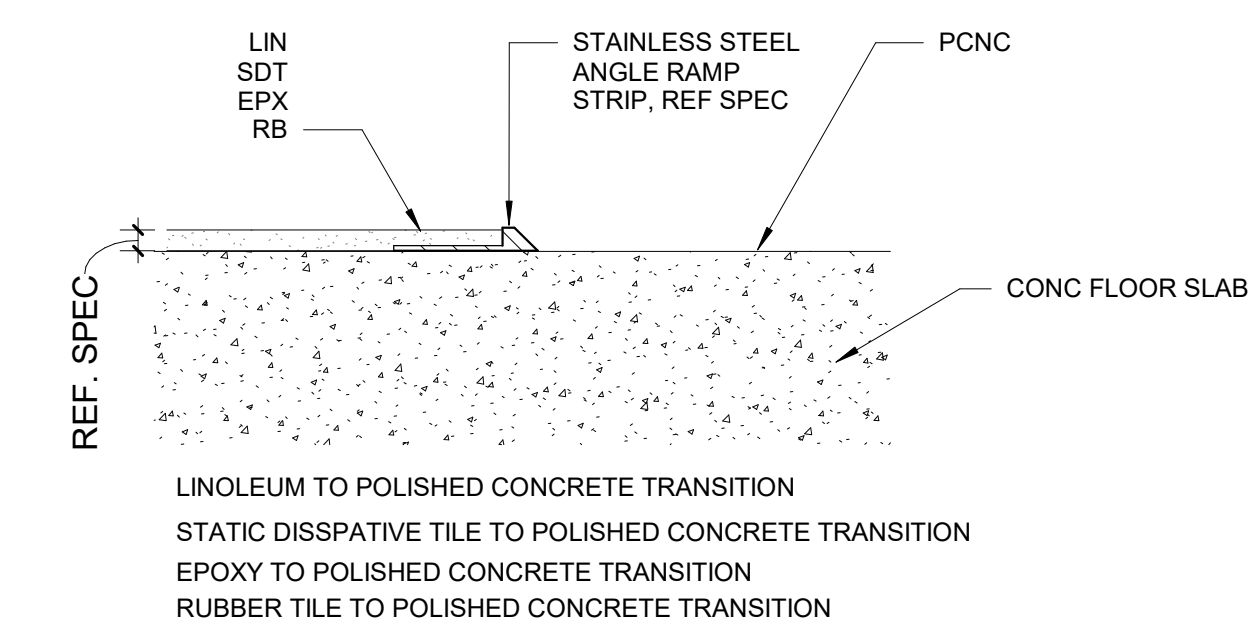


FINISH LEGEND

	EPX-1 EPOXY		TCPX-4 TEXTILE COMPOSITE FLOORING
	EPX-2 EPOXY		LIN-1 RESILIENT SHEET FLOORING
	POLISHED CONCRETE		LIN-2 RESILIENT SHEET FLOORING
	EXPOSED AGGREGATE CONCRETE		LIN-3 RESILIENT SHEET FLOORING
	TXCP-01 TEXTILE COMPOSITE FLOORING		EG ENTRANCE GRILLE
	TXCP-02 TEXTILE COMPOSITE FLOORING		SDT STATIC DISSIPATIVE TILE
	TXCP-03 TEXTILE COMPOSITE FLOORING		RAF RAISED FLOOR ACCESS SYSTEM
			CONTROL JOINT
			WOC WALK-OFF CARPET

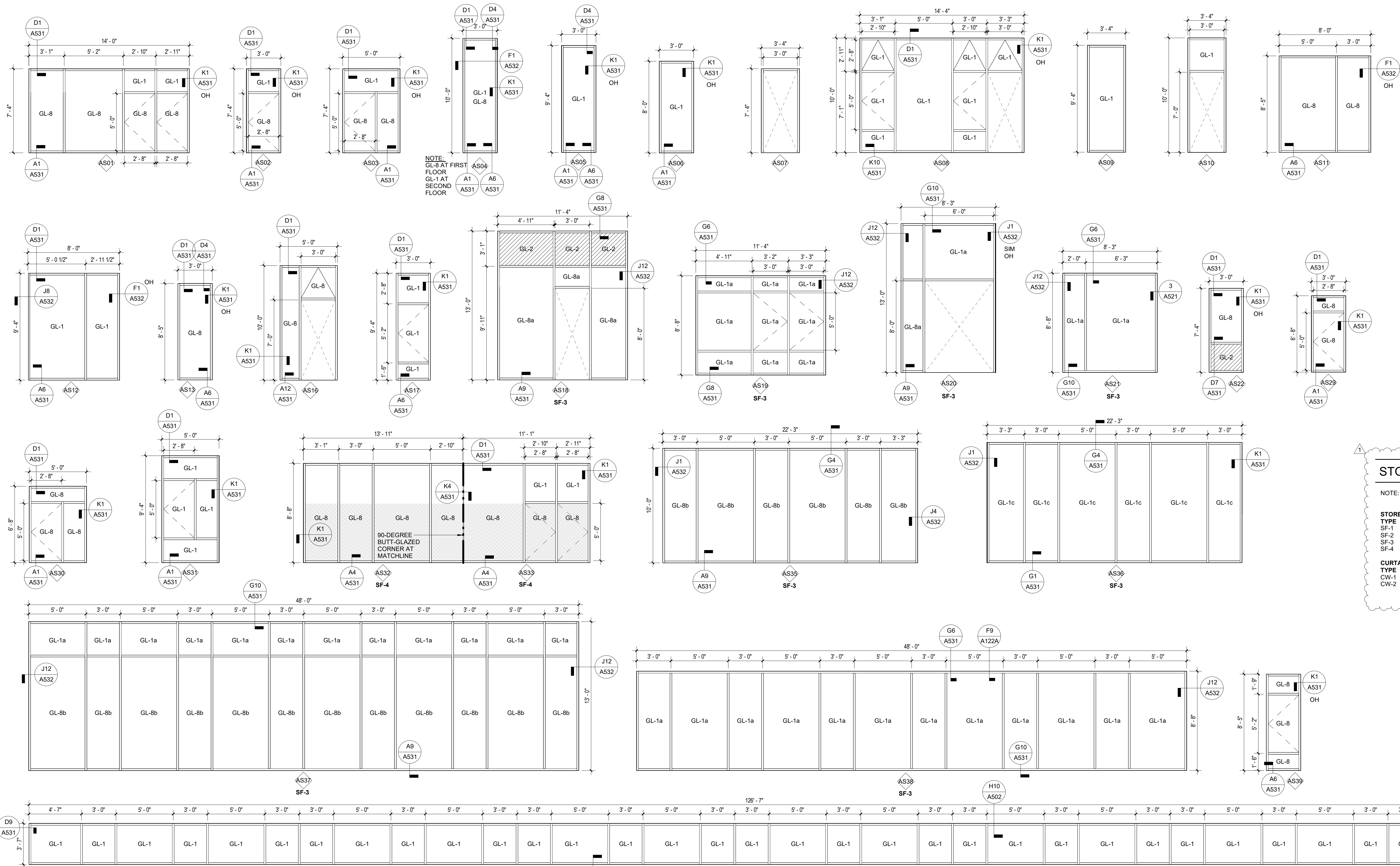
FLOOR FINISH TRANSITIONS

MATERIALS	TRANSITION
PCNC > LIN	REF DETAIL ON A131A
PCNC > EG	REF DETAIL ON A131A
PCNC > TXCP	REF DETAIL ON A131A
PCNC > EPX	REF DETAIL ON A131A
PCNC > SDT	REF DETAIL ON A131A
PCNC > RB	REF DETAIL ON A131A
TXCP > LIN	SLT-XX-A
LIN > EPX	REF DETAIL ON A131A
TXCP > EPX	REF DETAIL ON A131A
SDT > EPX	REF DETAIL ON A131A



EXTERIOR STOREFRONT ELEVATIONS

1/4"=1'-0"



GENERAL NOTES

- REF PLAN & ELEVATIONS FOR SURROUNDING WALL ASSEMBLY AT STOREFRONT AND CURTAIN WALL SYSTEMS.
- REINFORCE SYSTEMS AS REQUIRED TO MEET CODE LOADS FOR ALL CONDITIONS.
- OVERALL DIMENSIONS REFER TO ROUGH OPENINGS.
- ALL DIMENSIONS TO BE VERIFIED IN FIELD PRIOR TO FABRICATION AND INSTALLATION OF GLAZING SYSTEMS.
- ALL EXT. STOREFRONTS SYSTEM TO BE SF-1 EXCEPT WHERE NOTED OTHERWISE.
- REFER TO OVERALL BUILDING ELEVATIONS FOR OPERABLE PANEL LOCATIONS.

GLAZING SCHEDULE

MARK	DESCRIPTION
GL-1	EXTERIOR 1" IGU, LOW-E, CLEAR, LOW IRON
GL-1a	EXTERIOR 1" IGU W/ APPLIED FRIT PATTERN
GL-1b	EXTERIOR 1" IGU, 3/8" OUTER GLASS
GL-1c	EXTERIOR 1" IGU W/ APPLIED FRIT PATTERN AND 3/8" OUTER GLASS
GL-2	EXTERIOR 1" IGU, LOW-E, SPANDREL, LOW IRON
GL-3	INTERIOR 1/4" TEMPERED, CLEAR
GL-4	INTERIOR LAMINATED - ACOUSTIC, CLEAR
GL-5	INTERIOR LAMINATED - SECURITY, CLEAR
GL-6	FIRE RATED GLAZING
GL-7	INTERIOR 1" IGU W/ INTERIOR LAMINATED - ACOUSTIC
GL-8	EXTERIOR 1" IGU W/ INTERIOR LAMINATED - SECURITY
GL-8a	EXTERIOR 1" IGU W/ INTERIOR LAMINATED - SECURITY, W/ APPLIED FRIT PATTERN
GL-8b	EXTERIOR 1" IGU W/ INTERIOR LAMINATED-SECURITY, W/ APPLIED FRIT PATTERN AND 3/8" OUTER GLASS

GLASS FILM LEGEND

NOTE: REF SPEC SECTION 088000 FOR GLASS FILM PRODUCTS

	GLASS FILM STYLE 1 (GF-1)
	GLASS FILM STYLE 2 (GF-2)
	GLASS FILM STYLE 3 (GF-3)

STOREFRONT & CURTAIN WALL TYPES

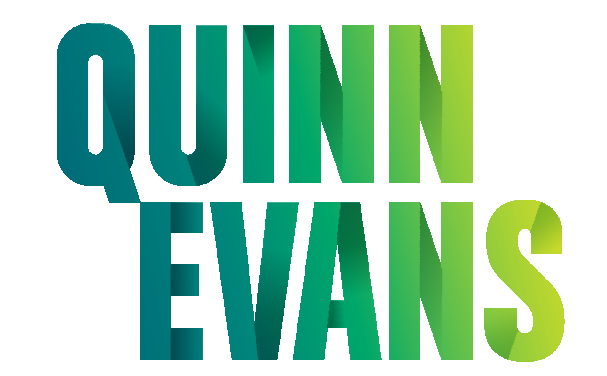
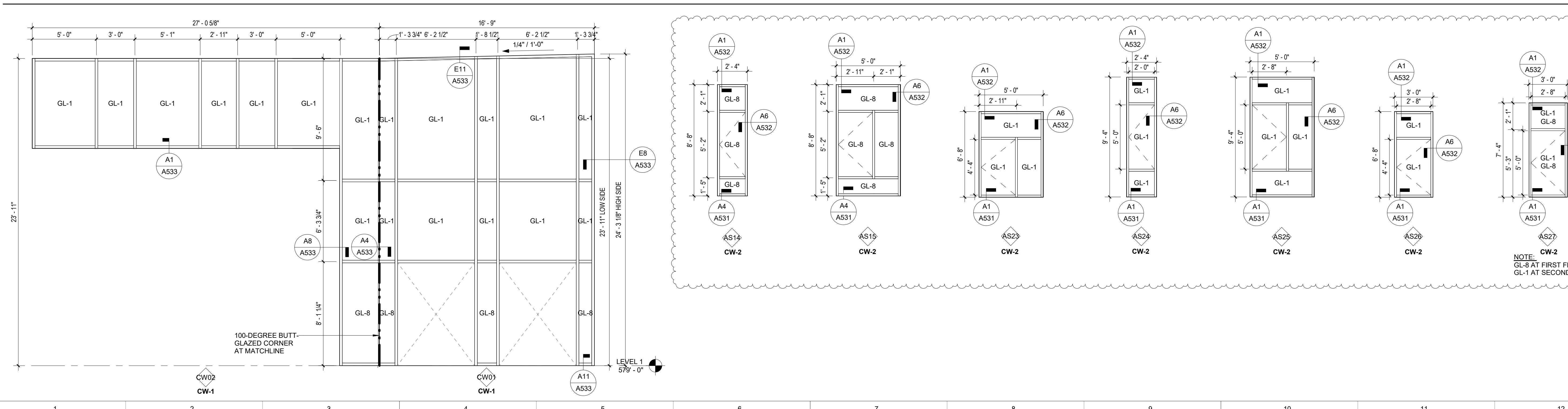
NOTE: ALL EXTERIOR STOREFRONT SYSTEMS TO BE SF-1, EXCEPT WHERE NOTED OTHERWISE.

STOREFRONT TYPE	DESCRIPTION	LOCATION
SF-1	2" X 4-1/2" FRONT SET	TYPICAL
SF-2	NOT USED	NOT USED
SF-3	2" X 6" FRONT SET	COURTYARD & CORR 120/220 EAST
SF-4	2" X 4-1/2" FRONT SET (STICK)	WELLNESS RM 114

CURTAIN WALL TYPE	DESCRIPTION	LOCATION
CW-1	2-1/2" X 7-1/2"	MAIN ENTRANCE
CW-2	2-1/2" X 4-3/4"	SOUTH ELEVATION

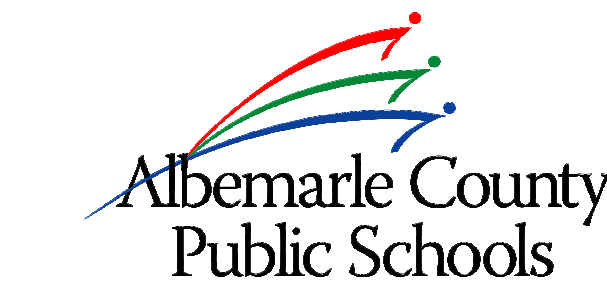
CURTAIN WALL ELEVATIONS

1/4"=1'-0"



1840 WEST BROAD STREET
SUITE 400
RICHMOND, VA 23220
v 804.788.4774

QUINNEVANS.COM



NEW CONSTRUCTION
HIGH SCHOOL
CENTER II

IFB No. 2025-IFB-1007262
STATE PROJECT NO.
002-88-01-100

Albemarle County
Public Schools

2775 Hydraulic Rd.
Charlottesville, VA 22901

No	Date	Description
1	10/25/2024	ADDENDUM 2

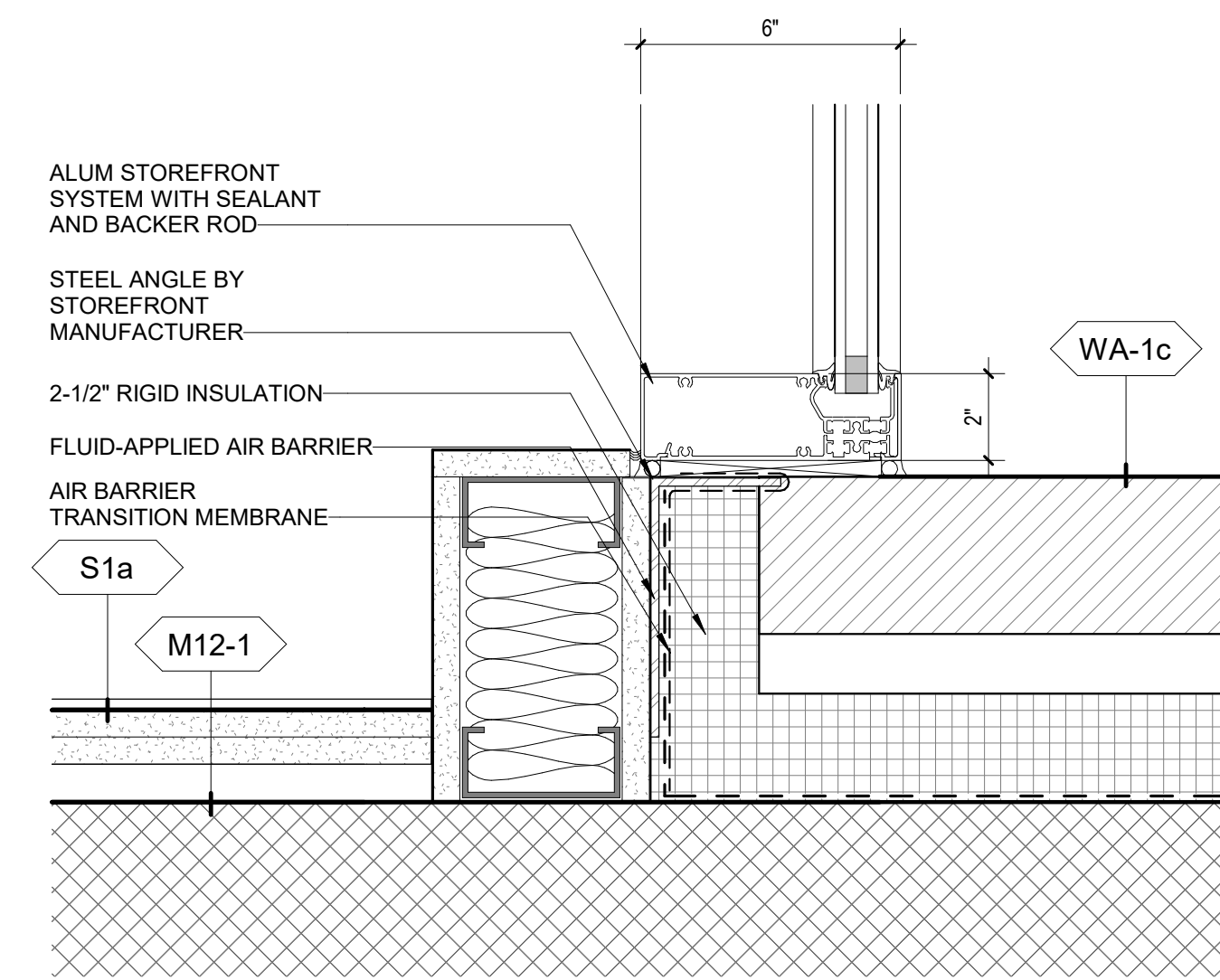
QEA No.41911390
BID DOCUMENTS
10/8/2024

EXT STOREFRONT &
CURTAIN WALL
ELEVS

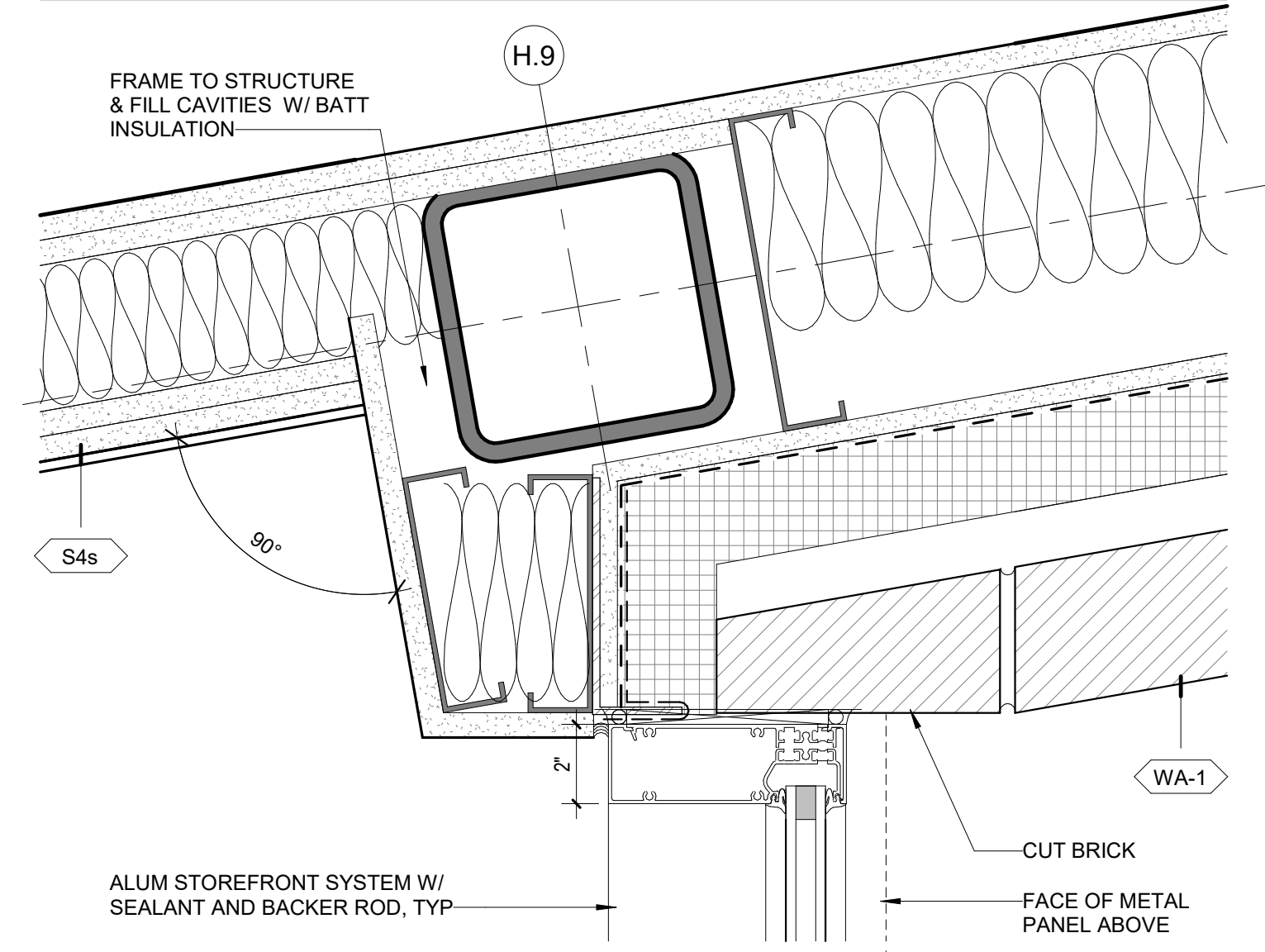
A211

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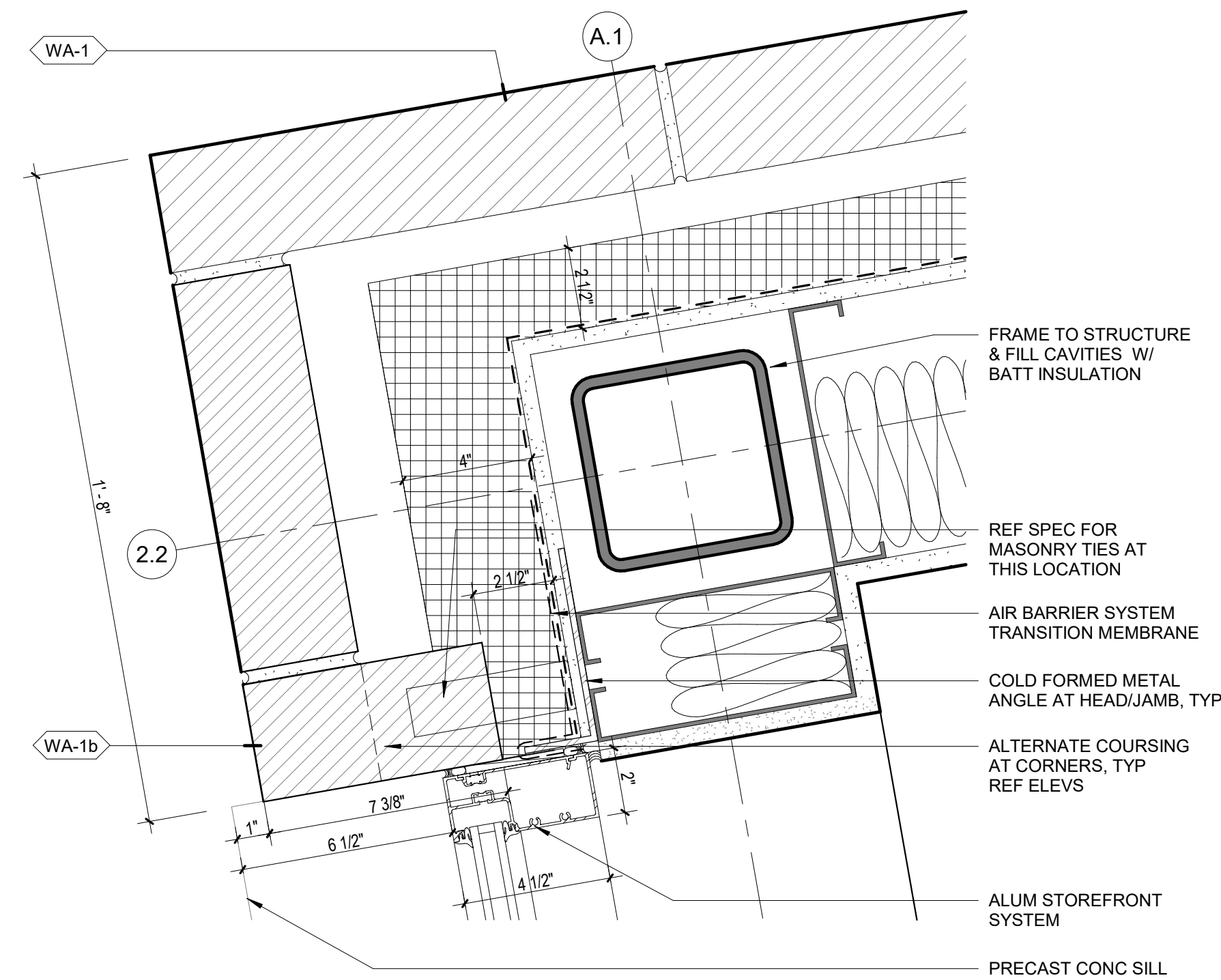
EXTERIOR STOREFRONT DETAILS (CONTINUED)



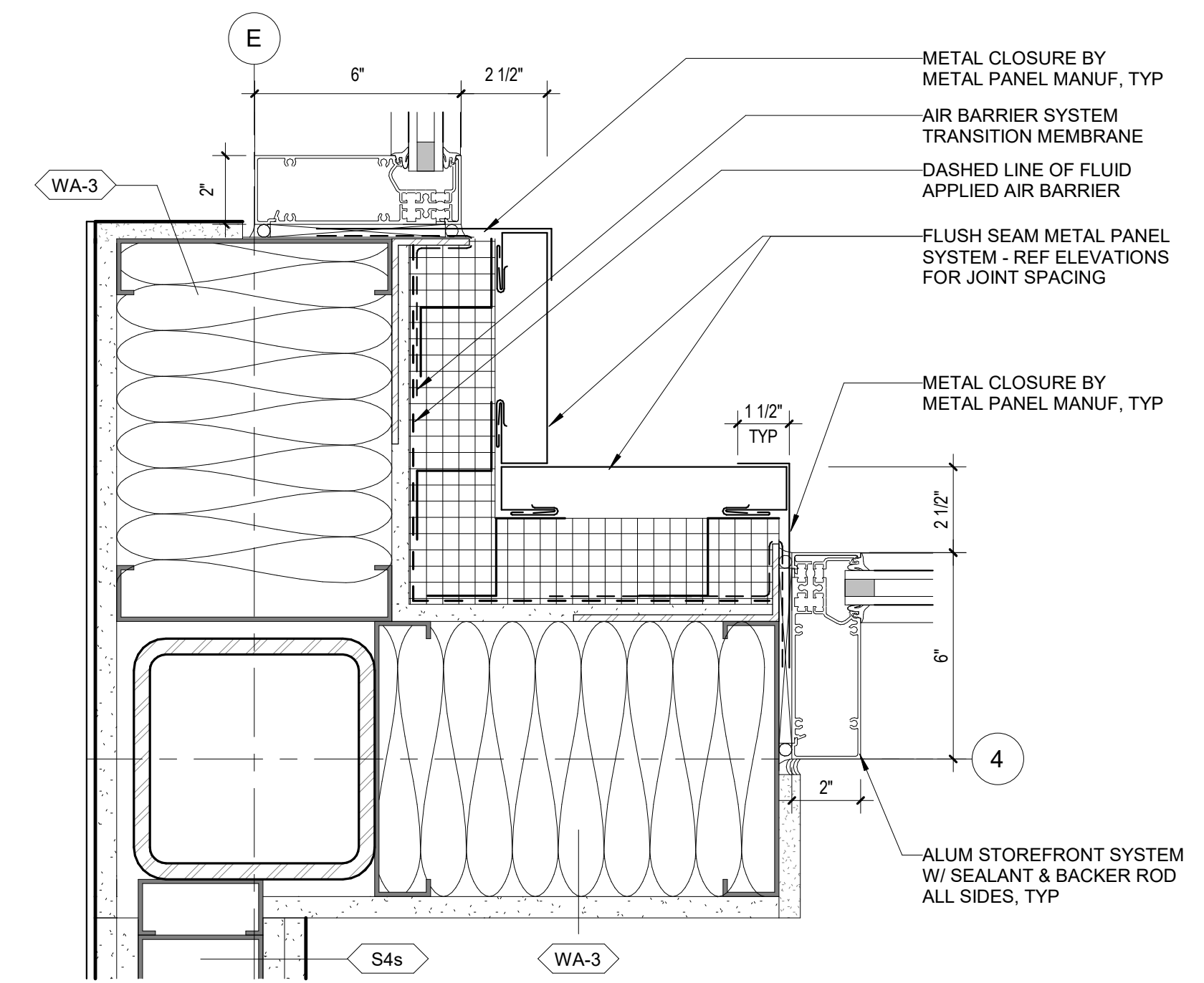
J1 PLAN - SF JAMB AT CORRIDOR 122 - 90 DEGREE
A532 3" = 1'-0"



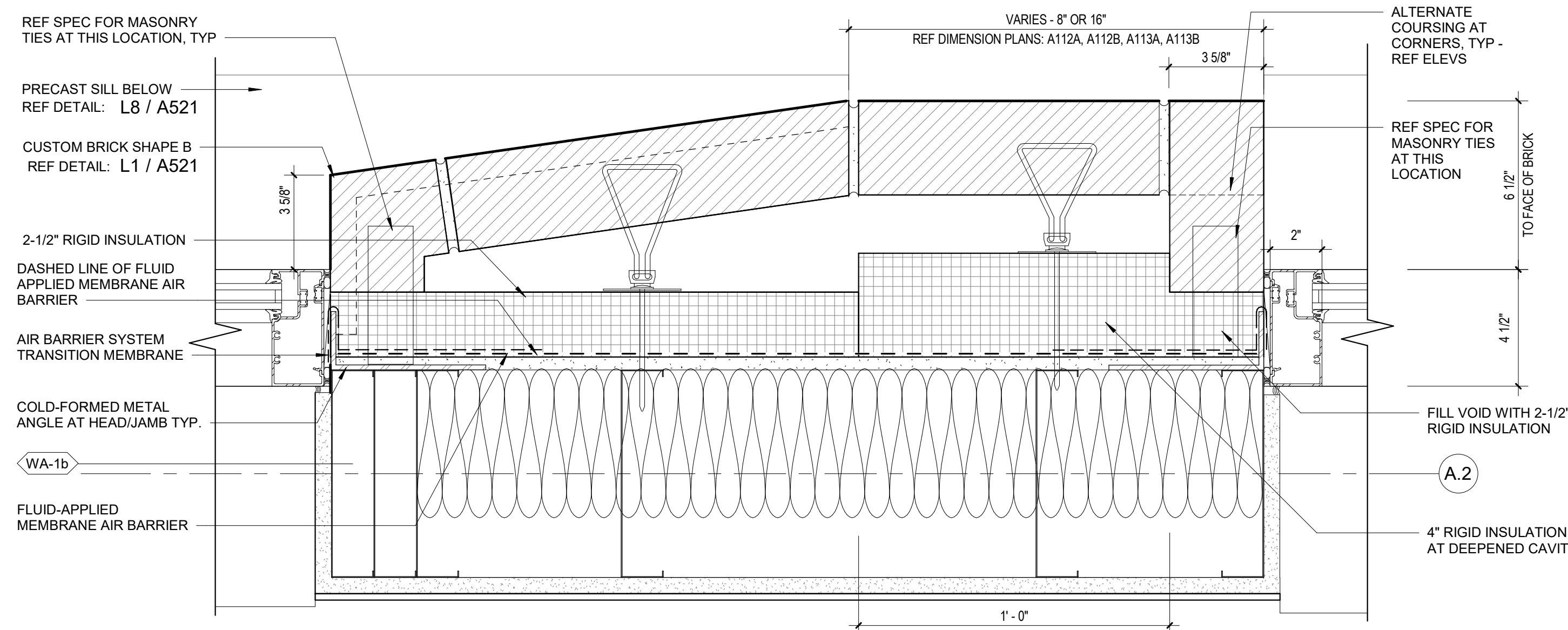
J4 PLAN - SF JAMB AT CORRIDOR 122 EAST - ANGLE
A532 3" = 1'-0"



J8 EXT PLAN DETAIL - CORRIDOR 122 WEST
A532 3" = 1'-0"

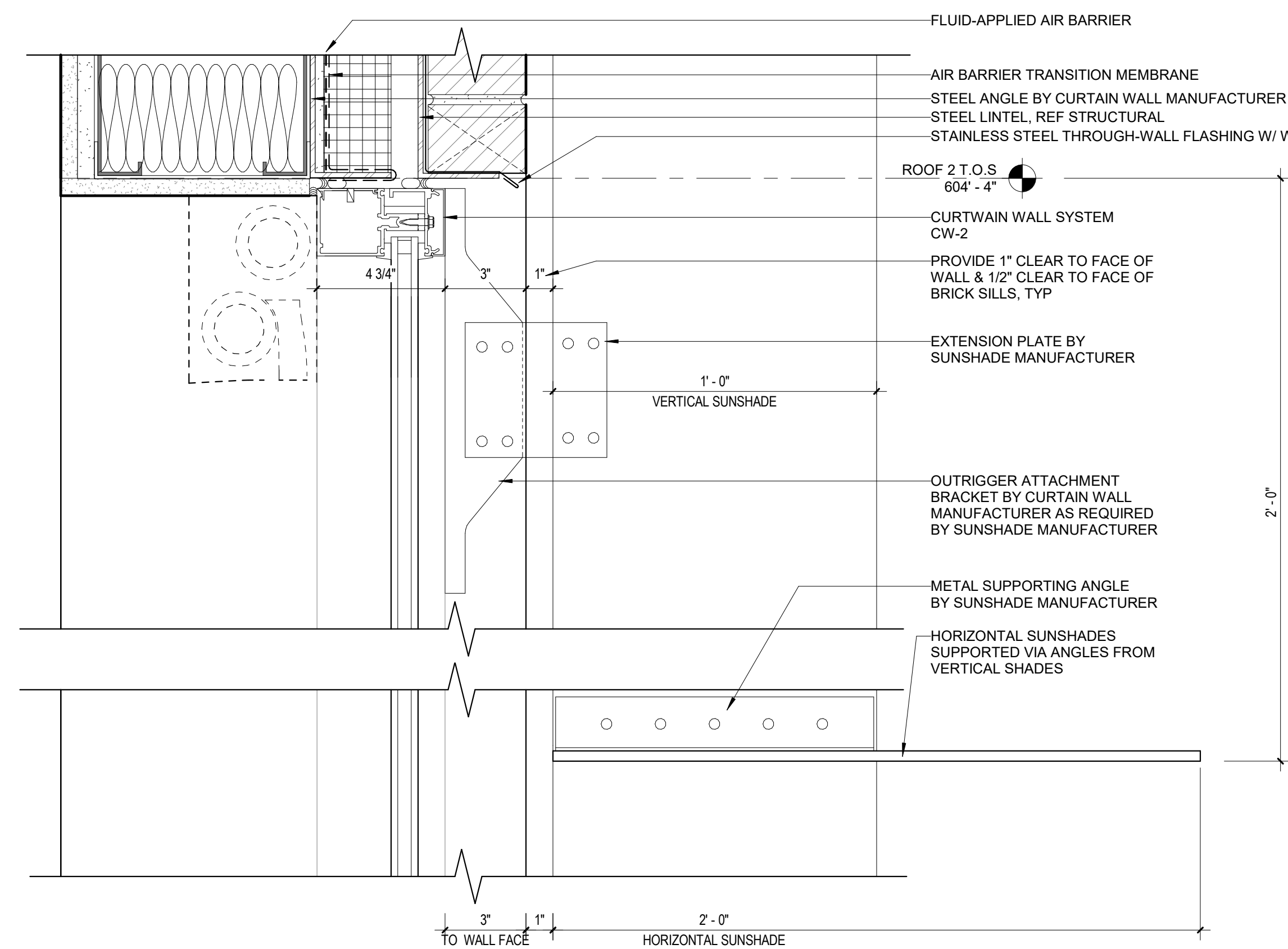


J12 PLAN - SF JAMB AT FLUSH SEAM MTL PANEL
A532 3" = 1'-0"

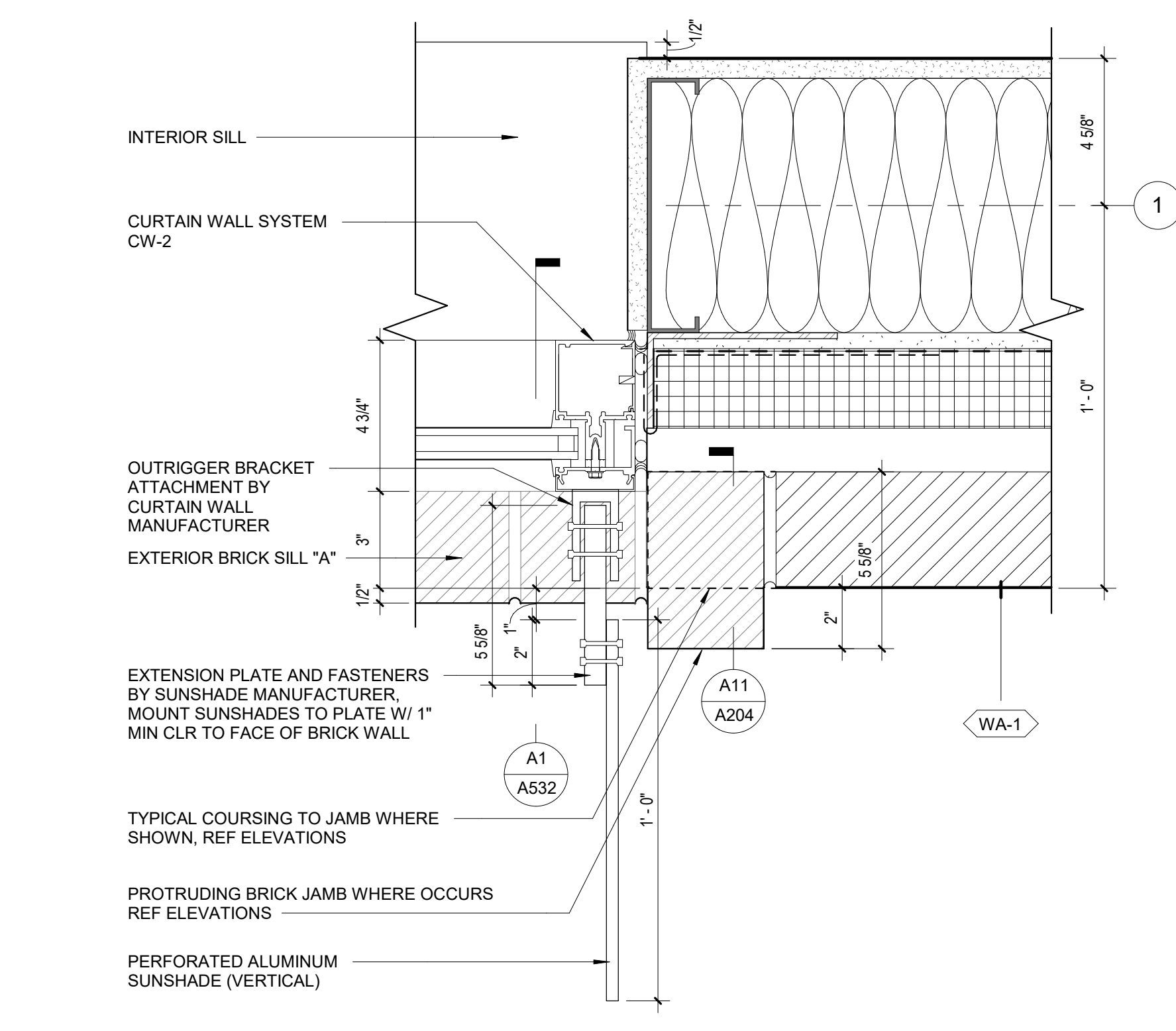


F1 PLAN - STOREFRONT AT ANGLED BRICK JAMB
A532 3" = 1'-0"

EXTERIOR CURTAIN WALL W/ OUTRIGGER SUNSHADE DETAILS



A1 SECTION - CURTAIN WALL HEAD, BRICK W/ SUNSHADES
A532 3" = 1'-0"



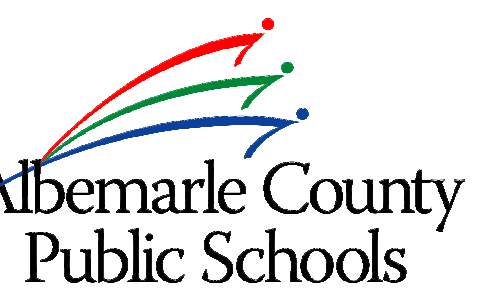
A6 PLAN - CURTAIN WALL JAMB AT SUNSHADE
A532 3" = 1'-0"

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1840 WEST BROAD STREET
SUITE 400
RICHMOND, VA 23220
v 804.788.4774

QUINNEVANS.COM



**NEW CONSTRUCTION
HIGH SCHOOL
CENTER II**

IFB No. 2025-IFB-1007262
STATE PROJECT NO.
002-88-01-100

Albemarle County
Public Schools

2775 Hydraulic Rd.
Charlottesville, VA 22901

No	Date	Description
1	10/25/2024	ADDENDUM 2

PROJECT MANAGER: KS
DRAWN BY: BG

QEA No.41911390

BID DOCUMENTS
10/8/2024

STOREFRONT
DETAILS

A532

DOOR SCHEDULE														MARK
MARK	LOCATION	PAIR	DOOR			FRAME			OTHER		REMARKS	MARK		
			WIDTH	HEIGHT	TYPE	MATL	GLASS	TYPE	MATL	HEAD			JAMB	LABEL
LEVEL 1														
100.1	VESTIBULE	PR	3'-0"	8'-0"	FG2	ALUM	GL-8	CW1	ALUM				1.0	100.1
100.2	VESTIBULE	PR	3'-0"	8'-0"	FG2	ALUM	GL-8	CW1	ALUM				3.0	100.2
100.3	VESTIBULE	PR	3'-0"	8'-0"	FG2	ALUM	GL-5	IS01	ALUM				2.0	100.3
100.4	VESTIBULE	PR	3'-0"	8'-0"	FG2	ALUM	GL-5	IS01	ALUM				4.0	100.4
101A.1	CORRIDOR	PR	3'-0"	8'-0"	FG2	ALUM	GL-5	IS05	ALUM				4.0	101A.1
101A.2	CORRIDOR	PR	3'-0"	8'-0"	FG2	ALUM	GL-5	AS20	ALUM				3.0	101A.2
102.1	RECEPTION		3'-0"	7'-0"	FG2	WD	GL-5	IS02	ALUM				11.0	102.1
102.2	RECEPTION		3'-0"	7'-0"	FG2	WD	GL-5	IS03	ALUM				12.2	102.2
102A	RECEPTION		3'-0"	7'-0"	N	WD	GL-3	HM01	HM	H1	J1		21.0	102A
103	OFFICE		3'-0"	7'-0"	N	WD	GL-4	HM03	HM	H1	J1		20.0	103
104	OFFICE		3'-0"	7'-0"	N	WD	GL-4	HM04	HM	H1	J1		20.0	104
105	OFFICE		3'-0"	7'-0"	N	WD	GL-4	HM03	HM	H1	J1		20.0	105
106.1	CONFERENCE ROOM		3'-0"	7'-0"	F	WD	GL-4	HM03	HM	H1	J1		26.0	106.1
106.2	CONFERENCE ROOM		3'-0"	7'-0"	F	WD	GL-4	CONCEALED	HM	H3	J3		27.0	106.2
107	WORKROOM		3'-0"	7'-0"	F	WD	GL-4	CONCEALED	HM	H3	J3		22.0	107
107A	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM01	HM	H1	J1		25.0	107A
108	CLINIC		3'-0"	7'-0"	G	WD	GL-4	HM06	HM	H1	J1		21.0	108
108A	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM01	HM	H1	J1		25.0	108A
109	OFFICE		3'-0"	7'-0"	F	WD	GL-4	HM05	HM	H1	J1		20.0	109
110	COUNSELING		3'-0"	7'-0"	G	WD	GL-4	HM06	HM	H1	J1		21.0	110
110A	STOR		3'-0"	7'-0"	F	WD	GL-4	HM01	HM	H1	J1		16.0	110A
111	FOCUS ROOM		3'-0"	7'-0"	G	WD	GL-4	HM01	HM	H1	J1		20.0	111
112	OFFICE		3'-0"	7'-0"	G	WD	GL-4	HM09	HM	H1	J1		20.0	112
113	FOCUS ROOM		3'-0"	7'-0"	G	WD	GL-4	HM01	HM	H1	J1		20.0	113
114	WELLNESS ROOM		3'-0"	7'-0"	G	WD	GL-4	HM06	HM	H1	J1		21.0	114
115a	TABLES/CHAIR STORAGE		3'-0"	7'-0"	F	WD	GL-4	CONCEALED	HM	H3	J3		17.0	115a
115b	AV		3'-0"	7'-0"	F	WD	GL-4	HM01	HM	H1	J1		16.0	115b
116.1	SERVING		3'-0"	7'-0"	F	HM							30.0	116.1
116.2	SERVING		3'-0"	7'-0"	F	HM							23.0	116.2
117	COMMONS		3'-0"	7'-2"	FG2	ALUM	GL-3	AS07	ALUM				5.0	117
117A	KITCHEN		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		17.0	117A
117B	DRY STORAGE		3'-0"	7'-0"	F	HM							17.0	117B
117C	CUST		3'-0"	7'-0"	F	WD	GL-4	HM01	HM	H1	J1		21.0	117C
117D	LAUNDRY		3'-0"	7'-0"	L	HM							21.0	117D
117E	TOILET		3'-0"	7'-0"	F	HM							25.0	117E
117F	DISH ROOM		3'-0"	7'-0"	F	HM							30.0	117F
118.1	CORRIDOR	PR	3'-0"	7'-0"	G	HM	GL-8	HM02	HM	H4	J4		8.0	118.1
118.2	CORRIDOR		4'-0"	7'-0"	F	HM							21.0	118.2
119A	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119A
119B	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119B
119C	TOILET		2'-6"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119C
119D	TOILET		2'-6"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119D
119E	TOILET		2'-6"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119E
119F	TOILET		2'-6"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119F
119G	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119G
119H	TOILET		3'-0"	7'-0"	F	WD	GL-4	HM02	HM	H2	J2		25.0	119H
120	CORRIDOR	PR	3'-0"	7'-0"	FG2	WD	GL-7	IS07	ALUM				15.0	120
121.1	CULINARY LAB		3'-6"	7'-0"	FG2	WD	GL-4	HM10	HM	H2	J2		21.0	121.1
121.2	CULINARY LAB		3'-0"	8'-0"	FG2	ALUM	GL-8	AS18	ALUM				5.0	121.2
121.3	CULINARY LAB		2'-6"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		25.0	121.3
122.1	LEARNING STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM12	HM	H5	J5		21.0	122.1
122.2	LEARNING STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-8	AS10	ALUM				5.0	122.2
123.1	PROJECT STUDIO		3'-0"	7'-0"	G	WD	GL-4	HM12	HM	H5	J5		21.0	123.1
123.2	PROJECT STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-8	AS16	ALUM				5.0	123.2
123.3	PROJECT STUDIO		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		30.0	123.3
123A	PROJECT STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM14	HM	H1	J1		21.0	123A
124.1	ADVANCED MANUFACTURING LAB		3'-0"	7'-0"	G	WD	GL-4	HM13	HM	H1	J1		11.0	124.1
124.2	ADVANCED MANUFACTURING LAB		3'-0"	7'-0"	FG2	ALUM	GL-8	AS16	ALUM				9.0	124.2
124.3	ADVANCED MANUFACTURING LAB		3'-0"	7'-0"	F	HM							30.0	124.3
124.4	ADVANCED MANUFACTURING LAB	PR	3'-0"	7'-0"	F	HM							22.0	124.4
125.1	PROJECT STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM21	HM	H1	J1		21.0	125.1
125.2	PROJECT STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-8	AS10	ALUM				5.0	125.2
126.1	PREP ROOM		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		21.0	126.1
126.2	PREP ROOM		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		21.0	126.2
127.1	PROJECT STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM21	HM	H1	J1		21.0	127.1
127.2	PROJECT STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-1	AS10	ALUM				5.0	127.2
128.1	LEARNING STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM12	HM	H5	J5		21.0	128.1
128.2	LEARNING STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-8	AS10	ALUM				5.0	128.2
129.1	LEARNING STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM12	HM	H5	J5		21.0	129.1
129.2	LEARNING STUDIO		3'-0"	7'-0"	FG2	ALUM	GL-8	AS10	ALUM				5.0	129.2
130.1	TEACHER COLLABORATION		3'-0"	7'-0"	G	WD	GL-3	HM11	HM	H5	J5		21.0	130.1
130.2	TEACHER COLLABORATION		3'-0"	7'-0"	FG2	ALUM	GL-8	AS10	ALUM				5.0	130.2
130A	TOILET		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		25.0	130A
130B	WELLNESS		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		24.0	130B
131	MDF		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		16.0	131
132	LEARNING STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM21	HM	H5	J5		21.0	132
133	PROJECT STUDIO		3'-0"	7'-0"	G	WD	GL-3	HM12	HM	H5	J5		21.0	133
134.1	CUSTODIAL RECEIVING		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		16.0	134.1
134.2	CUSTODIAL RECEIVING	PR	4'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		16.0	134.2
135	ELEC		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H1	J1		45 MIN	135
136	CUSTODIAL		3'-0"	7'-0"	F	WD	GL-3	HM01	HM	H2	J2		16.0	136
137.1	GROUP ROOM		3'-0"	7'-0"	G	WD	GL-3	IS08	ALUM				21.0	137.1
137.2	CORRIDOR		3'-0"	7'-0"	G	WD	GL-3	IS08	ALUM				21.0	137.2
138	TOILET		3'-0"	7'-0"	F	WD	GL-3	HM02	HM	H2	J2		25.0	138
139	TOILET		3'-0"	7'-0"	F	WD	GL-3	HM02	HM	H2	J2		25.0	139
140.1	CORRIDOR		3'-0"	7'-0"	G	WD	GL-3	IS08	ALUM				21.0	140.1
140.2	GROUP ROOM		3'-0"	7'-0"	G	WD	GL-3	IS08	ALUM				21.0	140.2
G001	DUMPSTER ENCLOSURE GATE	PR	11'-6"	8'-0"	GATE	STL							29.0	G001
G002	DUMPSTER ENCLOSURE GATE	PR	11'-6"	8'-0"	GATE	STL							29.0	G002
S001.1	STAIR 1		3'-0"	7'-0"	F	WD	GL-3	HM02	HM	H2	J2		45 MIN	S001.1
S001.2	STAIR 1		3'-0"	7'-0"	FG2	ALUM	GL-8							