

BID ADDENDUM NO. (5)

1/22/26

Hammondsport Central School District
2025 Capital Improvements Project
1925-014

(SED #57-25-01-04-0-002-025 – Main Building)
(SED #57-29-01-04-05-003-008 – Bus Garage)

The following Addendum items shall be considered a part of the contract documents prepared by HUNT ENGINEERS, ARCHITECTS, LAND SURVEYORS & LANDSCAPE ARCHITECT, DPC. Bid Document date of (10/27/2025).

Clarifications issued by this Addendum:

1. NA

Project Manual Sections issued by this Addendum:

01 32 16B – Phasing and Staging Plans
04 01 00 – Maintenance of Masonry
32 18 29 – Synthetic Field Sport Surfacing
33 41 16.16 – Geocomposite Subdrainage

Drawings issued by this Addendum:

MB-A1.6 – ROOF PLAN – AREA A
MB-A3.2 – BUILDING & WALL SECTIONS
MB-A6.1 – DOOR SCHEDULES & TYPES
AD5-A1 – DEMOLITION PLAN @ CORR. C-3
AD5-A2 – DEMOLITION PLAN @ LIBRARY
AD5-A3 – FIRST FLOOR PLAN @ LIBRARY
AD5-E1 -FIRE CURTAIN POWER – ALT #12
AD-P1 – ROOF STORM PLAN – ALT. #3

Revisions to Project Manual issued by this Addendum:

ITEM AD5-1 Refer to 01 23 00 - Alternates

ADD Specification Section 1.4, L. to read as: " L. Alternate 12 – 2-Hour Fire Barrier Improvement: Provide all work associated with the improvement of exterior walls adjacent to the new canopy construction to be a 2-hour barrier. This includes but not limited to: Door, frame and glazing change in fire rating as shown on the door schedule. The addition of fire/smoke curtains in (2) locations as shown on AD#5-E1 in AD#5 addenda document. Base bid includes the exterior door systems with no fire rating."

ITEM AD5-2 Refer to 01 32 16B – Phasing and Staging Plans

AMEND Hammondsport CIP Bid Milestone Schedule as issued by this addendum

ITEM AD5-3 Refer to 04 01 00 – Maintenance of Masonry

ADD Specification 04 01 00 – Maintenance of Masonry as issued by this addendum.

ITEM AD5-4 Refer to Section 23 18 29 – Synthetic Field Sport Surfacing

DELETE Specification Section 32 18 29 - Synthetic Field Sport Surfacing in its entirety.

ADD Specification Section 32 18 29 - Synthetic Field Sport Surfacing, issued by this addendum.

ITEM AD5-5 Refer to Section 33 41 16.16 – Geocomposite Subdrainage

ADD Specification Section 33 41 16.16 – Geocomposite Subdrainage, issued by this addendum.

Revisions to Drawings issued by this Addendum:

ITEM AD5-6 Refer to MB-A0 Series

AMEND Keynote 37 to read: "REMOVE EXISTING CURTAIN WALL SYSTEM IN ITS ENTIRETY AS REQUIRED. REMOVAL TO BE RETAINED FOR REINSTALLATION INTO ORIGINAL OPENING. ORIGINAL WINDOW SYSTEM THRU WALL FLASHING IS FAILING. REMOVAL TO FACILITATE REMOVAL AND REPAIR/NEW THRU WALL FLASHING FOR THE ENTIRETY OF OPENING". As issued by this addendum

ITEM AD5-7 Refer to MB-A0.1 – FIRST FLOOR DEMO PLAN – AREA A

AMEND Detail 1 as shown on Drawing AD5-A1- DEMOLITION PLAN @ CORR. C-3 as issued by this addendum.

ITEM AD5-8 Refer to MB-A0.2 – FIRST FLOOR DEMO PLAN – AREA B

AMEND Detail 1 as shown on Drawing AD5-A2- DEMOLITION PLAN @ LIBRARY as issued by this addendum.

ITEM AD5-9 Refer to MB-A1 Series

AMEND Keynote 17 to read: "REINSTALL SALVAGED CURTAIN WALL SYSTEM IN ITS ORIGINAL WALL OPENING. REMOVE AND PROVIDE NEW THRU WALL FLASHING FROM OPENING INTO EIFS SYSTEM. REPAIR EIFS AS REQUIRED FOR REMOVAL AND INSTALLTION. PROVIDE EXTERIOR ALUMNIUM SILL OUT TO FACE OF EIFS AND TURN DOWN FAÇADE 1" TO FACILITATE WATER DRAINAGE". As issued by this addendum

ITEM AD5-10 Refer to MB-A1.2 – FIRST FLOOR PLAN – AREA B

AMEND Detail 1 as shown on Drawing AD5-A3- FIRST FLOOR PLAN @ LIBRARY as issued by this addendum.

DELETE Keynote 4 from walls in C-11 - CORRIDOR

ITEM AD5-11 Refer to MB-A1.6 – ROOF PLAN – AREA A

DELETE Drawing MB-A1.6 – ROOF PLAN – AREA A in its entirety.

ADD Drawing MB-A1.6 – ROOF PLAN – AREA A issued by this addendum.

ITEM AD5-12 Refer to MB-A2.1 – FIRST FLOOR REFLECTED CEILING PLAN – AREA A

ADD Plan note to Detail 1 in Corridor 79C to read as: "Alternate #12 – Provide fire curtain to (2) existing window systems. Basis of design to be SD240GS 2-Hr Fire Protective Smoke Curtain. Curtain back mounted to exterior wall, exposed vertical rails with roller box concealed above ACT and bottom flush mounted to ACT."

ITEM AD5-13 Refer to MB-A3.2 – BUILDING & WALL SECTIONS

DELETE Drawing MB-A3.2 – BUILDING & WALL SECTIONS in its entirety.

ADD Drawing MB-A3.2 – BUILDING & WALL SECTIONS as issued by this addendum.

ITEM AD5-14 Refer to MB-A6.1 – DOOR SCHEDULES & TYPES

DELETE Drawing MB-A6.1 – DOOR SCHEDULES & TYPES in its entirety.

ADD Drawing MB-A6.1 – DOOR SCHEDULES & TYPES as issued by this addendum.

ITEM AD5-15 Refer to MB-H1.2 – FIRST FLOOR DEMOLITION PLAN – AREA C

ADD Note to five unit ventilators with note D8 to read:
"ALTERNATE #11"

ITEM AD5-16 Refer to MB-H1.2 – FIRST FLOOR DEMOLITION PLAN – AREA C

ADD Note to EV-14 thru EV-21 and EV-23 thru EV-27 to read.
"Provide refrigerant shut-off box model SOV096C23S"

ITEM AD5-17 Refer to MB-E1.2 – FIRST FLOOR POWER PLAN – AREA A

AMEND Detail 1 with drawing AD5-E1 – SMOKE BARRIER POWER, as issued with this addendum.

ITEM AD5-18 Refer to MB-E3.2 – ELECTRICAL SCHEDULES

AMEND MECHANICAL EQUIPMENT CONTROL SCHEDULE, to add note E.
“Circuit solenoid provided by Mechanical Contractor in-line with EV. Solenoids to be provided to EV-14 thru EV-21, and EV-23 thru EV-27. Coordinate with other trades prior to starting work.”

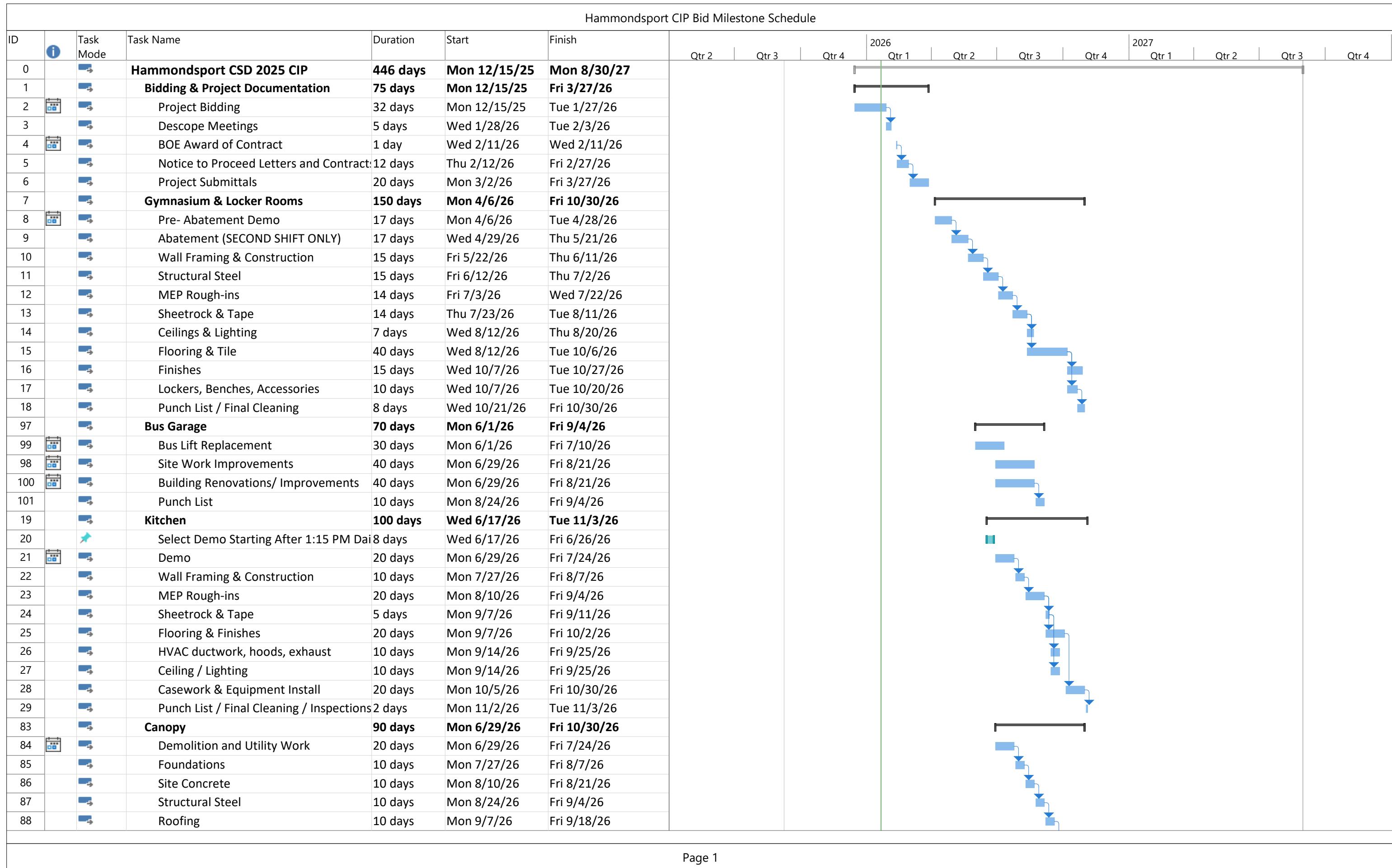
ITEM AD5-19 Refer to AD4-E4 – SERVICE ENTRANCE SWITCHBOARD PROVISIONS

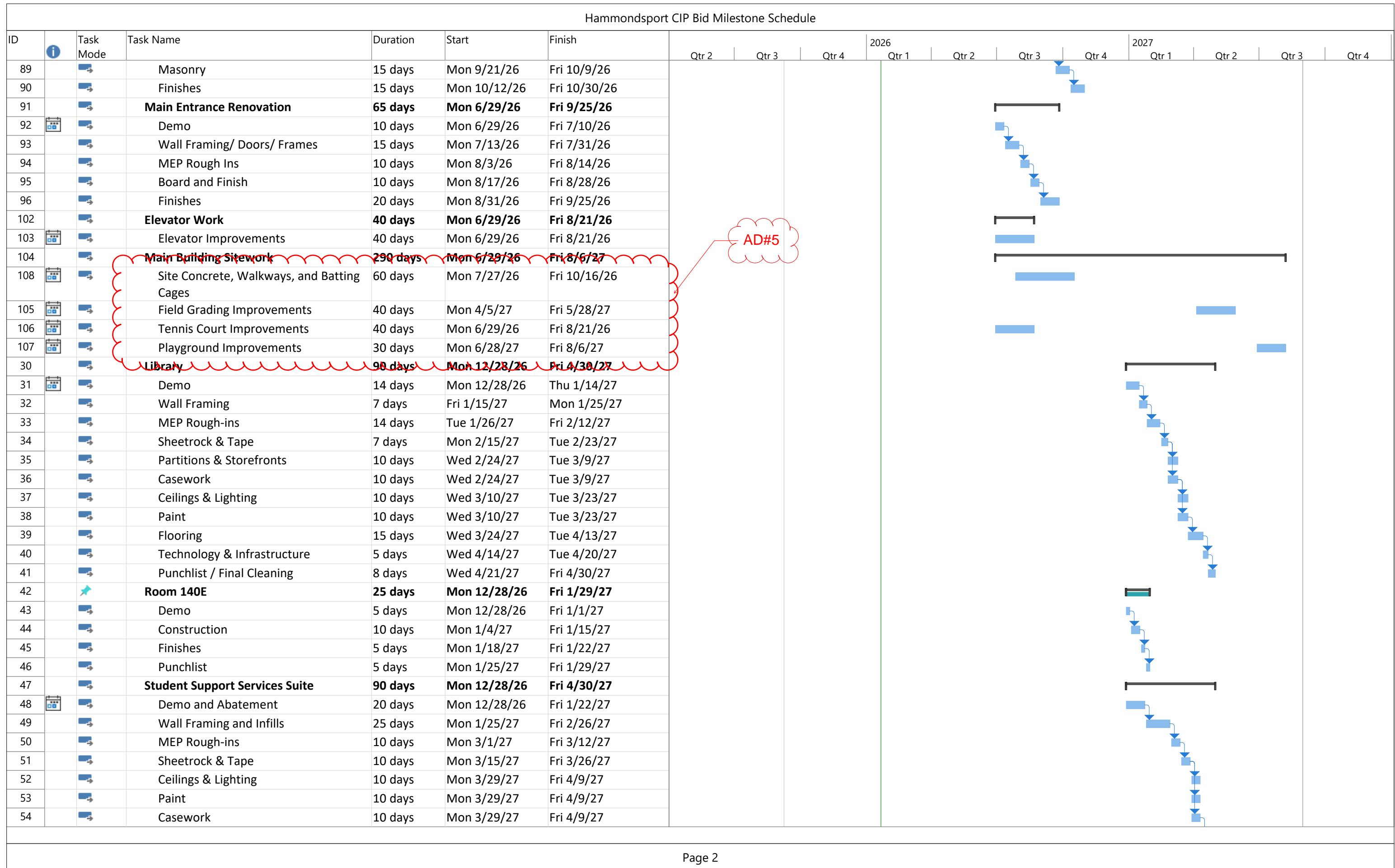
AMEND Note P19 to read:
“PROVIDE AND INSTALL 208Y/120V 3PH 1200A SERVICE ENTRANCE RATED DISCONNECT SWITCH IN CRAWL SPACE ACROSS FROM EXISTING MDP. CONNECT BY TAPPING EXISTING BUS OF MDP. PROVIDE 208Y/120V 3PH 1200A RATED SWITCHBOARD IN CRAWL SPACE NEXT TO EXISTING MDP1 AND MDP2. CONNECT TO SERVICE ENTRANCE RATED DISCONNECT SWITCH. CIRCUIT USING (3) SETS OF (4) - #600, (1) -3/0G IN 4"C. PROVIDE (4) 400A/3P CIRCUIT BREAKERS TO SERVE NEW ELECTRICAL EQUIPMENT AS SHOWN IN DRAWINGS. PROVIDE SHOP DRAWING OF LOCATIONS OF SWITCHBOARD / DISCONNECT TO ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.”

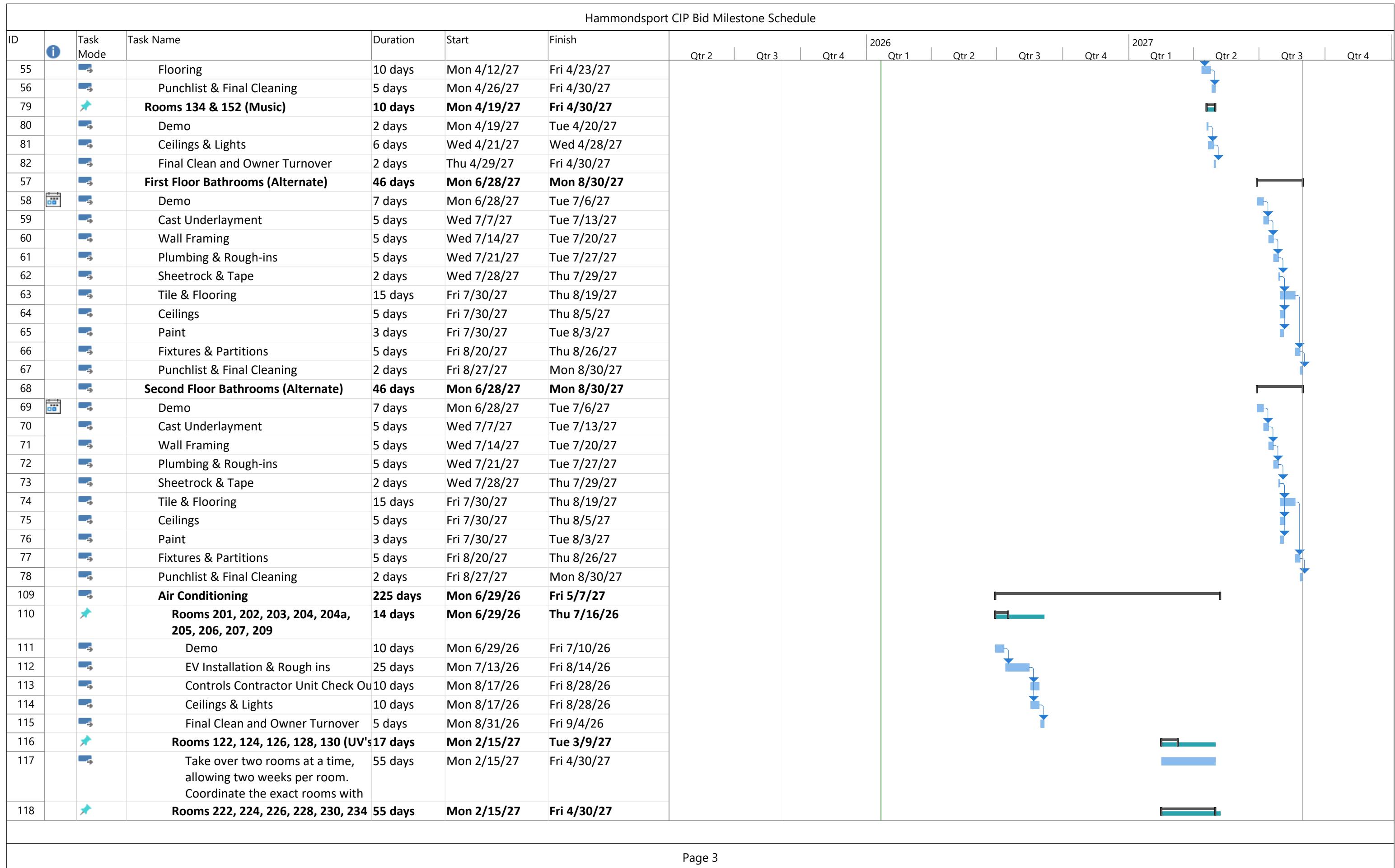
ITEM AD5-20 Refer to MB-T1.X SERIES DWGS

AMEND Construction Notes – Technology, Note #4 to read as: “NOT USED”.

End of Addendum (5)







Hammondsport CIP Bid Milestone Schedule														
ID	Task Mode	Task Name	Duration	Start	Finish	2026			2027					
						Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
119		Take over two rooms at a time, allowing two weeks per room. Coordinate the exact rooms with	60 days	Mon 2/15/27	Fri 5/7/27									

SECTION 04 01 00
MAINTENANCE OF MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Water cleaning of masonry surfaces.
- B. Replacement of architectural pre-cast stone units.
- C. Repointing mortar joints.
- D. Repair of damaged masonry.

1.2 RELATED REQUIREMENTS

- A. Section 04 05 11 - Masonry Mortaring and Grouting.
- B. Section 04 20 00 - Unit Masonry: Brick masonry units.

1.3 REFERENCE STANDARDS

- A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on cleaning compounds and cleaning solutions.
- C. Product Data: Provide manufacturer's product data and MSDS sheets on CFRP systems, including physical and chemical characteristics, material specifications for each component, limitations on use of system, construction or application instructions, maintenance instructions, and general manufacturer's recommendations regarding each system.
- D. Samples: Submit four samples of decorative block, face brick, and stone units to illustrate matching color, texture and extremes of color range.
- E. Manufacturer's Instructions: For cleaning materials, indicate special procedures, conditions requiring special attention.

1.5 QUALITY ASSURANCE - MASONRY WORK

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
 1. Maintain one copy of each document on project site.
- B. Restorer: Company specializing in masonry restoration with minimum three years of documented experience.

1.6 MOCK-UPS

- A. Locate where directed.
- B. Mock-up may remain as part of the Work.

1.7 FIELD CONDITIONS - MASONRY WORK

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Restoration and Cleaning Chemicals:
 - 1. Diedrich Technologies, Inc: www.diedrichtechnologies.com/#sle.
 - 2. HMK Stone Care System: www.hmkstonecare.com/#sle.
 - 3. PROSOCO: www.prosoco.com/#sle.

2.2 CLEANING MATERIALS

- A. Cleaning Agent: Detergent type.
- B. Cleaning Agent: 0.5 lb of sodium hydrosulphite mixture to one gallon of water.
- C. Acid Solution: Clean, stain free, commercial hydrochloric (muriatic) acid, mixed one part to 10 parts of potable water.

2.3 MORTAR MATERIALS

- A. Comply with requirements of Section 04 05 11.

2.4 MASONRY MATERIALS

- A. Brick: Section 04 20 00.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces to be cleaned are ready for work of this section.

3.2 PREPARATION

- A. Protect surrounding elements from damage due to restoration procedures.
- B. Carefully remove and store removable items located in areas to be restored, including fixtures, fittings, finish hardware, and accessories; reinstall upon completion.
- C. Separate areas to be protected from restoration areas using means adequate to prevent damage.
- D. Mask immediately adjacent surfaces with material that will withstand cleaning and restoration procedures.

3.3 REBUILDING

- A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.
- B. Support structure as necessary in advance of cutting out units.

- C. Cut away loose or unsound adjoining masonry as directed.
- D. Build in new units following procedures for new work specified in other section(s).
- E. Mortar Mix: Colored and proportioned to match existing work.
- F. Ensure that anchors are correctly located and built in.
- G. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.

3.4 VENEER STABILIZATION

- A. Install Helical Veneer Stabilization Anchors per manufacturers recommendations.
- B. Spacing location and embedment as indicated on the drawings.

3.5 REPOINTING

- A. Perform repointing prior to cleaning masonry surfaces.
- B. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch depth or until sound mortar is reached.
- C. Do not damage masonry units.
- D. When cutting is complete, remove dust and loose material by brushing.

3.6 CLEANING NEW MASONRY

- A. Verify mortar is fully set and cured.
- B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

3.7 RESTORATION CLEANING

- A. Clean surfaces and remove large particles with wood scrapers or non-ferrous wire brush.

3.8 AGING

- A. Rub in new masonry work to match, as close as possible, adjacent original work.
 - 1. Use carbon black in small amounts, rubbing in well with burlap rags.
- B. After each application, dust off surplus and wash down with low pressure hose. Allow surface to dry before proceeding with succeeding applications.
- C. Continue process until acceptance.

3.9 CLEANING

- A. Immediately remove stains, efflorescence, or other excess resulting from the work of this section.
- B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.
- C. Clean surrounding surfaces.

END OF SECTION

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SECTION 32 18 29
SYNTHETIC FIELD SPORT SURFACING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Drainage Base Layer, including subgrade preparation, subbase stone and drainage pipe.
- B. Synthetic Grass System for Athletic Field including carpet, infill and markings.

1.2 RELATED REQUIREMENTS

- A. Section 31 22 00 - Grading.
- B. Section 31 23 16 - Excavation.
- C. Section 31 23 23 - Fill.
- D. Section 32 11 23 - Aggregate Base Courses.
- E. Section 32 33 45 - Athletic Field Equipment.
- F. Section 33 41 16.16 - Geocomposite Subdrainage.

1.3 REFERENCE STANDARDS

- A. ASTM D1335 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings; 2021.
- B. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)); 2012 (Reapproved 2021).
- C. ASTM D2256/D2256M - Standard Test Method for Tensile Properties of Yarns by the Single-Strand Method; 2021.
- D. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016 (Reapproved 2021).
- E. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils; 1963 (Reapproved 2007).
- F. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.; 1999a (Reapproved 2014).
- G. ASTM D5823 - Standard Test Method for Tuft Height of Pile Floor Coverings; 2019.
- H. ASTM D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Coverings; 2010.
- I. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2023.
- J. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).
- K. ASTM F1936 - Standard Specification for Impact Attenuation of Turf Playing Systems as Measured in the Field; 2010 (Reapproved 2015).

- L. ASTM F2898 - Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood Test Method; 2011 (Reapproved 2019).
- M. NFHS (Guide) - Court and Field Diagram Guide; current edition.
- N. STC (GCRI) - Guidelines for Crumb Rubber Infill Used in Synthetic Turf Fields; 2010, Revised (2014).
- O. ASTM C88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
- P. ASTM D1577 - Standard Test Method for Linear Density of Textile Fibers; 2007 (Reapproved 2018).
- Q. ASTM D5034 - Standard Test Method for Breaking Strength and Elongation of Textile fabrics (Grab Test).
- R. ASTM F1015 - Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces.
- S. ASTM F3188 - Standard Specification for Extractable Hazardous Metals in Synthetic Turf Infill Materials.
- T. Synthetic Turf Council - Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

1.4 SUBMITTALS

- A. Within 72 hours of Bid Opening, as requested, the Contractor shall submit:
 1. Three (3) copies of a list of references from 10 similar exterior installations of the specified material with comparable square footage to this project in the last five years.
 2. Three (3) copies of the required prepaid insurance policy supported from a third party, A.M. Best, A-rated or better domestic insurance carrier.
 3. Three (3) copies of the Product Data, Detailed Specifications and Literature for the synthetic turf system and the individual components, including but not limited to the fiber, primary and secondary backing, rubber infill materials, and adhesives. Submittal shall include all properties, characteristics, and testing results listed in this specification.
 4. One (1) boxed 10 x 10 inches minimum sample of proposed synthetic turf system. Box must allow visibility of the proposed turf section.
 5. One (1) 18 x 18 inches minimum sample of the carpet with the fiber in place, without infill, including the primary and secondary backing.
 6. The Contractor shall provide in writing the names of three (3) existing clients for whom significant after-the-sale service work has been performed or for whom the Contractor has performed Warranty Services.
- B. Two (2) weeks prior to ordering of materials, the Contractor shall submit the following information below as a complete submittal. Because of the nature of the submittal, submittal review will not commence until all information is provided. All certifications, test results, shop drawings and other product information shall be checked and stamped as approved by the Contractor before submittal to the Architect.
 1. Samples:
 - a. One (1) boxed 10 x 10 inches min. sample of the proposed synthetic turf system - illustrating details of the complete and finished synthetic turf system product. including the infill materials as proposed to be installed. Box must allow visibility of the proposed turf section.
 - b. Two (2) - one quart samples of the sand infill material.
 - c. Two (2) - one quart samples of the rubber infill material.
 - d. Two (2) - 18 x 18 inches min. samples of the carpet with the fiber in place, without infill, including the primary and secondary backing.

- e. Two (2) - 6 x 12 inches min. samples of all available fiber colors for game lines and markings for final selection by the Owner.
2. Certifications, Five (5) copies each:
 - a. Documentation certifying that the Contractor has an additional prepaid insurance policy in place from a third-party "A"-rated domestic insurance carrier in accordance with the requirements specified in the Quality Assurance Section of this specification.
 - b. Sample Warranty: The Contractor and the Turf Manufacturer shall provide a sample copy of insured, non-prorated warranty and third-party insurance policy information which meets or exceed all of the warranty requirements defined in this specification.
 - c. A signed letter from the Contractor and Turf Manufacturer that certifies:
 - 1) The products utilized for the synthetic turf system meet or exceed the specified requirements contained in this Specification and in the Contract Drawings. The letter shall include a written statement from the Turf Manufacturer detailing both the synthetic turf warranty period and the expected useful life of the turf.
 - 2) No lead or lead chromate components are utilized in the manufacturing of the turf system.
 - 3) The turf system complies with and meets the latest standards of the STC (GCRI) - Synthetic Turf Council guidelines and recommendations for installation and rubber infill materials.
 - 4) The turf system does not violate any other manufacturer's patents, patents allowed or patents pending.
 - 5) All of the required manufacturing and installation experience and training certification requirements specified in the Quality Assurance Section of this specification will be met.
3. Documentation of Experience:
 - a. Resume of Installation Supervisor who will be present on site throughout the duration of installation.
 - b. Resumes of Designated Installation Crew.
 - c. References for Contractor and Turf Manufacturer experience required in the Quality Assurance Section of this specification.
 - d. Certification by Turf Manufacturer of designated installation crew and Installation Supervisor.
4. Turf Laboratory Test Results: Five (5) Certified copies of independent (third-party) laboratory testing reports for the following tests:
 - a. Pile height, face width and total fabric weight - per ASTM D5848.
 - b. Primary and secondary backing weights - per ASTM D5848.
 - c. Tuft bind - per ASTM D1335.
 - d. Grab tear strength - per ASTM D5034.
 - e. Pill Burn test - per ASTM D2859.
5. Subbase and Choker Stone Gradation Calculations and Laboratory Test Results, five (5) copies each:
 - a. All testing and gradation calculations shall be performed by a certified independent testing firm - retained and paid for by the aggregate supplier.
 - b. Gradation Test Results for aggregate materials defined in Section 2.1 Drainage Base Layer Materials of this specification.
 - c. Maximum dry density attainable through the Standard Proctor compaction test, ASTM D698.
6. Financial Statements; The Contractor and the Turf Manufacturer - at the Request of the Architect, shall provide a current audited company financial statement for each of the past three (3) years.

7. Five (5) copies of all Product Data, Detailed Specifications and Literature shall be submitted for the overall synthetic turf system and the individual components, including but not limited to the fiber, primary and secondary backing, rubber infill materials, drainage rate for complete installed system, adhesives, and the recommended field groomer. Submittal shall include all properties and characteristics listed in this specification. The Turf Manufacturer must submit the fiber manufacturer's name, type of fiber and composition of fiber.
8. Five (5) copies of Installation Procedures shall be submitted for the synthetic turf system and individual components.
9. Shop Drawings shall be submitted which include the following, five (5) copies each:
 - a. Field Layout
 - b. Field Marking Plans (in color), drawn to a scale of no greater than 1 inch = 30 feet with the required line and marking colors clearly shown, including all details and dimensions for all markings and their layout for the high school sports of Football, Soccer and Lacrosse. Provide individual plans for each sport and a composite plan that shows the lines and markings for all sports. Details shall be at a scale that provides a clear presentation.
 - c. Roll/Seaming Layout Plan.
 - d. Methods of attachment, field openings and perimeter conditions. Include all details for conditions where synthetic turf will be applied to covers, plugs, etc.

C. Prior to installation of the shock pad, the General/Site Contractor shall submit a minimum of three (3) copies of the following:

1. An As-Built Topographic Survey of the Prepared Finishing Stone Aggregate shall be performed and submitted per the requirements of Field Quality Control Section of this specification.
2. A signed letter that that planarity checks have been performed on the Finishing stone aggregate layer in accordance with the requirements of Section 3.1 Examination of this specification.

D. Prior to Final Acceptance, the Contractor shall submit a minimum of three (3) copies of the following:

1. Field Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance for the synthetic turf system.
2. Project Record Documents: Record actual locations of seams, anchors or other pertinent information.
3. Warranty: Submit Manufacturer Warranty and ensure that forms have been completed in the Owner's name and registered with Manufacturer.

1.5 QUALITY ASSURANCE

- A. Provide a full-time on-site Installation Supervisor to review and coordinate the installation of the entire synthetic turf system, including subgrade preparation, and installation of the subbase and drainage system. Installation Supervisor must be present on-site through the duration of the installation.
- B. The Contractor shall meet the following criteria:
 1. Substantiate the ability to secure bonding capacity in excess of \$1,000,000 for this project.
 2. Demonstrate a track record where the Surety or Bonding Company has not been required to finish work.
 3. Demonstrate a financial strength to fully service and warrant the systems during the period of the warranty.
- C. Manufacturer/Installer's Experience:

1. The Turf Manufacturer must be experienced in the manufacture and installation of this specific type of artificial turf system and provide references of this specific synthetic turf from 100 similar exterior installations, 15 of which must have occurred in the State of New York, of the specified material with comparable square footage to this project.
2. The Contractor must have actively been in business, under its current name and ownership for at least the past five years; and must have a minimum of 25 synthetic turf fields in the United States that are currently in use and have been in use for at least five years.
3. The Contractor must provide competent workmen skilled in this specific type of synthetic turf installation.
 - a. The designated Installation Supervisor on the project must be certified, in writing by the turf manufacturer, as competent in the installation of this material, including sewing, cutting, gluing, shearing seams, proper installation of the infill mixture and brushing operations. This supervisor must be certified by the distributor and have installed at least 25 synthetic turf systems of a similar size in the past 5 years.
 - b. The designated installation crew shall be certified in writing by the Turf Manufacturer and have installed at least 25 synthetic turf systems of a similar size in the past 5 years.
4. The Contractor shall have a representative on-site to certify the installation and warranty compliance.
5. The Contractor and/or Turf Manufacturer shall not have had a surety or bonding company finish work on any contract within the last 3 years.
6. The Contractor and/or Turf Manufacturer shall never have been disqualified or barred from performing work from any public entity.

1.6 WARRANTY

- A. The Contractor and Turf Manufacturer shall provide a warranty to the Owner that includes the following in writing:
 1. The turf warranty shall be from a single source, single policy and shall provide full coverage for all defects in all materials and workmanship of the synthetic turf system for its intended usability and playability for a period of ten (10) years from the date of Final Completion and acceptance of the turf field. The Turf Manufacturer must verify that their on-site representative has inspected the installation and that the work conforms to the manufacturer's requirements.
 2. In addition to the Contractor's/Manufacturer's single source warranty, an additional prepaid insurance policy supported from a third party, A.M. Best, A-rated or better domestic insurance carrier shall be provided. The insurance policy and manufacturer warranty shall be written specifically naming the field being constructed as part of this project and shall additionally require payment of a claim to be made directly to the Owner of said field. Evidence of such coverage must be submitted and approved.
 3. The turf warranty shall include general wear and damage caused from ultra-violet degradation.
 4. The turf warranty shall specifically list what components and properties are covered by the warranty. The list shall include but not be limited to any and all defects or failures relating to construction of the synthetic turf system, drainage through the synthetic turf system, synthetic turf seam rupture, synthetic turf yarn ultraviolet stability; excessive wear and tensile strength.
 5. The turf warranty shall cover defects in the workmanship of installation and further warrants that the installation was done in accordance with both the manufacturer's recommendations and any written directives of the manufacturer's on-site representative.
 6. The turf warranty shall include all necessary materials, labor, transportation costs, etc., to complete repairs or replacements. The warranty shall guarantee the availability of the same or better replacement materials for the synthetic turf system for the warranty period. The turf warranty must cover full replacement value of the total square footage installed including removal and disposal of failed turf system.

7. The turf warranty shall be non-prorated and shall not place limits on the amount of field's usage.
8. The turf warranty shall clearly define the conditions under which the manufacturer considers the warranty to be void.
9. The turf warranty shall define the typical time frame within which repairs will be initiated by the synthetic Contractor, once notice has been received requesting repairs.
10. The warranty shall guarantee the G-max ratings at the completion of construction and for the duration of the warranty as described in this specification.

B. All designs, markings, layouts, and materials shall conform to all currently applicable National Federation State High School Association rules and other standards that may apply to this type of synthetic turf installation.

C. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields used for sports listed previously. The materials as hereinafter specified, should be able to withstand full climatic exposure in the State of New York; be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic non clogging characteristic of flow through drainage allowing free movement of surface run-off through turf where such water may flow through the gravel blanket and into the field drainage system. The adhesive bonding and sewn seams of all system components shall provide a permanent, tight secure and hazard free athletic playing surface. All sheared and glued adhesive bonded and sewn seams shall, at a minimum, remain in place throughout the duration of the warranty period.

1.7 FIELD QUALITY CONTROL

A. Aggregate Material Testing: The Contractor responsible for the installation of the stone base shall retain and pay for the services of an independent testing agency, subject to approval by the Owner, to provide the following testing services. If any tested material is found to be non-compliant with the requirements of the Contract Documents, the Contractor shall bear the cost of correcting the non-compliant condition, including if necessary, the removal of all non-compliant material from the project site and replacement of the materials to comply with the required specifications. All re-testing associated with noncompliant material shall be paid for by the Contractor.

1. In-Place Density Testing: Density testing shall be performed on the installed and prepared dynamic base stone in accordance with ASTM D6938. One density test will be performed per 2,500 SF of placed dynamic base stone.
2. The installed subbase shall drain at a rate of not less than 100 inches per hour.
3. Gradation Testing: Gradation testing shall be performed on the dynamic base stone delivered to the project site in accordance with ASTM D422, Standard Test Method for Particle Size Analysis of Soils.
4. Additional Testing: The Owner reserves the right to request that additional tests be performed that are deemed necessary to confirm that the installation of materials associated with the new synthetic turf playfield system comply with the requirements of the Contract Documents.

B. As-Built Survey: The Contractor installing the aggregate base shall provide an as-built survey of the final compacted finishing stone depicting the grades within the synthetic turf field area in half foot contours. The survey shall be performed and signed by a licensed Surveyor, Registered in the State of New York. The drawing shall be developed at a scale of 1 inch = 20 feet. The survey shall depict elevations in a grid pattern with maximum intervals between survey points of 20 feet in both directions, including elevations along the field crown line and perimeter boundary. Each survey point number and its corresponding elevation shall be shown on the as-built drawing using an established project bench mark. If any high and low spots are identified, adjustments shall be made by Contractor providing the aggregate base by adding or removing material to conform to the specified planarity and grades. Repair areas shall be re-graded and re-compacted to the specified tolerances prior to installing the finishing stone layer of the aggregate base course.

C. Shock Attenuation Evaluation

1. G max Rating Requirements for Synthetic Turf System:
 - a. G max Rating Testing shall be performed in accordance with ASTM F1936.
 - b. Testing shall be paid for by the Contractor and performed by an Independent Testing Agency approved by the Owner.
 - c. G max Rating: No single test shall exceed 200g, and the average G max rating shall not exceed 165g.
2. At the Substantial Completion of each Turf System, perform ten (10) in place G max tests at locations to be determined by the Owner and/or Architect. If any test results do not comply with the G max Rating Requirements specified, take corrective action as necessary to achieve satisfactory results. Perform additional testing to verify the results as directed by the Architect.
3. During Warranty Period, the Owner reserves the right to have the field tested for shock attenuation at its own cost at any time it deems necessary. If at any time, the G-max Rating does not comply with the G-max Rating Requirements specified, it is the responsibility of the Contractor to take corrective action as necessary to achieve satisfactory results. If the G max rating exceeds the allowable limits after three attempts to repair the high rating, replace the field including disposal and removal of existing surface within 90 calendar days at no cost to the Owner.

D. Infill Depth: Measurement of infill by Independent Testing Agency, approved by the Owner, to verify depth shall be taken at a minimum of ten (10) locations throughout each installed playfield. The amount of installed infill shall in all cases meet the minimum specified depth with an allowable tolerance of plus or minus $\frac{1}{4}$ inch.

1.8 MAINTENANCE

- A. The synthetic Contractor shall provide training for the Owner regarding the recommended maintenance program for the synthetic turf field. The training shall include a detailed review of the turf maintenance manual required to be provided by the synthetic turf manufacturer.
- B. Maintenance shall include site visit three months after installation and add/subtract infill material to account for typical break-in condition. Adjust Owners grooming equipment at time of installation and as necessary during the first three months of use to create optimum performance.
- C. Extra Materials: Upon final completion, provide the following materials directly to the Owner in the minimum quantities specified:
 1. Seaming Tape - 200 LF
 2. Seaming Epoxy - One standard sized pail.
 3. Turf fabric - 500 SF with at least one piece 15 feet wide by 10 feet long.
 4. 4 inch Wide Colored Fabric - Minimum 100 LF of each color specified for inlaid linestriping.
 5. 2,000 pounds of ground rubber infil in weatherproof containers.

PART 2 PRODUCTS

2.1 DRAINAGE BASE LAYER MATERIALS

- A. Geotextile Filter Fabric: Non-woven polypropylene geotextile fabric. Mirafi 140N or approved equal as shown on drawings.
- B. Geotextile Stabilization Fabric: Woven polypropylene geotextile fabric. Mirafi 500X or approved equal as shown on drawings.
- C. Drainage Pipe: See Section 33 41 16.16 - Geocomposite Subdrainage.

D. Base Stone Aggregate Material: AASHTO #57 clean washed stone at a minimum depth of five (5) inches or per Turf Manufacturer recommendations.

Sieve	Approximate Percent Passing
1-1/2"	100%
1"	95-100%
1/2"	25-60%
#4	0-10%
#8	0-5%

E. Finishing Stone Aggregate Material: Crushed limestone blend, clean washed stone at a minimum depth of one (1) inch or per Turf Manufacturer recommendations.

Sieve	Approximate Percent Passing
1/2"	100%
3/8"	95-100%
#4	70-85%
#8	45-60%
#16	25-40%
#100	8-15%
#200	0-5%

2.2 SYNTHETIC GRASS SYSTEM

A. General Carpet Requirements:

1. Shall have the characteristics of a flow-through drainage system allowing free movement of surface run-off through the turf and directly into the prepared aggregate base and into the field drainage system. The system and all components shall be non-toxic with respect to the users and the environment including no intentionally added PFAS.
2. Face Yarn Type: 100% U.V. resistant polyethylene blended multifilament system consisting of ridged monofilament and parallel-long slit film fibers.
3. Primary Backing: Double layered polypropylene porous fabric treated with U.V. inhibitors.
4. Secondary Backing: Porous, heat activated urethane to permanently lock fiber tufts in place.
5. Color: As shown on drawings and approved by Owner.
6. Alternating shade 25%/75% and 75%/25%.
7. Construction: Broadloom tufted.
8. Furnished in 15' wide rolls of sufficient length to extend from side line to sideline without splices and including white perimeter line and 5 yard football lines tufted into each role.
9. Turf panels including sideline panels and inlaid markings, must be sewn, glued panel seams are not acceptable.
10. All markings are to be factory tufted or inlaid at the project site. No line painting will be allowed.

B. Minimum Carpet Properties:

1. Minimum Yarn Linear Density: minimum 5,000 denier for slit-film fibers and minimum 7,200 denier for rigid monofilament. (ASTM D1577)
2. Minimum Yarn Thickness: 100 microns for slit-film fibers and 240 microns for rigid monofilament.
3. Minimum Yarn Breaking Strength: 33 lbs. nominal. ASTM D2256/D2256M
4. Pile Height: 2.25 inches nominal. ASTM D5823
5. Minimum Pile Weight - 43 oz/sy minimum. ASTM D5848
6. Minimum Primary Backing Weight - 7.0 oz/sy minimum. ASTM D5848
7. Minimum Secondary Backing Weight - 16 - 22 oz/sy. ASTM D5848
8. Minimum Total Product Weight: 75 oz/sy. ASTM D5848
9. Minimum Tuft Bind: 8 lbs/force without infill. ASTM D1335
10. Minimum Grab Tear (width): >200 lbs/force (ASTM D5034)

11. Minimum Grab Tear (length): >200 lbs/force (ASTM D5034)
12. Maximum Relative Abrasiveness Index: 25 (ASTM F1015)
13. Minimum Permeability: 20 inches/hour. (ASTM D4491)
14. Flammability (Pill Burn): Pass ASTM D2859
15. Maximum Yarn Elongation: 40% nominal.
16. Minimum Stitch Rate: 9/3 inch.
17. Maximum Tufting Gauge: 3/4 inch.

C. General Resilient Infill Requirements:

1. Controlled resilient layered granular mixture, partially covering carpet, consisting of graded clean silica sand and processed rubber crumb.
2. Minimum Weight: 6 lbs per square foot.
3. Infill Depth: 1.75 inches deep minimum.
4. Infill Sand: Specifically-graded dust-free silica sand. The sand shall be delivered to the site graded, washed and dried. The sand particles shall be rounded to sub-angular so as to minimize abrasion to the athlete and synthetic turf fibers.
5. Infill Rubber: Ambiently processed, hammer-milled clean, dust-free, contaminant free and metal-free SBR rubber crumb. The SBR particles shall be processed and sized under rigid specifications and in accordance with the Turf Manufacturer's quality control program.
6. Infill materials must meet or exceed ASTM F3188 requirements.
7. Infill material to be supplied by an SBR crumb rubber manufacturer.

D. Accessories: Glue, thread, paint, seaming fabric and other materials used to install and mark the synthetic turf surfacing system shall be provided as recommended by the Turf Manufacturer.

E. Nailer: Pressure Treated wood nailer provided at all edges as shown on drawings and detail. See unit pricing.

PART 3 EXECUTION

3.1 PRE-CONSTRUCTION MEETINGS:

- A. An interview shall take place at a time and date to be determined by the Architect. Present at this meeting shall be the Architect, Landscape Architect, Owner's Representative(s), the Project Manager and Site Superintendent for the Prime Contractor and the Project Manager and Project Foreman for the Contractor. The purpose of this meeting will be to review turf product and installation means and methods, to interview and ascertain the experience and competence of the Turf Manufacturer, as well as, the on-site Project Foreman for this project and to review the project schedule. Contractor shall submit all required submittals, warranties and insurance at or before this meeting.
- B. A second meeting shall take place at a time and date to be determined by the Architect. Present at this meeting shall be the Architect, Landscape Architect, Owner's Representative(s), and the Project Manager for the Site Contractor. The purpose of this meeting shall be to review and confirm schedule. (with particular attention on the turf installation) and to confirm that the turf product has been ordered by way of notarized copies of the original confirmed Purchase Order and guaranteed delivery date.

3.2 GENERAL REQUIREMENTS

- A. The Contractor shall strictly adhere to the installation procedures outlined under this and following sections. Any variance from these requirements must be accepted in writing, by the Contractor and Turf Manufacturer, and submitted to the Architect/Owner, verifying that the changes do not in any way affect the warranty.

- B. Do not install synthetic turf system when ambient temperature is below 45 degrees F, above 110 degrees F, if materials are wet, or if rain is falling or pending. Materials can be installed under dry conditions only.
- C. Notify the Architect when each major component is near completion for review prior to proceeding to next operation.

3.3 PREPARATION

- A. Excavation: Site Contractor shall excavate natural grass field, topsoil, and subsoil as necessary to meet the subgrade elevations and established in the Contract Documents plans and details. See 31 23 16 - Excavation for related requirements.
- B. Refer to 31 22 00 - Grading, and 31 23 23 - Fill for related requirements.
- C. The subgrade shall be sloped at a minimum of 0.5% to mirror final field grades, unless otherwise directed in the plans and details. Subgrade is to be sloped toward the drainage piping at the perimeter of the field.
- D. Subgrade shall be proof rolled and compacted to a minimum of a 90% compaction rate. Notify Architect if soils not able to achieve the proper compaction. Areas which cannot achieve the proper compaction shall be over-excavated and structural fill shall be installed, recompacted, and retested.
- E. Excess and unsuitable soils shall be removed from the project site.
- F. Site Contractor shall install all conduit and other utility piping in accordance with the plans, details, and appropriate specifications, including required backfilling, compaction and testing.

3.4 DRAINAGE BASE LAYER INSTALLATION

- A. Install geotextile fabric over excavated and prepared subgrade. Provide a 36 inch minimum overlap at all seams. The entire field shall be covered with fabric prior to the base aggregate application.
- B. Install lateral subdrainage pipes on geotextile fabric as shown on the plans and connect to perimeter drain pipes.
- C. Base Stone: The installation of the base stone shall only begin after the drainage pipe installation has been inspected and approved by the Architect. Installation of the Free Draining Base Stone shall follow procedures that protect the subgrade soils and drainage pipe. The drainage pipe network and its existing elevations shall not be disrupted through ground pressures from trucks, dozers or by any other means.
 1. The subgrade shall be dry before undertaking the placement of base stone.
 2. Delivery trucks shall enter the field only from the designated entrance point. Base stone shall be dumped closest to the entrance first and continuously worked towards the furthest point of the field. Extreme care must be taken not to disturb subgrade or drainage network.
 3. Track-type dozers shall push out the stone from behind the pile onto and toward the field center. Dozers shall only traffic the aggregate they are spreading.
 4. Bulldozer blades shall be equipped with a laser-guided hydraulic system. Care shall be taken not to disturb or contact the subgrade soils with the dozer blades or tracks. All equipment trafficking over the drainage aggregate shall insure there is a minimum depth of 4 inches of aggregate between the geotextile fabric and the dozer track ground contact position.
 5. When the stone spreading is completed, the surface shall be further-firmed by a 5-ton roller. Static vibration shall not be part of this process.
 6. The stone shall be left firm, but not over-compacted as to protect the porosity and drainage capabilities of the aggregate profile.

7. After the base stone has been uniformly spread throughout the surface, the surface shall receive a final laser finished grade. This process shall be accomplished using a turf-type tractor, or lightweight grader, equipped with high flotation tires and a hydraulically controlled laser blade.
8. Verify the compaction of the base stone course is 95% according to the Modified Proctor procedure ASTM D1557, and that the surface tolerance does not exceed $\frac{1}{4}$ inch over 10 feet and $\frac{1}{2}$ inch from design grade. The synthetic Contractor shall provide a minimum of 48 hours notice to the Owner and the Architect prior to scheduling final compaction or planarity testing.

D. Finishing Stone Aggregate: The installation of the finishing stone shall only begin after the base stone has been inspected and approved by the Architect.

1. The finishing stone layer shall be applied using laser-controlled low ground pressure grading equipment.
2. Arrange for the inspection of the Finishing Stone and curbs using a laser level and plot on a 10 foot topographical grid. Based on this topographical survey, arrange for the suitable fine grading of the Finishing Stone area, including proper rolling and compacting.
3. Final layer of stone must be installed at a depth as indicated on drawings. Finished aggregate base must be proof-rolled by means of 2- to 5-ton roller. It shall also be flush with top of nailer.
4. Notify the Architect prior to the commencement of fine grading, for a visual inspection of Finishing Stone condition. If contamination or disturbance of the Base Stone is evident, remove finishing stone as directed by Architect for inspection and testing of Base Stone.
5. Provide grading and compaction to the lines, grades, slopes and typical sections indicated on the Contract Drawings. Compact the finishing stone within the range of 90% dry density attainable through the Standard Proctor compaction test ASTM D698. It is necessary to maintain the compaction within this range to provide stability also to maintain the permeability characteristics of the prepared material. Take precautions and use the appropriate equipment to avoid over-compaction of the finishing stone aggregate. Perform compaction operations in both directions.
6. Planarity tolerance for the completed finishing stone aggregate installation is $\frac{1}{4}$ inch over 10 feet from any given point in any direction, as measured with a 10- foot long straightedge. Finished grade of the prepared finishing stone shall not deviate by more than $\frac{1}{8}$ -inch from the extrapolated design grade. This tolerance is required over the entire field.
7. A planarity check letter shall be performed and a certification shall be submitted by the Contractor.
8. Additionally, an as-built survey in accordance with this specification shall be performed.
9. Arrange for Turf Manufacturer to inspect and certify that the finishing stone area to receive the synthetic turf surfacing is ready for installation of the underlayment shock pad; is perfectly clean as the installation commences; and will be maintained in that condition throughout the installation process.
10. Stone base installing Contractor to preform field permeability testing according to ASTM F2898 - Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood Test Method. Results to be submitted to Architect for approval prior to proceeding.
 - a. Minimum allowable permeability rates:
 - 1) New fields: 16 inches per hour.
 - 2) Existing fields being recovered: 10 inches per hour.
11. When the Contractor confirms conditions as being acceptable to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Architect. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

3.5 SYNTHETIC GRASS CARPET INSTALLATION

- A. The rolls of turf shall be rolled out a minimum of four hours prior to starting seaming procedures and allowed to relax/expand.
 - 1. All visible wrinkles shall be stretched out before seaming.
 - 2. Seams shall be flat, tight and permanent with no separation or fraying.
 - 3. Synthetic turf yarn fabric that is trapped or glued between seams shall be freed from the seams by hand or other approved method to an upright position prior to the commencement of brushing and top dressing procedures.
- B. Lay full width rolls across the field of sufficient length to permit full cross field installation from sideline to sideline without head or cross seams in the main playing area between sidelines. The first roll shall begin with the longest perpendicular cross-field distance.
- C. Provide 99% sewn installation. Minimal gluing will be permitted to repair problem areas, corner completions, and to cut in any logos or Inlaid lines as required. All seams shall be sewn using double bagger stitches and polyester thread or adhered using seaming tape and high grade adhesive per the manufacturer's standard procedures. Make all seams flat, tight and permanent without separation or fraying.
- D. **GLUING OF ROLLS SHALL NOT BE ACCEPTABLE.**
- E. When all rolls of the playing surface have been attached, install sideline areas at right angles to the playing field synthetic turf area.
- F. Install synthetic turf for the covers of the power/communication boxes, plugs for the drainage system clean outs, filler plug covers for the football goal posts and any other "in-ground" components within the limits of the synthetic turf field.
- G. Attach the synthetic turf surfacing to the perimeter edge as detailed on the Contract Documents and in strict accordance with the Turf Manufacturer's standard recommendations.

3.6 FIELD MARKINGS

- A. Standards:
 - 1. All designs, markings, layouts, field lines and materials for indicated sports previous in accordance with the current National Federation of State High School Associations NFHS (Guide) "Rules Book" for each sport.
 - 2. All lines and markings for the batting cages.
 - 3. All preliminary colors of field lines and markings are included in the Contract Documents. Final color selection will be made by the Owner.
- B. For the purpose of developing the Contract Bid Price, the Contractor shall assume that all field lines are independent of each other and that no common field lines will be permitted. In all instances where field lines for different sports are defined to be in the same location the lines shall be tufted or inlaid directly adjacent to each other. Installation of common sport field lines will be considered as part of a playfield linestriping shop drawing provided by the contractor during the submittal process.
- C. If NFHS (Guide) rules provide a range of acceptable line widths, the contractor shall include the cost to provide the widest for the bid price, unless specifically indicated otherwise on the Contract Documents. The final determination of line widths shall be made during the review of submittals.
- D. Inlaid lines, markings, and logos are to be installed by shearing and gluing and in accordance with the requirements of the Turf Manufacturer. The primary and secondary backing are not to be cut when installing inlaid lines.
- E. At completion of the carpet and markings installation, notify Architect for review three (3) days before proceeding with installation of subsequent component.

3.7 INFILL MATERIAL INSTALLATION

SYNTHETIC FIELD SPORT SURFACING

- A. Apply infill materials in numerous thin lifts. Install infill to a 1 3/4 inch depth at the weight specified for the manufacturer minimum 6 lbs per sq ft 3 lbs sand and 3 lbs rubber. Place infill with a 1/2 inch void to the top of the fibers.
- B. Install Infill materials to fill voids between the fibers and to allow the fibers to remain vertical and non-directional.
- C. Between applications, the infill area shall be brushed with a motorized rotary nylon broom.
- D. Install infill to a 1.75 inch depth at the weight specified by the Turf Manufacturer. Place infill with a 1/2 inch void to the top of the fibers.
- E. The Contractor shall have the depth of infill confirmed in accordance with the testing requirements specified herein. Results shall be provided to the Architect.
- F. The Contractor shall re-visit site three months after installation and add/subtract infill material to account for typical break-in condition. Adjust grooming equipment at time of installation and as necessary during the first three months of use to create optimum performance.
- G. At substantial completion, the Contractor shall notify the Architect for final inspection and review. The Shock Attenuation Evaluation specified herein shall be scheduled after final inspection has been completed and punch list items addressed.

3.8 CLOSEOUT

- A. The Contractor and Turf Manufacturer must verify that their on-site representative has inspected the installation and that the work conforms to the manufacturer's requirements.
- B. The Contractor shall provide Shock Attenuation Evaluation in accordance with this specification, and certify that it meets the specified G-max criteria.
- C. The Contractor and Turf Manufacturer shall provide the submittals required, including any required warranty, maintenance manuals, and as-built striping layout.

3.9 CLEAN UP

- A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items.
- B. All usable remnants of new material shall be neatly rolled up and turned over to the Owner, if desired, at a place and area designated by the Owner.
- C. During the contract and at intervals as directed by the Architect and as synthetic turf installation is completed, clear the site of all extraneous materials, rubbish, or debris and leave the site in a clean, safe, well draining, neat condition.
- D. Surfaces, recesses, enclosures, etc., shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

END OF SECTION

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SECTION 33 41 16.16
GEOCOMPOSITE SUBDRAINAGE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Subsurface Drainage Systems.
- B. Filter aggregate and bedding.

1.2 RELATED REQUIREMENTS

- A. Section 31 23 16 - Excavation: Excavating for subdrainage system piping and surrounding filter aggregate.
- B. Section 31 23 23 - Fill: Backfilling over filter aggregate, up to subgrade elevation.
- C. Section 33 42 11 - Site Storm Utility Drainage Piping: Connector and drainage pipe.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on geosynthetic drainage products, fittings, and accessories.
- C. Shop Drawings: Indicate dimensions, layout of geocomposite, high and low points of pipe inverts, and gradient of slope between corners and intersections.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Project Record Documents: Record location of geocomposite and pipe runs, connections, cleanouts and principal invert elevations.

PART 2 PRODUCTS

2.1 SUBSURFACE DRAINAGE

- A. Geocomposite Drainage: Structured high-density polyethylene (HDPE) perforated core, thermally bonded to geotextile filter fabric, suitable for horizontal or vertical installation. Drain shall allow water collection from all sides and provide continuous flow path.
 - 1. Drain Thickness: 1 inch, minimum.
 - 2. Drain Width: As indicated on Drawings..
 - 3. Core Material: High density polyethylene.
 - 4. Ultraviolet Stability: 70 percent, minimum, when tested in accordance with ASTM D4355/D4355M.
 - 5. Compressive Strength: 11,400 psi, minimum, when tested in accordance with ASTM D1621.
 - 6. Flow Rate: 21 gpm/ft width at 10psi and 0.1 gradient, minimum when tested in accordance with ASTM D4716/D4716M.
 - 7. Filter Fabric Material: Needle punctured, nonwoven geotextile.
 - 8. Elongation: 50%, minimum, when tested in accordance with ASTM D4632/D4632M.
 - 9. Grab Tensile: 120 pounds, minimum, when tested in accordance with ASTM D4632/D4632M.
 - 10. Permittivity: 0.5 per second, minimum, ASTM D4491/D4491M.

11. Apparent Opening Size: 70 U.S. Std. Sieve, in accordance with ASTM D4751.
12. Products:
 - a. Intech Anchoring Systems; Hydraway: www.hydraway.net.
 - b. Or Approved Equal.
 - c. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 ACCESSORIES

- A. Drain Couplings, Fittings, and Outlets: Solid polypropylene plastic, same manufacturer as drain system.
- B. Connector and drainage pipe: See Section 33 42 11.

2.3 AGGREGATE AND BEDDING

- A. Filter Aggregate and Bedding Material: As detailed on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that excavated base is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

- A. Hand trim excavations to required elevations. Correct over-excavation.
- B. Remove large stones or other hard matter that could damage geocomposite drainage piping or impede consistent backfilling or compaction.

3.3 INSTALLATION

- A. Install and join geocomposite system components and pipe fittings in accordance with drainage system manufacturer's instructions.
- B. Place drainage system on compacted granular fill.
- C. Lay geocomposite drain to slope gradients noted on drawings; with maximum variation from true slope of 1/8 inch in 10 feet.
 1. For horizontal applications, ensure top and bottom of system is oriented according to manufacturer's instructions.
- D. Join geocomposite ends with manufacture's standard splice couplings.
- E. Install other fittings and outlet transitions at locations indicated on approved shop drawing to provide free flowing drainage.
- F. Place aggregate in maximum 4 inch lifts, consolidating each lift.
 1. Do not allow wheeled traffic over geocomposite prior to a minimum of 6 to 9 inches of compacted cover being established.
- G. Refer to Section 31 23 23 for compaction requirements. Do not displace or damage geocomposite or pipe when compacting.
- H. Connect to storm sewer system with unperforated pipe .

3.4 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspection and testing.
- B. Request inspection prior to and immediately after placing aggregate cover over pipe.

3.5 PROTECTION

- A. Protect drainage, pipe and aggregate cover from damage or displacement until backfilling operation begins.

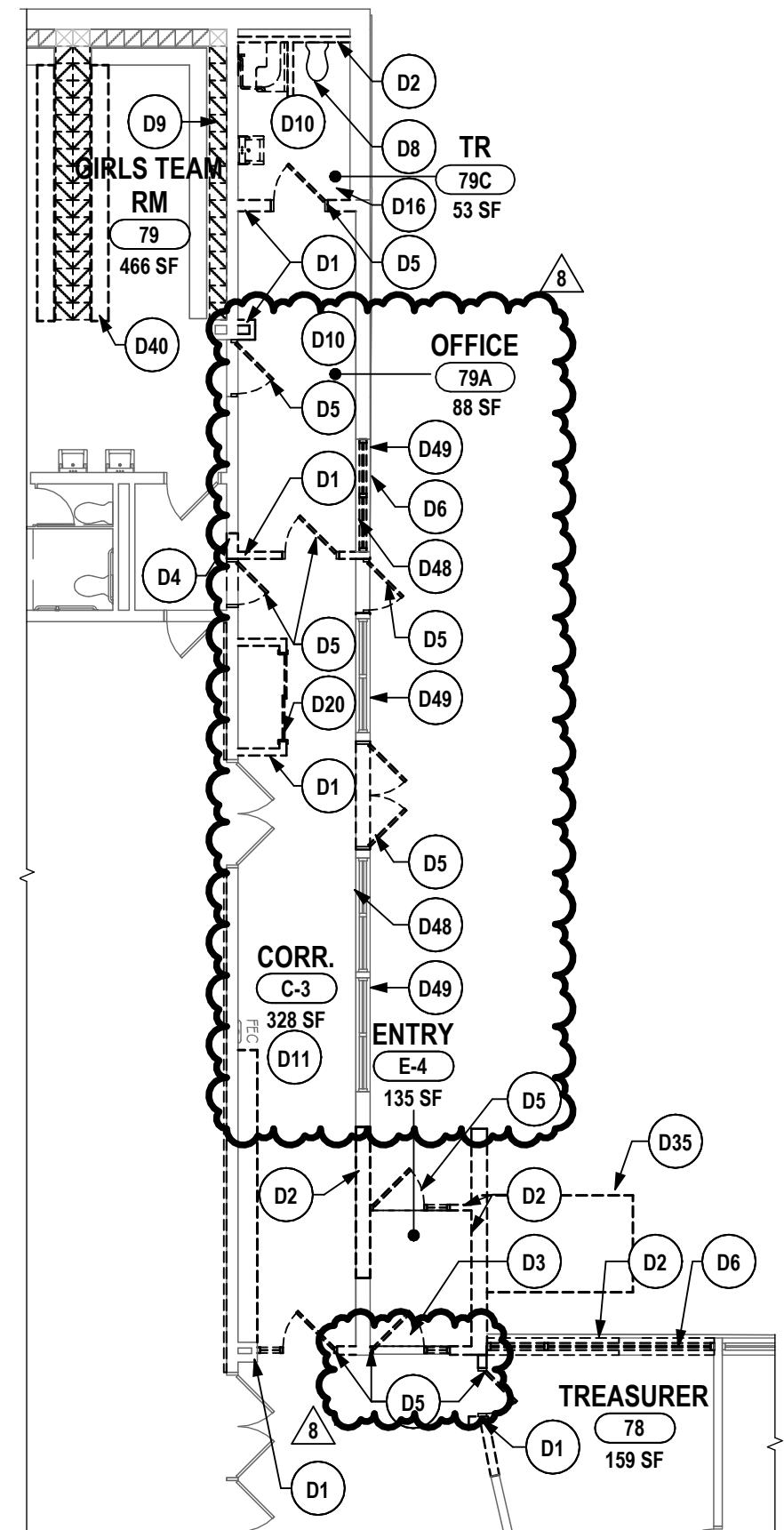
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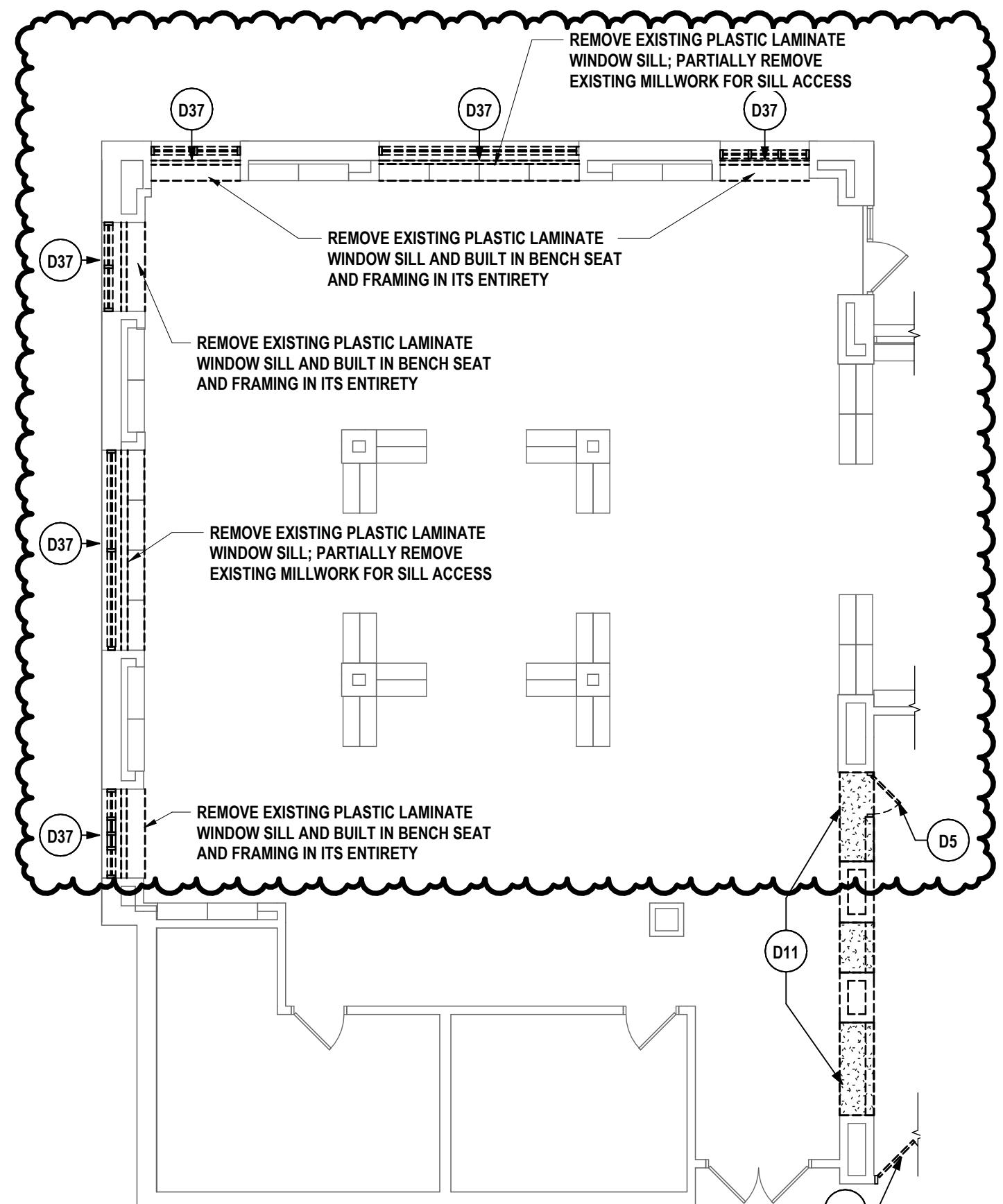
"IT IS A VIOLATION OF THE LAW FOR ANY PERSON TO MAKE UNAUTHORIZED ALTERATIONS OR ADDITIONS TO PLANS BEARING A LICENSED ENGINEER'S, ARCHITECT'S OR SURVEYOR'S SEAL."

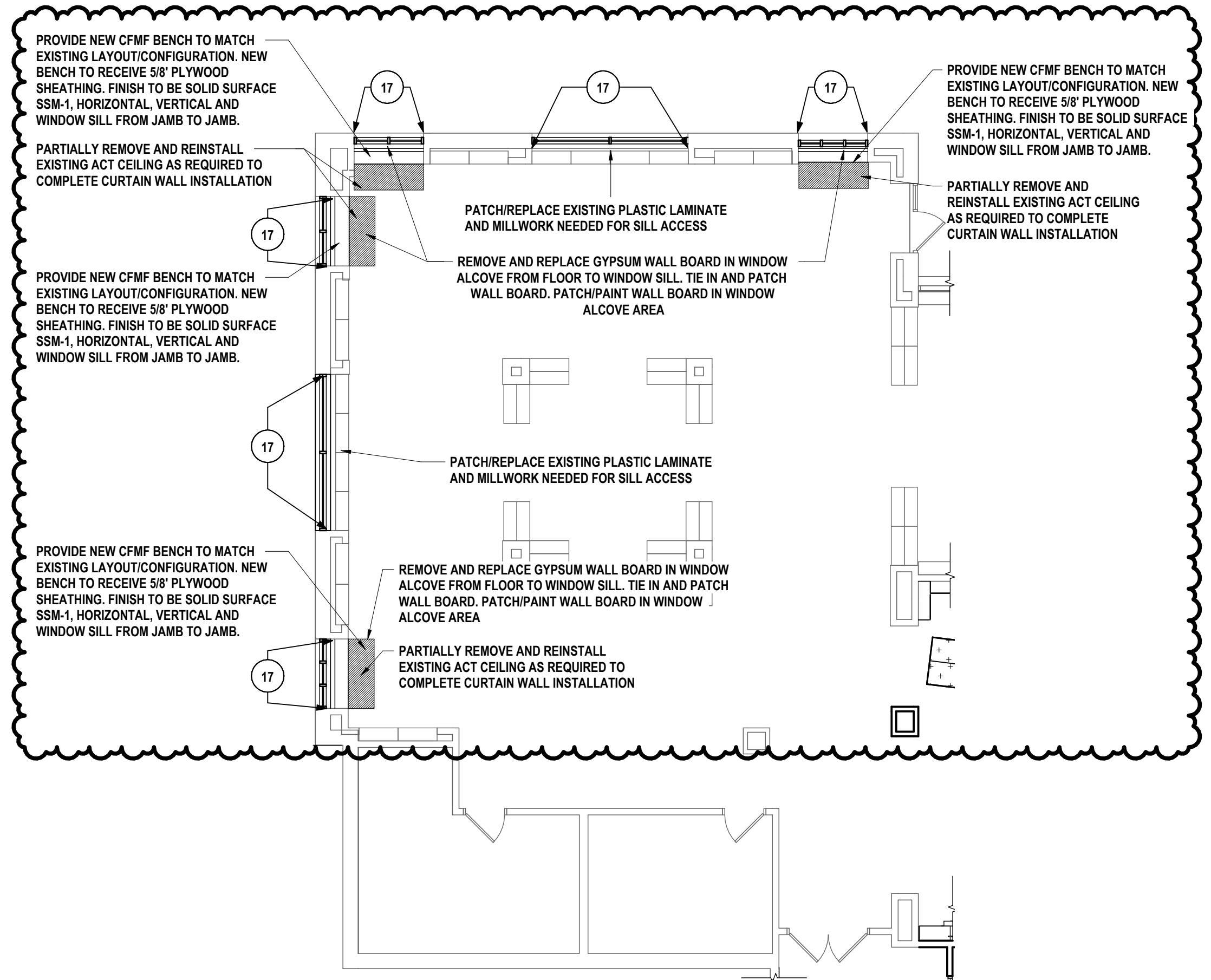
HUNT ENGINEERS | ARCHITECTS | SURVEYORS
 HORSEHEADS, NY 607-358-1000 ROCHESTER, NY 585-327-7950
 TOWANDA, PA 570-265-4868 BINGHAMTON, NY 607-798-8081
 ALBANY, NY 607-798-8081 WWW.HUNT-EAS.COM
 NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

SED #: MB: 57-29-01-04-0-02-025 BG: 57-29-01-04-5-003-008
DEMOLITION PLAN @ CORR. C-3
2025 CAPITAL IMPROVEMENTS PROJECT
HAMMONDSPORT CENTRAL SCHOOL DISTRICT
 8272 MAIN STREET HAMMONDSPORT, NEW YORK, 14840
AD5-A1
 PROJECT NO: 1925.014



1 **DEMOLITION PLAN @ CORR. C-3**
 1" = 10'-0"





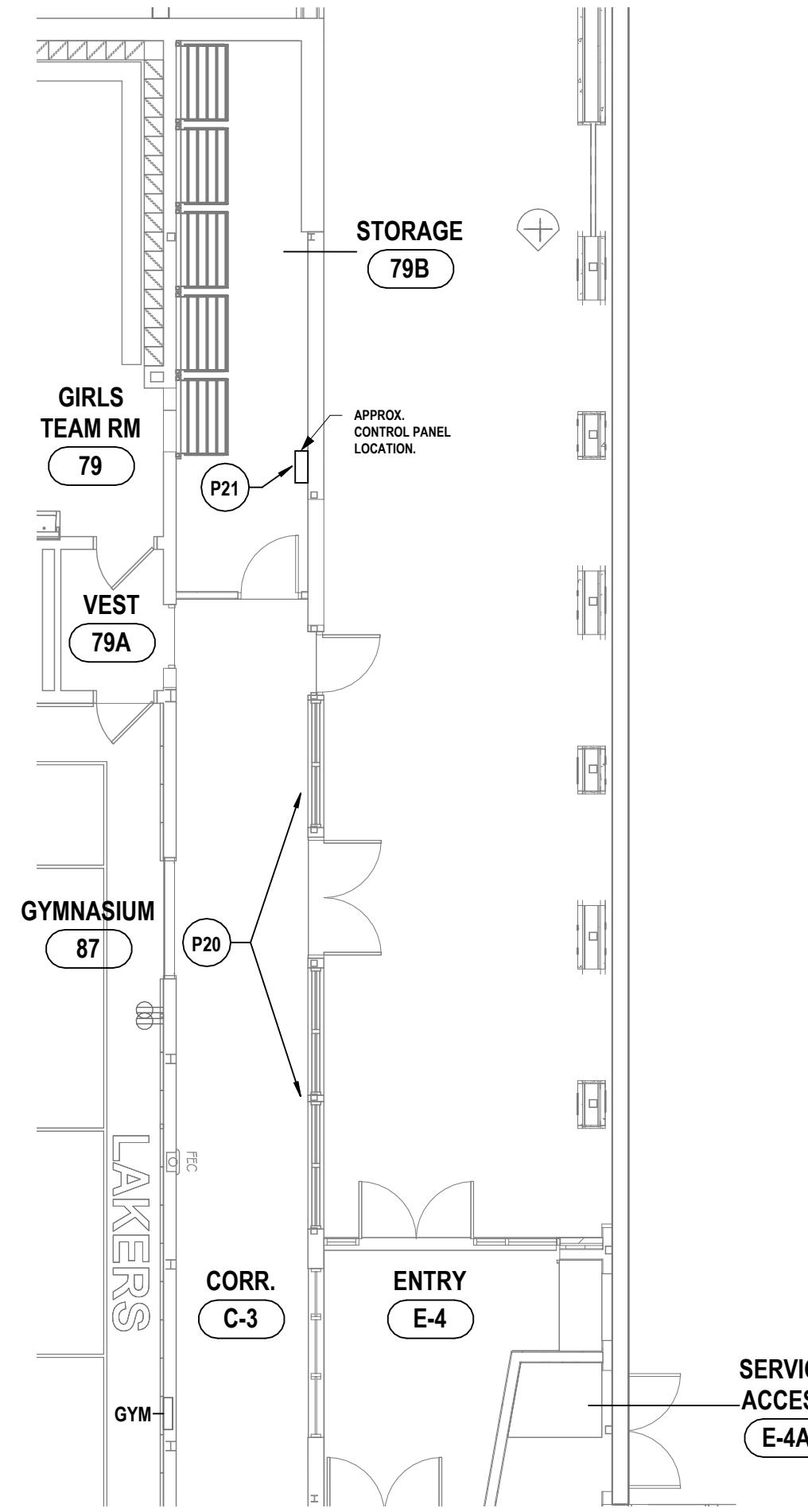
CONSTRUCTION NOTES - POWER - ALTERNATE #12

DRAWN BY: MDB
CHECKED BY: TAWC
DATE: 01/21/26
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SED NUMBER: MB-57-29-01-04-002-025 BG: 57-29-01-04-5-003-008
FIRE CURTAIN POWER - ALT #12
2025 CAPITAL IMPROVEMENTS PROJECT
HAMMONDSPORT CSD
8272 MAIN STREET HAMMONDSPORT, NEW YORK, 14840
AD5-E1
PROJECT NO: 1925-014



1 FIRST FLOOR POWER PLAN - AREA A - SMOKE BARRIER POWER

1/8" = 1'-0"

P20 PROVIDE POWER TO THE (2) SMOKE CURTAIN MOTORS IN THESE APPROXIMATE LOCATIONS. BASIS OF DESIGN FOR MOTORS: 208V 3PH 1HP. CIRCUIT EACH WITH THEIR OWN DEDICATED FEED TO PANEL NP3-S2. CIRCUIT USING (3)-12, (1)-12G, IN 3/4"C. PROVIDE 15A/1P BREAKER IN PANEL. PROVIDE DISCONNECT SWITCH FOR EACH CIRCUIT.

P21 PROVIDE 120V 20A DEDICATED FEED TO ASSOCIATED CONTROL PANEL FOR FIRE SMOKE BARRIERS. CIRCUIT TO PANEL NP3-S2 USING (2)-12, (1)-12G, IN 3/4"C. PROVIDE 20A/1P BREAKER. PROVIDE IN-LINE SURGE SUPPRESSION FOR CIRCUIT PER MANUFACTURER SPECIFICATIONS. PROVIDE ASSOCIATED FIRE ALARM RELAY AND CABLING FROM BUILDING FIRE ALARM SYSTEM TO CONTROL PANEL AS NEEDED. PROVIDE LOW VOLTAGE WIRING BETWEEN CONTROL PANEL AND SMOKE BARRIER MOTORS AS NEEDED TO COMPLETE THE SYSTEM. BASIS OF DESIGN: SD240GS 2HR FIRE PROTECTIVE SMOKE CURTAIN BY U.S SMOKE AND FIRE.

SED NUMBER: MB: 57-29-01-04-0-002-025 BG: 57-29-01-04-5-003-008

ROOF STORM PLAN - ALT. #3
2025 CAPITAL IMPROVEMENTS PROJECT
HAMMONDSPORT CSD
 8272 MAIN STREET HAMMONDSPORT, NEW YORK, 14840



AD5-P1

PROJECT NO: 1925-014

1

ROOF STORM PLAN - ALT. #3
 1/8" = 1'-0"

HUNT ENGINEERS | ARCHITECTS | SURVEYORS

HORSEHEADS, NY 14807-3588 | 1000 ROCHESTER, NY 14610-3277 | 7449 BINGHAMTON, NY 13901-3800 | 1000 EAST 42ND STREET, NEW YORK, NY 10017-3601 | 1000 WOOD HALL ROAD, LEAMINGTON, ON N8V 2L2 | 14881

NY CERTIFICATE NO. 0101220 | PA CERTIFICATE NO. FSC220311464-1

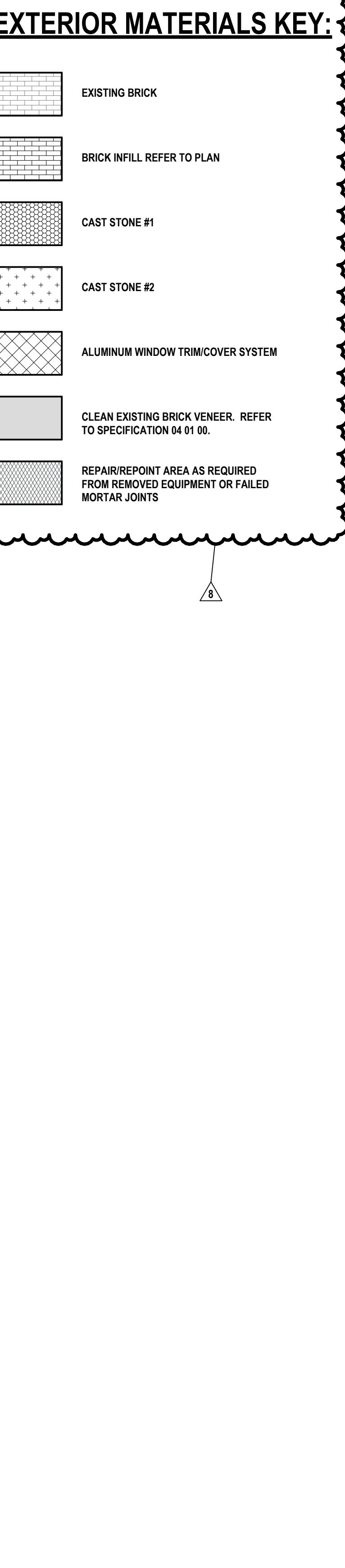
BUILDING & WALL SECTIONS

2025 CAPITAL IMPROVEMENTS PROJECT HAMMONDSPORT CENTRAL SCHOOL DISTRICT

MB-A3.2

PROJECT NO: 1925.000

SED #: MB-72940-044-042/025-BG-57284-04-5-005006



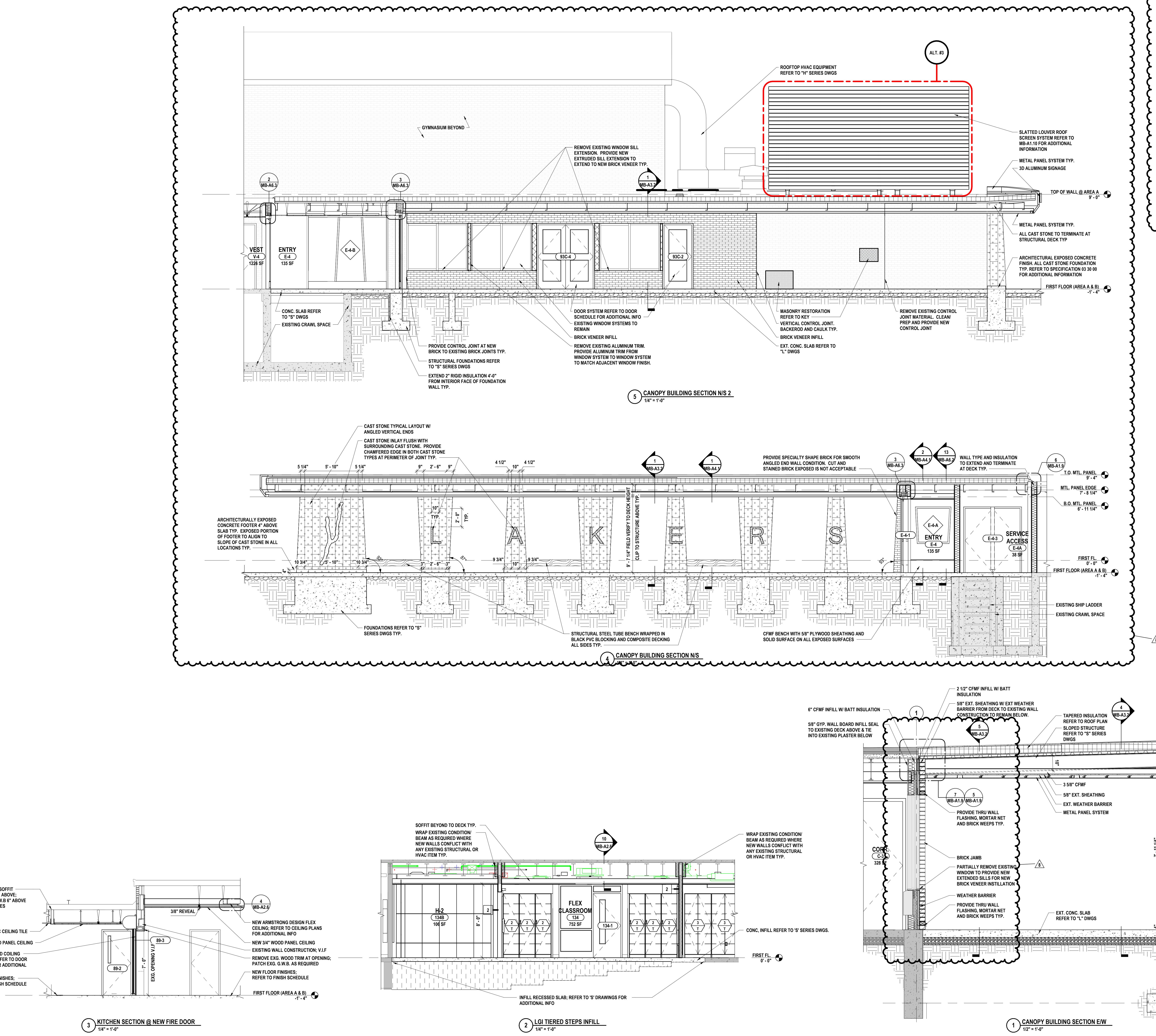
DRAWN BY:	KLC
CHECKED BY:	JZ
DATE:	12/30/2025
PHASE:	CD
Copyright:	2025

DATE: DESCRIPTION OF REVISION:

2 12/10/2025 ISSUE FOR BID

8 12/26/2026 ADDendum 5

BEARING A LICENSED PERSON TO MAKE UNAUTHORIZED ALTERATIONS OR SURVEYS OR SEAL."



#	DOOR								GLAZING	FRAME								DETAIL	NOTES			
	TYPE	SIZE	THICK.	MATL.	FINISH	RATING	MATL.	MARK		TYPE	MATL.	FINISH	RATING	MATL.	MARKING	HEAD	JAMB	SILL				
78A-1	2	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	--	A	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1						
79C-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	--	10	A	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
80A-1	2	3'-0" x 7'-0"	1 3/4"	WD	STN	--	G-1	8	A	HM	PNT	--	--	5/MB-A6.1	2/MB-A6.1	1/MB-A6.1						
80B-1	2	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	--	G-1	8	A	HM	PNT	--	--	5/MB-A6.1	4/MB-A6.1	1/MB-A6.1					
83-1	4	PR @ 3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	--	11	D	HM	PNT	45	--	--	5/MB-A6.1	4/MB-A6.1	1/MB-A6.1					
86-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	--		7	A	HM	PNT	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1						
86A-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	--	8	A	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
89-1	2	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	12	A	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
89-2	2	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	12	A	HM	PNT	45	--	--	3/MB-A6.1	1/MB-A6.1					
89-3	6	8'-6" x 7'-0"	3/4"	STL	SS	90 MIN		5	--	STL	STAINLESS			14/MB-A6.1	15/MB-A6.1	14/MB-A6.1	OVERHEAD COILING FIRE DOOR. PROVIDE 4' SAFETY YELLOW FLOOR PAINT AT FLOOR TRANSITION AS PER SED CODE.					
89-4	6	6'-0" x 7'-0"	3/4"	STL	SS	90 MIN		5	--	STL	STAINLESS			14/MB-A6.1	15/MB-A6.1	14/MB-A6.1	OVERHEAD COILING FIRE DOOR. PROVIDE 4' SAFETY YELLOW FLOOR PAINT AT FLOOR TRANSITION AS PER SED CODE.					
89-5	6	3'-0" x 4'-0"	3/4"	STL	PNT	90 MIN		5	--	STL	STAINLESS			3/MB-A4.1	16/MB-A6.1	3/MB-A4.1	COUNTER OVERHEAD COILING FIRE DOOR					
93C-1	2	3'-0" x 7'-0"	1 3/4"	HM	PNT	45 MIN	FRG-1	D-H-45	8.1	A	HM	PNT	45	FRG-6	D-44-45	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
93C-2	9	3'-0" x 7'-0"	1 3/4"	HM/AL	ANOD.	90 MIN	FRG-5	D-H-W-90	1	A	HW/AL	PNT/AL	120	FRG-6	W-120	9/MB-A6.1	10/MB-A6.1	1/MB-A6.1				
93C-4	5	PR @ 3'-0" x 7'-0"	1 3/4"	HM/AL	ANOD.	90 MIN	FRG-5	D-H-W-90	1	D	HW/AL	PNT/AL	120	FRG-6	W-120	9/MB-A6.1	10/MB-A6.1	1/MB-A6.1				
94-1	6	2"	STL	GALVANIZED	--			5	--	STL	GALVANIZED			12/MB-A6.1	13/MB-A6.1		OVERHEAD TRACK DOOR					
94-2	8	7'-0"	1 3/4"	HM	PNT	--		5	--	AL	ANOD.			11/MB-A6.1	11/MB-A6.1		FACE MOUNTED SLIDING TRACK DOOR					
129-1	3	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN		4	--	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
131-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN		4	--	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
134A-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	8.1	C	HM	PNT	45	FPG-2	D-44-OH-20	6/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
134A-10	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	G	AL	ANOD.	--		19/MB-A6.1	16/MB-A6.1	19/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
134B-10	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	F	AL	ANOD.	--		19/MB-A6.1	18/MB-A6.1	19/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
134B-2	7	8'-0"	--	--	--	--	--	--	AL	ANOD.	--			6/MB-A6.6	5/MB-A6.6	7/MB-A6.6	DIRTT FOLDING LEAF WALL					
134C-1	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	F	AL	ANOD.	--		19/MB-A6.1	18/MB-A6.1	19/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
134D-1	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	H	AL	ANOD.	--		20/MB-A6.1	17/MB-A6.1	20/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
141-1	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	H	AL	ANOD.	--		20/MB-A6.1	17/MB-A6.1	20/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
142-1	10	3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	G-1	--	H	AL	ANOD.	--		20/MB-A6.1	17/MB-A6.1	20/MB-A6.1	REFER TO SPECIFICATION 08 32 00					
229-1	3	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN		4	--	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
229B-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN		6	A	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
229C-1	1	3'-0" x 7'-0"	1 3/4"	WD	STN	20 MIN		7	--	HM	PNT	45	--	--	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1					
C11-1	5	PR @ 3'-10" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	11	D	HM	PNT	45	FPG-3	D-44-OH-20	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
C11-2	5	PR @ 3'-10" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	11	D	HM	PNT	45	FPG-2	D-44-OH-20	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
C4-1	5	PR @ 3'-10" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	11	D	HM	PNT	45	FPG-2	D-44-OH-20	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
C4-2	5	PR @ 3'-10" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	11	D	HM	PNT	45	FPG-2	D-44-OH-20	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
E-10	5	PR @ 3'-10" x 7'-0"	1 3/4"	WD	STN	20 MIN	FPG-1	D-20	11	D	HM	PNT	45	FPG-2	D-44-OH-20	3/MB-A6.1	2/MB-A6.1	1/MB-A6.1				
E-4-1	5	PR @ 3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	IG-A	2	D	AL	ANOD.	--		6/MB-A6.1	8/MB-A6.1	7/MB-A6.1	STOREFRONT ASSEMBLY					
E-4-2	5	PR @ 3'-0" x 7'-0"	1 3/4"	AL	ANOD.	--	IG-A	2	D	AL	ANOD.	--		6/MB-A6.1	8/MB-A6.1	7/MB-A6.1	STOREFRONT ASSEMBLY					
E-4-3	4	PR @ 3'-0" x 7'-0"	1 3/4"	HM	PNT	--	13	D	HM	PNT	120	FRG-3	W-120	9/MB-A6.1	10/MB-A6.1	1/MB-A6.1						
S3-1	4	PR @ 3'-0" x 7'-0"	1 3/4"	WD	STN	90 MIN	FRG-3	D-H-W-90	11	E	HM	PNT	120	FRG-4	W-120	9/MB-A6.1	10/MB-A6.1	1/MB-A6.1				
S3-2	4	PR @ 3'-0" x 7'-0"	1 3/4"	WD	STN																	