BID ADDENDUM NO. (3)

1/13/26
Hammondsport Central School District
2025 Capital Improvements Project
1925-014

(SED #57-025-01-04-0-002-025 – 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. Locker removals shown on demolition plans outside of gang toilet rooms 129 & 229 are included in their perspective alternates for gang toilet room renovations.

Project Manual Sections issued by this Addendum:

11 66 23 – Gymnasium Equipment

27 51 16 – Public Address Systems
27 53 13 – Clock Systems
32 18 29 – Synthetic Field Sport Surfacing

Drawings issued by this Addendum:

AD3-S1 – TYP. FROST SLAB AT DOOR

AD3-S2 – TYPICAL FROST WALL AT EXISTING FOUNDATION

Revisions to Project Manual issued by this Addendum:

ITEM AD3-1 Refer to 01 10 00 - Summary
AMEND Paragraph 1.13, C. to read:
"Provide the complete work of Division 27 – Communications with the following exceptions:
a. Specification Section 27 51 16 – Public Adress Systems. Provided by others."

ITEM AD3-2 Refer to 01 10 00 - Summary
ADD Paragraph 1.14B to read:

"1.14B – COOPERATIVE PURCHASE PRIME CONTRACT #7 – PUBLIC ADDRESS SYSTEM.

A. The Public Address System Contractor shall be responsible for all work shown on Electrical (E) and Technology (T) Drawings unless noted otherwise and any public address system work shown on all other drawings and further defined below:
    1. Division 2 – Existing Conditions:
        a. Specification Section 02 41 00 – Demolition:
            1. Co Op Contractor to be responsible for all demolition of items as it pertains to their contract.
    2. Division 27 – Communications
        a. Provide the complete work of Specification Section 27 51 16 – Public Adress Systems.
        b. Provide the complete work of Specification Section 27 53 13 – Clock Systems."

ITEM AD3-3 Refer to 01 10 00 - Summary

ADD Paragraph 1.14C to read:

"1.14C – COOPERATIVE/GSA PURCHASE PRIME CONTRACT #8 – BUS LIFT

B. The Bus Lift System Contractor shall be responsible for all work shown on Architectural (A), Plumbing (P) and Electrical (E) Drawings unless noted otherwise and any bus lift system work shown on all other drawings and further defined below:
    1. Division 2 – Existing Conditions:
        a. Specification Section 02 41 00 – Demolition:
            1. Co Op Contractor to be responsible for all demolition of items as it pertains to their contract.
    2. Division 14 – Communications
        a. Provide the complete work of Specification Section 14 45 13 – Vehicle Service Lifts"

ITEM AD3-4 Refer to 11 66 23 – GYMNASIUM EQUIPMENT

DELETE Specification 11 66 23 – Gymnasium Equipment in its entirety.

ADD Specification 11 66 23 – Gymnasium Equipment as issued by this addendum.

ITEM AD3-5 Refer to 23 09 23 - DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC

DELETE Paragraph 2.10 in its entirety.

ITEM AD3-6 Refer to Section 23 09 93 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS
ADD Paragraph 3.14 to read:

"3.14 CABITNET UNIT HEATERS
A. General:
1. Unit shall be enabled anytime the heating plant is enabled.
B. Heating Mode:
1. Supply fan shall run continuously.
2. Upon a fall in space temperature the control valve shall modulate open.
3. Upon a rise in space temperature the control valve shall modulated closed."

ITEM AD3-7 Refer to Section 27 51 16 – Public Address Systems
ADD Specification section 27 51 16 – Public Address Systems as issued by this addendum.

ITEM AD3-8 Refer to Section 27 53 13 – Clock Systems
ADD Specification section 27 53 13 – Clock Systems as issued by this addendum.

ITEM AD3-9 Refer to Section 32 18 29 – Synthetic Field Sport Surfacing
ADD Specification section 32 18 29 – Synthetic Field Sport Surfacing as issued by this addendum.

Revisions to Drawings issued by this Addendum:

ITEM AD3-10 Refer to MB-L1.X SERIES – SITE DEMOLITION PLANS
AMEND Note 10 to read "PROVIDE POWER WASHING FOR ENTIRETY OF TENNIS COURT SURFACEING, PREPARE FOR ACRYLIC RESURFACING LAYER AND COURT CRACK REPAIR."

ITEM AD3-11 Refer to MB-L2.X SERIES – SITE IMPROVEMENT PLANS
AMEND Note 11 to read "PROVIDE 158 LINEAR FEET OF COURT CRACK REPAIR, ACRYLIC SURFACING, AND STRIPING FOR TENNIS AND PICKLEBALL AS SHOWN. SEE DETAIL 7/MB-L4.1."

ITEM AD3-12 Refer to MB-L4.1 – SITE DETAILS
DELETE Detail 4 in its entirety.

ITEM AD3-13 Refer to MB-S1.2 LOW ROOF FRAMING PLAN – AREA A
AMEND The plan title on plan 2 to read "LOW ROOF PLAN – ALTERNATE #3"

ITEM AD3-14 Refer to MB-S1.2 LOW ROOF FRAMING PLAN – AREA A

ADD Note 12 on plan 2 to read "ALL WORK SHOWN SHALL BE PART OF ALTERNATE#3. IF ALTERNATE #3 IS ACCEPTED THE FRAMING AT THE MECHANICAL UNIT SHOWN IN PLAN 2 WILL REPLACE THE FRAMING SHOWN FOR BASE BID ON PLAN 1/MB-S1.2. "

ITEM AD3-15 Refer to MB-S3.1 FOUNDATION DETAILS

ADD Detail 16 per drawing AD3-S1 issued by this addendum.

ITEM AD3-16 Refer to MB-S3.1 FOUNDATION DETAILS

ADD Detail 17 per drawing AD3-S2 issued by this addendum.

ITEM AD3-17 Refer to A0.X Series – DEMOLITION PLANS

AMEND Demolition keynote D15 to read: "REMOVE ALL FLOOR MOUNTED RAILING SYSTEMS IN THEIR ENTIRETY"

ITEM AD3-18 Refer to MB-A0.1 – FIRE FLOOR DEMO PLAN – AREA A

AMEND Drawing Notes D20 at (2) exterior doors in Rm 79C to read: "D5"

ITEM AD3-26 Refer to MB-A0.1 FIRST FLOOR DEMO PLAN – AREA A

AMEND Keynote D9 "REMOVE AND SALVAGE LOCKERS, BASE AND ASSOCIATED ACCESSORIES IN THEIR ENTIRETY.REPAIR DAMAGED WALL AND FLOOR SURFACES TO RECEIVE NEW FINISHES."

ITEM AD3-19 Refer to MB-A0.2 – FIRE FLOOR DEMO PLAN – AREA B

ADD Plan Demolition Note #15 to room 134 LGI.

ITEM AD3-20 Refer to MB-A1.2 – FIRE FLOOR PLAN – AREA B

AMEND Plan Drawing Note #21 in rooms 101,103,105,107, and 109 to read: "#22"

ITEM AD3-21 Refer to MB-A1.3 – FIRST FLOOR PLAN – AREA

DELETE Plan Drawing Note #17 in Rm. S3-1 Stair

ITEM AD3-21 Refer to MB-A1.3 FIRST FLOOR PLAN – AREA C

DELETE All instances of Plan Drawing Note #7 on the entire sheet.

ITEM AD3-24 Refer to MB-A1.4 – SECOND FLOOR PLAN – AREA B

AMEND Plan Drawing Note #2 to read: "REFER TO MECHANICAL DWGS FOR HVAC REMOVAL SCOPE AND ADDITIONAL INFORMATION. PATCH AND REPAIR EXISTING WALL SURFACE ALONG THE PLAN NORTH WALL FROM REMOVED HVAC FLOOR REGISTER SYSTEM. PATCH/ INFILL FLOOR SYSTEM AND

PREPARE FOR NEW FINISHES FROM REMOVED HVAC FLOOR REGISTER SYSTEM."

ITEM AD3-25 Refer to MB-A1.1 – FIRST FLOOR PLAN – AREA A

AMEND Plan Drawing Note #13 to read: "PROVIDE MATCHING BASE INFILL AND FINISHES TO MATCH ADJACENT TO REMAIN LOCKERS & BASE. REINSTALL SALVAGED LOCKERS AND ASSOCIATED ACCESSORIES IN THEIR ENTIRETY."

ITEM AD3-25 Refer to MB-A1.1 – FIRST FLOOR PLAN – AREA A

AMEND Plan Drawing Note #24 to read: "REMOVE ALL SOLID WOOD BENCHES IN THE SPACE, SAND/REFINISH, STAIN TO MATCH ARCHITECT SAMPLE, PROVIDE WATER BASED CLEAR COAT. REUSE SALVAGED/REMOVED BENCHES FOR INFILL LOCATIONS AS REQUIRED TO EXTENT SHOWN ON PLAN. PROVIDE STEEL SPLICE PLATES ON UNDERSIDE FOR SUPPORT OF NEW INFILL SECTIONS. REINSTALL REFINISHED BENCHES IN THE ENTIRE SPACE."

ITEM AD3-22 Refer to MB-H2.1 SCHEDULES

AMEND DOAS Schedule note #9 to read: "9. Not used."

ITEM AD3-23 Refer to MB-H2.1 SCHEDULES

AMEND Rooftop Unit Schedule note #9 to read: "9. Not used."

ITEM AD3-22 Refer to BG-A0.1 – FIRST FLOOR DEMO PLAN – AREA A

AMEND Keynote D5 "PARTIALLY REMOVE EXISTING CONCRETE SLAB AS REQUIRED TO PROVIDE NEW IN GROUND LIFT SYSTEM. REFER TO SPECIFICATION 14 45 00 FOR ADDITIONAL INFORMATION. REFER TO DETAIL 2/BG-A0.1 FOR MORE INFORMATION."

End of Addendum (3)

SECTION 11 66 23
GYMNASIUM EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Basketball backboards, goals, and support framing.

B. Floor sleeves for net and goal posts.

C. Wall mounted protection pads.

D. Gym divider curtains.

1.2 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete floor slab to receive floor sleeves and anchors.

B. Section 05 12 00 - Structural Steel Framing: Structural members supporting basketball systems.

C. Section 05 21 00 - Steel Joist Framing: Building framing supporting backstops.

D. Section 05 50 00 - Metal Fabrications: Secondary structural members supporting gymnasium equipment.

E. Section 09 64 66 - Wood Athletic Flooring: Gymnasium flooring.

F. Section 26 05 83 - Wiring Connections.

1.3 REFERENCE STANDARDS

A. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).

B. NCAA (BR) - Men's and Women's Basketball Rules and Interpretations; current edition.

C. NFHS (Guide) - Court and Field Diagram Guide; current edition.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

F. International Basketball Federation: FIBA-Official Basketball Rules for Men and Women.

G. Underwriters Laboratories Inc.: UL - Electrical Construction Equipment Directory.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

B. Electrically Operated Equipment: Coordinate location and electrical characteristics of service connection.

C. Preinstallation Meeting: Convene minimum one week prior to commencing work of this section.

D. Coordination:
1. Coordinate layout of backstops and support framing with the following to avoid interferences:
a. HVAC equipment, ductwork, outlets, and inlets.
b. Fire suppression system piping and sprinkler heads.
c. Lighting.

1.5 SUBMITTALS

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

B. Product Data: Provide manufacturer's data showing configuration, sizes, materials, finishes, hardware, and accessories; include:
1. Electrical characteristics and connection locations.
2. Fire rating certifications.
3. Manufacturer's installation instructions.
4. Colors available.
5. Submit general construction, component connections and details, wiring diagram and electrical equipment.

C. Shop Drawings: For custom fabricated equipment indicated, in large scale detail, construction methods; method of attachment or installation; type and gauge of metal, hardware, and fittings; plan front elevation; elevations and dimensions; minimum one cross section; utility requirements as to types, sizes, and locations.
1. Shop drawings and calculations shall be signed and sealed by Professional Engineer, licensed in the State of New York.
2. Plan of gymnasium at 1/8" scale. Indicate size and location of backstops.
a. Show operable backstops in fully extended and retracted positions.
3. Indicate operator locations and mounting details. Include wiring diagrams for electric operators and controls.
4. Indicate magnitude and location of loads imposed on building framing.

D. Erection Drawings: Detailed dimensional requirements for proper location of equipment.

E. Samples: Submit samples of wall pad coverings fabrics in manufacturer's available range of colors.

F. Operating and maintenance data for each operating equipment item.

G. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.6 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Operation and Maintenance Data: Include the following:
1. Description of method of operation and motor control system.
2. Parts catalog with complete list of replacement parts.
3. Lubrication requirements and frequency, and periodic adjustments required.
4. Schematic wiring diagrams of installed electrical equipment.

C. Certificates: Affidavit, signed by the Company field advisor and notarized, certifying that the equipment meets the contract requirements and is operating properly.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified with minimum 10 years of experience.

C. Manufacturer shall be represented by a local agency to provide maintenance and service of specified equipment.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to project site in manufacturer's original packaging with factory original labels attached. Inspect for damage.

B. Store products indoors and elevated above floor; prevent warping, twisting, or sagging.

C. Store products in accordance with manufacturer's instructions; protect from extremes of weather, temperature, moisture, and other damage.

1.9 WARRANTY

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

1.10 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Gymnasium Equipment:
1. Draper, Inc: www.draperinc.com.
2. Performance Sports Systems: www.perfsports.com.
3. Porter Athletic Equipment Company: www.porterathletic.com.
4. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 GENERAL REQUIREMENTS

A. See drawings for sizes and locations, unless noted otherwise.

B. Where mounting dimensions or sizes are not indicated, comply with applicable requirements of the following:
1. NFHS (Guide) - National Federation of State High School Associations sports rules.

C. Provide mounting plates, brackets, and anchors of sufficient size and strength to securely attach equipment to building structure; comply with requirements of Contract Documents.

D. Hardware: Heavy duty steel hardware, as recommended by manufacturer.

E. Electrical Wiring and Components: Comply with NFPA 70; provide UL-listed equipment.

F. Structural Steel Fabrications: Welded in accordance with AWS D1.1/D1.1M, using certified welders.

2.3 GYMNASIUM DIVIDER CURTAINS

A. Gymnasium Divider Curtains:

1. Curtain Material: Class A rated, self-extinguishing vinyl coated polyester complying with NFPA 101.
2. Upper Section: 9 oz/sq yd vinyl mesh fabric.
3. Lower Section: 18 oz/sq yd solid vinyl coated polyester.
4. Travel: _____.
5. Width: As indicated on drawings.
6. Operation:
   a. Electric Operator: 12 inches per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
   b. The electric device controlling the operation of the partition shall be capable of being reversed at any point in the extend, retract, or stack travel cycle.
   c. Control Station: Two standard keyed, tamper-proof, three button constant pressure type; 24 volt circuit, wired in series; surface mounted.
      1) Control stations shall be located at opposite ends of, on opposite sides of, and in view of the curtain so as to require simultaneous activation of both control stations to operate the partition.
      2) Key switch prepared for mortise lock cylinder.
      3) Key switches alike.
      4) Control stations shall have prominently posted signage at each regarding safe and proper operation and supervision:

         CAUTION
         ELECTRICALLY POWERED PARTITION
         Only Appropriately Trained Staff may operate this partition.
         Control stations must be attended by staff members while the partition is in motion.
         Staff members must stand on opposite sides of the opening or closing partition.
         Students must stay away from the partition when in motion.

   d. Safety Features:
      1) Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
      2) Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
      3) Devices that will stop the forward motion of the partition when a body or object passes between the leading edge of curtain and a wall or other termination point, that will stop curtain movement prior to an occupant reaching the curtain.
         (a) Devices shall provide full coverage, using multiple devices if required, and located such that no occupant may pass over or under the sensing range to avoid detection.
         (b) Devices may include, but is not limited to:
            (1) Beam type sensors with sending and receiving devices.
            (2) Motion detection sensors.
      4) Devices that will stop the backward motion of the curtain, stopping the stacking motion when a body or object is within or enters the stacking area of partition.
         (a) Devices shall provide full coverage, using multiple devices if required, and located such that no occupant may pass over or under the sensing range to avoid detection.
         (b) Devices within the pocket area may include, but is not limited to:
            (1) Beam type sensors with sending and receiving devices.
            (2) Motion detection sensors.
            (3) Pressure or weight sensitive mats.
            (4) Heat detection sensors.
      5) All sensing devices shall be required to be manually reset.
7. Manufacturers:

a. Draper, Inc: www.draperinc.com/#sle.
b. Porter Athletic Equipment Company: www.porterathletic.com/#sle.

2.4 BASKETBALL

A. Basketball System: Backstop assembly, backboard, and goal.
1. Provide system components from a single source manufacturer for design and functional compatibility.
2. Manufacturers:
a. Porter Athletic Equipment Company: www.porterathletic.com.
b. Substitutions: See Section 01 60 00 - Product Requirements.

B. Ceiling-Suspended Backstop Assemblies, Type ___: Capable of mounting both rectangular and fan-shaped backboards.
1. Framing: Fully welded Center strut; match existing folding orientation; front-braced framing.
a. Support steel and fittings anchored to overhead structural framing members with adjustable hangers for precise plumbing of backstop.
b. Heavy structural steel weldment at center strut for goal direct-through-backboard attachment to eliminate strain on backboard.
c. Brace assembly shall lock in place upon deployment, and be automatically released by cable hoist during retraction.
2. Height Adjuster: Raises or lowers assembly by 2 feet to adjust goal height. Height adjusters on (4) side backstop locations.
3. Height Control System: Electric hoist that adjusts backstop with 115 volt actuator, and integral limit switches that provide automatic shut-off in both positions.
4. Framing Color: factory finished in white. .
5. Backboard Type: _____

C. Backboards: Tempered glass, rectangular shaped.
1. Conform to all NCAA (BR) and NFHS (Guide) requirements.
2. Frame: Brushed aluminum edge, steel mounting.
3. Dimensions: 42 inches high by 72 inches wide
4. Markings: Integrally manufactured.
5. Provide safety padding for bottom edge of backboard.
6. Provide mounting kit.
7. Color: Main court hoops in purple and (4) side courts in gray.
8. Manufacturers: Same as backstop assembly.

D. Standard Goals: Steel rim, mounted to backboard, with attached nylon net; complete with mounting hardware.
1. Regulation 5/8 inch cold drawn alloy steel, formed to 18 inch inside diameter ring. Inside diameter of ring shall be positioned 6 inches from face of backboard.
2. Rim shall be rigidly braced by means of formed, die cut steel braces on underside for maximum support.
3. Net Attachment Device: Tube-tie.
4. Finish: Powder coat orange.

2.5 WALL PADDING

A. Wall Padding, Type WP-1: Foam filling bonded to backing board, wrapped in covering; each panel fabricated in one piece.
1. Flammability: Comply with NFPA 286.
2. Covering: Vinyl-coated polyester fabric, mildew and rot resistant; stapled to back of board.
a. Cover material shall have a certificate of flame resistance from the State of California (registered fabric No. F-140). The cover material shall be non-tear vinyl with a rip resistant quality utilizing industrial polyester filament yarn.

b. Color: As indicated on drawings.
c. Texture: Embossed leather-look.
d. Custom Graphics: To be supplied by Owner. Refer to MB-AX.X for locations and details.
e. Fabric Weight: 14 oz/sq yd, minimum.
3. Foam: Soft, urethane, with 3.5 pcf nominal density.
4. Foam Thickness: 2 inches.
5. Backing Board: Oriented strand board.
a. Thickness: 7/16 inch, minimum.
6. Panel Dimensions: 24 inches wide by 72 inches long, including nailing/fastening margins.
7. Fastening Margins: 1 inch wide, covered by fabric covering.
8. Mounting: Permanent; using screws. Provide grommets to reinforce screw locations.
9. Basis of Design Product:
a. Draper, Inc; EcoVision Wall Pads: www.draperinc.com.
b. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Take field measurements to ensure proper fitting of work. If taking field measurements before fabrication will delay work, allow for adjustments within recommended tolerances.

B. Inspect areas and conditions before installation, and notify Architect in writing of unsatisfactory or detrimental conditions.

C. Do not proceed with this work until conditions have been corrected; commencing installation constitutes acceptance of work site conditions.

D. Verify that electrical services are correctly located and have proper characteristics.

E. Verify building structural frame and wall surfaces are ready to receive equipment.

F. Verify finishing operations, including painting, are complete before installing equipment.

3.2 INSTALLATION

A. Install in accordance with contract documents approved shop drawings and manufacturer's instructions.

B. Coordinate installation of inserts and anchors that must be built in to flooring or subflooring.

C. Install equipment rigid, straight, plumb, and level.

D. Secure equipment with manufacturer's recommended anchoring devices.

E. Install wall padding securely, with edges tight to wall and without wrinkles in fabric covering.

F. Separate dissimilar metals to prevent electrolytic corrosion.

G. Install backstops in accordance with NCAA and NFHS requirements.

H. Coordinate installation schedule with the schedules of other trades to ensure orderly and timely progress of the total work.

I. Assemble components furnished loose for field assembly.

J. Install backboards plumb, level, and parallel to basketball court end line.

K. Placement of equipment relating to floor groove lines shall be coordinated with work under gymnasium flooring section.

L. Secure wall pads to block wall with 1/2" diameter bolt. Bolts staggered; (1) maximum spacing 18" O.C. Bolt holes neatly drilled.

M. Touch up damaged finishes to match shop finish.

3.3 ADJUSTING

A. Verify proper placement of equipment.

B. Verify proper placement of equipment anchors and sleeves, and use actual movable equipment to be anchored if available.

C. Adjust operating equipment for proper operation; remove and replace equipment causing noise or vibration; lubricate equipment as recommended by manufacturer.

D. Adjust limit switches to prevent damage to equipment.

3.4 CLEANING

A. Remove masking or protective covering from finished surfaces.

B. Clean equipment in accordance with manufacturer's recommendations.

3.5 PROTECTION

A. Protect installed products until Date of Substantial Completion.

3.6 DEMONSTRATION

A. Manufacturer's Representative shall demonstrate operation and maintenance of all units, winches and backboard height adjustment.

END OF SECTION

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SECTION 27 51 16
PUBLIC ADDRESS SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Amplifier and control equipment.

B. Input equipment.

C. Reproducer equipment.

D. Sound system cable.

E. Accessories.

1.2 RELATED REQUIREMENTS

A. Section 27 05 28 - Pathways For Communications Systems

B. Section 27 10 05 - Communications Copper Cabling

1.3 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SYSTEM DESCRIPTION

A. Public address system for voice and music.

B. Input components:
   1. Microphone.

C. Features:
   1. Interface to telephone system.
   2. Emergency paging override.
   3. Distribution of background music.

1.5 SUBMITTALS

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

B. Shop Drawings: Indicate electrical characteristics and connection requirements. Indicate layout of equipment mounted in racks and cabinets, component interconnecting wiring, and wiring diagrams of field wiring to speakers and remote input devices.

C. Product Data: Provide data showing electrical characteristics and connection requirements for each component.

D. Test Reports: Indicate satisfactory completion of each test recommended by the manufacturer.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's Field Reports: Indicate that installation is complete and system performs according to specified requirements.

H. Project Record Documents: Record actual locations of speakers, control equipment, and outlets for input/output connectors.

I. Operation Data: Include instructions for adjusting, operating, and extending the system.

J. Maintenance Data: Include repair procedures and spare parts documentation.

1.6 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70 and Federal Communications Commission.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience with service facilities within 100 miles of Project.

C. Supplier Qualifications: Authorized distributor of specified manufacturer with minimum three years documented experience.

D. Installer Qualifications: Authorized installer of specified manufacturer with service facilities within 100 miles of Project.

E. Products: Listed, classified, and labeled as suitable for the purpose intended.

F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Advanced Network Devices: www.anetd.com

B. Atlas IED: www.atlasied.com

C. Bogen Communications, Inc: www.bogen.com/#sle.

2.2 SQUARE CEILING TILE 25/70V SPEAKER

A. The speaker shall be a Drop-In Ceiling Speaker, which shall be fully enclosed and constructed of industrial grade steel. It shall be comprised of a damped high compliance factory-mounted 8" loudspeaker that shall consist of an 8" treated paper main cone, a secondary high frequency cone, and a 10 ounce magnet. The unit shall have a 70V/25V transformer with power taps of 4, 2, 1, 0.5, and 0.25 watts, selectable by rotary switch. Output shall be 94 dB @ 1 watt / 1 meter (min.). Frequency response shall be 95 Hz to 20 kHz (min.). The speaker shall include 4 seismic attachment points. The speaker shall have a non-reflective bright white metal finish grille. Speaker is listed to UL Standard 1480 for U.S. use. The speaker assembly will fit into 2' x 2' and 2' x 4' ceiling tiles. For 2' x 2' installations, a support rail shall not be needed and no cuts to the ceiling shall be necessary. For 2' x 4' installations, a single cut to the ceiling tile and an included support rail shall be needed. The speaker shall measure 24" W x 4-7/8" H x 24" D and shall weigh 14 lb.

B. Product: Bogen CSD2X2U-V2.

2.3 SQUARE CEILING TILE 25/70V SPEAKER WITH INTEGRATED VOLUME CONTROL

A. The speaker shall be a Drop-In Ceiling Speaker, which shall be fully enclosed and constructed of industrial grade steel. It shall be comprised of a damped high compliance factory-mounted 8" loudspeaker that shall consist of an 8" treated paper main cone, a secondary high frequency cone, and a 10 ounce magnet. The unit shall have a 70V/25V transformer with power taps of 4, 2, 1, 0.5, and 0.25 watts, selectable by rotary switch. Output shall be 94 dB @ 1 watt / 1 meter (min.). Frequency response shall be 95 Hz to 20 kHz (min.). The speaker shall include 4 seismic attachment points. The speaker shall have a non-reflective bright white metal finish grille. Speaker is listed to UL Standard 1480 for U.S. use. The speaker assembly will fit into 2' x 2' and 2' x 4' ceiling tiles. For 2' x 2' installations, a support rail shall not be needed and no cuts to the ceiling shall be necessary. For 2' x 4' installations, a single cut to the ceiling tile and an included support rail shall be needed. The speaker shall measure 24" W x 4-7/8" H x 24" D and shall weigh 12 lb. A front-mounted recessed volume control shall be easily accessible.

B. Product: Bogen CSD2X2VRU.

2.4 SURFACE MOUNT 25/70V SPEAKER

A. The speaker shall include an 8" paper cone speaker with 6 oz. magnet. The frequency response shall be 110 Hz to 15 kHz. Dispersion angle shall be no less than 100°. Sensitivity, measured 1 watt @ 1 meter on axis, shall be a minimum of 96 dBspl. The unit shall incorporate a transformer with tap selection wires corresponding to power settings of 4, 2, 1, 1/2, 1/4, and 1/8 watts for both 70V and 25V constant voltage speaker systems. Models with VR suffix shall feature a recessed volume control centered in the front speaker grille. The speaker enclosure shall be full steel construction and allow for surface mounting. The enclosure shall be painted off-white. The speaker enclosure shall also provide Wiremold® knockouts. Front face of models MB8TSL(VR) shall be angled by 12.5 degrees downward. Product weight shall be 9 lb.

B. Products:
   1. Angled: Bogen MB8TSL.
   2. Angled With Integrated Volume Control: Bogen MB8TSLVR.
   3. Flat: Bogen MB8TSQ.
   4. Flat With Integrated Volume Control: Bogen MB8TSQVR.

2.5 SURFACE MOUNT EXTERIOR 25/70V SPEAKER

A. Flange-mounted, high intelligibility, reentrant type loudspeaker. Its sturdy, weatherproof, vandal-resistant, all-metal construction rated for indoor and outdoor use. Built-in, rotary impedance selector switch for matching the speaker power requirements to a 70V or 25V constant-voltage line. Screw terminals make installation fast and easy. Rated at 15 watts max. @ 70V or 25V. Power levels are: 15, 7.5, 3.6, 1.8, or 0.9 watts for 70V systems and 15, 7.0, 1.8, 0.9, 0.5, 0.25, or 0.125 watts for 25V systems

B. Product: Bogen FMH15T

C. Accessories:
   1. Surface-Mount Enclosure: Bogen BBSM6
   2. Flush-Mount Enclosure: Bogen BBFM6
   3. Adapter Ring: Bogen FMHAR8
   4. Grille: Bogen SGHD8

2.6 EMERGENCY PAGING OVERRIDE RELAY

A. The relay device shall monitor audio activity over a wide range of input voltages and operate two sets of C-Form relay contacts in response to detected activity. The relay shall be used to detect voltages as low as signals directly from a microphone or as high as signals from 70V speaker systems.

B. System must comply with NFPA 72 section 24.5.23.2; Visible notification devices of building mass notification system must flash simultaneously.

C. Manufacturers:
   1. Bogen Model: VAR1

D. Accessories:
   1. 12V DC Power Supply Model: PRS40C

2.7 ZONE CONTROL MODULE

A. Factory assembled PCB control board housed in a rugged and compact 1RU chassis. The unit provides the same addressable end point functionality as an IP speaker or IP phone with the convenience of line level and amplified audio output. This line level output is ideal for use with amplifiers to power large zones of traditional 25V, 70.7V, or 100V speakers or paging horn speakers. In addition to the line level output, the controller provides 1-channel of 15-Watt RMS at 8-ohm or, 70.7V amplified output to drive a small cluster of analog speakers. It also includes 2 GPI Inputs, 1 GPI Output and Microphone input for talk back or listen applications. Features include Auto-provisioning and auto-registration. This is an easy and timesaving way to configure our IP speakers on your Voice VLAN, similar to a VoIP handset. By sitting on the same VLAN, both VoIP phones and IP speakers share the same Quality of Service (QoS) so communications are always secure and guaranteed.

B. Product: Atlas IED IP-ZCM1RMK

2.8 AMPLIFICATION EQUIPMENT

A. Rackmount 25 / 70 volt output amplifier sized per power requirements to drive all connected speakers at the specified loudness level.

B. Manufacturers:
   1. Advanced Network Devices
   2. Bogen Communications, Inc

2.9 WIRE AND CABLE

A. Cable per section 27 10 05 - Communications Copper Cabling

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Splice cable only at terminal block units.

C. Make cable shields continuous at splices and connect speaker circuit shield to equipment ground only at amplifier.

D. Install input circuits in separate cables and raceways from output circuits.

E. Provide protection for exposed cables where subject to damage.

F. Use armored cable for outside speaker circuits.

G. Support cables above accessible ceilings to keep them from resting on ceiling tiles. Use spring metal clips or plastic cable ties to support cables from structure for ceiling suspension system. Include bridle rings or drive rings.

H. Use suitable cable fittings and connectors.

I. Connect reproducers to amplifier with matching transformers.

J. Ground and bond equipment and circuits in accordance with Section 26 05 26.

3.2 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Measure and record sound power levels at each location.

3.3 ADJUSTING

A. Adjust transformer taps for appropriate sound level.

B. Adjust devices and wall plates to be flush and level.

3.4 CLOSEOUT ACTIVITIES

A. See Section 01 79 00 - Demonstration and Training, for additional requirements.

B. Demonstration: Demonstrate operation of system to Owner's personnel.
   1. Use operation and maintenance data as reference during demonstration.
   2. Briefly describe function, operation, and maintenance of each component.

C. Training: Train Owner's personnel on operation and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of two hours of training.

3.5 MAINTENANCE

A. Provide service and maintenance of public address and music system for one year from Date of Substantial Completion.

END OF SECTION

SECTION 27 53 13
CLOCK SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Clock system requirements.

B. Wireless clock systems and associated components:
   1. Wireless secondary indicating clocks.

C. Accessories.

1.2 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 27 51 16 - Public Address Systems: For interface with clock system.

1.3 REFERENCE STANDARDS

A. 47 CFR 15 - Radio Frequency Devices; current edition.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of clocks with potential conflicts and/or view obstructions installed under other sections or by others.
   2. Coordinate the work with other installers to provide power for clocks and equipment at required locations.
   3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Preinstallation Meetings:

C. Sequencing:
   1. Do not install clocks until final surface finishes and painting are complete.

1.5 SUBMITTALS

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

1.6 QUALITY ASSURANCE

A. Comply with the following:
   1. NFPA 70.

1.7 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

PART 2 PRODUCTS

2.1 CLOCK SYSTEM REQUIREMENTS

A. Provide modifications and extensions to existing clock system consisting of all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.

B. Interface with Existing Clock System:
   1. Existing Master Clock Unit:
      a. Manufacturer/Model: Visiplex.

C. Interface with Other Systems:
   1. Provide products compatible with other systems requiring interface with clock system.
   2. Interface with public address system as specified in Section 27 51 16.

D. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of 47 CFR 15, for Class B, consumer application.

2.2 WIRELESS CLOCK SYSTEMS

A. Manufacturers:
   1. Wireless Clock System - Basis of Design: visiplex.

B. Analog Wireless Secondary Indicating Clocks:
   1. Basis of Design: Visiplex.
   2. Power Source: 120 VAC; provide required transformers., battery (2 C size).
   3. Time Reference Source: Synchronized with master clock unit wireless time correction signal.
   4. Clock Movements: Microprocessor-controlled.
   5. Clock Face:
      a. Shape: Round.
      b. Size: 14 inch, nominal.
      c. Color: White face with black numerals and markings, unless otherwise indicated or approved by Architect.
      d. Hands: For indicating hour, minute, and second.
   6. Clock Crystal/Lens: Glass or shatter-resistant plastic.
   7. Case Material/Color/Finish: Black Frame.
   8. Mounting:
      a. Single-Face Clocks: Surface.
      b. Double-Face Clocks: Surface.
   9. Product(s):
      a. Double-Sided Wireless Clock Model: TS4147
      b. Single-Face Clock Model: TS4142
      c. Accessories:
         1) 110V AC Adapter (Replaces Clock Batteries) Model: TS-OPT

C. Provide components as indicated or as required for extension of wireless time correction signal between master clock unit and wireless secondary indicating clocks.

2.3 ACCESSORIES

A. Protective Covers/Guards for Clocks

1. Products:
   a. American Time 1500-WEB hinged clock guard.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that characteristics of system components are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive system components.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).

B. Install products in accordance with manufacturer's instructions.

C. Install wire guards where installed in areas of potential impact.

D. Wiring Method for NFPA 70 Class 2 and Class 3 Circuits: Unless otherwise indicated, use cables (not in conduit), where permitted by code.
   1. Use suitable listed cables in wet locations, including underground raceways.
   2. Use suitable listed cables for vertical riser applications.
   3. Use listed plenum rated cables in spaces used for environmental air.
   4. Install wiring in conduit for the following:
      a. Where required for rough-in.
      b. Where required by authorities having jurisdiction.
      c. Where exposed to damage.
      d. Where installed outside the building.
      e. For exposed connections from outlet boxes to devices.
   5. Conceal all cables unless specifically indicated to be exposed.
   6. Route exposed cables parallel or perpendicular to building structural members and surfaces.
   7. Do not exceed manufacturer's recommended maximum cable length between components.

E. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

3.3 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Prepare and start system in accordance with manufacturer's instructions.

C. Program system parameters according to requirements of Owner.

D. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

E. Submit detailed reports indicating inspection and testing results and corrective actions taken.

3.4 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.5 PROTECTION

A. Protect installed system components from subsequent construction operations.

END OF SECTION

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, shock pad, infill and markings.

C. Equipment for Maintenance of Synthetic Turf Surface System.

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 guildines 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. Documenation 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 Chocker 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 occured 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 sythentic 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 distrubutor 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 certifed 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 tile Contract Documents.

B. As-Built Survey: The Contractor installing the aggregate base shall provide an as-built survey of the final compacted finishing stone deplicting 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 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 ¼ 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 minmum 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. Manufacturer
1. A-Turf; _____: www.aturf.com.
2. FieldTurf; _____: www.fieldturf.com.
3. AstroTurf; _____: www.astroturf.com.

B. 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 rigid monofilament strands 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. Head seams are only acceptable at sidelines.
10. Turf panels including sideline panels and inlaid markings, must be sewn, glued panel seams are not acceptable.
11. All markings are to be factory tufted or inlaid at the project site. No line painting will be allowed.

C. 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: 9 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.

D. 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.

E. 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.

F. 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, warrantees 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. Nofity Archtitect if soils not able to acheive the proper compaction. Areas which cannot acheive 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 ¼ inch over 10 feet and ½ 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 ¼ 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 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 piror 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 RESILIENT UNDERLAYMENT SHOCK PAD INSTALLATION

A. Installation of underlayment shock pad shall be in strict accordance with the manufacturer's instructions, site specific recommendations, and industry best practices.

B. After the finishing stone grades have been approved and inspected, the resilient Shock Pad shall be installed from sideline to sideline.
   1. Equipment and personnel shall take extreme care to minimize disturbance of the finishing stone during Shock Pad installation.
   2. All operations shall work from behind the Shock Pad or from adjacent, pre-installed pad surface.
   3. For rolled Shock Pads, one head seam shall be allowed per length. Head seams shall be staggered so as not to be within 10 feet of the previously installed roll.
      a. The head seam shall overlap approximately 4 inches on original roll out. Second and subsequent rolls shall be rolled out within 1 inch, or less, of the previous roll and allowed to expand or contract before manually sliding in place.
      b. After allowance for expansion or contraction, the padding shall slide into place so as to touch the edge or seam of the previous. Care shall be taken so as not to disturb the finishing stone material when butting the seams together.

C. The Resilient ShockPad shall not receive a final cut or edging detail until the material has relaxed/expanded in direct sunlight for a minimum of six hours.
   1. No open seams shall exceed 1/4 inch (in expanded state) after final seam or end cutting is complete.
   2. Padding material shall stop just short of the exposed nailer board.

D. The Resilient ShockPad shall be inspected by the Contractor after completion to insure the surface is smooth with only minor bumps from stone particles or other material protruding from underneath that will not show up once the turf is laid over top.
   1. Expansion bubbles and open seams shall be repaired prior to final inspection.
   2. Repeat inspections shall be carried out prior to each roll of synthetic turf being installed.

E. At completion of the Shock Pad installation, notify Architect for review three (3) days before proceeding with installation of subsequent component.

3.6 SYNTHETIC GRASS CARPET INSTALLATION

A. After a final inspection of the Resilient ShockPad by the Turf Manufacturer Representative and the Architect, the synthetic turf installation shall begin.

B. 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.

C. 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.

D. 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.

E. GLUING OF ROLLS SHALL NOT BE ACCEPTABLE.

F. When all rolls of the playing surface have been attached, install sideline areas at right angles to the playing field synthetic turf area.

G. 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.

H. 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.

3.7 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. The following are additional line striping requirements

E. 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.

F. At completion of the carpet and markings installation, notify Architect for review three (3) days before proceeding with installation of subsequent component.

3.8 INFILL MATERIAL INSTALLATION

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 Attentuation Evaluation specified herein shall be scheduled after final inspection has been completed and punch list items addressed.

3.9 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 Attentuation 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.

3.10 CLEAN UP

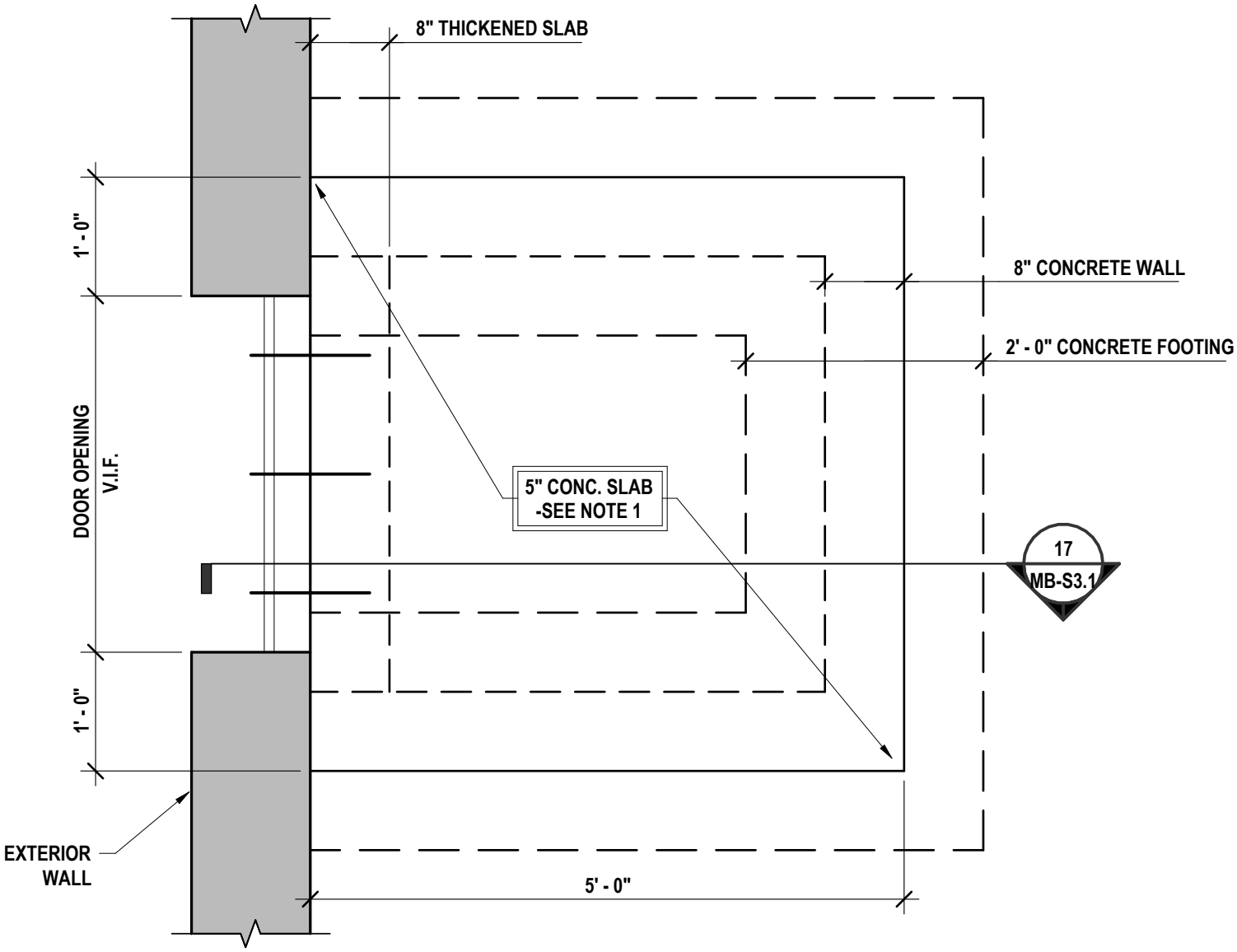
A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items.

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



NOTES:

1. 5" FIBER REINFORCED SLAB ON GRADE ADDITIONALLY REINFORCED WITH 6x6-W2.0xW2.0 WWF. PROVIDE SUPPORT CHAIRS TO HOLD WWF IN POSITION DURING CONCRETE PLACEMENT. PROVIDE AIR ENTRAINMENT AND 2% SLOPE AT EXTERIOR SLABS.

16 TYP. FROST SLAB AT DOOR

3/4" = 1'-0"

-ADD DETAIL 16 TO SHEET MB-S3.1

TYP. FROST SLAB AT DOOR

2025 CAPITAL IMPROVEMENTS PROJECT

HAMMONDSPORT CSD

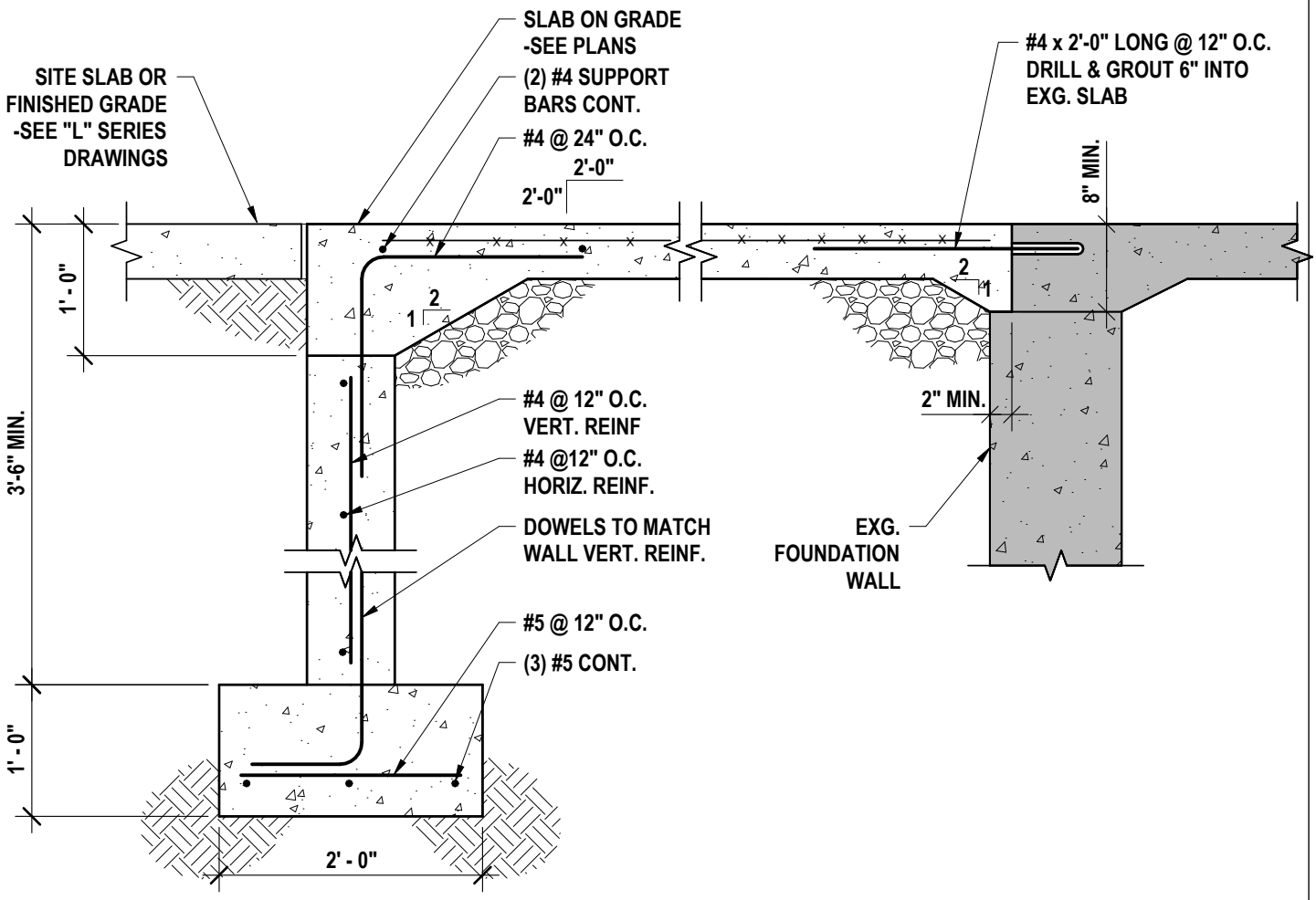
8272 MAIN STREET HAMMONDSPORT, NEW YORK, 14840

HUNT ENGINEERS | ARCHITECTS | SURVEYORS
ALBANY, NY - BINGHAMTON, NY - HORSEHEADS, NY - ROCHESTER, NY
TOWANDA, PA - WILLIAMSPORT, PA
WWW.HUNT-EAS.COM 607 - 358 - 1000
NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

AD3-S1

DATE: 01/13/26

PROJECT NO: 1925-014



17 TYPICAL FROST WALL AT EXISTING FOUNDATION

3/4" = 1'-0"

-ADD DETAIL 17 TO SHEET MB-S3.1

TYPICAL FROST WALL AT EXISTING FOUNDATION

2025 CAPITAL IMPROVEMENTS PROJECT

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HUNT ENGINEERS | ARCHITECTS | SURVEYORS
ALBANY, NY - BINGHAMTON, NY - HORSEHEADS, NY - ROCHESTER, NY
TOWANDA, PA - WILLIAMSPORT, PA
WWW.HUNT-EAS.COM 607 - 358 - 1000
NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

AD3-S2

DATE: 01/13/26

PROJECT NO: 1925-014