ADDENDUM NO. 1

February 5, 2026

Michigan City Community Event Center
Michigan City, Indiana

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated January 16, 2026 by Fanning Howey Associates, Inc. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 1-1 and attached Addendum No. 1 from Fanning Howey Associates, Inc. dated February 4, 2026 and consisting of 3 pages, added Specification Section 08 71 00 – Door Hardware, revised Specification Sections 11 68 33 – Athletic Field Equipment, 22 11 23 – Domestic Water Pumps, 22 40 00 – Plumbing Fixtures, 32 13 15 – Unbonded Post-Tensioned Concrete Tennis Courts, 32 18 13 – Synthetic Grass Surfacing, 33 30 00 – Sanitary Sewers, and 14 drawings.

A. SPECIFICATION SECTION 00 00 10 – TABLE OF CONTENTS

1. **ADD:**

   Specification Section 08 71 00 – Door Hardware

B. SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACE SUMMARY

B. BID CATEGORY NO. 2 – GENERAL TRADES

1. **ADD:**

   Specification Section 08 71 00 – Door Hardware

A D D E N D U M N O. 1

Michigan City Community Event Center

Michigan City Area Schools
Michigan City, Indiana

Project No. 224177.01

Index of Contents

Addendum No. 1, 7 items, 2 pages
New Project Manual Section: 08 71 00 – Door Hardware
Revised Project Manual Sections: 11 68 33 – Athletic Field Equipment, 22 11 23 – Domestic Water Pumps, 22 40 00 – Plumbing Fixtures, 32 13 15 – Unbonded Post-Tensioned Concrete Tennis Courts, 32 18 13 – Synthetic Grass Surfacing and 33 30 00 – Sanitary Sewers
Revised Drawing Sheets: L-101, L-201, L-202, L-203, L-401, S120, A-171, A-172, A-601, P-110, P-120, P-501, P-901, and ET11A

Date: February 4, 2026

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Architect/Engineer under the Laws of the State of Indiana.

FANNING/HOWEY ASSOCIATES, INC.
ARCHITECTS/ENGINEERS/CONSULTANTS

Paul A. Miller, License No. AR10800161
Expiration Date: 12/31/2027

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated January 16, 2026, for Michigan City Community Event Center for Michigan City Area Schools, 408 S. Carroll Ave, Michigan City, IN 46360; as prepared by Fanning/Howey Associates, Inc., Crown Point, Indiana.
This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. PROJECT MANUAL, TABLE OF CONTENTS

A. Book 2, Page 00 01 10-4, DIVISION 32: Change title of section 32 18 13.01 to read "Manufacturers Third Party Guarantee"

B. Book 2, Page 00 01 10-1, DIVISION 08: Add Section 08 71 00 – Door Hardware.

ITEM NO. 2. NEW PROJECT MANUAL SECTION(S)

A. New Project Manual Section 08 71 00 – Door Hardware is included with and hereby made a part of this Addendum.

ITEM NO. 3. REVISED PROJECT MANUAL SECTIONS

A. Project Manual Sections 11 68 33 – Athletic Field Equipment, 22 11 23 – Domestic Water Pumps, 22 40 00 – Plumbing Fixtures, 32 13 15 – Unbonded Post-Tensioned Concrete Tennis Courts, 32 18 13 – Synthetic Grass Surfacing and 33 30 00 – Sanitary Sewers has been revised, dated 2/4/26, and are included with and hereby made a part of this Addendum.

ITEM NO. 4. PROJECT MANUAL, SECTION 09 96 00 – HIGH-PERFORMANCE COATINGS

A. Add 3.7, A, 1., b., 1), as follows:

"1) Same as Topcoat."

B. Add 3.7, B., 1., b., 1), as follows:

"1) Same as Topcoat."

ITEM NO. 5. REVISED DRAWING SHEETS

A. Drawing Sheets: L-101, L-201, L-202, L-203, L-401, S120, A-171, A-172, A-601, P-110, P-120, P-501, P-901, and ET11A have been revised, dated 2/4/26, and is included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

ITEM NO. 6. DRAWING SHEET NO. T-001

A. Add item to Owner Responsibility Matrix - PA Speakers and Wiring is contractor furnished, contractor installed.

B. Edit item Owner Responsibility Matrix - Sound System – Scoreboard to AV System – Scoreboard is contractor furnished, contractor installed.

END OF ADDENDUM

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical door hardware

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 "General Requirements" sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. "Metal Doors and Frames"
   b. "Interior Aluminum Doors and Frames"

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
2. NFPA 101 – Life Safety Code
3. NFPA 105 – Smoke and Draft Control Door Assemblies
4. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
   a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

3. Door Hardware Schedule:
   a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
   b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
   c. Indicate complete designations of each item required for each opening, include:
      1) Door Index: door number, heading number, and Architect's hardware set number.
      2) Quantity, type, style, function, size, and finish of each hardware item.
      3) Name and manufacturer of each item.
      4) Fastenings and other pertinent information.
      5) Location of each hardware set cross-referenced to indications on Drawings.
      6) Explanation of all abbreviations, symbols, and codes contained in schedule.
      7) Mounting locations for hardware.
      8) Door and frame sizes and materials.
      9) Degree of door swing and handing.

4. Key Schedule:
    a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
    b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
    f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
    a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
    b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
    a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
    b. Catalog pages for each product.
    c. Final approved hardware schedule edited to reflect conditions as installed.
    d. Final keying schedule
    e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
    a. Fire door assemblies, in compliance with NFPA 80.
    b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project’s vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
   b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
   b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Review required testing, inspecting, and certifying procedures.

d. Review questions or concerns related to proper installation and adjustment of door hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.07 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    a. Mechanical Warranty
        1) Locks
            a) Schlage ND Series: 10 years
        2) Exit Devices
            a) Von Duprin: 10 years
        3) Closers
            a) LCN 4000 Series: 30 years

1.08 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.

C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Roton
   b. ABH
   c. Hager

B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.04 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Don-Jo
   c. Hager

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.05 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood
   c. Hager

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.06 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage L9000 series

2. Acceptable Manufacturers and Products:
   a. No substitute.

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to “KEYING” article, herein.
5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches. Provide motor based electrified and motor based latch retraction locksets that comply with the following requirements:
   a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
   b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case
   c. Low maximum current draw – maximum 0.4 amps (Lever control) and maximum 2.0 amps (Latch retraction) to allow for multiple locks on a single power supply.
   d. Low holding current (Lever control or latch retraction) – maximum 0.01 amps to produce minimal heat, eliminate “hot levers” in electrically locked applications and motorized latch retraction applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
   e. Connections – provide quick-connect Molex system standard.

8. Provide locks with a key override feature built into the chassis that allows the outside key to retract the deadbolt and/or latchbolt, overriding the inside thumbturn when it is being held in the locked position - where the XL13-439 option is specified in the hardware sets.
9. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
    a. Lever Design: 06A

2.07 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
    a. Schlage ND series

2. Acceptable Manufacturers and Products:
    a. No substitute.

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide escutcheon with lock status indicator window on top of lockset rose:
    a. Escutcheon height (including rose) 6.05 inches high by 3.68 inches wide.
    b. Indicator window measuring a minimum 3.52-inch by .60 inch with 1.92 square-inches of front facing viewing area and 180-degree visibility with a total of .236 square-inches of total viewable area.
    c. Provide snap-in serviceable window to prevent tampering. Lock must function if indicator is compromised.
    d. Provide messages color-coded with full text and symbol, as scheduled, for easy visibility.
    e. Unlocked and Unoccupied message will display on white background, and Locked and Occupied message will display on red background.
3. Cylinders: Refer to "KEYING" article, herein.
4. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
5. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
6. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
7. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
    a. Lever Design: Rhodes

2.08 DEADBOLTS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
    a. Schlage B600/B700/B800 Series

2. Acceptable Manufacturers and Products:
    a. No substitute.

B. Requirements:

1. Provide grade 1 deadbolt series conforming to ANSI/BHMA A156.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide deadbolts with standard 2-3/4 inches (70 mm) backset. Provide 2-3/8 inches (60 mm) where noted or if door or frame detail requires. Provide deadbolt with full 1-inch (25 mm) throw, constructed of steel alloy.
4. Provide manufacturer's standard strike.
5. Lock Status Indicator Trim: Where specified, provide escutcheon with lock status indicator widow.
   a. Escutcheon height 4.125 inches, width 2.54 inches. Projection 1.32 inches on thumbturn side and 1.28 inches on cylinder side.
   b. Unlocked and Unoccupied message will display on white background, and Locked and Occupied message will display on red background.
   c. Provide snap-in serviceable window to prevent tampering. Lock must function if indicator is compromised.
   d. Indicator window to provide 180-degree visibility.

2.09 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 99/33A series

2. Acceptable Manufacturers and Products:
   a. No substitute.

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide grooved touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
6. Provide flush end caps for exit devices.
7. Provide exit devices with manufacturer's approved strikes.
8. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
10. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
11. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.

14. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.10 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Schlage FSIC (Match existing system)

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.11 KEYING

A. Scheduled System:

1. Existing factory registered system:
   a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:
   a. Replaceable Construction Cores.
      1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
         a) 3 construction control keys
         b) 12 construction change (day) keys.
      2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:
   a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      1) Master Keying system as directed by the Owner.
   b. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   c. Provide keys with the following features:
      1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
      2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
   d. Identification:
      1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
      2) Identification stamping provisions must be approved by the Architect and Owner.

3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

e. Quantity: Furnish in the following quantities.
1) Permanent Control Keys: 3.
2) Master Keys: 6.
3) Change (Day) Keys: 3 per cylinder/core that is keyed differently
4) Key Blanks: Quantity as determined in the keying meeting.

2.12 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Telkee

2. Acceptable Manufacturers:
   a. HPC
   b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
   a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
   b. Provide hinged-panel type cabinet for wall mounting.

2.13 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4040XP series

2. Acceptable Manufacturers and Products:
   a. No substitute.

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.

4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
11. Closers shall be capable of being upgraded by adding modular mechanical or electronic components in the field.

2.14 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Trimco

2. Acceptable Manufacturers:
   a. Ives
   b. Rockwood

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.15 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Trimco

2. Acceptable Manufacturers:
   a. Ives
   b. Rockwood

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.

2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.16 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Rockwood
   b. Trimco

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.17 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

B. Scheduled Manufacturer:

1. Zero International

C. Acceptable Manufacturers:

1. National Guard
2. Reese
3. Pemko

D. Seals and Gasketing: Provide continuous gasketing on exterior openings, to the head and jambs, forming a continuous seal between the door and the frame. Provide smoke, light, or sound gasketing on interior doors where indicated.

1. Provide self-tapping fasteners for aluminum extruded gasketing being applied to hollow metal frames.
   a. Provide non-corrosive fasteners for all exterior applications.
   b. Provide security fasteners where indicated.

2. Provide neoprene, EPDM, silicone, or nylon brush inserts as specified in hardware sets. Provide non brush inserts of solid or sponge cell, as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

E. Smoke Labeled Gasketing: At all smoke labeled openings, provide smoke listed perimeter gasketing assemblies complying with NFPA 105 listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for smoke control ratings indicated based on testing according to UL 1784.

F. Fire Listed Gasketing: Assemblies complying with NFPA 80 that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction for fire ratings indicated based on testing according to UL-10C.

1. Where frame-applied intumescent seals are required by the manufacturer, provide gaskets that comply with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies and UBC 7-2, Fire Tests of Door Assemblies.

G. Sound-Rated Gasketing: Provide acoustic gasketing to meet Sound Transmission Class (STC) rating required.

H. Meeting-Stile Gasketing: Provide meeting-stile gasketing that fastens to the meeting stiles forming a continuous seal when doors are closed.

I. Door Sweeps or Shoes: Apply to the bottom of the door to close the gap between the door bottom and finished floor or saddle threshold.

1. Provide solid neoprene, EPDM, silicone, or nylon brush type of seal as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

J. Automatic Door Bottoms:

1. Provide closed cell sponge, bulb neoprene. or EPDM type of seal as specified in hardware sets.
2. Door bottom to be mortised, semi mortised, or surface mount as with a minimum thickness as specified in hardware sets.

K. Rain Drips:

1. Provide overhead rain drips for out-swinging hollow metal doors that are not covered against 45 degree blowing rain. Aluminum extrusion to be a minimum of .088 inches thick and extend 2.50 inches from the face of the frame, in anodized finish to match door.
2. Door sweeps or shoes with integral rain drip must meet ADA requirements

L. Thresholds: Provide threshold units not less than 4 inches wide, formed to accommodate change in floor elevation where indicated, and fabricated to accommodate door hardware and fit door frames.

1. Threshold extrusion to be a minimum thickness as specified in hardware sets.

2.18 FINISHES

A. FINISH: BHMA 626/652 (US26D); EXCEPT:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match

7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum
10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.
3. Furnish permanent cores to Owner for installation.

J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

K. Continuous Hinges: Re-locate the door and frame fire rating labels where they will remain visible so that the hinge does not cover the label once installed.

L. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

M. Overhead Stops/Holders: Mount overhead stops/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

N. Thresholds:

1. Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
2. Aluminum thresholds to be cut-in, and scribed around mullions, frame members, and stops. Do not butt to thresholds. Provide a continuous surface across full width of opening from jamb to jamb.
3. Where aluminum panic-type (rabbeted) thresholds with neoprene inserts are specified, undercut doors as required to properly mate with seal in threshold.

O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

P. Perimeter Gasketing:

1. Apply to head and jamb, forming seal between door and frame.
2. Install gasketing in a manner eliminating need to cut any seal to install surface mounted hardware. Install compatible mounting bracket for surface mounted hardware unless minimum 1/4 inch thick solid aluminum seals are provided for mounting of surface applied hardware.

Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

R. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

145968 OPT0467674 Version 2

Legend:
Link to catalog cut sheet
Electrified Opening

Hardware Group No. 01

For use on Door #(s):

A104	A110	B102	B107B	C101A	D101
D102	D103				

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	STOREROOM LOCK	ND80TD RHO		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 02

For use on Door #(s):
A101

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE	LD-99-EO-SNB		626	VON
1	EA	PANIC HARDWARE	LD-99-L-NL-06-SNB		626	VON
1	EA	RIM CYLINDER	20-057 ICX		626	SCH
1	EA	MORTISE CYLINDER	20-061		626	SCH
2	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
2	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN
2	EA	PROTECTION PLATE	10X1 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
2	EA	MEETING STILE	8195AA		AA	ZER
2	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 03

For use on Door #(s):

A102A	A107B	A107C	A107D	A107E	B106B
B101B	B106C	B107A	C101B	C101C	

Provide each RU door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	MORTISE CYLINDER	20-061		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1			BALANCE OF HARDWARE BY DOOR MANUFACTURER			

Hardware Group No. 04

For use on Door #(s):
A102B A107A A107F B101A B106A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50TD RHO		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 05

For use on Door #(s):
A103 B105

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	CORRIDOR LOCK W/ OUTSIDE INDICATOR W/ INSIDE INDICATOR	L9456T 06A OS-LOC IS-LOC XL13-439		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 06

For use on Door #(s):
A105 A106 A108A A109A B103 B104

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	CLASSROOM DEADBOLT	B663T		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	HEAVY DUTY PUSH PLATE	1001-9		630	TRM
1	EA	PULL PLATE	1017		630	TRI
1	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 07

For use on Door #(s):
A108B A109B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	ONE WAY DEADBOLT	B661T		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	HEAVY DUTY PUSH PLATE	1001-9		630	TRM
1	EA	PULL PLATE	1017		630	TRI
1	EA	SURFACE CLOSER	4040XP SHCUSH TBWMS		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	PROTECTION PLATE	4X1 LDW-CSK-HB		630	TRM
3	EA	SILENCER	SR64		GRY	IVE

KEY FROM PULL SIDE.

Hardware Group No. 08

For use on Door #(s):
A111

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	STOREROOM LOCK	ND80TD RHO		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SHCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 09

For use on Door #(s):
B100

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		628	IVE
1	EA	CONST LATCHING BOLT	FB51P		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	STOREROOM LOCK	ND80TD RHO		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	COORDINATOR	COR X FL		628	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61		689	LCN
2	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
2	EA	RAIN DRIP	142AA		AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			
2	EA	MEETING STILE	383AA		AA	ZER
2	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	655A - OR AS REQUIRED BY SILL DETAIL		A	ZER

Hardware Group No. 10

For use on Door #(s):
D104

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	BALANCE OF HARDWARE	BY GATE MANUFACTURER			
1	EA	MORTISE CYLINDER	20-061		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH

Hardware Group No. 11

For use on Door #(s):
A100 B108

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY		628	IVE
1	EA	STOREROOM LOCK	ND80TD RHO		626	SCH
1	EA	FSIC CORE	MATCH EXISTING SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBWMS		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61		689	LCN
1	EA	PROTECTION PLATE	10X1 1/2 LDW-CSK-HB		630	TRM
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURURE			

END OF SECTION

SECTION 116833 - ATHLETIC FIELD EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Playfields and equipment, including the following:
1. Monuments
2. Long jump pits
3. Long jump take-off boards
4. Vaulting boxes
5. Pole vault landing system
6. Shot put toe board and pad
7. High school Shot Put safety cage
8. Combination Football/Soccer goals
9. Football/soccer goal posts
10. Protective pads
11. Concrete slabs and encasements
12. Discus pad
13. Discus safety cage
14. Tennis court equipment and accessories
15. Football/soccer ball netting

B. Related Sections include the following:
1. Division 03 Section “Cast-In-Place Concrete”: For concrete footings.
2. Division 31 Section “Earth Moving”: For excavation for installation of concrete footings.

1.3 SUBMITTALS

A. Shop Drawings: For items included in this Section. Include types of materials, construction details, sizes and layout, and complete information on hardware and accessories.

B. Quality Assurance/Control Submittals
1. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, finishes, field-assembly requirements, and installation details.
2. Qualification Data: For installer.

1.4 QUALITY ASSURANCE

A. Standards: Provide athletic equipment complying with or exceeding requirements of the National Federation of State High School Associations.

B. Pre-Installation Conference: Meet with Installer, and installers of substrate construction, and other related work including penetrating work such as playground equipment, Architect and Owner.
1. Review requirements (Contract Documents), submittals, status of coordinating work, availability of materials, and installation facilities and establish preliminary installation schedule. Review requirements for inspections, tests, certifications, forecasted weather conditions, governing regulations, and proposed installation procedures.

C. Installer Qualifications An installer shall have a minimum of 5 years experience installing athletic equipment and be able to demonstrate successful completion of similar projects.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Where a model number is used on the Drawings, it refers to the manufacturer and product listed which is specified as the type, size, function, and quality required for this Project.

1. Tennis Net/Post: Post are to have interior wind mechanism, 3" sq posts. Each net is to have an adjustable center strap. Each court is to have 1 score reporter and 1 trash receptacle, mounted on the net post at each court. Provide products from one of the approved manufacturers listed below.

a. (Basis of Design) Equipment as manufactured by Douglas Tennis Systems

(Phone 1-800-553-8907) "Premier 3" square post; "TN-50" NET: "SR-357" Score Reporter; "Court Order Unit"; "OMP-9R" Windscreen with "TR-50" Tie-Rap Fasteners.

b. Equipment as manufactured by Court-1: Canada (Phone 1-800-363-3591) "RS-100" 3" Square Tennis Post; "TN-60" Net; "SK-10" Center Strap and Anchor; "VP-9/G(Grommets)" Tennis Court Windscreening "Open Mesh" Polyester with "PNT" TY-RAPS.

c. Equipment as manufacture by Ball Products, Inc. Sanford, Florida (Phone 1-800-767-Ball or 407-321-2122.) "Championship Internal Wind Post"; Duranet 3.5 Tournament"; Adjustable Center Strap and Anchor; "Poly Pro 80% Open Mesh Windscreen, 9' width; "TY-RAPS" 71/2"-50 lb. break strength.

d. Equipment as manufactured by J.A. Cissel MFG. CO., Lakewood, New Jersey (Phone 1-800-631-2234 or 908-901-0300.) "#245" Courtmaster Royal 3" sq. Internal-Wind Posts; "701CDH" Net with "735E" Center Strap complete with Pipe Anchor and Snaps; "298" Professional Tennis Score Card; "101" Air Master 1 Open Weave, 9' high Windscreening with "220" Self-Locking Tyraps.

e. Equipment as manufactured by Japro Sports, LLC., Waterford, CT (Phone 1-800-243-0533) "STP-200" Deluxe Square Wind Club Tennis Posts; "STPGS-2" Deluxe Square Tennis Post Ground Sleeve; "TTN-3" Tournament Tennis Net w/ Vinyl Headband; "CS-1" Tennis Center Strap; "A-2" Tennis Center Strap Anchor.

B. The Architect will consider for acceptance products of other manufacturers provided they equal or exceed the material requirements and functional qualities of the specified product. Requests for Architect/Engineer's approval must be accompanied by the "Substitution Request Form" and complete technical data for evaluation. All materials for evaluation must be received by the Project Manager and Specification Department at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

1. Basis-of-Design: Douglas Tennis Systems…Subject to compliance with requirements, provide either the named products from one of the above manufactures or a comparable product by one of the following:

a. Sportsfield Specialties.
b. Porter Athletic Equipment Co.
c. Aalco Equipment
d. Schelde North America

2.2 MATERIALS

A. Monuments: Shall be as indicated.

1. Provide monuments at each corner of the football/soccer field.
2. Provide monuments locating centers of track radii.

B. Long / Triple Jump sand pit system.
1. Basis of Design: Preformed Long / Triple Jump sand pit with Sand Catchers #SP6020 as manufactured by Sportsfield Specialties, 888-975-3343,Delhi, NY

C. Long Jump Pit sand mix
1. Pit Fill: Shall consist of 40 percent clean mason sand and 60 percent sawdust. Sawdust shall be a hardwood sawmill byproduct. Sawdust particles shall not exceed 1/4 inch in size, and shall be free of any chemical or petroleum treatments. Blend to a uniform mix throughout.
2. Pit Base: Shall consist of 4 inches of No. 6 gravel.

D. Long Jump Take-Off Board: Board shall be 16 inches wide by 48 inches long with 3/4 x 16 x 48 inch marine plywood attached to an aluminum take-off board body with a stainless steel tray.
1. Basis-of-Design: HTB 16; Aluminum Athletic Co., West Conshohocken, Pennsylvania. Subject to compliance with requirements, provide either the named product or a comparable product of one of the following:
a. UCS, Kearny
b. Gill Athletics
c. Sportsfield Specialties

E. Vaulting Boxes: Stainless steel vaulting boxes with flared sides and tilted end. Provide plug which can be covered with track synthetic surface material, fitting flush with track surface.
1. Basis-of-Design: SSVB/SSVC; Aluminum Athletic Equipment Co., West Conshohocken, Pennsylvania. Subject to compliance with requirements, provide either the named product or a comparable product of one of the following:
a. UCS
b. Gill Athletics
c. Sportsfield Specialties

F. Pole Vault landing system: Pole vault landing system shall be Durazone as manufactured by by Sportsfield Specialties, 888-975-3343,Delhi, NY

G. Discus Throw ring: Recessed throwing ring.
1. Basis-of-Design: #TFD099AL aluminum Discus throw ring as manufactured by Sportsfield Specialties Co. 888-975-3343, Delhi, NY Subject to compliance with requirements, provide either the named product or a comparable product of one of the following:
a. UCS
b. Gill Athletics
c. Aluminum Athletic equipment Co

H. High School Discus cage:
1. Basis of Design: Portable Discus cage consisting of aluminum poles with 1 ¾" nylon mesh netting and associated hardware shall be model number DCHSPT as manufactured by Sportsfield Specialties Co., 888-975-3343, Delhi, NY.

I. Shot Put Toe Board: Heavy-duty cast aluminum toe board and recessed throwing ring.
1. Basis-of-Design: #TFSPH001AL aluminum Shot Put toe board and #TFSPH084AL throw ring as manufactured by Sportsfield Specialties Co. 888-975-3343, Delhi, NY Subject to compliance with requirements, provide either the named product or a comparable product of one of the following:
a. UCS
b. Gill Athletics
c. Aluminum Athletic equipment Co

J. High school Shot Put safety cage: Portable Shot put safety cage with 1-3/4" nylon mesh netting and associated hardware shall be model number SPCPT as manufactured by Sportsfield Specialties Co., 888-975-3343, Delhi, NY.

K. Combination Goal for Football and Soccer: Goal posts shall be official 24 feet wide and 8 feet above grade. Soccer uprights and cross bars shall be constructed from heavy wall extruded aluminum. Football uprights shall 20 feet high and 23 feet 4 inches apart. Football cross bar to be 10 feet above grade. Provide intermediate support as required. Top of uprights shall be capped with a formed, plated metal cap. Include associated protective padding.
   a. Basis of Design: SG4985HS High school "GoalPak"; Sportsfield Specialties Subject to compliance with requirements.

L. Football/soccer ball netting: Football/soccer ball netting system shall be 40' high x 50' wide #FSNS64040 as manufactured by Sportsfield Specialties Co., 888-975-3343, Delhi, NY.

M. Concrete Slabs
   1. Provide concrete slabs for shot-put, discus, and also for high jump standards. Size, configuration, and locations of slabs shall be as indicated on approved shop drawings.
   2. Concrete shall conform to the requirements of Division 03 Section "Cast-in-Place Concrete" and the "Concrete Schedule".

N. Concrete Encasements
   1. Provide concrete encasement of monuments and football goal posts.
   2. Provide concrete consisting of portland cement, complying with ASTM C150, aggregates complying with ASTM C33, and with a minimum of 28-day compressive strength of 2500 psi, using at least 4 sacks of cement per cu.yd., 1 inch maximum size aggregate, maximum 3 inch slump, and 2 percent to 4 percent entrained air. Prepare to conform to ASTM C94.

O. Tennis Posts, Sleeves, Nets, Center Strap Tie Down, and Anchors:
   1. Tennis posts shall be PVC coated galvanized steel. One pair of posts shall consist of one reel post and one tie off post. Posts shall extend the required 3'-6" above the court to meet U.S.T.A. requirements. Post shall be 3" square min. and shall set into corresponding aluminum ground sleeves. Upper end of posts shall be provided with an integral cap assembly with tamper resistant attachment hardware to prevent vandalism or use by unauthorized individuals.
      a. Color: Green.
   2. Extruded post sections shall be provided with an internal channel/track system to accept both a cable length adjustment clamp and a unique tension assembly to provide for ease of net installations. Net tensioning mechanism is totally enclosed in the posts. Net tensioning assembly is furnished with an integral pulley and a spring loaded retaining ring for quick and easy cable attachments. Acme screw adjustment is provided with a roller thrust bearing to minimize friction to provide proper net tension. Net tensioning crank handle is removable. Net tie-off post provides an integral clamp for adjustment of nets with varying cable lengths.
   3. Courtside of posts is provided with a continuous slot as part of the extrusion design to accept twist-lock type retainers to support a vertical net attachment rod. Posts and caps shall be finished in a durable black, powder-coated finish. Internal tensioning mechanism and net clamp shall be zinc plated.
   4. Sleeve shall be of a high-tensile special aluminum extrusion, which is anodized for maximum corrosion resistance. Sleeve have a 1/2" diameter locating/anchor pin located 2'-0" below the playing surface. Bottom end of sleeve shall be open to allow drainage into gravel base beneath the concrete footing. Removable cover plate shall be of a solid zinc-type die-cast material, with a flat-head stainless steel locking bolt, for maximum corrosion resistance. Cover shall incorporate a special expansion-type toggle system to lock cover in place with a 5/16" allen wrench provided with each unit.

5. Size of net to be 42’-0” in length by 3’-3” in height. Netting to be tarred nylon with a durable vinyl covered polyester reinforced top binding. Heavy-duty bindings shall encase sides and bottom of net. Galvanized steel tension cable shall be encased in top binding with an attachment loop securely swaged at both ends.
6. Basis-of-Design: Douglas Tennis Systems.. Subject to compliance with requirements, provide either the named product or a comparable product by one of the following:
    a. Sportsfield Specialties.
    b. Porter Athletic Equipment Co.
    c. Aalco Equipment
    d. Schelde North America

P. Accessories:
1. Score Keeper: Steel construction with swivel base for rotation. Clamps easily to any post shape or size.
    a. Game Numbers: 4 inch by 7 inch (1-7) HD durable plastic.
        1) Provide two sets of game numbers and 2 sets of “sets won”.
    b. Name Plate with pen.
2. Cabana bench: Shaded cabana bench shall be a 6’ long cabana bench with canvas shade covering and direct burial foundation as manufactured by Douglas equipment, Eldridge, IA 52748, 800-553-8907.

Q. Product: Douglas Score Keeper:

PART 3 - EXECUTION

3.1 INSTALLATION

A. Monuments: Shall be properly installed to the required lines and grades, locating the exact points indicated.

B. Long Jump Pits: Shall be constructed and filled as indicated on the details and per manufacturers recommendations and as located on the plan.

C. Long jump take-off boards, vaulting boxes, and shot put toe board shall be installed in accordance with manufacturer's printed instructions at the locations indicated.
1. Dig a hole approximately 30 inch by 60 inch by 12 inch (consult local codes for concrete depth and drainage requirements) in the proper location for the long and triple jumps.
2. Position a wooden concrete form in the hole so that the top of the wooden frame is 1/2 inch below the top level of the finished synthetic runway surface.
3. Fill the void with concrete to establish a level of 1-3/4 inch below the top of the wooden concrete form. (Note: Overall 2-1/4 inch from finished runway surface).
4. While the concrete is still in a semi-pliable state, position and level the 16ST stainless steel tray with the 16TB take-off board in place, so that the top of the board is exactly the same level as the top of the finished synthetic runway surface. Check the level of the take-off board in both directions.
5. Make a cement mix (1:2). Pour this around the tray, beneath the curved edge and to the top of the tray.
6. After cement hardens, remove the wooden form and fill the void with asphalt.
7. The top of the tray is 1/4 inch below the top of the finished synthetic runway surface. Pour the synthetic surface on the runway so that it is flush and level with both the runway and the top of the take-off board.

D. Install vaulting boxes and pole vault landing systems in strict accordance with manufacturer's recommendations and as located on the plans.

E. Install shot put toe board and concrete pad in strict accordance with manufacturer's recommendations and as located on the plans.

F. Install discus throwing ring and pad in strict accordance with manufacturers recommendations and as located on the plans.

G. Football Goal Posts
   1. Do not begin prior to completion of final grading. Excavate holes for post footings in firm, undisturbed, or compacted soil. Holes shall have a depth as indicated on the shop drawings and as recommended by the manufacturer. Excavate deeper as required for adequate support in soft and loose soils.
   2. Place concrete around sleeves in a continuous pour, tamp for consolidation. Check each sleeve for vertical and top alignment and hold in position during placement and finishing operations.

H. Install soccer goals in strict accordance with manufacturer's recommendations and as located on the plans.

I. Install Football/soccer ball netting in strict accordance with manufacturers recommendations and as located on the plans.

J. Concrete Slabs: Shall be installed as shown on approved shop drawings, at the required locations and elevations, and in conformance with requirements of Division 03 Section "Cast-in-Place Concrete" and the "Concrete Schedule".

K. Install protective pads in strict accordance with manufacturer's recommendations and as located on the plans.

L. Install all Tennis court equipment and cabana benches in locations as noted on plans and details and per manufacturers recommendations.

END OF SECTION 116833

SECTION 22 11 23 - DOMESTIC WATER PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following all-bronze and bronze-fitted centrifugal pumps for domestic cold- and hot-water circulation:
   1. Close-coupled, in-line, seal-less centrifugal pumps.

1.2 ACTION SUBMITTALS

A. Product Data: For each type and size of domestic water pump specified. Include certified performance curves with operating points plotted on curves; and rated capacities of selected models, furnished specialties, and accessories.

B. Shop Drawings: Diagram power, signal, and control wiring.

1.3 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of domestic water pumps and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. UL Compliance: Comply with UL 778 for motor-operated water pumps.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Retain shipping flange protective covers and protective coatings during storage.

B. Protect bearings and couplings against damage.

C. Comply with pump manufacturer's written rigging instructions for handling.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Acceptable Manufacturers: In-Line Circulating Pumps: Bell & Gossett, Taco.

~~B. Acceptable Manufacturers: Water Pressure Booster Pump: Namco, Taco, Peerless.~~

2.2 IN-LINE CIRCULATING PUMPS

A. Domestic hot water system in-line recirculating pump(s) shall be of the horizontal in-line, <u>all bronze</u>, oil lubricated type, suitable for 125# working pressure. Pump body shall be bronze with brass impeller, heat treated carbon steel shaft, mechanical seal, bronze sleeve-oil lubricated bearings, flexible spring coupler, and ring mounted nonoverloading motor. Motor shall be open, dripproof, sleeve bearing, quiet operating, rubber mounted construction, having built-in thermal overload protection.

B. Each circulating pump shall have sufficient capacity to circulate the scheduled GPM against the scheduled external head (feet) with the horsepower and speed as scheduled or as denoted on the Drawings. Motors shall be of electrical characteristics as scheduled, denoted or as indicated on the electrical plans and Specifications. Pump characteristics shall be such that the head of the pump, under varying conditions, shall not exceed the rated horsepower of the drive motor.

~~2.3 ENERGY SAVING SYSTEM (ESS)~~

~~A. An Energy Saving System (ESS) shall shut-down the lead pump during low flow requirements. A factory-pre-charged, ASME code and NB stamped 119 gallon, 125# psi(g) rated tank shall be provided. Construction features shall include and air fill valve, a drain valve, and a FDA approved replaceable flexible membrane to separate air and water. No water shall come in contact with the metal walls of the tank. In addition, the tank shall be capable of 100% drawdown. The tank shall ship pre-charged to the proper design conditions. The tank shall be capable of storing a minimum of 24 gallons of usable water with the scheduled pump(s) and design conditions. The tank is to be mounted (on)(adjacent to) the pumping system skid. The tank shall be of the to-feed style, and shall be equipped with a 3/4 inch air-release valve to emit air and provide air/water separation at the high point of the system.~~

~~B. Provide a UL-listed pressure switch, a UL-listed 'ESS' flow switch, with a time-delay relay to automatically control lead pump operation. These controls shall operate in such a way as to prevent high flow rate shut-downs and the lead pump short cycling while maximizing the amount of stored water available from the tank. The flow switch shall be full-vane type, UL/FM approved, with visual flow-indication light and adjustable speed control.~~

~~C. To shut-down the lead pump, a flow switch must determine that the flow demand is less than four gpm, and a pressure switch must determine that the bladder tank is fully charged with high-pressure water. If these conditions existing concurrently, the lead pump will shut-down. If the flow rate is greater than eight gpm or the pressure in the bladder tank is below minimum pressure, the lead pump with restart.~~

~~D. An additional spring-loaded, non-slam silent check valve shall be provided on the lead pump discharge line upstream of the Cal-Val pressure reducing valve.~~

~~E. The tank-feed line size must be a minimum of 1.50 inch diameter with a 1.50 inch isolation ball valve at each pump. The tank feed line shall have a leaky check valve for slow fill and rapid discharge of the bladder tank. The fill line with connect to the pump discharge line between the two check valves. If the lead pump is alternated with any other pump, then the alternate lead pump(s) shall assume the duty of controlling the ESS and filling the bladder tank. Any system arrangement with tank-feed supply line, other than that described above, will not be allowed.~~

~~2.4 POWER AND CONTROL PANEL~~

~~A. Furnish a single enclosure NEMA-1 power and control panel. Enclosure shall be steel, and furnished with an industrial-grade green enamel. It shall house all control components and include a 115 Volt control transformer with control power switch, power indicating light, combination manual. automatic 24-hous alternator, lead select switch for same size pumps, visual and audible alarm system with silencer, and other necessary controls. Include a lockable disconnect switch with external operating handle, fuses, a magnetic starter with 3-leg overload protection, pump-running lights, and multiple-position mode selector switch for each pump.~~

B. All control functions shall be by programmable logic controller (PLC). The PLC shall be control-voltage powered, using control voltage for each of its ten(10) inputs and eight (8) relay outputs, each capable of making a breaking a 7 Amp inductive load. The PLC shall contain a resident EEPROM. Battery backup shall not be required. All adjustable functions shall be stored for display on a four-line, 20 character-per-line display module. The PLC shall be capable of multi-level password protection. A built-in communications port shall operate at 9600 baud. Terminal strips for control power, and all input and output connections shall be removable.

C. All of the above shall be factory pre-wired and tested in accordance with the provisions of the National Electrical Code (NEC). All control wires shall be individually numbered, and each component shall be labeled accordingly. All internal wiring shall be copper stranded, A.W.G., with a minimum insulation of 90EC. The complete assembly shall have the UL-508 listing mark for industrial control panels. UL listing of components only is unacceptable.

2.5 INSTRUMENTATION CONTROLS

A. Include individual pressure gauges, with a 2-1/2 inch liquid filled dial and ASA Grade 'A' stainless steel cases, for indication the pressure at each pump, system and suction pressures, and ESS tank pressure, if specified. Pressure switches shall be provided for low-system and low suction pressures. The low-system pressure switch with manual reset will start the back-up pumps and sound the alarm after one minute of low-system pressure. The low-suction pressure switch shall automatically reset and will shut down the system and sound the alarm when low suction pressure is detected. On the occurrence of low suction pressure, the system will remain off for a minimum of three minutes as controlled by an adjustable timer. All pressure gauges, shall be mounted above the control panel, utilizing brass ball valves for isolation purposes, and the pressure switches shall be mounted on the back of the control panel. A pump temperature protection system shall be provided. Water for each pump shall be tested for a temperature greater than 110 degrees F. If the temperature is exceeded, a non-electric thermal purge valve will open to cool the pumps, and then close. For system pressure over 140 psi(g), an adjustable electric thermostat and solenoid valve shall be used.

B. The Control panel shall carry a UL-508 listing. The motor/pump shall carry a UL-778 listing and the complete system shall carry a UL-9F35 number for third party approval.

2.6 FACTORY PREFABRICATION

A. The entire booster module shall be factory prefabricated, on a common structural-steel stand, with all interconnecting piping and wiring completed and operationally tested to design flow and pressure conditions prior to shipment. The complete package shall include isolation valves on the suction and discharge of each pump. Valves 2-1/2 inch and larger shall be lug-type butterfly valve, and valves 2inch and smaller shall be fully-ported ball valves. The manifold branches shall be T pulled and assembled so no pipe will protrude into the header. The branch shall be v-notched to fit the contour of the header. For copper pipe, the joint filler shall have a minimum of fifteen percent (15%) silver content. For stainless steel, all joints shall be TIG welded with argon-shield gas. Stainless steel stick welding shall not be permitted.

B. The pipe material shall be type L copper. The tubing shall be Imperial Eastman 44NSRhigh-pressure nylon tubing with a minimum burst pressure rating of 1000 psi(g). All the controls and gauge taps shall be isolated by brass ball valves rated 600 psi(g) WOG pressure. The only field connections required will be at the suction and discharge headers, and drains, and power connection(s) at the control panel.

2.7 FACTORY TEST AND CERTIFICATION

A. The factory shall certify in writing that the water-pressure booster module and its component parts have undergone a complete flow and hydraulic test prior to shipment. The test shall include an operation flow test from 0 to 100% design flow rate under the specified suction and net system pressure conditions. The certification shall include copies of the test data. The system test may be witnessed by the owner, architect, or engineer.

~~B. The internal pumping assemblies and pressure regulating valves shall be guaranteed for one year from date of shipment against defective material and workmanship. The motors shall also be guaranteed for one year from the date of shipment against "burn-out" from any cause when equipped with an over-temperature protection system and maintained according to factory instructions. The water-pressure booster module as a whole shall be guaranteed in writing by the manufacturer for a period of one year from the date of shipment against defects in design, materials, or construction.~~

~~C. The service of a factory-trained representative shall be made available on the project site to check installation, perform start-up, and instruct the operator(s).~~

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of domestic-water-piping system to verify actual locations of connections before pump installation.

3.2 PUMP INSTALLATION

A. Install pumps with access for periodic maintenance including removal of motors, impellers, couplings, and accessories.

B. Independently support pumps and piping so weight of piping is not supported by pumps and weight of pumps is not supported by piping.

C. Install in-line, sealless, centrifugal pumps with motor and pump shafts horizontal.

3.3 CONTROL INSTALLATION

A. Start/stop operation shall be controlled by The Energy Management System.

3.4 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to pumps to allow service and maintenance.

C. Connect domestic water piping to pumps. Install suction and discharge piping equal to or greater than size of pump nozzles. Refer to Division 22 Section "Domestic Water Piping."
   1. Install shutoff valve and strainer on suction side of pumps, and check valve and throttling valve on discharge side of pumps. Install valves same size as connected piping. Refer to Division 22 Section "General-Duty Valves for Plumbing Piping" for general-duty valves for domestic water piping and Division 22 Section "Domestic Water Piping Specialties" for strainers.
   2. Install pressure gages at suction and discharge of pumps. Install at integral pressure-gage tappings where provided or install pressure-gage connectors in suction and discharge piping around pumps. Refer to Division 22 Section "Meters and Gages for Plumbing Piping" for pressure gages and gage connectors.

D. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

END OF SECTION 22 11 23

SECTION 22 40 00 - PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following conventional plumbing fixtures and related components:
   1. Flushometers.
   2. Toilet seats.
   3. Fixture supports.
   4. Water closets.
   5. Urinals.
   6. Lavatories.
   7. Commercial sinks.
   8. Sinks.
   9. Floor service sinks.
   ~~10. Wall service sinks.~~

1.2 ACTION SUBMITTALS

A. Product Data: For each type of plumbing fixture indicated. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

B. Shop Drawings: Diagram power, signal, and control wiring.

1.3 CLOSEOUT DOCUMENTS

A. General: Closeout Submittals are to be submitted with O and M Manuals only. Do not submit with other ACTION and INFORMATIONAL Submittals:
   1. Operation and Maintenance Data: For plumbing fixtures to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.
   1. Exception: If fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for that category.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"[**; Public Law 90-480, "Architectural Barriers Act" ; and Public Law 101-336, "Americans with Disabilities Act" ;**] for plumbing fixtures for people with disabilities.

D. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.

E. NSF Standard: Comply with NSF 61, "Drinking Water System Components--Health Effects," for fixture materials that will be in contact with potable water.

F. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

G. Comply with the following applicable standards and other requirements specified for plumbing fixtures:
   1. Stainless-Steel Commercial, Handwash Sinks: NSF 2 construction.
   2. Stainless-Steel Residential Sinks: ASME A112.19.3.
   3. Vitreous-China Fixtures: ASME A112.19.2M.

H. ARI Standard: Comply with ARI "Directory of Certified Drinking Water Coolers" for style classifications.

I. ARI Standard: Comply with ARI 1010, "Self-Contained, Mechanically Refrigerated Drinking-Water Coolers," for water coolers and with ARI "Directory of Certified Drinking Water Coolers" for type and style classifications.

J. ASHRAE Standard: Comply with ASHRAE 34, "Designation and Safety Classification of Refrigerants," for water coolers. Provide HFC 134a (tetrafluoroethane) refrigerant, unless otherwise indicated.

K. Comply with the following applicable standards and other requirements specified for lavatory and sink faucets:
   1. Backflow Protection Devices for Faucets with Side Spray: ASME A112.18.3M.
   2. Backflow Protection Devices for Faucets with Hose-Thread Outlet: ASME A112.18.3M.
   3. Faucets: ASME A112.18.1.
   4. Hose-Connection Vacuum Breakers: ASSE 1011.
   5. Hose-Coupling Threads: ASME B1.20.7.
   6. Integral, Atmospheric Vacuum Breakers: ASSE 1001.
   7. NSF Potable-Water Materials: NSF 61.
   8. Pipe Threads: ASME B1.20.1.
   9. Sensor-Actuated Faucets and Electrical Devices: UL 1951.
   10. Supply Fittings: ASME A112.18.1.
   11. Brass Waste Fittings: ASME A112.18.2.

L. Comply with the following applicable standards and other requirements specified for shower faucets:
   1. Backflow Protection Devices for Hand-Held Showers: ASME A112.18.3M.
   2. Combination, Pressure-Equalizing and Thermostatic-Control Antiscald Faucets: ASSE 1016.
   3. Faucets: ASME A112.18.1.
   4. Hand-Held Showers: ASSE 1014.
   5. High-Temperature-Limit Controls for Thermal-Shock-Preventing Devices: ASTM F 445.
   6. Hose-Coupling Threads: ASME B1.20.7.
   7. Manual-Control Antiscald Faucets: ASTM F 444.
   8. Pipe Threads: ASME B1.20.1.
   9. Pressure-Equalizing-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.
   10. Sensor-Actuated Faucets and Electrical Devices: UL 1951.
   11. Thermostatic-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.
   12. All new shower heads for projects pursuing LEED accreditation shall be listed/labeled as WaterSense approved per the EPA.gov website.

M. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:
   1. Atmospheric Vacuum Breakers: ASSE 1001.
   2. Brass and Copper Supplies: ASME A112.18.1.
   3. Dishwasher Air-Gap Fittings: ASSE 1021.
   4. Manual-Operation Flushometers: ASSE 1037.
   5. Brass Waste Fittings: ASME A112.18.2.
   6. Sensor-Operation Flushometers: ASSE 1037 and UL 1951.

N. Comply with the following applicable standards and other requirements specified for miscellaneous components:

1. Flexible Water Connectors: ASME A112.18.6.
2. Floor Drains: ASME A112.6.3.
3. Hose-Coupling Threads: ASME B1.20.7.
4. Off-Floor Fixture Supports: ASME A112.6.1M.
5. Pipe Threads: ASME B1.20.1.
6. Plastic Toilet Seats: ANSI Z124.5.
7. Supply and Drain Protective Shielding Guards: ICC A117.1.

1.5 WARRANTY

A. Warranty Period for Commercial Applications: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lavatories
1. American Standard, Kohler, Crane, Eljer, Zurn, **Sloan, Toto**
2. Trim: Zurn Aquaspec, T & S Brass, Chicago, Cambridge Brass, Speakman, Moen Commercial

B. Water Closets and Urinals
1. Water Closet and Urinal : American Standard, Kohler, Crane, Eljer, Zurn, **Sloan, Toto**
2. Flush Valve: Sloan, Zurn
3. Seats: Beneke, Olsonite, Bemis, Church, Centoco, Zurn

C. Sinks
1. Elkay, Just
2. Trim: Zurn Aquaspec, T & S Brass, Chicago, Cambridge Brass, Speakman, Moen Commercial

D. Mop Basin
1. Sink: Fiat, Swan, Acorn, Mustee
2. Trim: Zurn Aquaspec, T & S Brass, Chicago, Cambridge Brass, Speakman, Moen Commercial

~~E. Wall Service Sink~~
~~1. Elkay, Just~~

F. Lavatory, Sink and Water Fountain/Cooler Connections
1. Mcguire, Chicago, American Standard, Kohler, T&S Brass, Crane, Zurn, Dearborn Brass

2.2 GENERAL REQUIREMENTS

A. Exposed connections and trim to fixtures shall be chromium plated. Trim shall be chrome-plated brass, unless otherwise specified. Each fixture shall have chrome plated stops in the supplies and escutcheons at wall.

B. Unless otherwise specified, lavatory and sink connections to include Quarter Turn Ball Type supply stops with removable handles, with 1/2 inch female inlet, 12 inches long, 3/8 inch OD flexible riser and wall flange. Finish to be polished chromium plate. Supply Stops shall be McGuire LFBV216X series or equal by Zurn or EBF. "P" trap shall be 1-1/2 inches chrome-plate cast brass #8-394 with cleanout made by Brass Craft Manufacturing Co., Zurn, or McGuire.

C. Flow restriction devices shall be used on plumbing fixtures (other than units used for safety reasons) to meet the requirements as set forth in the State and Local Building Codes for new building construction.

D. All handicap fixtures and trim shall meet ADA Requirements. Exposed supplies and trap on all fixtures with exposed supplies and drain shall be wrapped with insulation equal to trap wrap by Brocar Products, Inc, or Trubro.

E. All fixture and trim screw attachments shall be vandal resistant.

F. Provide offset grid strainer and tailpiece for ADA accessible lavatories and sinks.

G. Provide approved white sealant at all fixtures to wall and sinks/lavs to casework tops.

H. Sinks are to be furnished and installed under this Contract. This Contractor to provide trim, supplies, stops, escutcheons, plates, traps, and the like for complete plumbing installation and to furnish the casework manufacturer templates for cutting sink holes for all plumbing fixtures shown on the Plumbing and Architectural Drawings. See Equipment Schedules and Drawings for types and locations.

I. All faucets shall be heavy duty and be provided with ceramic disc valving.

J. Refer to Plumbing Fixture Schedule on the Drawings for additional requirements.

K. Stainless steel casework sinks designated to be handicapped accessible shall be provided with sink drain openings offset to the center rear.

~~L. **Faucets, flush valves, shower heads and handshowers shall be WaterSense listed for any LEED or OFCC project.**~~

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.

B. Examine cabinets, counters, floors, and walls for suitable conditions where fixtures will be installed.

3.2 INSTALLATION

A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers' written instructions.

B. Install off-floor supports, affixed to building substrate, for wall-mounting fixtures.
1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
2. Use carrier supports without waste fitting for fixtures with tubular waste piping.
3. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.

C. Install back-outlet, wall-mounting fixtures onto waste fitting seals and attach to supports.

D. Install floor-mounting fixtures on closet flanges or other attachments to piping or building substrate.

E. Install counter-mounting fixtures in and attached to casework.

F. Install fixtures level and plumb according to roughing-in drawings.

G. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.

1. Exception: Use ball valves if supply stops are not specified with fixture. Valves are specified in Division 22 Section "General-Duty Valves for Plumbing Piping."

H. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.

I. Install tubular waste piping on drain outlet of each fixture designated to be indirectly connected to drainage system.

J. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.

K. Install toilet seats on water closets.

L. Install traps on fixture outlets.
1. Exception: Omit trap on fixtures with integral traps.
2. Exception: Omit trap on indirect wastes, unless otherwise indicated.

M. Install escutcheons at piping wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings.

N. Set service basins in leveling bed of cement grout. Grout is specified in Division 22 Section "Common Work Results for Plumbing."

O. Seal joints between fixtures and walls, floors, and countertops using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color.

P. Supplies and waste shall run in wall wherever practicable.

Q. Pipes shall be jointed to plumbing fixtures with screwed tailpiece couplings and unions so that fixtures can be easily removed and reset.

R. An escutcheon plate to match the pipe shall be used around waste and supply piping wherever same passes through floors, walls, or ceilings.

S. Provide adjustable lavatory, urinal, and water closet carriers to support each independently of wall. Carriers shall be complete with feet and vertical or horizontal style waste fittings to comply with waste and vent arrangement indicated on the accompanying Drawings and as required by construction. Supporting feet must be located within wall or in pipe space without damage to wall face. Manufacturer shall provide suitable template frames for mounting on carriers before tiling of wall for adjustment.

T. Furnish vacuum breakers on fixtures or equipment having under-rim supply or hose connection, as furnished or installed under this Contract.

U. Provide caulk sealant on all plumbing fixtures.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping for all fixtures shown on the Plumbing and Architectural Drawings. Use size fittings required to match fixtures.

C. Coordinate grounding of equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

D. Coordinate wiring connections according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.

B. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.

C. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.

D. Install fresh batteries in sensor-operated mechanisms.

3.5 ADJUSTING

A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.

B. Adjust water pressure at faucets and flushometer valves to produce proper flow and stream.

C. Replace washers and seals of leaking and dripping faucets and stops.

3.6 CLEANING

A. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Do the following:
1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
2. Remove sediment and debris from drains.

B. After completing installation of exposed, factory-finished fixtures, faucets, and fittings, inspect exposed finishes and repair damaged finishes.

3.7 PROTECTION

A. Provide protective covering for installed fixtures and fittings.

END OF SECTION 22 40 00

SECTION 32 13 15 - UNBONDED POST-TENSIONED CONCRETE TENNIS COURTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. General: Design, detailing and installation of post tensioned concrete slabs for tennis courts and other work as noted shall be the sole responsibility of the Contractor. Slabs shall be designed using acceptable engineering practices in accordance with the American Concrete Institute Building Code requirements for reinforced concrete and the Post - Tensioning Institutes specifications for post-tensioning materials. The soil condition and plasticity index of the court site shall be taken into consideration in determining strand spacings and beam requirements.
    a. Post-tensioning tendons and accessories, including pocket formers, bar chairs, slab bolsters, and non-prestressed reinforcement required for installing post-tensioning tendons, including the following:
        1) Support bars.
        2) Backup bars and hairpins at anchorages.
        3) Supplemental reinforcement at block outs.

B. Related Requirements

1. Section 32 13 13 "Site concrete" for foundations and concrete work outside of post tensioned concrete tennis courts.
2. Section 31 22 00 “Earthwork”
3. Section 32 31 13 “Fences and gates” to be included with work in this section. Scope is to be performed by Tennis Court Contractor and or monitored by Post Tensioned Concrete contractor.
4. Section 11 68 33 “Athletic field equipment” for Tennis court equipment to be included with work in this section.
5. Section 32 18 26 “Tennis court surfacing” for Tennis court surfacing to be included with work in this section.

C. A single “Tennis Court” Contractor (or subcontractor) shall be responsible for construction work of this Section and work in related tennis court sections. The Tennis Court Contractor is permitted to have a subcontractor perform the concrete placement but the Post-Tensioned Concrete surface, subbase, tendon installation, tendon stressing, and setting of fencing shall be performed by the Tennis Court Contractor and monitored by the Tennis Court Contractor Representative.

1.2 STANDARDS

A. The work shall be done in a thorough workman-like manner by contractors of the American Sports Builders Association (ASBA) and shall conform to their standards for tennis court construction. Contractor shall have an ASBA Certified Court Builder on staff. Proof of certification shall be required of the successful bidder.

B. All laying of cable, concrete work and stressing of cables shall be done by selected contractor (no part of this work shall be subcontracted). This provision intent is to provide continuity and one source responsibility for the integrity of the post tensioned slabs.

1.3 DEFINITIONS

A. Strand Tail: Excess strand length extending past the anchorage device.

B. Stressing Pocket: Void formed by pocket former at stressing-end anchorage that provides required cover over wedges and strand tail.

C. Wedge Cavity: Cone-shaped hole in anchorage device designed to hold the wedges that anchor the strand.

1.4 COORDINATION

A. Attachments and Penetrations:
1. Attach permanent construction, such as curtain-wall systems, handrails, fire-protection equipment, lights, and security devices to the post-tensioned slab using embedded anchors.
2. Drilled anchors, power-driven fasteners, and core drilling for sleeves or other penetrations are not allowed unless authorized in writing by Architect.
3. Form penetrations within 18 inches of an anchorage with ASTM A53/A53M, Schedule 40 steel pipe.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1. Review procedures related to installation and stressing of post-tensioning tendons, including, but not limited to, the following:
2. Construction schedule and availability of materials, personnel, and equipment needed to make progress and avoid delays.
3. Storage of post-tensioning materials on-site.
4. Structural load limitations.
5. Coordination of post-tensioning installation drawings and non-prestressed reinforcing steel placing drawings.
6. Horizontal and vertical tolerances on tendons and non-prestressed reinforcement placement.
7. Marking and measuring of elongations.
8. Submittal of stressing records and requirements for tendon finishing.
9. Removal of formwork.

1.6 ACTION SUBMITTALS

A. Product Data: For the following:
1. Post-tensioning coating.
2. Tendon sheathing.
3. Anchorage devices
4. Tendon couplers
5. Bar and tendon support
6. Pocket formers.
7. Sheathing repair tape.
8. Stressing pocket patching material.
9. Encapsulation system.

B. Shop Drawings: Sealed shop drawings and calculations prepared by a qualified professional engineer licensed in the state, detailing tendon layout, installation procedures, and the following:
1. Installation drawings, including plans, elevations, sections, and details.
2. Numbers, arrangement, and designation of post-tensioning tendons.
3. Tendon profiles and method of tendon support, including chair heights and locations. Show tendon profiles at sufficient scale to clearly indicate all support points with their associated heights.
4. Details for horizontal curvature around openings and at anchorages.
5. Locations of anchorages and block outs required for stressing.
6. Anchorage details, including bundled tendon flaring.
7. Tendon clearances around slab openings and penetrations.
8. Construction joint locations and pour sequence.
9. Details for corners and other locations where tendon layouts may conflict with one another or with non-prestressed reinforcing steel.

10. Locations of non-prestressed reinforcement required for installing post-tensioning tendons, including, but not limited to, the following:
    a. Support bars.
    b. Backup bars and hairpins at anchorages.
    c. Hairpins at locations of horizontal curvature.
    d. Supplemental reinforcement at block outs.
11. Stressing procedures and jacking force to result in final effective forces used in determining number of tendons required.
12. Calculated elongations for each tendon.
13. ***Types of materials, construction details, sizes and layout, and complete information on hardware and accessories.***

C. Delegated-Design Submittal: For post-tensioning system.
1. Include signed and sealed design calculations prepared by a qualified structural engineer licensed to practice engineering in the project state, indicating method of elongation calculation, including values used for friction coefficients, anchorage seating loss, elastic shortening, creep, relaxation, and shrinkage.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For installer and manufacturer. Include resume of individual supervising installation and stressing of post-tensioning tendons.

B. Product Certificates: For each type of encapsulation system.

C. Mill Test Reports: Certified mill test reports for prestressing strand used on Project, indicating that strand is low relaxation and including the following:
1. Coil numbers or identification.
2. Breaking load.
3. Load at 1 percent extension.
4. Elongation at failure.
5. Modulus of elasticity.
6. Diameter and net area of strand.

D. Field quality-control reports.

E. Procedures Statement: Procedures for cutting excess strand tail and patching stressing pocket.

F. Stressing Jack Calibration: Calibration certificates for jacks and gages to be used on Project. Calibrate each jack- and-gage set as a pair.

G. Stressing Records: Submit the same day as stressing operations. Cable elongation records shall be submitted following final stress operations. Measured elongation shall be compared to calculated elongation to assure specified tension. Cable elongation shall be within +/- 10 percent of calculated elongation.

1.8 QUALITY ASSURANCE

A. Designer Qualifications: Design post-tensioning systems under the direct supervision of a Professional Structural Engineer experience in design of this Work and licensed in the State where project is located.

B. Contractor shall have a Certified Tennis Court Builder on staff. Contractor shall be a member of the Post- Tensioning Institute (PTI). Installing foreman shall be a PTI Certified Installer, and the work shall be overseen by a PTI Certified Post-Tensioning Inspector. The contractor shall complete all work with his own forces, to include all indicated and functionally required construction, tendon fabrication and placing, concrete placement and tendon stressing.

1. Contractor shall be a builder member in good standing of the United States Tennis Court & Track Builders Association and the American Sports Builders Association (ASBA).

C. Manufacturer Qualifications: Fabricating plant certified by PTI according to procedures set forth in PTI's "Manual for Certification of Plants Producing Unbonded Single Strand Tendons."

D. Installer Qualifications: A qualified installer whose full-time Project superintendent has successfully completed PTI's Level 1 - Field Fundamentals course or has equivalent verifiable experience and knowledge acceptable to Architect.
1. Installer shall have a minimum of 5 years and a minimum of 10 similar, successfully completed, projects of documented experience in the same type of construction/project work.
2. Installer for the post-tension slab shall assure single-source responsibility by completing all work with his own forces (no part of the work to be subcontracted) to include fine grading, construction, tendon placing, concrete placement and tendon stressing.

E. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.
1. Testing Agency Inspector: Personnel performing field inspections and measuring elongations shall have successfully completed PTI's Level 1 - Field Fundamentals course or shall have equivalent verifiable experience and knowledge acceptable to Architect.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle post-tensioning materials according to PTI's "Field Procedures Manual for Unbonded Single Strand Tendons."

1.10 WARRANTY

A. Contractor Provided Extended Warranty: First year warranty is included with the base contract. This extended limited warranty shall commence upon expiration of the base warranty period for a total 9 additional years. Warranty, base plus extended, not to exceed 10 years.
1. Warranty is to cover all usability aspects of the project including but not limited to; PT levelness, PT cracking, Degradation of PT surface, PT workmanship, Fencing failure due to heaving and or tipping of fence post and base, PT failure in any manner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain post-tensioning materials and equipment from single source."
1. Stressing jacks not provided by post-tensioning supplier must be calibrated and approved for use on Project by post-tensioning supplier.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design post-tensioned reinforcement.

B. Design structure to withstand the loads indicated according to governing codes, within limits and under conditions indicated.

C. Average Precompression:
1. Minimum average slab precompression: 125 PSI.
2. Maximum average slab precompression: 300 PSI.

D. Comply with ACI 318 requirements unless more stringent requirements are indicated.
1. Limits on stresses at transfer of prestress and under service load.

2. Minimum bonded reinforcement.
3. Concrete cover over reinforcement.

E. Deflection Limits, Including Creep and Shrinkage Effects, as Follows:
1. Total Dead Load: L/600
2. Total Dead Plus Live Load: L/360

F. Closure Strips: Locate closure strips at midspan and adjust tendon forces and profiles accordingly. Calculate moments in spans with closure strips assuming a continuous slab. Provide only non-prestressed reinforcement within closure strips. Design reinforcement in closure strip to carry ultimate moment at midspan.

2.3 PRESTRESSING TENDONS

A. ACI Publications: Comply with ACI 423.7 unless otherwise indicated.

B. Post-tensioning strands and anchorages shall conform to the “PTI Guide Specifications for Post-tensioning Materials”.

C. Prestressing Strand: ASTM A416/A416M, Grade 270 (Grade 1860), uncoated, seven-wire, low-relaxation, 0.6- inch diameter strand. Cables shall be fabricated to proper length for each slab, coated with a permanent rust preventative lubricant and encased in slippage sheathing. Any damage to the sheathing shall be repaired with plastic tape prior to concrete placement. A maximum of 6” exposed strands are permitted at the dead-end anchor.

D. Post-Tensioning Coating: Compound with friction-reducing, moisture-displacing, and corrosion-inhibiting properties; chemically stable and nonreactive with prestressing strand, non-prestressed reinforcement, sheathing material, and concrete.
1. Completely fill annular space between strand and sheathing over entire tendon length with post- tensioning coating.

E. Tendon Sheathing:
1. Material: Polyethylene or polypropylene with a minimum density of 0.034 lb/cu. in.
2. Minimum Thickness: 0.050 inch.
3. Continuous over length of tendon to provide watertight encapsulation of prestressing strand and between anchorages to prevent intrusion of cement paste or loss of coating for a nonencapsulated system.

F. Anchorage and Coupler Assemblies: Assemblies of prestressing strand, wedges, and anchor or coupler complying with static and fatigue testing requirements and capable of developing 95 percent of actual breaking strength of strand.
1. Anchorage Bearing Stresses: Comply with ACI 423.7 for stresses at transfer load and service load.
2. Fixed-End Anchorage Assemblies: Plant fabricated with wedges seated at a load of not less than 80 percent and not more than 85 percent of breaking strength of strand.

G. Encapsulation System: Watertight encapsulation of prestressing strand consisting of the following:
1. Encapsulation Caps: Attached to anchorages with a positive mechanical connection and completely filled with post-tensioning coating.
a. Encapsulation Caps for Fixed- and Stressing-End Anchorages: Designed to provide watertight encapsulation of wedge cavity. Sized to allow required extension of strand past the wedges.
1) Attach encapsulation caps for fixed-end anchorages in fabricating plant.
b. Encapsulation Caps at Intermediate Anchorages: Open to allow passage of strand.
2. Sleeves: Attached to anchorage with positive mechanical connection; overlapped a minimum of 4 inches with sheathing and completely filled with post-tensioning coating.

2.4 NONPRESTRESSED STEEL BARS

A. Support Bars, Reinforcing Bars, and Hairpins:
   1. Steel: ASTM A615/A615M, Grade 60 (Grade 420), deformed.
   2. Galvanized Steel: ASTM A615/A615M, Grade 60 (Grade 420), deformed bars, ASTM A767/A767M, Class I zinc coated after fabrication and bending.

B. Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening tendons and tendon support bars in place. Manufacture bar supports, according to CRSI's "Manual of Standard Practice," from steel wire, plastic, or precast concrete of greater compressive strength than concrete.

2.5 CONCRETE MATERIALS AND MIX DESIGN

A. Concrete shall have a compressive strength of not less than 4,500 psi after twenty-eight (28) days. Ready- mixed concrete shall be mixed and delivered according to ASTM C94 specifications for ready-mixed concrete with a 4-inch maximum slump. The concrete mix shall be designed to minimize shrinkage by limiting water and cement content and by using well graded coarse aggregate. Mix design as follows (final mix design shall be subject to review of delegated design structural engineer for the work of this Section):
   1. Compressive Strength: 4500 psi after twenty-eight (28) days.
   2. Cement – 6 bag mix Type II. Cement should conform to one of the Standard Specifications for Portland Cement. ASTM C150 OR Specifications for Blending Hydraulic Cements, ASTM C595, excluding slag cements Types S and SA. Water/cement ratio 0.45/1.
   3. Air Entrainment by total volume of concrete shall be 6 percent +/- 1% for maximum size coarse aggregate.
   4. Aggregate should conform to Standard Specifications for Concrete Aggregates ASTM C33. For concrete work that is 5 inches thick, the nominal size of the coarse aggregate should not exceed ¾ Inch.
   5. Do not use fly ash or other additives.
   6. Do not use curing compounds.

2.6 GROUT

A. Grout Fill at Tendon Cut Off:
   1. Compressive Strength (28 day): 7000 psi. Shrink-resistant grout per ASTM C1107.

2.7 ACCESSORIES

A. Pocket Formers: Capable of completely sealing wedge cavity; sized to provide the required cover over the anchorage and allow access for cutting strand tail.

B. Anchorage Fasteners: Galvanized-steel nails, wires, and screws used to attach anchorages to formwork.

C. Sheathing Repair Tape: Elastic, self-adhesive, moisture proof tape with minimum width of 2 inches (50 mm), in contrasting color to tendon sheathing; nonreactive with sheathing, coating, or prestressing steel.

2.8 PATCHING MATERIALS

A. One-component, polymer-modified, premixed patching material containing selected silica aggregates and Portland cement, suitable for vertical and overhead applications. Do not use

material containing chlorides or other chemicals known to be deleterious to prestressing steel or material that is reactive with prestressing steel, anchorage device material, or concrete.

2.9 SOURCE QUALITY CONTROL

A. Inspect and test stressing tendons before delivery to site for compliance with specified standards.

2.10 MOISTURE/VAPOR BARRIERS

A. Moisture/vapor barriers, consisting of polyethylene (Min. thickness – per PT manuf. written recommendation) shall be installed prior to installation of any steel and or cables.

B. Vapor Barrier:
   1. Plastic Vapor Barrier
      a. Water Vapor Barrier: ASTM E-1745; meets or exceeds Class A.
      b. Permeance Rating: ASTM E-96 or ASTM F 1249; 0.01 Perms or less.
      c. Thickness of Barrier: ACI 302.2R-06; not less than 15 mils.
   2. Products:
      a. Stego Wrap (15 mil) Vapor Barrier; Stego Industries
      b. VaporBlock 15/VaporBlock G; Raven Industries
      c. Perminator (15 mil); W.R. Meadows
      d. Viper Vaporcheck II (15 mil); Insulation Solutions Inc.
      e. Barrier-Bac VB-35 16 mil); Interplast
      f. Husky Yellow Guard (15 mil); Poly-America
      g. Tex-Trude Xtreme Vapor Barrier (15 mil); Tex-Trude, LP

C. Vapor Retarder: Multi-ply reinforced polyethylene sheet, ASTM E 1745, Class A, or polyethylene sheet, ASTM D 4397, not less than 15 mils thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase course surfaces for compliance with requirements for dimensional, grading, and elevation tolerances per PT Manufactures written recommendation.

B. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.
   1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
   2. Proof-roll with a loaded 10-wheel tandem-axle dump truck weighing not less than 15 tons.
   3. Subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch require correction according to requirements in Division 31 Section "Earth Moving."

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

B. Install, protect, and repair vapor barrier according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.
   1. Lap joints 6 inches and seal with manufacturer's recommended adhesive or joint tape.
   2. Wrap vapor barrier up and over face of concrete formwork to provide completely enclosed system.
   3. Repair any punctures and tears with matching material in accordance with manufacturer’s written instructions.

3.3 FORMWORK

A. Design formwork to support load redistribution that may occur during stressing operation. Ensure that formwork does not restrain elastic shortening, camber, or deflection resulting from application of prestressing force.

B. Do not remove forms supporting post-tensioned elements until tendons have been fully stressed and elongations have been approved by Architect.

C. Do not place concrete in supported floors until tendons on supporting floors have been stressed and elongations have been approved by Architect.

3.4 INSTALLATION OF NONPRESTRESSED STEEL REINFORCEMENT

A. Placement of non-prestressed steel reinforcement is specified in Section 033000 "Cast-In-Place Concrete". Coordinate placement of non-prestressed steel reinforcement with installation of post-tensioning tendons.

3.5 INSTALLATION OF TENDONS

A. Install tendons according to installation drawings and procedures stated in PTI's "Field Procedures Manual for Unbonded Single Strand Tendons."
   1. Tolerances: Comply with tolerances in ACI 423.7 for beams and slabs.

B. Tendon Supports: Provide continuous slab bolsters or bars supported on individual highchairs spaced at a maximum of 42 inches o.c. to ensure tendons remain in their designated positions during construction operations and concrete placement.
   1. Support tendons as required to provide profiles shown on installation drawings. Position supports at high and low points and at intervals not exceeding 48 inches. Ensure that tendon profiles between high and low points are smooth parabolic curves.
   2. Attach tendons to supporting chairs and reinforcement without damaging tendon sheathing.
   3. Support slab tendons independent of beam reinforcement.
   4. All cables shall be supported on chairs and loosely tied two inches high at all intersections (too tightly tied, tendon friction will increase when tensioning) to prevent vertical and horizontal movement during concrete placement. Strands shall be placed as engineered. See drawing details for cable spacing.

C. Maintain tendon profile within maximum allowable deviations from design profile as follows:
   1. 1/4 inch for member depth less than or equal to 8 inches.
   2. 3/8 inch for member depth greater than 8 inches and less than or equal to 24 inches.
   3. 1/2 inch for member depth greater than 24 inches.

D. Maintain minimum radius of curvature of 480-strand diameters for lateral deviations to avoid openings, ducts, and embedded items. Maintain a minimum of 2 inches of separation between tendons at locations of curvature.

E. Limit tendon bundles to five tendons. Do not twist or entwine tendons within a bundle. Maintain a minimum distance of 12 inches between center of adjacent bundles.

F. If tendon locations conflict with non-prestressed reinforcement or embedded items, tendon placement governs. Obtain Architect's approval before relocating tendons or tendon anchorages that interfere with one another.

G. Deviations in horizontal spacing and location of slab tendons are permitted when required to avoid openings and inserts.

H. Installation of Anchorages:
   1. Place anchorages at locations shown on approved installation drawings.
   2. Do not switch fixed- and stressing-end anchorage locations.

3. Attach pocket formers, intermediate anchorages, and stressing-end anchorages securely to bulkhead forms. Install stressing-end and intermediate anchorages perpendicular to tendon axis.
4. Install tendons straight, without vertical or horizontal curvature, for a minimum of 12 inches behind stressing-end and intermediate anchorages.
5. Embed intermediate anchorage devices at construction joints in first concrete placed at joint.
6. Minimum splice length in reinforcing bars at anchorages is 24 inches. Stagger splices a minimum of 60 inches.
7. Place fixed-end anchorages in formwork at locations shown on installation drawings. Support anchorages firmly to avoid movement during concrete placement.
8. Remove loose encapsulation caps on fixed-end anchorages, refill with post-tensioning coating, and re- attach encapsulation caps to achieve a watertight enclosure.

I. Maintain minimum concrete cover as follows:
1. From Exterior Edge of Concrete to Wedge Cavity: 2 inches.
2. From Exterior Edge of Concrete to Wedge-Cavity Cap: 1 inch.
3. Top, Bottom, and Edge Cover for Anchorages: 1-1/2 inches.

J. Maintain minimum clearance of 6 inches between tendons and openings.

K. Prior to concrete placement, mark tendon locations on formwork with spray paint.

L. Do not install sleeves within 36 inches of anchorages after tendon layout has been inspected.

M. Do not install conduit, pipe, or embeds requiring movement of tendons after tendon layout has been inspected.

N. Do not use couplers unless location has been approved by Architect.

3.6 SHEATHING INSPECTION AND REPAIR

A. Inspect sheathing for damage after installing tendons. Repair damaged areas by restoring post-tensioning coating and repairing or replacing tendon sheathing.
1. Ensure that sheathing is watertight and there are no air voids.
2. Follow tape repair procedures in PTI's "Field Procedures Manual for Unbonded Single Strand Tendons."

B. Immediately remove and replace tendons that have damaged strand.

3.7 CONCRETE PLACEMENT

A. Do not place concrete until placement of tendons and non-prestressed-steel reinforcement has been inspected by testing agency.

B. Provide Architect and testing agency a minimum of 48 hours' notice before concrete placement.

C. Ensure compaction of concrete around anchorages.

D. Ensure that position of tendons and non-prestressed-steel reinforcement do not change during concrete placement. Reposition tendons and non-prestressed-steel reinforcement moved during concrete placement to original location.

E. Ensure that method of concrete placement does not damage tendon sheathing. Do not support pump lines, chutes, or other concrete-placing equipment on tendons.

F. The perimeter beam cross section is min. 12”x12” or as designed. The cables are anchored approximately 4” down from the surface of the slab. Two #4 rebar continuous lies longitudinally around the court beam directly inside the cable anchor on top of the cables. Overlapping should be minimum of 30 bars diameter.

G. A full court shall be placed in one continuous operation. The minimum 5-inch-thick slab will be placed with a laser screed capable of providing a surface to ¼” +/- in 10’ at a 1% slope. Finish surface shall not have a water holding area greater than 1/8” deep (cover a nickel). This is to be determined by the flooding the court with water, allowing it to drain for 1 hour on a 70-degree F or warmer day.

3.8 TENDON STRESSING

A. Calibrate stressing jacks and gages at start of project and at least every six months thereafter. Keep copies of calibration certificates for each jack-and-gage pair on Project site that are available for inspection. Exercise care in handling stressing equipment to ensure that proper calibration is maintained.

B. Stress tendons only under supervision of a qualified post-tensioning superintendent.

C. Do not begin stressing operations until concrete compressive strength has reached 3000 psi as indicated by tests of field-cured cylinders.

D. Complete stressing within 96 hours of concrete placement.

E. If concrete has not reached required compressive strength, obtain Architect's approval to partially stress tendons and delay final stressing until concrete has reached required strength.

F. If detensioning and restressing of tendon is required, discard wedges used in original stressing and provide new wedges.

G. Mark and measure elongations according to PTI's "Field Procedures Manual for Unbonded Single Strand Tendons." Measure elongations to closest 1/8 inch.

H. Submit stressing records within one day of completion of stressing. If discrepancies between measured and calculated elongations exceed plus or minus 7 percent, resolve these discrepancies to satisfaction of Architect.

I. Prestressing will be considered acceptable if gage pressures shown on stressing record correspond to required stressing force and calculated and measured elongations agree within 7 percent.

J. If measured elongations deviate from calculated elongations by more than 7 percent, perform additional testing, restressing, strengthening, or replacing of affected elements unless otherwise approved by Architect.

K. Stressing Records: Testing agency shall record the following information during stressing operations:
   1. Name of Project.
   2. Date of approved installation drawings used for installation and stressing.
   3. Floor number and concrete placement area.
   4. Date of stressing operation.
   5. Weather conditions, including temperature and rainfall.
   6. Name and signature of inspector.
   7. Name of individual in charge of stressing operation.
   8. Serial or identification numbers of jack and gage.
   9. Date of jack-and-gage calibration certificates.
   10. Gage pressure to achieve required stressing force according to supplied calibration chart.

11. Tendon identification mark.
12. Calculated tendon elongation.
13. Actual tendon elongation.
14. Actual gage pressure.

3.9 TENDON FINISHING

A. Do not cut strand tails or cover anchorages until stressing records have been reviewed and approved by Architect.

B. Cut strand tails as soon as possible after approval of elongations.

C. Cut strand tail between 1/2 and 3/4 inch from wedges. Do not damage tendon or concrete during removal of strand tail. Acceptable methods of cutting strand tail include the following:
1. Oxyacetylene flame.
2. Abrasive wheel.
3. Hydraulic shears.
4. Plasma cutting.

D. Install encapsulation caps and sleeves on intermediate anchorages within one day of stressing.

E. Cut strand tails and install encapsulation caps on stressing-end anchorages within one day of Architect's acceptance of elongations.

F. Patch stressing pockets within one day of cutting strand tail. Clean inside surface of stressing pocket to remove laitance or post-tensioning coating before installing patching material. Finish patching material flush with adjacent concrete.

3.10 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI SPEC-306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, or a combination of these as follows:
1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.11 FIELD QUALITY CONTROL

A. 3rd Party Testing Agency: Owner will engage a qualified 3RD party testing and inspecting agency to perform field tests and inspections and prepare test reports for both heavy duty concrete paving and PT surfaces.

B. Testing: A qualified testing agency to perform tests and inspections.
   1. Before concrete placement, testing agency will inspect the following for compliance with post- tensioning installation drawings and the Contract Documents:
      c. Location and number of tendons.
      d. Tendon profiles and cover.
      e. Installation of backup bars, hairpins, and other non-prestressed reinforcement shown on post- tensioning installation drawings.
      f. Installation of pocket formers and anchorage devices.

      g. Repair of damaged sheathing.
      h. Installation of backup bars, hairpins, and other non-prestressed reinforcement shown on post- tensioning installation drawings.
   2. Testing Agency will record tendon elongations during stressing. Mark and measure elongations according to PTIs “Field Procedures Manual for Unbonded Single Strand Tendons”. Measure elongations to closest 1/8 inch.
   3. Testing Agency will immediately report deviations from the Contract Documents to the Architect.

C. Maintain maximum grout temperature while curing of 90 degrees F.

D. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
   1. Testing Frequency: Obtain at least 1 composite sample for each 100-cu. yd. or fraction thereof of each concrete mix placed each day.
      a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
   2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
   3. Density: ASTM C138; one test for each composite sample, but not less than test for each day’s pour of each concrete mix.
   4. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
   5. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
   6. Compression Test Specimens: ASTM C 31; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
   7. Compressive-Strength Tests: ASTM C 39; test 1 specimen at 7 days and 2 specimens at 28 days.
      a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

E. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

F. Test results shall be reported in writing to A/E, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

3.12 PROTECTION

A. Do not expose tendons to electric ground currents, welding sparks, or temperatures that would degrade components.

B. Protect exposed components within one workday of their exposure during installation.

C. Prevent water from entering tendons during installation and stressing.

D. Provide weather protection to stressing-end anchorages if strand tails are not cut within 10 days of stressing the tendons.

E. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

3.13 REPAIRS

A. Submit repair procedure to Architect for evaluation and approval.

B. Do not proceed with repairs requiring removal of concrete unless authorized in writing by Architect.

END OF SECTION 32 13 15

SECTION 321813 - SYNTHETIC GRASS SURFACING

PART 1 - GENERAL

A. Section Includes:
   1. Synthetic grass Turf and infill system and accessories.
      a. New synthetic grass Turf and infill system for athletic fields**.**
      b. A heat reducing or cool turf infill material for athletic fields shall also be submitted as an alternate for consideration by the owner.
      2. FieldSpec 7’ Drag Brush
      3. FTMAG 7’ tow behind magnet
      4. Drainage testing of new infill turf field.

B. Related Work:
   1. Division 31 Section “Site Clearing”: For removal of existing natural turf and existing improvements.
   2. Division 31 Section “Earth Moving”: For preparation of subgrade and field base materials.
   3. Division 33 Section “Subdrainage”: For storm drainage structures and field drainage system.

1.2 DEFINITIONS

A. Terminology Definitions:
   1. Base Materials: Materials that provide porosity and stability such as crushed aggregate or porous pavement.
   2. Denier: The weight in grams of 9000 meters of fiber.
   3. Drainage System: A method of removing surface and subsurface moisture/water.
   4. Fiber: A specific form of fibrous textile material from which yarn is manufactured.
   5. Fiber Thickness: A measurement in microns (metric) or mils. (U.S.) of the thinnest cross section of a fiber.
   6. G-Max: A measurement of impact (shock absorption) in terms of gravity units as a ratio of deceleration.
   7. Infill: Loosely dispersed materials that are added to the synthetic turf system, typically sand, rubber, other suitable material, or a combination thereof.
   8. Knitted: A process in which the yard fibers of the pile are tied to the backing which was simultaneously constructed in the same over and under, crisscross process.
   9. Water Permeability: The rate at which water flows through a surface or system crosssection or components of the cross-section.
   10. Planarity: Uniformity of the surface as compared to certain fixed predetermined points or prescribed slopes.
   11. Primary Backing System: A single or multiple layers of woven or non-woven materials, into which the fiber is either tufted or knitted, to provide the initial construction of the synthetic turf.
   12. Secondary Backing System: A coating and/or woven or non-woven fabric layer(s) applied to the primary backing after the fiber pile has been locked into place which serves to provide tuft bind and additional structural integrity.
   13. Shock Absorbing System: Component(s) that add resiliency to the system.
   14. Subgrade: A stabilized foundation onto which the base materials and field systems are installed.
   15. Synthetic Pile Fiber: Grass-like blades made of synthetic materials.
   16. Tufted: A process by which the fiber yarns that form the pile are inserted into a previously prepared blanket-like primary backing.

1.3 PERFORMANCE REQUIREMENTS

A. General: Design of synthetic turf system is based on products and systems by manufacturers as specified in Part 2. Systems shall be engineered by manufacturer to provide a complete turf system.

B. Standard Test Methods: Systems shall comply with all applicable test standards as follows:
   1. ASTM F 1551; "Standard Test Methods for Characterization of Synthetic Turf Playing Surfaces and Materials."
      a. Suffix-DIN 18-035, Part 6 – Water Permeability of Synthetic Turf Systems and Permeable Bases.
      b. Suffix ASTM – Turf System Ball Bounce and Ball Rebound.
   2. ASTM D-1682; Grab Strength Test
   3. ASTM D-1335; Tuft bind
   4. ASTM D-4158; Uniform Abrasion Method
   5. ASTM F-1015; Relative Abrasiveness
   6. ASTM F-355; Procedure A; Shock Absorbency
   7. ASTM D-1876; Peel Resistance

C. Field Markings: Conform to requirements of the National Federation of State High School Association's High School Track and Field Rules and Records.

D. ***Turf Colors: Turf field color shall be as 'Green'. Owners' logos and lettering shall match the owners technical branding guidelines in both layout and colors. Field colors shall be selected by the owner from manufacturers standard turf colors, based upon approved vector file supplied by Owner.***

E. Shock Absorbency: Field shall achieve a minimum of 130 Gmax Shock Absorbency at all tested locations and a maximum of 175.

F. Player-Surface Interface, ASTM F1936: The field surface should provide consistent footing across the entire field area in all directions. Footing includes traction, slip resistance, and rotational resistance. It should also allow for movement between the shoe and the field surface so that contact can be made between athletes without the foot locking into place.
   1. Traction: The surface should provide good traction in all types of weather with the use of conventional athletic type shoes applicable to the sports and/or activity specified.
   2. Rotational Resistance: The surface should allow for twisting movements as is common in athletic activities. Rotational resistance measures the ability of the user to perform twisting motions when in contact with the surface.
   3. Slip Resistance Component: The system should enable a predictable range of movement between the user and the surface uniformly throughout. The surface should balance traction and slippage by way of the sliding coefficient.
   4. Surface Abrasiveness: The field surface should have fibers that minimize skin abrasions.
   5. Impact Absorption (force reduction): The field surface should have the ability to adequately absorb player impact with the surface.
   6. Surface Stability (vertical deformation): The surface should provide adequate stability so that the athlete can maintain body control to help prevent or properly control contact between athletes. This is an important consideration that should be balanced with the surface's ability to absorb impact. If the surface is too soft, the stability provided by the field may not be optimal for player movement and body control.

G. Ball-Surface Interface, ASTM F1936: The field surface should provide consistent and predictable ball performance reaction characteristics.
   1. Surface Uniformity: The synthetic turf playing field should be slightly sloping as noted on plans. The synthetic surface shall provide a true and uniform playing surface throughout.
   2. Ball Bounce: The synthetic turf field should provide a ball bounce as close to the optimal playing characteristics of the sport or sports (football and soccer). The published standards for the regulatory organizations applicable for each sport should be referenced.

3. Ball Roll: The synthetic turf field should provide a ball roll as close to optimal playing characteristics of the intended sport or sports (football and soccer). The published standards for the regulatory organizations as may be applicable for each sport should be referenced.

H. Appearance: Unless otherwise dictated by design, the synthetic turf should have a consistent color and shade without significantly noticeable streaks or other irregularities when observed in any direction.

1.4 ACTION SUBMITTALS

A. Shop Drawings: Prepare at scale of the construction documents and contain all pertinent information regarding layout and installation. Drawings shall include the following:
1. Seaming plan; seams of pad are not to coincide with seams of synthetic turf or interfere with subsurface drainage system.
2. Installation details; edge detail, and other inserts, etc.
3. ***Striping plan: layouts for soccer, football and reference marks for other sports as noted on plans showing any field lines, markings and boundaries, and field logos as indicated.***

B. Samples for Verification: Synthetic Turf, 30 inches by 30 inches with two 4 inches by 12-inch lines, (1 white and 1 yellow), installed per manufacturer's recommended method.
1. Color samples of A/E selected field colors from vendors standard colors and owner custom logo and lettering to match owners' technical branding and color guidelines.
2. Provide at project site for review by A/E representative and owner.

C. Product Submittals:
1. Product Data: For each type of product indicated.
2. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturers and witnessed by a qualified testing agency for turf system performance.
a. Compliance with Pile Height, Face Weight and Total Fabric Weight per ASTM D418.
b. Primary and Secondary Backing Weights per ASTM Dd418.
c. Tuft Bind per ASTM D1335.
d. Grab Tear Strength per ASTM D1682.
3. Certification of Subbase, drainage system and aggregate base installation: Manufacturer/installer shall certify acceptance of subbase, storm drainage system and aggregate base for the purpose of obtaining manufacturer's warranty for the finished synthetic playing surface.
4. Certification of Installer: Proof of compliance with "Quality Assurance" provisions.
5. Warranty: Manufacturer's warranty with provisions specified herein that will be utilized for the Project. Generic warranties are not acceptable.

1.5 CLOSEOUT DOCUMENTS

A. General: Closeout Submittals are to be submitted with O and M Manuals only. Do not submit with other ACTION and INFORMATIONAL Submittals:
1. Maintenance Data: For the proper care and preventative maintenance of the synthetic turf system, including painting and striping.
2. Warranties: Special Warranties specified in this Section.

1.6 QUALITY ASSURANCE

A. Manufacturer/Installer's

1. The synthetic turf installer/manufacturer shall demonstrate experience with at least 3 similar projects with contract amounts over $1,500,000.00. Submit information with the bid.
2. The installer/manufacturer shall employ only qualified, experienced supervisors and technicians skilled in the installation of this system. All turf technicians shall be full time statutory employees of the turf manufacturer/installer. Submit resumes of the top 5 technicians and 2 supervisors with the bid.
3. The turf installer/manufacturer must provide competent workmen skilled in this specific type of synthetic grass installation. The designated supervisory personnel on the project must be certified in writing by the turf manufacturer as competent in the installation of this material, including seaming and proper installation of the infill mixture. The manufacturer shall have a representative on site to certify the installation and warranty compliance.
4. The manufacturer's representative and installation project manager shall observe establishment of subgrade, drainage system, and perimeter drain at periodic intervals during construction and notify the Architect of any items observed that may be detrimental to final installation of the synthetic turf.
5. The Manufacturer must be a certified member of the Synthetic Turf Council (STC).

B. Prospective bidders must meet the following criteria:
1. Have proper license, in good standing, and have never had a license revoked.
2. Have not been disqualified or barred from performing work for any public Owner or other contracting entity.
3. Shall have demonstrable financial strength to fully service and warrant the systems through the provision of audited financial statement for the past 3 years.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer shall provide a 3rd party warranty on all synthetic turf against defects in the material provided, including ultraviolet degradation, excessive fading, wrinkling, panel movement, shock absorbency, etc.
1. The warranty submitted must have the following provisions even if not part of Manufacturer's standard Warranty form.
a. Warranty Period: Ten (10) years from date of Substantial Completion.
b. Warranty shall include materials and workmanship.
c. Must repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
d. There must be a warranty from a single source covering workmanship and all self-manufactured or procured materials for the field surface and installation.
e. Warrant that the yarn used to make the grass-like tufts will maintain its UV stability and tensile strength such that the strength of the fiber when measured in accordance with ASTM D-2256 will not decrease by more than 50% during the warranty period due to breakdown of UV stability.

1.8 MAINTENANCE SERVICE

A. Maintenance Proposal: Provide a maintenance proposal from Manufacturer/Installer to the Owner in a form of a standard one-year maintenance agreement. State the services to be provided, obligations, conditions, and terms for agreement period and for future renewal options.

1.9 EXTRA MATERIALS

A. Furnish one additional standard infill container with rubber infill and one standard container with alternate cool infill if accepted for the owners use. Containers shall contain a min of 45 c.f. of rubber and alternate cool infill material.

B. Furnish roll of additional synthetic turf fabric for owners use. Roll shall contain a min. of 1500 s.f of turf fabric.
   1. All salvageable pieces of colored turf used during the installation should be left with the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS/PRODUCTS

A. Varsity Football/. Soccer – Basis of Design: Subject to compliance with requirements.
   1. Sprinturf ; Atlanta, Georgia
      a. Football/Soccer: Ultrablade 50 Sharktooth

B. Varsity Football/Soccer Stadium athletic field turf- Approved Manufacturers: Subject to compliance with Basis of Design requirements, provide products by one of the manufacturers specified.
   1. Fieldturf / Tarkett, Calhoun, Georgia.
   2. Motz Group; Cincinnati, Ohio.
   3. Astroturf, Harmony, Pennsylvania.
   4. Mondo, Conshohocken, PA

C. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. Requests for Architect's approval must be accompanied by the "Substitution Request Form" and complete technical data for evaluation. All materials for evaluation must be received by the Project Manager and Specification Department at least 15 days prior to bid due date. Only the listed approved manufacturers will be issued by Addendum.
   1. With any substitution request, the manufacturer must submit all information and specifications of the equal material to the architect.

2.2 SYSTEM COMPONENTS

A. Drainage System, by Division 33, Section "Subdrainage".

B. Base Materials by Division 31, Section "Earthwork"

C. Materials: All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in the area of the Project, be resistant to insect infestation, rot, fungus, and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow-through drainage allowing free movement of surface run-off through turf where such water may flow to the subbase and into the field drainage system.

D. Synthetic Turf: The synthetic turf surface should provide the performance characteristics, components and construction that meet the needs of the declared use for the playing field. (Football/Soccer).
   1. Synthetic turf construction should provide a system that is resistant to weather, rot, mildew and fungus growth. The system components should be non-toxic, not cause commonly known allergic reactions, and conform to environmental requirements. Each synthetic turf system should be constructed to provide dimensional stability and resist damage from wear and tear during athletic and recreational usage. Each system should be resistant in its entirely to excessive ultraviolet degradation.
   2. Fibers for Tufted Systems: The polypropylene or polyethylene fiber should be of flat film, extruded or texturized slit film for football field.
   3. Primary Backing Systems: The primary backing materials should be either polyester tire cord, utilized in the knitting process, or a woven, non-woven, or other suitable materials in one or more layers, utilized in the tufting process.

4. Secondary Backing Systems: The secondary backing materials should be applied through a coating process that can be single or multiple applications of one or several different materials. A knitted turf fabric should receive an initial acrylic coating followed by different options of polyurethane or suitable latex coatings in various weights and thickness configurations, depending on individual system design. A tufted turf fabric should receive a polyurethane or suitable latex precoat or a performance-based acceptable equal which than can be followed by an attached cushion or a laminated secondary backing utilizing polyurethane, suitable latex, or an acceptable performance based equal. The purpose of the secondary backing is to provide the desired level of tuft bind and structural integrity of the turf components. In cases where an increased level of system resilience is desired, multiple layers of secondary backing materials of different physical characteristics can be applied.
5. Water Permeability Rate: Permeable system by design with adequate drainage, perforations should be put through all of the backing coatings to provide for adequate drainage through the system as specified.
6. Seams: New synthetic turf materials are manufactured in panels or rolls that are usually 15 feet wide. Each panel or roll should be attached to the next with a seam to form the fabric of the field. Seams should be glued with a supplemental backing material or sewn with high strength sewing thread.
7. Adhesive: All adhesives used in bonding the system together should be resistant to moisture, bacterial and fungus attacks, meet local/regional environmental requirements and be resistant to ultraviolet rays at all locations within the installed system. The bonding or fastening of all system material components should provide a permanent, tight, secure, and hazard-free, athletic playing surface.
8. Seaming Tape: Seaming tape is commonly used for seams and/or inlaid lines and markings. The tape is comprised of a fabric that should be installed below the backing material on both sides of a seam or inlay. Adhesive is then applied to the seaming tape to provide a bond between adjacent turf panels to sections. The fabric used for seaming tape should provide dimensional strength and enough surface texture to bond well with the adhesive.
9. Turf Characteristics: For playing field areas
    a. ***Fiber type: Dual fiber (slit film and monofilament).***
    b. Yarn: UV-Resistant polyethylene.
    c. Tuft Bind Strength: 8-10 lbs/force
    d. ***Face/Pile Yarn Weight: Minimum of 50 oz/sq yd.***
    e. Total Weight: Minimum of 72 oz.
    f. GMax Range: 130 – 165.
    g. ***Infill Materials: mix of Sand 45% and Rubber 55%*** and alternate cool infill if alternate accepted by owner
    h. Infill Material Density: Minimum of 6 lbs/sf.
    i. ***Pile Height:*** ~~1-3/4 inch and~~ ***2 inch*** as indicated on Drawings.
    j. Colors: manufacturer's standard colors for green field, white and yellow lines,. Custom colors as required to match school colors for logos and text.

E. Infill Material: Infill materials on playing field turf are comprised of rubber and sand, thereof which are placed on top of the synthetic turf backing and between the synthetic surface fibers.
    1. Sand: The sand material utilized as infill should be silt free, similarly sized, and rounded to sub-angular. The sand should be delivered to the site graded, washed and dried.
    2. Rubber: The rubber infill utilizes material that is either styrene butadiene rubber (SBR) or ethylene propylene dien polimerisat (EPDM) rubber granules. Both ambient and/or cryogenic rubber can be used.
        a. Rubber granules must be clean and metal free.
    3. Hybrid: Constitutes the use of sand and rubber or other suitable materials in various combinations.

4. Heat reducing or Cool infill: Each contractor shall submit as an alternate price for a heat reducing or cool infill material option for consideration by the owner. The contractor shall submit with the alternate price information and specifications on the heat reducing or cool infill material. Cool infill material should be priced to be added as a ¼" top dressing to the base bid infill requested.

F. Lines, Markings, Logos or text: Construction and materials used should be harmonious with the synthetic surface.
   1. Installation: Lines, markings, logos or text shall be inlaid in the synthetic turf surface. Paint shall not be used unless otherwise approved by A/E.
   2. Color of inlaid lines, markings logos or text fabric shall be in custom colors as selected by the Owner / Architect from custom color selections, to match school colors.
   3. selected from custom colors shall be supplied at no additional cost to the owner.
      a.Refer to Drawings for field markings, lines, graphics, text and colors.
      b. Center field logo and lettering to be supplied and installed in a 30' x 30' maximum area.
   4. Consistency: Synthetic turf and fibers utilized for the tufted or inlaid lines, markings, logos or text should be like that used in all other areas of the field and installed to the same tolerances.

G. Inserts: Covers for goal or base sleeves and anchors below synthetic turf.
   1. Consistency: The synthetic turf used for the inserts should be like that used in the area adjacent to the insert.
   2. Installation: The inserts should be anchored securely in the surrounding areas so that they cannot be displaced by the activities occurring on the field and installed to the same tolerances.

H. Nailer Strip: The nailer strip shall be 2 inches by 4 inch composite PVC.+

I. The entire synthetic turf system shall be "lead-free".

J. In Ground utility boxes (if required): In ground utility boxes #3500 with infill retainer system for synthetic turf as supplied by Sportsfield Specialties, 888-975-3343 to be installed at each of the locations of existing boxes if required or as adjusted on site.

K. FieldSpec 7' Drag Brush:
   1. Basis of Design: FieldSpec 7' Drag Brush and Accessories as Manufactured and/or supplied by:
      a. Sportsfield Specialties, Inc.; P.O. Box 231, 41155 State Highway 10 Delhi, NY 13753, P. (888) 975-3343
   2. System to Include:
      a. Powder coated steel construction
      b. Towable with small tractor or utility vehicle
      c. Reversible & replaceable grooming brushes
      d. Replaceable dethatching tines
      e. Simplified height adjustment
      f. Easily upgradable to 15' brush
      g. Fully portable for off-field storage
      h. Approx. Unit weight: 240 lbs.

L. FTMAG - 7' Tow Behind Magnet:
   1. Basis of Design: FTMAG - 7' Tow Behind Magnet and Accessories as Manufactured and/or supplied by:
      a. Sportsfield Specialties, Inc.; P.O. Box 231, 41155 State Highway 10 Delhi, NY 13753, P. (888) 975-3343

2. System to Include:
    a. Tow behind magnet system for synthetic infill turf
    b. Pull handles allow debris to be released from magnet
    c. Powder coated steel and aluminum construction
    d. Compatible with SweepRight Pro and GroomRight
    e. Approximate unit weight: 150 lbs.
    f. Store inside when not in use

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspection: Synthetic materials should be inspected prior to installation for:
    1. Damaged or defective goods.
    2. Missing goods or quantities.
    3. Correct turf pile height.
    4. Correct backing perforation diameter and spacing if applicable.
    5. Materials out of tolerance with the specification.

3.2 GENERAL, INSTALLATION

A. The installation shall be performed in full compliance with shop drawings and manufacturer's printed instructions.

B. All installation operations shall be performed by personnel directly employed by the manufacturer, fully familiar with the materials and their application, under the full-time direction and supervision of a qualified technical supervisor employed by the manufacturer of the synthetic turf.

3.3 TURF INSTALLATION FOR PLAYING FIELDS

A. Subgrade Preparation, refer to Division 31, Section "Earthwork": The subgrade should provide a stabilized foundation upon which base materials and subsequent components of playing field systems will be installed.
    1. Subgrade (Rough) Planarity: The tolerances for the finished subgrade should not exceed one inch as measured by a 10-foot straight edge. Grading of the subgrade shall minimize ponding to the extent practical.

B. Aggregate refer to Division 31, "Earthwork": Installation of the aggregate base should provide a close, evenly textured surface meeting the required tolerances.

C. Nailer: Attach the composite nailer for the turf attachment to curbs or concrete slabs by means of a galvanized 3/8-inch minimum bolt at 4 feet on center, minimum. The elevation of the nailer shall be determined by the turf manufacturers specifications.

D. Synthetic Turf Installation: All synthetic turf systems should be installed to provide stability that will prevent panels from shifting or bunching.
    1. Seaming Method: The synthetic turf panels should be securely fastened together for the warranted life of the system. These seams are typically glued or sewn, the method for which varies from system to system. Seam gaps should be uniform. For tufted infill systems the gap between the fibers should not exceed the gauge of the tufting. For other synthetic turf systems, the seam gaps should not exceed 1/16 inch.
        a. Major panel seaming: Seams must be sewn. Seams shall be flat, tight and permanent with no separation or fraying.
        b. Inlays shall be glued and warranted for workmanship per the Warranty Article.
    2. Edge Anchoring: Tiee anchor to trench drain. Provide a secure anchor.

E. Infill Material Installation: Correct installation is critical to performance of these systems and should follow the manufacturer's recommendations.

1. Environmental Conditions: It is recommended infill materials should be installed under dry field conditions.
2. Method of Application: The infill material should be installed uniformly. The equipment used for the application of the infill materials should erect the fiber, place the infill materials, and should incorporate a metering method to provide consistent distribution. The equipment utilized should not distort or displace any base materials or damage to system in any way.
    a. Apply infill in numerous thin lifts using specialized broadcasting equipment.
    b. Infill material shall be installed to a depth of approximately 1.75 inches. A maximum of 0.75 inches of fiber can be exposed.
    c. Infill mixture can only be applied when dry.

F. Fiber Conditioning: It is essential to maintain the integrity and uniformity of the fiber throughout the manufacturing, shipping and handling, installation and maintenance processes in order to prevent damage which could alter the specified performance and void the warranty.

3.5 SYNTHETIC TURF FIELD TESTING

G. Porosity is the measure of how much ground water a soil can hold, permeability is the measure of how quickly water passes through a soil, while retention is the measure of how much water stays behind. To calculate the exact area of land required for effective drainage an 'assessment' is required, usually by performing a percolation/water table test as described below.

1. Stage one: Work out the groundwater level – a Trial hole should be dug to determine the position of the standing groundwater table a minimum of 1m squared in area and 2m deep, or a minimum of 1.65m below the invert of the proposed drainage field pipework. The groundwater table should not rise to within 1m of the invert level of the proposed distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered.
2. Stand two: the percolation test – a percolation test should then be carried out to assess the further suitability of the proposed area. A hole 300mm square should be excavated to a depth of 300mm below the proposed invert level of the distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom but may be enlarged above the 3oomm level to enable safe excavation to be carried out. Fill the 300mm square section of the hole to a depth of at least 300mmm with water and allow it to seep away overnight. Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from 75% full to 25% full level (ie: a depth of 150mm). Divide this time by 150. The answer gives the average time in seconds (Vp) required for the water to drop 1mm. the test should be carried out at least three times with at least two trial holes and the average figure from the test should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, sever frost or drought. This minimum value ensures that unwanted duff and litter cannot percolate too rapidly into groundwater. Where Vp is outside these limits effective treatment is unlikely to take place in a drainage of the field.

3. Stage Three: The Drainage Calculation
    a. To calculate the floor area of the drainage field (A in m squared) use the following formulas:
        1) For athletic fields: First, determine the time for water to drop (T) in minutes
        2) Next, measure the drop distance (D) in inches
        3) Use the formula from above: RT=T/D
        4) Finally, calculate the percolation rate (PR) in minutes per inch

5) After inserting the variables and calculating the result, check your answer with the use of an online calculator to make sure values are correct.

3.6 FIELD MARKINGS

A. Installer shall install striping, logos, and additional markings as indicated in accordance with NFHS and adhering to the process indicated on shop drawings. Obtain vector file of school logo from Owner prior to start of construction.

3.7 CLEANUP

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

B. All useable remnants of new material shall become the property of the Owner.

C. The Contractor shall keep the area clean throughout the project and clear of debris.

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.

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing agency to perform field quality-control testing.

B. G-Max Testing, ASTM F1936:
1. Temperature: Ambient shaded air temperature of 40 – 100 degrees Fahrenheit.
2. Number: 10 tests shall be conducts throughout each field area at completion of work. Test locations shall conform as closely as possible to the test sites specified in ASTM F1936 (Football) or FIFA Handbook 3-06 (Soccer).
   a. Provide complete report of testing values and diagram of locations.
   b. Acceptable industry manufacturer tolerance of +/- 2 percent.
   c. Test results shall be between 130 and 175. If test results in values above 175, adjustments should be made to the installation and materials until test results are within the acceptable range.

3.9 DEMONSTRATION

A. The synthetic turf installer shall provide detailed written maintenance instructions, suggested guidelines for the system, and training of maintenance personnel. Maintenance of the systems typically consists of cleaning, stain removal, minor seam repair, dragging or redistribution of any infill material, and management of infill compaction. Specialized equipment is typically required for the maintenance of the surface and should be included with the field contract. Utilizing this equipment as recommended by the installation builder will generate the proper maintenance in relation to any future warranty claims.

3.10 DISPOSAL

B. Disposal: Remove surplus soil material, unsuitable infill, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
1. Burning of combustible cleared and grubbed materials is not permitted on Owner’s property.

3.11 MANUFACTURER / PRODUCT INFORMATION REQUIREMENTS

A. Manufacturer product characteristics and specifications shall be submitted for consideration by each contractor following bidding for consideration.

END OF SECTION 321813

SECTION 33 30 00 - SANITARY SEWERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sanitary sewers outside of the building.
2. Sanitary lift station and piping.

B. Related Sections:

1. Division 33 Section “Common Work Results for Utilities”.
2. Division 33 Section “Sanitary Sewer Testing (Indianapolis)”.

1.2 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with the requirements of the utility company which receives the wastewater and otherwise has authority over the sanitary infrastructure “Sanitary Utility”.
2. All materials and work within the right-of-way or easement of any local government or other agency having jurisdiction over sewage, shall meet the requirements of such an agency.
3. All sanitary work and testing shall conform to the Indiana Department of Environmental Management (IDEM) and the Indiana State Department of Health (ISDH).

1.3 SUBMITTALS

A. General: Each item in submittal must state that the item meets or exceeds the specified standards referenced herein. In addition, if multiple sizes or types are included in the submittal, clearly indicate which is to be used, and where, if applicable.

B. Product Data:

1. Sewer pipe, fittings and joint materials.
2. Pipe connectors (flexible connectors into sanitary manholes).
3. Cleanouts.

C. Shop Drawings:

1. Pre-cast concrete manholes, including castings, steps, sealing materials and any other required appurtenances.

D. Test Reports: Submit results for all testing and inspections to Architect/Engineer.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

A. Notes:

1. Unless otherwise indicated, pipe sizes refer to the nominal inside diameter.
2. Unless otherwise indicated, the following materials shall be used as described below.

B. Sanitary Sewer:

1. Polyvinyl chloride (PVC) pipe and fittings (6” through 15”):

a. Pipe: ASTM D3034, SDR-35.
b. Fittings: ASTM D3034, SDR-35.
c. Joints: ASTM D3212, compression bell and spigot.
d. Gaskets: ASTM F477, elastomeric.

2. Polyvinyl chloride (PVC) pipe and fittings (18” through 24”):

a. Pipe: ASTM F679, T-1 wall thickness.
b. Fittings: ASTM F679, T-1 wall thickness.
c. Joints: ASTM D3212, compression bell and spigot.
d. Gaskets: ASTM F477, elastomeric.

3. Ductile iron pipe and fittings (6” and larger):

a. Pipe: AWWA C151, pressure class 350.
b. Fittings: AWWA C110, standard pattern or AWWA C153 compact pattern.
c. Joints: bell and spigot with push-on joints and gaskets.
d. Gaskets: AWWA C111, rubber.
e. Interior lining: epoxy coating (do not use cement mortar lining).
f. Exterior coating: standard asphaltic per AWWA C151.
g. Polyethylene encasement: AWWA C105 tube or sheet, Linear Low Density (LLD, minimum 8 mil) or High-Density Cross Laminated (HDCL, minimum 4 mil) with 2” polyethylene tape (minimum 12 mil).
h. Application: Required when crossing water lines with less than 18” vertical or 10’ horizontal clearance.

2.2 EXTERIOR CLEANOUTS

A. General:

1. Unless otherwise indicated, cleanouts shall be the same diameter as the sewer they serve for pipe sizes up to 8”, pipes greater than 8” shall use an 8” cleanout.
2. Unless otherwise indicated, riser pipes and cleanout bodies shall be the same material as the sewer they serve.
3. Each cleanout shall have an exterior housing to prevent transfer of load to the cleanout.
4. Medium duty housing may be used in non-vehicular areas, all others shall be heavy duty.
5. Exterior housing:

a. ASME A112.36.2M gray iron with round, secured, scoriated and gray iron cover.

b. Refer to Part 3 for concrete anchorage.

6. Cast iron cleanouts:

   a. Gray iron ferrule with tapered-thread, brass closure plug, ASME A112.36.2M.
   b. Riser pipe and fittings: cast iron soil pipe, ASTM A74.
   c. Ferrule connection may be inside caulk, spigot or no-hub. The connection must be water and airtight.

7. Plastic cleanouts:

   a. PVC body with PVC tapered thread plug.
   b. Riser pipe and fittings: SDR 35, ASTM D3034.

2.3 MANHOLES

A. General:

1. Precast concrete per ASTM C478 and watertight, See Part 3.
2. Manhole base shall be minimum 8” thick. To prevent flotation, increase the thickness of precast sections or add concrete to base section as required.
3. Steps: Polypropylene encased #4 rebar per ASTM D4101, meeting OSHA requirements.
4. Castings: All frames and castings shall be heavy duty and constructed of gray iron free from blowholes, porosity, hard spots, shrinkage distortion, etc. They shall be smooth and clean. Watertight manhole covers shall be used for any sanitary manhole located within a floodplain, floodway or other areas subject to flooding.
5. Adjusting rings: Precast concrete, interlocking with ½ butyl rubber base or extrudable preformed gasket material. Bricks, blocks or other means are not acceptable.
6. Pipe connectors: each pipe entering a sanitary manhole shall have a gasketed, flexible, watertight connector per ASTM C923.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Piping:

1. Install PVC gravity sewer piping according to ASTM D2321.
2. Install cleanouts and manholes in sewer lines where shown on the Drawings and as required by applicable Codes and/or field conditions.
3. Install manholes and cleanouts at all changes in direction. Blind turns or gradual deflection of pipe is not permitted.
4. The maximum distance between manholes is 400’.
5. Verify existing and proposed grades before installing any pipe. Notify Architect/Engineer of any conflicts with Drawings or Specifications.
6. Pipe installation shall proceed with spigot ends of bell and spigot pipe pointing into direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with adjoining pipe and to prevent sudden offset in the flow line.
7. Pipe trenches shall be excavated parallel to the specified pipe, slope and grade. The bottom of the pipe shall be supported by a minimum 6” thick layer of #8 crushed stone. The #8 crushed stone shall extend 6” on each side of the pipe and 12” above the top of the pipe. The remaining backfill in lawn and non-pavement areas shall be suitable fill material

approved by the Geotechnical Engineer. Pipes under and within 5' of pavements, slabs, sidewalks and other hard surfaces shall be backfilled with compacted granular fill. All backfilling and compaction shall be in accordance with Division 31 Section "Earthwork".

8. During backfilling, install detectable warning tape. See Division 33 Section "Common Work Results for Utilities" for warning tape requirements.
9. Any breaks or defects in pipe must be immediately repaired. Any pipe which has been disturbed after being laid must be taken up, joints cleaned and properly re-laid.
10. The interior of all pipes shall be cleaned of all dirt and superfluous materials as the work progresses. After pipe installation, install erosion control measures as shown on Drawings and as necessary to prevent sediment or other materials from entering or building up in pipe.
11. Water and sewer minimum clearances:

    a. Where minimum 18" vertical or 10' horizontal separation cannot be provided between sewers and water lines, the sewer shall be ductile iron, refer to Part 2.
    b. At crossings, extend ductile iron sewer pipe a minimum of 10 feet on both sides of the water line.
    c. Do not install water and sewer lines in the same trench under any circumstances.

B. Manholes:

1. Set castings flush with grade in pavement areas and 1" above grade in other areas.
2. Install 2 to 4 precast adjusting rings for an overall 6" to 12" adjustment height.
3. Grade to drain away from castings.
4. Install steps from 12" below top to 12" above bottom at 16" on center.
5. Bench bottom of manholes per Drawings.
6. If required by Sanitary Utility, apply mastic or other approved sealing material to outside of sanitary manholes per Sanitary Utility's specifications.

C. Cleanouts:

1. Install piping so cleanouts open in direction of flow in sewer pipe.
2. Set clean out covers flush with grade.
3. In areas other than concrete walks and concrete pavements, install concrete anchor pad.
4. Unless otherwise indicated, pad dimensions are 12" height with a diameter of the cleanout housing diameter + 12", to provide a 6" ring around the cleanout frame. Place on properly compacted subgrade and stone per Division 31 Section "Earthwork" and Division 32 Section "Site Concrete".

3.2 SANITARY SEWER TESTING

A. General:

1. The Contractor is responsible for all costs for testing and inspection, including labor, equipment and supplies.
2. The Contractor is responsible for coordinating and scheduling testing.
3. Any work failing testing and inspection requirements shall be repaired or replaced at the Contractor's expense and re-tested.

B. Requirements:

1. Testing and inspection shall meet all requirements of local Sanitary Utility and applicable State regulations. The contractor shall contact the local Sanitary Utility to verify testing and inspection requirements.

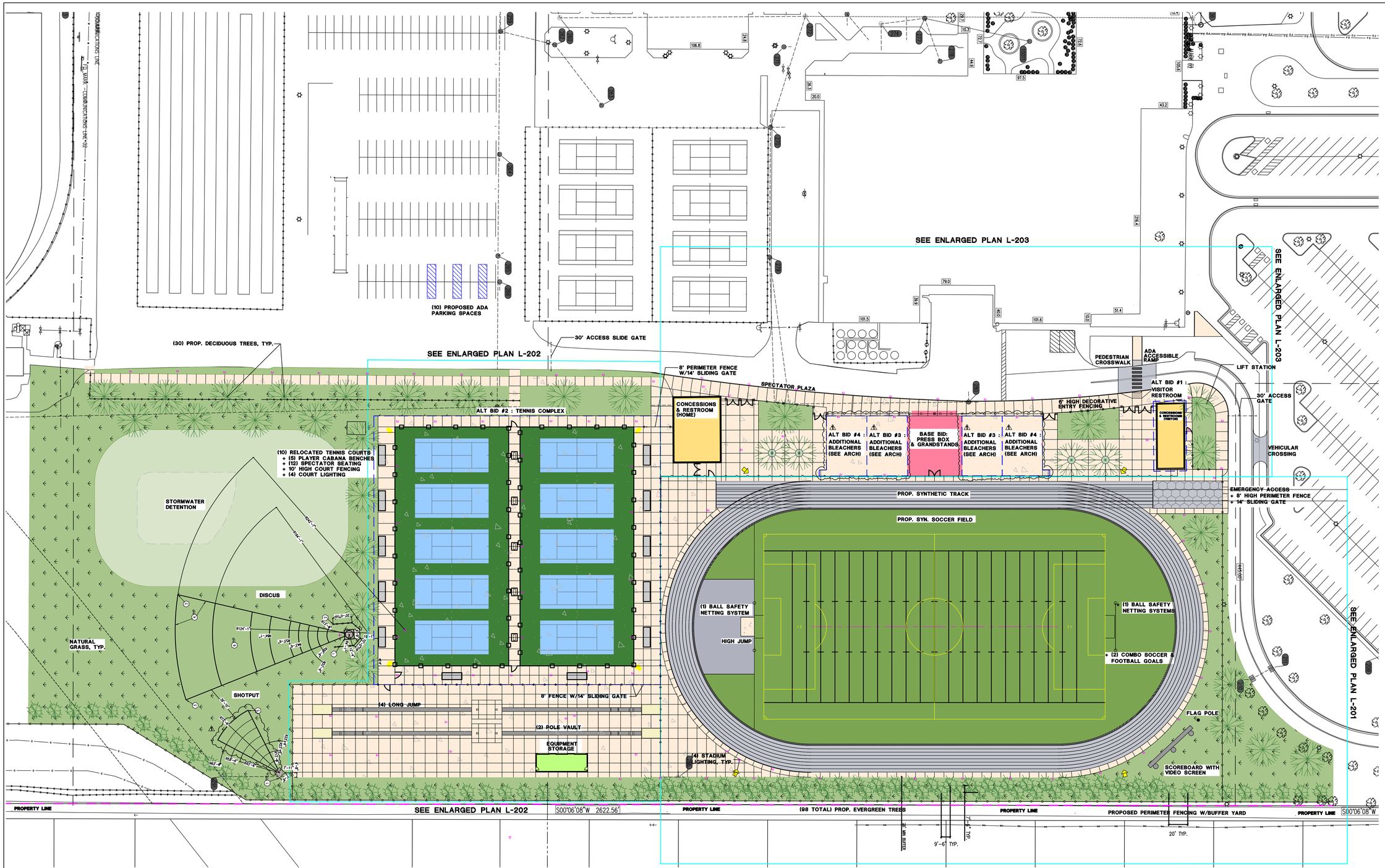
C. Gravity Sewer Pipe:

1. Deflection test: No sooner than 30 days after the installation, backfill and final compaction, each flexible sewer pipe shall be tested for deflection. No pipe shall exceed a deflection of 5%. The diameter of the mandrel shall be no less than 95% of the inside diameter of the pipe. The test shall not be performed with the aid of a mechanical pulling device.
2. Air pressure test: Each flexible sewer pipe shall be air pressure tested and conform to ASTM F1417. The leakage exfiltration or infiltration shall not exceed 200 gallons per inch of pipe diameter per mile per day for any section of pipe with a minimum positive head of two feet.

D. Manholes:

1. Each manhole shall be visually inspected after installation, backfilling and final compaction. If manhole shows leakage or signs thereof, it shall be repaired to the satisfaction of the Architect/Engineer and reinspected.
2. Vacuum test: Each manhole shall be air tested and conform to ASTM C1244.

END OF SECTION



SITE LEGEND

- 8 LANE RUNNING TRACK
- STANDARD CONCRETE WALKS/PADS
- TRACK ACCESS DRIVE ASPHALT PAVING
- NEW SYNTHETIC TURF SOCCER/FOOTBALL FIELD
- NEW ELECTRICAL SPORTS LIGHTING
- NEW ACO SLOT DRAIN SET WITHIN NEW 12" WIDE CONC. CURB
- NEW SEEDED LAWN
- NEW SCOREBOARD ASSEMBLY – REFER TO ARCHITECTURAL PLANS
- NEW ELEVATED HOME/VISITOR GRANDSTAND SEATING WITH PRESS BOX – SEE ARCHITECTURE & STRUCTURAL PLANS FOR MORE INFORMATION
- NEW PERIMETER 8' TALL CHAIN LINK FENCING (BLACK) PVC WITH NEW (DOUBLE AND SINGLE GATES AS SHOWN ON PLANS
- NEW 4' TALL CHAIN LINK FENCING
- PROPOSED LANDSCAPING
- PROPOSED 30' TALL FLAGPOLE
- NEW ENTRY PLAZA 6' TALL ORNAMENTAL FENCING (BLACK) WITH ARCH. COLUMNS @ MIDPOINTS AND CORNERS WHERE SHOWN ON PLANS AND @ CORNERS OF GATE LOCATIONS SHOWN ON PLANS
- ASPHALT RUNNING TRACK MEASURING LINE
- FOOTBALL/SOCCER GOALPACK SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES
- BALL SAFETY NETTING; TENSION NETTING SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES
- NEW HOME AND VISITOR CONCESSIONS AND RESTROOM BUILDINGS
- NEW STORAGE BUILDING
- NEW POST TENSION CONC. TENNIS COURTS

THROWS KEYNOTE LEGEND

1. STANDARD CONCRETE PADS, 6" THICK, PAVEMENT SCORING FOR PAD – CONTROL JOINTS MIDPOINTS TYP. – REFER TO DETAILS 14,18 L-401 AND 7-11 L-402
2. 15' TALL DISCUS BACKSTOP/CAGE/NETTING SYSTEM – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS, SEE DETAIL 8 L-401
3. CONCRETE MONUMENT – SEE DETAIL 18 L-401
4. DISCUS OUTLINE – SEE DETAIL 8 L-401
5. SHOT PUT LAYOUT – SEE DETAILS 9-10 L-401
6. SEEDED LAWN – SEE L-301 AND PROJECT MANUAL FOR FURTHER INFORMATION

SITE PROGRAMING SUMMARY

PEDESTRIAN CIRCULATION:
- ACCESSIBLE ROUTE TO ALL EVENTS
- CONNECTION BETWEEN EXISTING SCHOOL AND PROPOSED IMPROVEMENTS
- PEDESTRIAN CONNECTION FROM EXISTING PARKING LOTS TO IMPROVEMENTS

SPORTS AUXILIARY BLDG.:
- (2) COMBINED CONCESSIONS/RESTROOMS (SEPERATE HOME & VISITOR/SEE ARCH.)
- EQUIPMENT STORAGE BUILDING (SEE ARCH.)

SOCCER FIELD:
- PROP. 1000 SEAT SPECTATOR BLEACHERS (BASE BID); ADDITIONAL 2000 SEATS (BID ALTERNATES), SEE ARCH.
- PROP. PRESS BOX (BASE BID), SEE ARCH.
- PROP. SCORE BOARD W/VIDEO MONITOR (SEE ARCH)
- ENHANCED PEDESTRIAN ACCESS

THROWING EVENTS:
- LOCATED IN SEEDED GRASS AREA SOUTH OF TRACK & TENNIS COURTS
- SHOT PUT: INCLUDING, BUT NOT LIMITED TO, TOE BOARD, THROWING CIRCLE AND LANDING AREA
- DISCUS: INCLUDING, BUT NOT LIMITED TO, THROWING CIRCLE, DISCUS CAGE AND LANDING AREA.

TRACK AND FIELD EVENTS:
- 8 LANE X 400 METER TRACK
- INSIDE PERIMETER CURB/SLOT DRAIN
- SYNTHETIC TURF FIELD WITH UNDERDRAIN SYSTEM
- (2) POLE VAULTS AND (4) SINGLE LONG JUMPS ADJACENT TO TRACK
- HIGH JUMP IN SOUTH D-ZONE, FOR FLEXIBLE APPROACHES
- DISCUS AND SHOT PUT, LOCATED REMOTELY
- ALL SEATING ON WEST SIDE

OVERALL SITE MASTERPLAN

SCALE: 1" = 40'-0"

224177.01 MICHIGAN CITY COMMUNITY EVENTS CENTER

MICHIGAN CITY AREA SCHOOLS SCHOOL DISTRICT
408 South Carroll Ave, Michigan City, IN 46360
(219)-873-2000

Michigan City Area Schools

ARCHITECT
FANNING HOWEY
317-848-0966 WWW.FHAI.COM

KEY PLAN

BID DOCUMENTS

PAUL A. MILLER REGISTERED ARCHITECT STATE OF INDIANA ARCHITECT No. AR10001661

PROJECT MANAGER: DS
DRAWN BY: LH/EB
PROJECT NUMBER: 224177.01
PROJECT CONSTRUCTION ISSUE DATE: 01/16/2026

REV. NO.	DESCRIPTION	DATE
	100% SCHEMATIC DESIGN	06/30/25
	75% DESIGN DEVELOPMENT	08/19/25
	90% DESIGN DEVELOPMENT	10/16/25
	100% DESIGN DEVELOPMENT	10/30/25
	ZONING REVIEW	12/09/25
	COORDINATION	12/17/25
	BID DOCUMENTS	01/16/26
	ADDENDUM #1	02/04/26

OVERALL SITE PLAN

L-101

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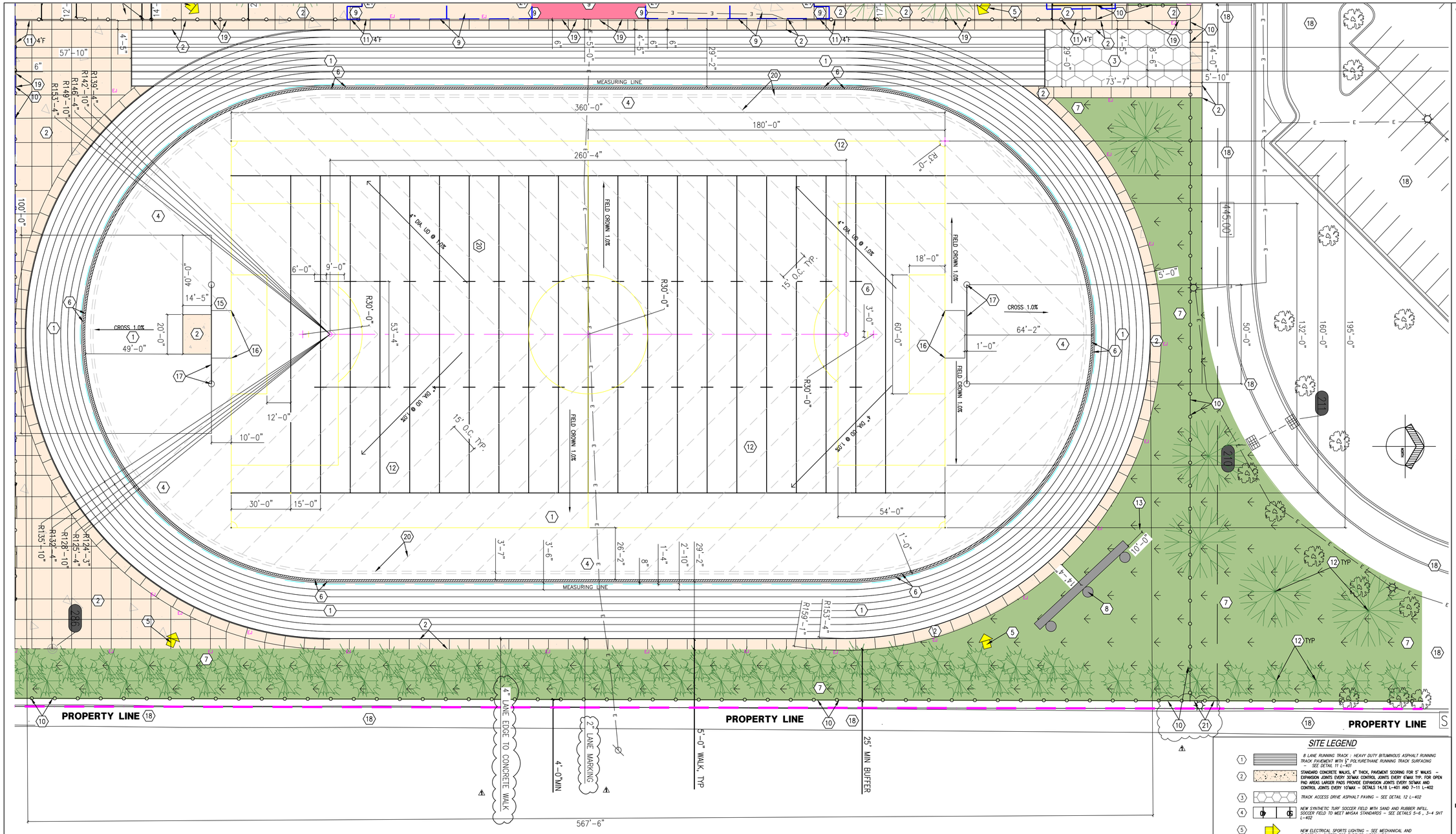

CITY GENERAL NOTES

1. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORMWATER MANAGEMENT PERMIT.
2. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER. UTILITY LINE RELOCATIONS REQUIRED FOR ROAD PROJECTS THAT RESULT IN A CONFLICT WITH PROPOSED DEVELOPMENT SHALL BE THE OWNER'S RESPONSIBILITY TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED TO WITHIN ONE FOOT OF PROPOSED RIGHT-OF-WAY LINE.
3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

GENERAL SITE NOTES

THE SITE SHALL BE STRIPPED OF EXISTING IMPROVEMENTS AS NOTED. ALL THE REMOVED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR

REMOVAL OF THE EXISTING IMPROVEMENTS ARE AS NOTED ON THE PLANS OR AS REQUIRED BY THE PROJECT. THE MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A PROPER AND LEGAL MANNER PER FEDERAL, STATE, AND OR LOCAL LAWS AND ORDINANCES.

EXISTING PAVEMENT, SIDEWALKS CURBS DRIVEWAYS, ELECTRICAL TRANSFORMER, DITCHES, DRAINAGE PIPES AND STRUCTURES, FENCES, LAWNS, TREES, BUSHES, MAILBOXES, SIGNS, POWER POLES ETC., TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE DURING CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL DAMAGES SHALL BE RESTORED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL

SAW CUT THE EDGES OF PAVED AREAS CLEAN, NEAT AND TRUE TO LINE SO NO UNWANTED CHIPPING OR BREAKING OF EXISTING PAVEMENT TO REMAIN WILL OCCUR.

GENERAL SITE NOTES: CONTINUED

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT EACH DAY AND REMOVE ALL MUD, DIRT, GRAVEL AND LOOSE MATERIALS TRACKED, DUMPED, SPILLED OR WIND BLOWN FROM THIS SITE ONTO OTHER SITES, RIGHT OF WAYS, PUBLIC OR PRIVATE STREETS OR ROADS, DRIVEWAYS, YARDS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN OR PICK UP DAILY IF NECESSARY. THE CONTRACTOR SHALL REDUCE THE AIRBORNE DUST DURING THE ENTIRE DEMOLITION SCHEDULE. WATER MAY BE USED AS A REDUCER.

THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS REQUIRED DURING DEMOLITION BY CITY OF CARMEL IN

IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL THE UTILITY COMPANIES AND DEPARTMENTS 72 HOURS BEFORE DEMOLITION IS TO START TO VERIFY ANY UTILITIES THAT MAY BE PRESENT ON SITE. ALL VERIFICATIONS, LOCATIONS, SIZE AND DEPTHS SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES OR DEPARTMENTS. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTIVE OF THE UTILITY MAY BE PRESENT DURING THE EXCAVATION TO INSTRUCT AND OBSERVE DURING THE EXCAVATION.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR CONTRACTORS TO OBTAIN ALL FEDERAL, STATE, COUNTY, CITY, AND LOCAL PERMITS FOR ANY AND ALL WORK REQUIRED UNLESS OTHERWISE NOTED. THIS SHALL INCLUDE ALL SUBMITTALS AS REQUIRED INCLUDING STORMWATER RUNOFF CONTROL (RULE 5). THE CONTRACTOR OR CONTRACTORS ARE RESPONSIBLE TO PAY FOR ALL REQUIRED PERMITS BY ANY OR ALL AGENIES MENTIONED ABOVE UNLESS OTHERWISE NOTED BY THE CONTRACT OR SPECIFICATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH EACH UTILITY COMPANY AND OR AGENT WHO IS RESPONSIBLE TO REMOVE OR RELOCATE EACH EXISTING UTILITY. IT FURTHER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR THE COST FOR THE REMOVAL, TERMINATION OR RELOCATION OF UTILITIES IF THE RESPONSIBILITY IS NOT COVERED BY THE UTILITY COMPANY.

THE UTILITIES INDICATED ON THESE PLANS AND ON THE SURVEY MAY NOT BE A COMPLETE INVENTORY OF ALL THE EXISTING UTILITIES PRESENT ON AND AROUND THIS SITE. THE LOCATIONS AND SIZE OF THESE UTILITIES ARE APPROXIMATE. THIS INFORMATION WAS GATHERED OR SUPPLIED FROM OTHERS AND USED BY THE ARCHITECT AND OR ENGINEER AND MAY NOT BE ACTUAL. THE ARCHITECT AND OR ENGINEER MAY NOT BE HELD LIABLE FOR ANY INCORRECT OR MISLEADING UTILITY INFORMATION INDICATED, IMPLIED OR NOT INDICATED ON THESE PLANS.

GENERAL SITE NOTES: CONTINUED

ALL CONTRACTORS MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. ACTUAL FIELD LOCATIONS OF ALL THE EXISTING UTILITIES ARE THE CONTRACTORS RESPONSIBILITY AND MUST BE LOCATED EITHER BY THE REPRESENTIVE OF THE UTILITY COMPANY OR BY A PRIVATE UNDERGROUND UTILITY LOCATING COMPANY PRIOR TO THE START OF DEMOLITION ACTIVITIES.

REMOVAL OF EXISTING CONCRETE OR OTHER PAVED AREAS INDICATED ON THE PLANS SHALL DOES NOT INCLUDE EXISTING AGGREGATE BASE MATERIALS. AREAS TO BE REMOVED SHALL BE SAW CUT CLEAN, NEAT AND TRUE TO LINE. REMOVE ALL NONE ORGANIC MATTER THAT WOULD INTERFERE WITH THE GROWTH OF TURF OR PLANT MATERIAL.

THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS. NO DEMOLITION, GRADING OR OTHER WORK SHALL COMMENCE WITHIN EASEMENTS ON ADJACENT PROPERTIES UNTIL A COORDINATION MEETING HAS BEEN HELD BETWEEN THE CITY, SCHOOL CORP. REPRESENTATIVE, ARCHITECT AND ADJACENT PROPERTY OWNERS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AT HIS EXPENSE ALL AUTOMOBILE AND PEDESTRAIN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL AGENCIES.

ENLARGED LAYOUT PLAN: MCHS

SCALE: 1" = 20'-0"

SITE LEGEND

1. 8 LANE RUNNING TRACK - HEAVY DUTY BITUMINOUS ASPHALT RUNNING TRACK PAVEMENT WITH 1/4" POLYURETHANE RUNNING TRACK SURFACING – SEE DETAIL 11 L-401
2. STANDARD CONCRETE WALKS, 6" THICK, PAVEMENT SCORING FOR 5' WALKS – EXPANSION JOINTS EVERY 30'MAX CONTROL JOINTS EVERY 6'MAX TYP. FOR OPEN PAD AREAS LARGER PADS PROVIDE EXPANSION JOINTS EVERY 50'MAX AND CONTROL JOINTS EVERY 10'MAX – DETAILS 14,18 L-401 AND 7-11 L-402
3. TRACK ACCESS DRIVE ASPHALT PAVING – SEE DETAIL 12 L-402
4. NEW SYNTHETIC TURF SOCCER FIELD WITH SAND AND RUBBER INFILL. SOCCER FIELD TO MEET MHSAA STANDARDS – SEE DETAILS 5–6 , 3–4 SHT L–402
5. NEW ELECTRICAL SPORTS LIGHTING – SEE MECHANICAL AND ELECTRICAL SHEETS FOR FURTHER INFORMATION
6. NEW ACO SLOT DRAIN SET WITHIN NEW 12" WIDE CONC. CURB – SEE PLAN FOR WIDTH REQUIRED – SEE DETAIL 3–4 L–402
7. NEW SEEDED LAWN – SEE PROJECT MANUAL AND L–302 FOR FURTHER INFORMATION
8. NEW VIDEO SCOREBOARD ASSEMBLY – SEE ARCHITECTURE PLANS FOR MORE INFORMATION.
9. NEW ELEVATED HOME/VISITOR GRANDSTAND SEATING WITH NEW PRESS BOX – SEE A–113 AND S–140
10. NEW PERIMETER 8' TALL CHAIN LINK FENCING (BLACK) PVC WITH NEW (DOUBLE 12' WIDE AND SINGLE GATES 6' WIDE AS SHOWN ON PLANS – SEE PLAN FOR TOTALS) HARDWARE AND ACCESSORIES AS REQUIRED FOR PROPER INSTALL –SEE DETAILS 1–2 AND 12–13 L–401
11. NEW 4' TALL CHAIN LINK FENCING – SEE PLANS FOR HEIGHT LOCATIONS – (BLACK) PVC WITH NEW (SINGLE GATES 6' WIDE) HARDWARE AND ACCESSORIES AS REQUIRED FOR PROPER INSTALL –SEE DETAILS DETAILS 1–2,12–13 L–401
12. PROPOSED LANDSCAPING – SEE L–301 FOR FURTHER INFORMATION
13. PROPOSED 30' TALL FLAGPOLE – (COLOR TO MATCH SCORE BOARD) – SEE PROJECT MANUAL FOR FURTHER INFORMATION – DETAIL 3 L–401
14. NEW ENTRY PLAZA 6' TALL ORNAMENTAL FENCING / DOUBLE WIDE GATES 12' WIDE (BLACK) WITH ARCH. COLUMNS @ MIDPOINTS AND CORNERS WHERE SHOWN ON PLANS AND @ CORNERS OF GATE LOCATIONS SHOWN ON PLANS – SEE DETAIL ___ AND ARCH DETAILS FOR FURTHER INFORMATION
15. ASPHALT RUNNING TRACK MEASURING LINE – SEE DETAIL 11 L–401
16. FOOTBALL/SOCCER GOALPACK SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE DETAIL 1 L–402
17. BALL SAFETY NETTING TENSION NETTING SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE DETAIL 2 L–402
18. EXISTING LAWN AND PAVED AREAS TO REMAIN – PROTECT DURING CONSTRUCTION
19. 6" CONC. CURB – SEE DETAIL 15 L–401 AND CIVIL DRAWINGS
20. SYNTHETIC TURF UNDER–DRAINAGE SYSTEM – (ADS) 1313 FLAT–PIPE SYSTEM @ 15' MAX SPACING AS SHOWN ON PLAN ATTACHED TO PERIMETER 15" COLLECTOR PIPE – SEE CIVIL DRAWINGS AND DETAILS 3–5 L–402
21. EXISTING PERIMETER CHAIN LINK FENCE TO REMAIN – PROPOSED FENCE INTERSECTION

811 Know what's below. Call before you dig. Call 811 or 1-800-382-5544 (Indiana Statewide Digger Hotline Member Systems) at least two full working days before you dig. It's Free. It's Easy and It's the Law! In the state of Indiana

CAUTION !!

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY UTILITY COMPANIES) AND ON RECORD DRAWINGS. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH RECORD DRAWINGS ARE NOT AVAILABLE. THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

LOCATIONS GIVEN ARE APPROXIMATE AND ARE TO BE SITE VERIFIED PRIOR TO THE START OF CONSTRUCTION. ALL ASPHALT PAVING NOT NOTED FOR WORK IS TO REMAIN – PROTECT DURING CONSTRUCTION TYP. IT'S THE RESPONSIBILITY OF THE CONTRACTOR TO DOCUMENT EX. SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTIONS AND BRING ISSUES WHICH EX. / PROPOSED CONDITIONS TO ARCHITECTS / ENGINEERS PRIOR TO THE START OF CONSTRUCTION TYP

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408 South Carroll Ave, Michigan City, IN 46360
(219)-873-2000

Michigan City Area Schools

ARCHITECT
FANNING HOWEY
317-848-0966 WWW.FHAI.COM

KEY PLAN

BID DOCUMENTS

PAUL A. MILLER REGISTERED No. A 20000161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DS
DRAWN BY: LH/EB
PROJECT NUMBER: 224177.01
PROJECT CONSTRUCTION ISSUE DATE: 01/16/2026

REV. NO.	DESCRIPTION	DATE
	100% SCHEMATIC DESIGN	06/30/25
	75% DESIGN DEVELOPMENT	08/19/25
	90% DESIGN DEVELOPMENT	10/16/25
	100% DESIGN DEVELOPMENT	10/30/25
	ZONING REVIEW	12/09/25
	COORDINATION	12/17/25
	BID DOCUMENTS	01/16/26
	ADDENMDUM #1	02/04/26

ENLARGED LAYOUT PLAN TRACK AND SOCCER FIELD

L-201

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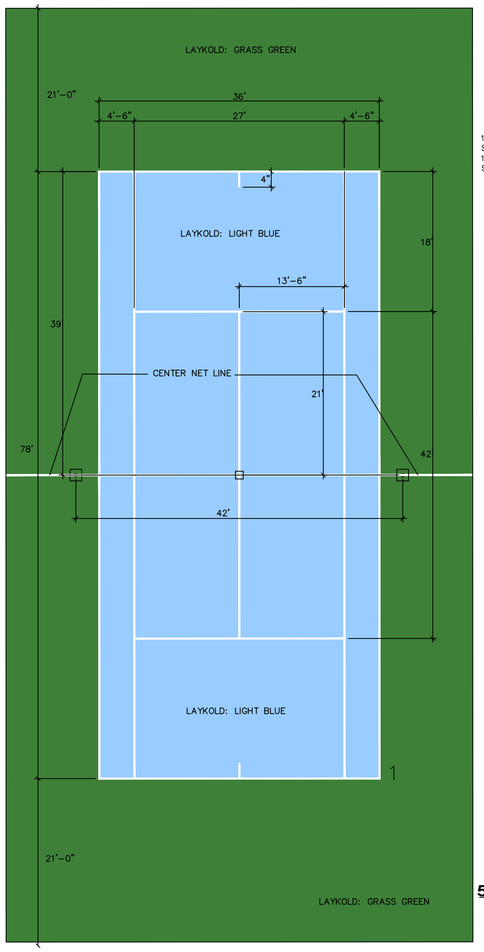


TENNIS COURTS TO BE USTA STD. COLORS : GRASS GREEN / LIGHT BLUE
FINAL COLOR TO BE APPROVED BY OWNER.

6 TENNIS COURT LAYOUT

NTS

NOTES:

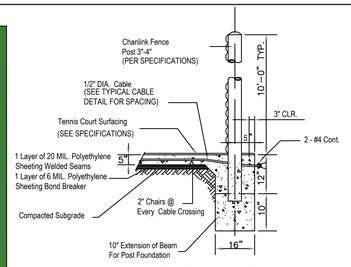
1. TENNIS NET/POSTS: PROVIDE NO. SETS AS REQUJIRED, REFER TO DETAIL 9 ON SHT. G4.00 REFER TO PROJECT MANUAL 11 68 33 ATHLETIC FIELD EQUIPMENT. POSTS ARE TO HAVE INTERIOR WIND MECHANISM, 3" SQ POSTS. EACH NET IS TO HAVE AN ADJUSTABLE CENTER STRAP. EACH COURT IS TO HAVE 1 SCORE REPORTER AND 1 TRASH RECEPTACLE, MOUNTED ON THE NET POSTS AT EACH COURT.

A. EQUIPMENT AS MANUFACTURED BY DOUGLAS (PHONE 1–800–553–8907) "PREMIER 3" SQUARE POST; "TN–50" NET; "SR–357" SCORE REPORTER; "COURT ORDER UNIT"; "OMP–9R" WINDSCREEN WITH "TR–50" TIE–RAP FASTENERS.

2. REFER TO SPEC SECTION 32 18 26 TENNIS COURT SURFACING

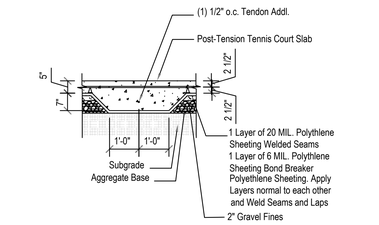
3. PAINT A 12" HIGH COURT NUMBER AT EACH COURT. (SOUTHEAST CORNER). FINAL LOCATION OF NUMBERS TO BE PER OWNERS DIRECTIONS.

4. PERIMETER FENCE AROUND TENNIS COURTS; ALL FENCING TO RECEIVE WINDSCREEN (RED) FINAL COLOR TO BE SELECTED BY OWNER PRIOR TO CONSTRUCTION – POST TO RECEIVE WINDSCREEN ARE TO HAVE POST FOOTING 18" DIA. X 5'–0" DEEP AND ARE TO BE ONE OF THE FOLLOWING:
   A. 5" DIA. SCH 40 PIPE, SPACED 10'–0" O.C. MAX.
   B. 4" DIA. SCH 40 PIPE, SPACED 8'–0" O.C. MAX.



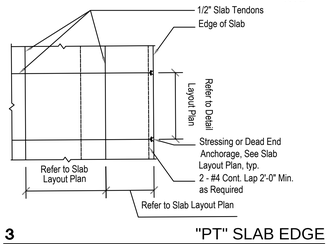
1 "PT" PERIMETER BEAM & FENCE POST DETAIL

NTS



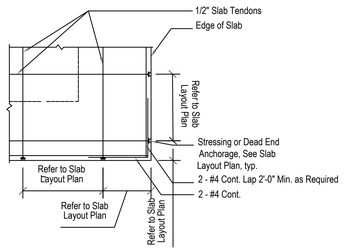
2 "PT" IN SLAB BEAM SECTION

NTS



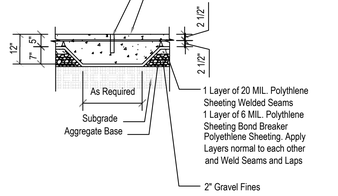
3 "PT" SLAB EDGE

NTS



4 "PT" SLAB EDGE CORNER

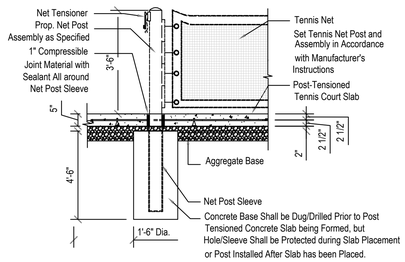
NTS



5 "PT" CENTER STRAP ANCHOR SECTION

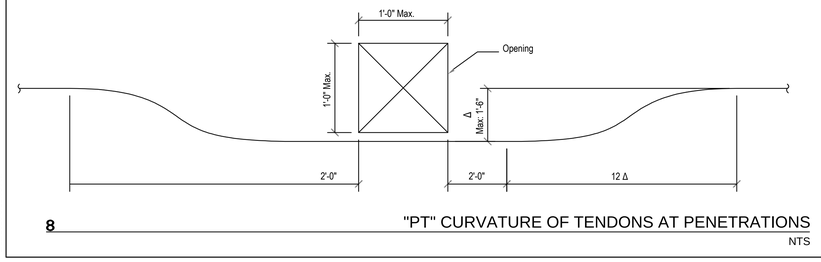
NTS

NOTES:
Use Extreme Care to Set Elevation of Top of Net Post Foundations at or Below Bottom Slab Elevation. Foundations Shall Not Protrude into Thickness of Slab.



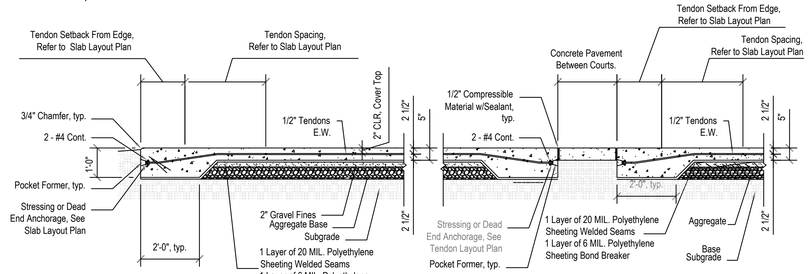
7 "PT" NET POST AND ANCHOR SECTION

NTS



8 "PT" CURVATURE OF TENDONS AT PENETRATIONS

NTS

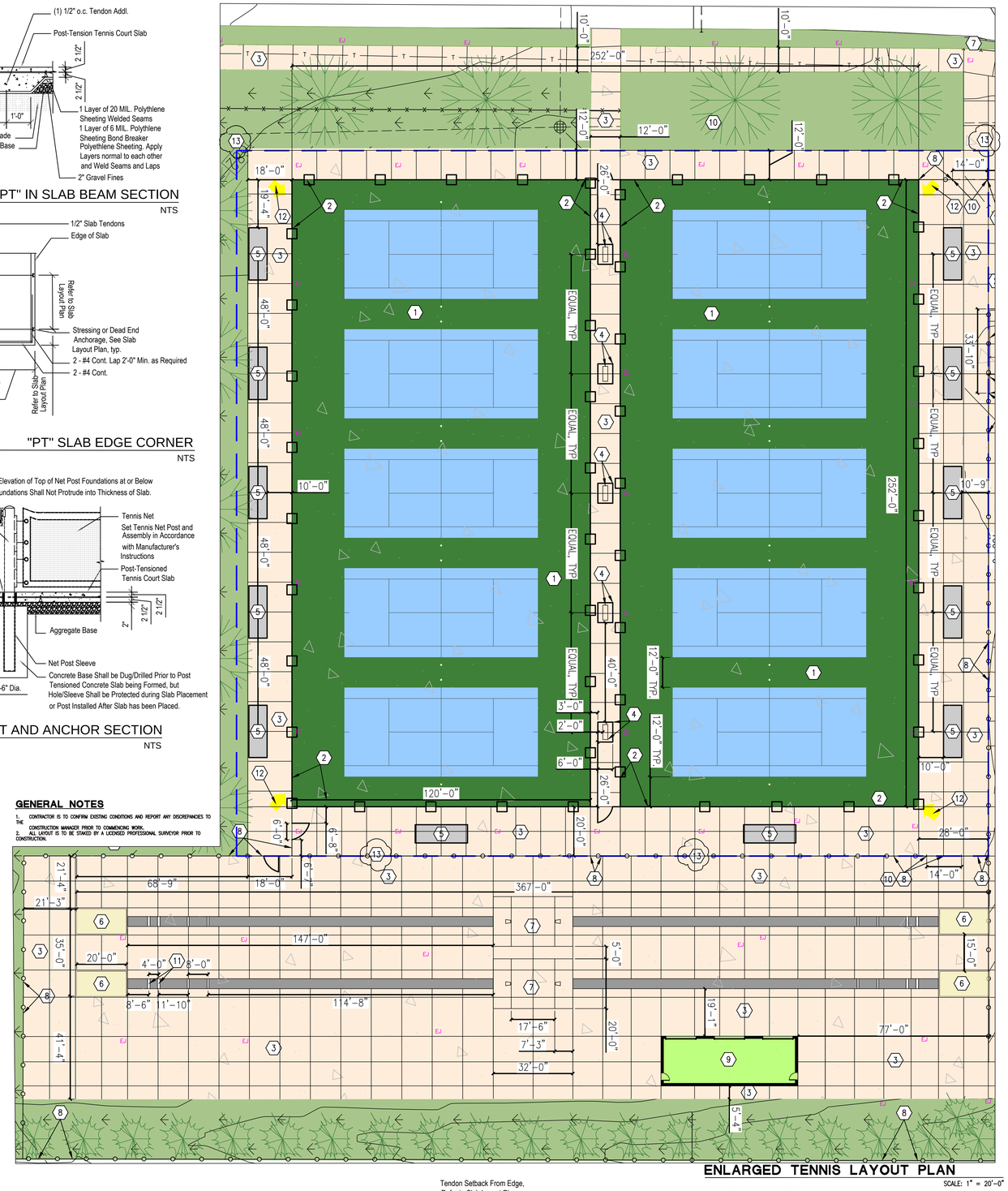


9 "PT" SLAB EDGE AND POUR STRIP SECTION

NTS

GENERAL NOTES

1. CONTRACTOR IS TO CONFIRM EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER PRIOR TO COMMENCING WORK.
2. ALL LAYOUT IS TO BE STAKED BY A LICENSED PROFESSIONAL SURVEYOR PRIOR TO CONSTRUCTION.



ENLARGED TENNIS LAYOUT PLAN

SCALE: 1" = 20'–0"

SHEET KEYNOTE LEGEND

1. POST–TENSION CONCRETE TENNIS COURT, REFER TO DETAILS 1–9/L–202 & THE PROJECT MANUAL
2. 10' HIGH CHAIN LINK FENCING / SINGLE MAN GATES (4 TOTAL) AT CORNERS INTO BAYS, COLOR: BLACK PVC. IN LOCATIONS SHOWN – REFER TO DETAILS 10&13/L–401, & PROJECT MANUAL
3. STANDARD CONCRETE WALKS, 6" THICK, PAVEMENT SCORING FOR 5' WALKS – EXPANSION JOINTS EVERY 30'MAX CONTROL JOINTS EVERY 6'MAX TYP. FOR OPEN PAD AREAS LARGER PADS PROVIDE EXPANSION JOINTS EVERY 50'MAX AND CONTROL JOINTS EVERY 10'MAX – REFER TO DETAILS 14,16 L–401 7–11 L–402
4. PLAYER CABANA BENCHES; 6' LENGTH, INSTALL PER MANUF. STANDARDS – REFER TO THE PROJECT MANUAL
5. SPECTATOR BLEACHERS; 4 ROWS X 21' LENGTH, REFER TO THE PROJECT MANUAL
6. LONG JUMP RUNWAY & LANDING PIT, REFER TO DETAILS 6–7 L–401
7. POLE VAULT RUNWAY & LANDING PIT, AND VAULT BOX – REFER TO DETAIL 4–5 L–401
8. 6' HT. BLACK CHAIN LINK FENMCETER FENCING WITH DOUBLE 12' WIDE AND SINGLE 6' WIDE MAN GATES – SEE PLAN FOR LOCATIONS AND COUNTS, REFER TO DETAILS 2,12–13 L–401, & PROJECT MANUAL
9. STORAGE SHED – SEE ARCHITECTURE PLANS
10. 14' LONG SLIDE GATE (6'HIGH) MATCH ADJACENT FENCING STYLE AND COLOR – INSTALL PER MANUF. STANDARDS – SEE PROJECT MANUAL FOR TYPE
11. TAKEOFF BOARDS, REFER TO DETAIL 6 L–401
12. TENNIS COMPLEX LIGHTING – SEE ELECTRICAL PLANS FOR FURTHER INFORMATION
13. TENNIS COMPLEX – BID ALTERNATE #2

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KEY PLAN

BID DOCUMENTS

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	ADDENDUM #1	02/04/26

ENLARGED TENNIS LAYOUT PLAN

L-202

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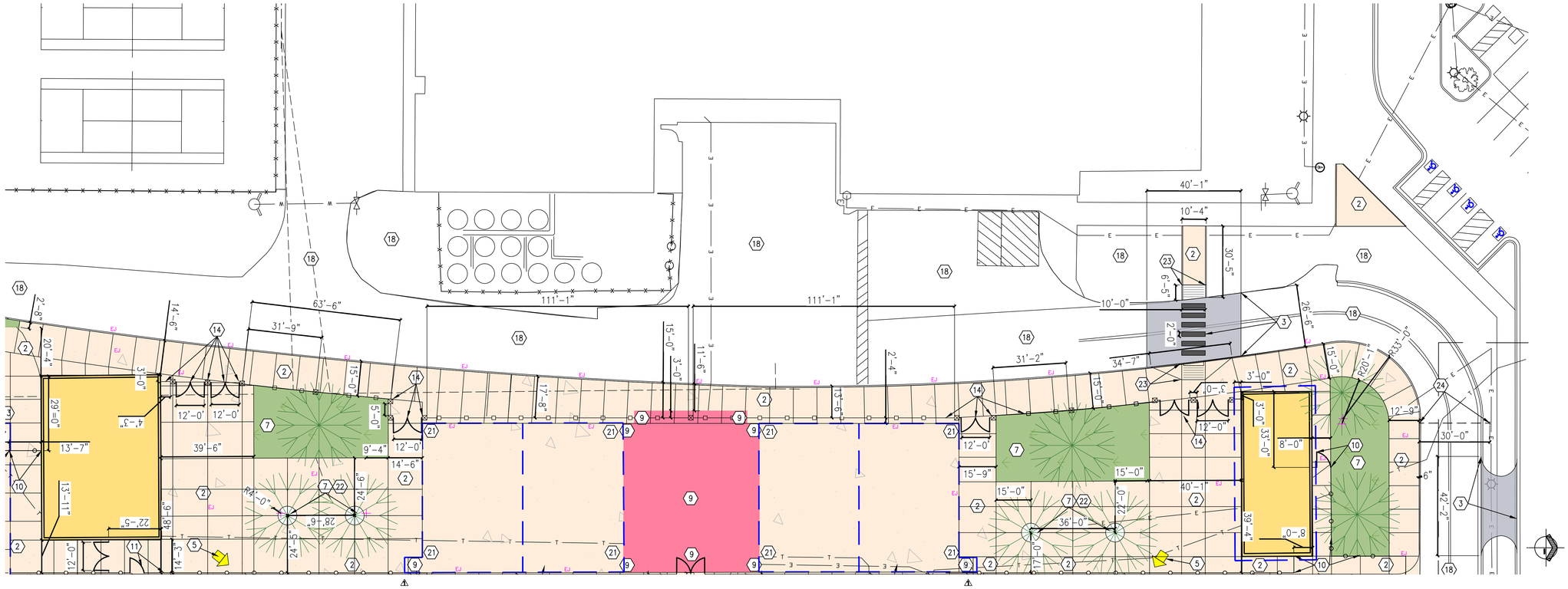

ENLARGED STADIUM PLAZA LAYOUT PLAN

SCALE: 1" = 20'-0"

CITY GENERAL NOTES

1. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORMWATER MANAGEMENT PERMIT.
2. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER. UTILITY LINE RELOCATIONS REQUIRED FOR ROAD PROJECTS THAT RESULT IN A CONFLICT WITH PROPOSED DEVELOPMENT SHALL BE THE OWNER'S RESPONSIBILITY TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED TO WITHIN ONE FOOT OF PROPOSED RIGHT-OF-WAY LINE.
3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

GENERAL SITE NOTES

THE SITE SHALL BE STRIPPED OF EXISTING IMPROVEMENTS AS NOTED. ALL THE REMOVED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR

REMOVAL OF THE EXISTING IMPROVEMENTS ARE AS NOTED ON THE PLANS OR AS REQUIRED BY THE PROJECT. THE MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A PROPER AND LEGAL MANNER PER FEDERAL, STATE, AND OR LOCAL LAWS AND ORDINANCES.

EXISTING PAVEMENT, SIDEWALKS CURBS DRIVEWAYS, ELECTRICAL TRANSFORMER, DITCHES, DRAINAGE PIPES AND STRUCTURES, FENCES, LAWNS, TREES, BUSHES, MAILBOXES, SIGNS, POWER POLES ETC., TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE DURING CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL DAMAGES SHALL BE RESTORED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL

SAW CUT THE EDGES OF PAVED AREAS CLEAN, NEAT AND TRUE TO LINE SO NO UNWANTED CHIPPING OR BREAKING OF EXISTING PAVEMENT TO REMAIN WILL OCCUR.

GENERAL SITE NOTES: CONTINUED

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT EACH DAY AND REMOVE ALL MUD, DIRT, GRAVEL AND LOOSE MATERIALS TRACKED, DUMPED, SPILLED OR WIND BLOWN FROM THIS SITE ONTO OTHER SITES, RIGHT OF WAYS, PUBLIC OR PRIVATE STREETS OR ROADS, DRIVEWAYS, YARDS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN OR PICK UP DAILY IF NECESSARY. THE CONTRACTOR SHALL REDUCE THE AIRBORNE DUST DURING THE ENTIRE DEMOLITION SCHEDULE. WATER MAY BE USED AS A REDUCER.

THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS REQUIRED DURING DEMOLITION BY CITY OF CARMEL IN

IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL THE UTILITY COMPANIES AND DEPARTMENTS 72 HOURS BEFORE DEMOLITION IS TO START TO VERIFY ANY UTILITIES THAT MAY BE PRESENT ON SITE. ALL VERIFICATIONS, LOCATIONS, SIZE AND DEPTHS SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES OR DEPARTMENTS. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTIVE OF THE UTILITY MAY BE PRESENT DURING THE EXCAVATION TO INSTRUCT AND OBSERVE DURING THE EXCAVATION.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR CONTRACTORS TO OBTAIN ALL FEDERAL, STATE, COUNTY, CITY, AND LOCAL PERMITS FOR ANY AND ALL WORK REQUIRED UNLESS OTHERWISE NOTED. THIS SHALL INCLUDE ALL SUBMITTALS AS REQUIRED INCLUDING STORMWATER RUNOFF CONTROL (RULE 5). THE CONTRACTOR OR CONTRACTORS ARE RESPONSIBLE TO PAY FOR ALL REQUIRED PERMITS BY ANY OR ALL AGENIES MENTIONED ABOVE UNLESS OTHERWISE NOTED BY THE CONTRACT OR SPECIFICATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH EACH UTILITY COMPANY AND OR AGENT WHO IS RESPONSIBLE TO REMOVE OR RELOCATE EACH EXISTING UTILITY. IT FURTHER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR THE COST FOR THE REMOVAL, TERMINATION OR RELOCATION OF UTILITIES IF THE RESPONSIBILITY IS NOT COVERED BY THE UTILITY COMPANY.

THE UTILITIES INDICATED ON THESE PLANS AND ON THE SURVEY MAY NOT BE A COMPLETE INVENTORY OF ALL THE EXISTING UTILITIES PRESENT ON AND AROUND THIS SITE. THE LOCATIONS AND SIZE OF THESE UTILITIES ARE APPROXIMATE. THIS INFORMATION WAS GATHERED OR SUPPLIED FROM OTHERS AND USED BY THE ARCHITECT AND OR ENGINEER AND MAY NOT BE ACTUAL. THE ARCHITECT AND OR ENGINEER MAY NOT BE HELD LIABLE FOR ANY INCORRECT OR MISLEADING UTILITY INFORMATION INDICATED, IMPLIED OR NOT INDICATED ON THESE PLANS.

GENERAL SITE NOTES: CONTINUED

ALL CONTRACTORS MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. ACTUAL FIELD LOCATIONS OF ALL THE EXISTING UTILITIES ARE THE CONTRACTORS RESPONSIBILITY AND MUST BE LOCATED EITHER BY THE REPRESENTIVE OF THE UTILITY COMPANY OR BY A PRIVATE UNDERGROUND UTILITY LOCATING COMPANY PRIOR TO THE START OF DEMOLITION ACTIVITIES.

REMOVAL OF EXISTING CONCRETE OR OTHER PAVED AREAS INDICATED ON THE PLANS SHALL DOES NOT INCLUDE EXISTING AGGREGATE BASE MATERIALS. AREAS TO BE REMOVED SHALL BE SAW CUT CLEAN, NEAT AND TRUE TO LINE. REMOVE ALL NONE ORGANIC MATTER THAT WOULD INTERFERE WITH THE GROWTH OF TURF OR PLANT MATERIAL.

THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS. NO DEMOLITION, GRADING OR OTHER WORK SHALL COMMENCE WITHIN EASEMENTS ON ADJACENT PROPERTIES UNTIL A COORDINATION MEETING HAS BEEN HELD BETWEEN THE CITY, SCHOOL CORP. REPRESENTATIVE, ARCHITECT AND ADJACENT PROPERTY OWNERS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AT HIS EXPENSE ALL AUTOMOBILE AND PEDESTRAIN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL AGENCIES.

SITE LEGEND

1. 8 LANE RUNNING TRACK : HEAVY DUTY BITUMINOUS ASPHALT RUNNING TRACK PAVEMENT WITH 5" POLYURETHANE RUNNING TRACK SURFACING – SEE DETAIL 11 L-401
2. STANDARD CONCRETE WALKS, 6" THICK, PAVEMENT SCORING FOR 5' WALKS – EXPANSION JOINTS EVERY 30'MAX CONTROL JOINTS EVERY 6'MAX TYP. FOR OPEN PAD AREAS LARGER PADS PROVIDE EXPANSION JOINTS EVERY 50'MAX AND CONTROL JOINTS EVERY 10'MAX – DETAILS 14,18 L-401 AND 7-11 L-402
3. TRACK / DRIVE ACCESS DRIVE ASPHALT PAVING – SEE DETAIL 12 L-402 AT DRIVE PROVIDE CROSSWALK MARKINGS MATCH EX. FOUND ON SITE TYP
4. NEW SYNTHETIC TURF SOCCER FIELD WITH SAND AND RUBBER INFILL. WITH NEW HYDRAWAY FLAT PIPE DRAINAGE SYSTEM LAID OUT PERPENDICULAR TO SLOPE 15' O.C. TYP WITH 12" PERF. HDPE COLLECTOR PIPE. SOCCER FIELD TO MEET MHSAA STANDARDS – SEE DETAILS 5-6 , 3-4 SHT L-402
5. NEW ELECTRICAL SPORTS LIGHTING – SEE MECHANICAL AND ELECTRICAL SHEETS FOR FURTHER INFORMATION
6. NEW ACO SLOT DRAIN SET WITHIN NEW 12" WIDE CONC. CURB – SEE PLAN FOR WIDTH REQUIRED – SEE DETAIL 3-4 L-402
7. NEW SEEDED LAWN – SEE PROJECT MANUAL AND L-302 FOR FURTHER INFORMATION
8. NEW DAKTRONICS SCOREBOARD : BASE BID (FB-2027 ON L-303) , ALTERNATE BID – OUTDOOR SPORTS VIDEO DISPLAY BOARD : LARGE LIVE VIDEO DISPLAY WITH ALL REQUIRED ACCESSORIES AND STEEL SUPPORT COLUMNS AND FOOTINGS IN QUANTY, SIZES AND DEPTHS SPECIFIED BY MANUF. AND LOCAL GOVERNING AGENCIES (LIX 15ND ON) SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FURTHER INFORMATION AND INSTALL PER MANUF. WRITTEN RECOMMENDATIONS
9. NEW ELEVATED HOME/VISITOR GRANDSTAND SEATING WITH ADA ACCESS RAMPS (2) AND PEDESTRIAN PATH PLATFORMS FOR FRONT ACCESS. NEW PRESS BOX – SEE A-113 AND S-140
10. NEW PERIMETER 8' TALL CHAIN LINK FENCING (BLACK) PVC WITH NEW (DOUBLE 12' WIDE AND SINGLE GATES 6' WIDE AS SHOWN ON PLANS – SEE PLAN FOR TOTALS) HARDWARE AND ACCESSORIES AS REQUIRED FOR PROPER INSTALL –SEE DETAILS 1-2 AND 12-13 L-401
11. NEW 4' TALL CHAIN LINK FENCING – SEE PLANS FOR HEIGHT LOCATIONS – (BLACK) PVC WITH NEW (GATES – 6' WIDE) HARDWARE AND ACCESSORIES AS REQUIRED FOR PROPER INSTALL –SEE DETAILS DETAILS 1-2,12-13 L-401
12. PROPOSED LANDSCAPING – SEE L-301 FOR FURTHER INFORMATION
13. PROPOSED 30' TALL FLAGPOLE – (COLOR TO MATCH SCORE BOARD) – SEE PROJECT MANUAL FOR FURTHER INFORMATION – DETAIL 3 L-401
14. NEW ENTRY PLAZA 6' TALL ORNAMENTAL FENCING (BLACK) WITH ARCH, COLUMNS @ MIDPOINTS AND CORNERS WHERE SHOWN ON PLANS AND @ CORNERS OF DOUBLE WIDE GATE LOCATIONS SHOWN ON PLANS – SEE ARCH DETAILS FOR FURTHER INFORMATION
15. ASPHALT RUNNING TRACK MEASURING LINE – SEE DETAIL 11 L-401
16. FOOTBALL/SOCCER GOAL/PACK SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE DETAIL 1 L-402
17. BALL SAFETY NETTING, TENSION NETTING SYSTEM WITH FOOTINGS PER LOCAL CITY/STATE ORDINANCES – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE DETAIL 2 L-402
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20. SYNTHETIC TURF UNDER-DRAINAGE SYSTEM – (ADS) 19X3 FLAT-PIPE SYSTEM @ 15' MAX SPACING AS SHOWN ON PLAN ATTACHED TO PERIMETER 12" COLLECTOR PIPE – SEE CIVIL DRAWINGS AND DETAILS 3-4 L-402
21. GRANDSTAND ALT. BIDS – SEE ARCH./STRUCTURAL DWGS & PROJECT MANUAL ALT. LIST FOR FURTHER INFORMATION; BASE BID: STANDARD CONC.–SEE KEYNOTE #8
22. TREE GRATES – (CIRCLE) INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE PROJECT MANUAL FOR FURTHER INFORMATION
23. ADA ACCESS RAMP – SEE DETAILS 17 L-401 AND 12 L-402
24. 30' DOUBLE WIDE SWING GATE – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS – SEE PROJECT MANUAL FOR HEIGHT AND STYLE

CAUTION !!

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NORTH

KEY PLAN

BID DOCUMENTS

PAUL A. MINER LICENSED ARCHITECT No. A19300161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DS

DRAWN BY: LH/EB

PROJECT NUMBER: 224177.01

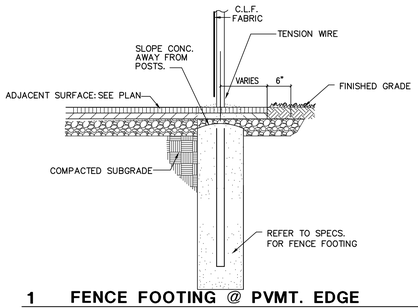
PROJECT CONSTRUCTION ISSUE DATE: 01/16/2026

REV. NO.	DESCRIPTION	DATE
	100% SCHEMATIC DESIGN	06/30/25
	75% DESIGN DEVELOPMENT	08/19/25
	90% DESIGN DEVELOPMENT	10/16/25
	100% DESIGN DEVELOPMENT	10/30/25
	ZONING REVIEW	12/09/25
	COORDINATION	12/17/25
	BID DOCUMENTS	01/16/26
	ADDENDUM #1	02/04/26

ENLARGED STADIUM PLAZA LAYOUT PLAN

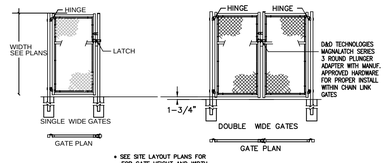
L-203

ARCH_224177.01_EBROWN
1/12/2026 0:11:09 AM



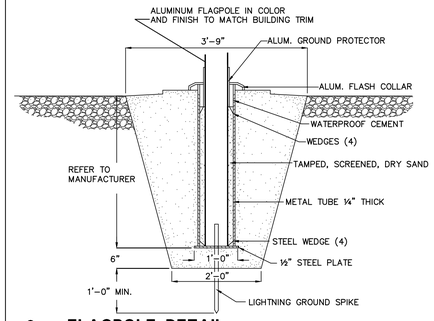
1 FENCE FOOTING @ PVMT. EDGE

NTS



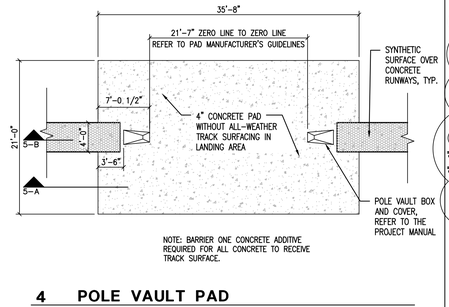
2 DOUBLE MAN GATE DETAIL

NTS



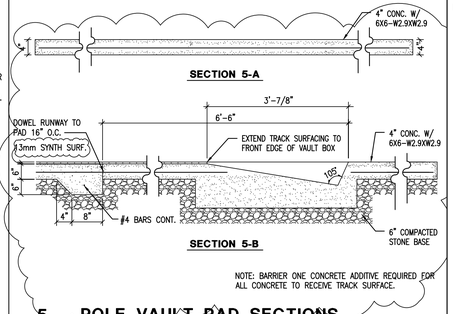
3 FLAGPOLE DETAIL

NTS



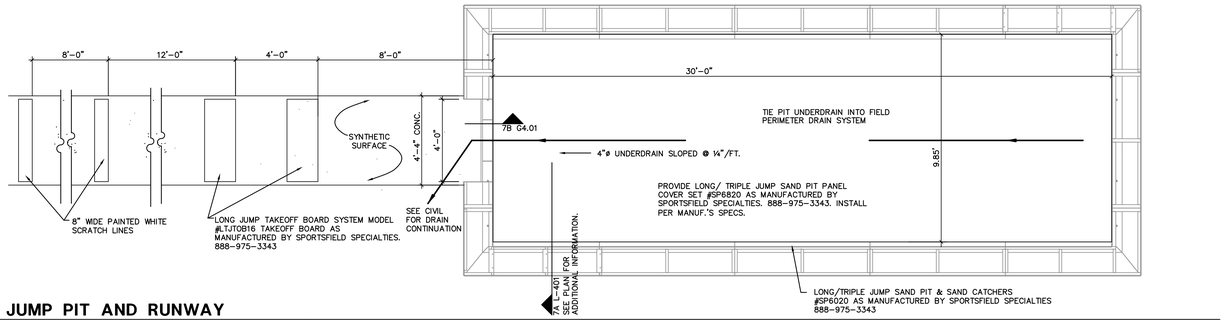
4 POLE VAULT PAD

NTS



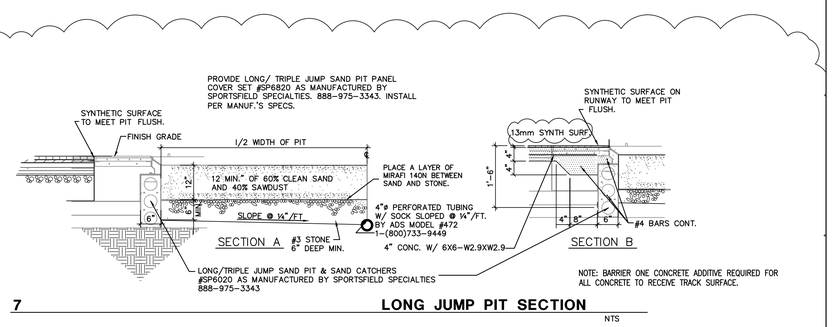
5 POLE VAULT PAD SECTIONS

NTS



6 LONG JUMP PIT AND RUNWAY

NTS

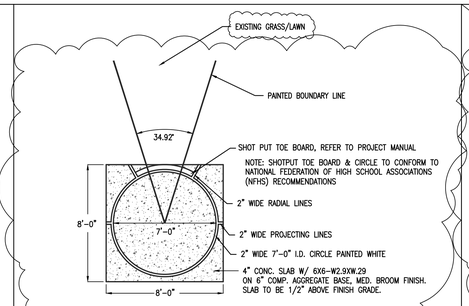


7 LONG JUMP PIT SECTION

NTS

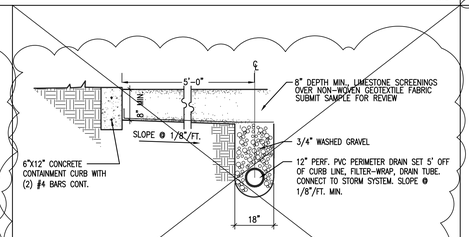
8 DISCUS PAD AND ENCLOSURE

NTS



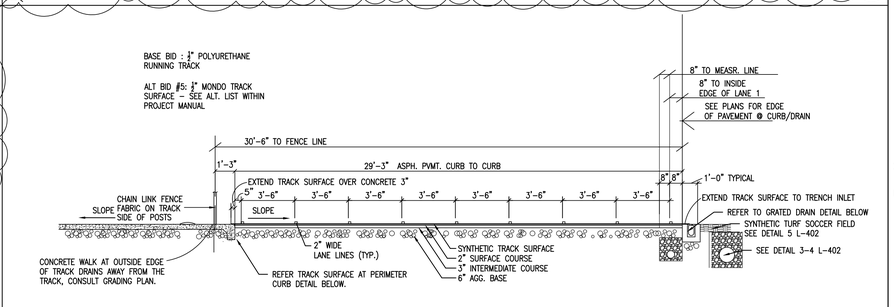
9 SHOT PUT CIRCLE

NTS



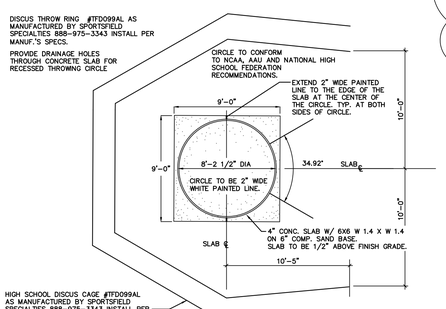
10 UNDERDRAIN AND CURB @ SHOT PUT THROWING AREA

NTS



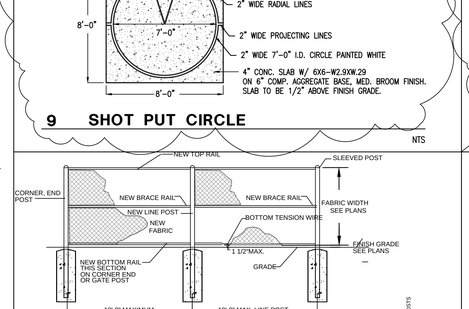
11 TRACK SURFACING AND SECTIONS

NTS



8 DISCUS PAD AND ENCLOSURE

NTS



12 FENCE ELEVATION / FOOTING

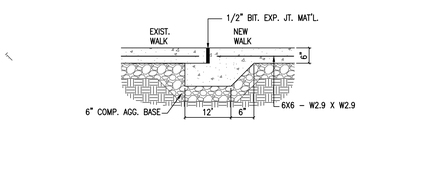
NTS

USE	FABRIC UNDER 10' HT.	FABRIC 10' AND OVER
CORNER, END & PULL POST	SCHED. 40 2.875" O.D.	SCHED. 40 4" O.D.
INTERMEDIATE POST	SCHED. 40 2.375" O.D.	SCHED. 40 4" O.D.
TOP AND BRACE RAILS	SCHED. 40 1.66" O.D.	SCHED. 40 1.66" O.D.
GATE POST FOR LEAF WIDTH: LESS THAN 6'	SCHED. 40 2.875"O.D.	SCHED. 40 4" O.D.
GATE FRAME	SCHED. 40 1.90" O.D.	SCHED. 40 1.90" O.D.

NOTE: CHAIN LINK FENCE FABRIC SHALL HAVE BLACK PVC COATING THERMALLY FUSED TO ZINC COATED WIRE. ALL POSTS, RAILS AND BRACING SHALL ALSO HAVE BLACK PVC COATING THERMALLY FUSED TO GALVANIZED (ZINC COATED) STEEL PIPE.

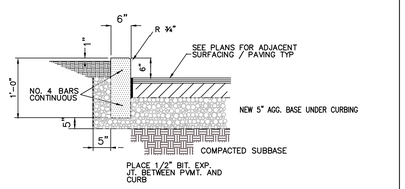
13 FENCING FRAME SCHEDULE

NTS



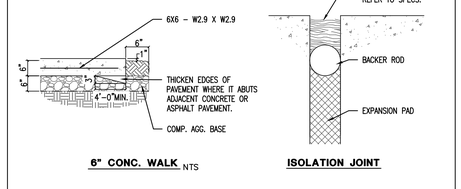
14 NEW WALK TO EXISTING WALK

NTS



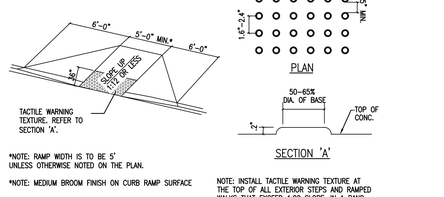
15 6" STANDARD CONC. CURBING

NTS



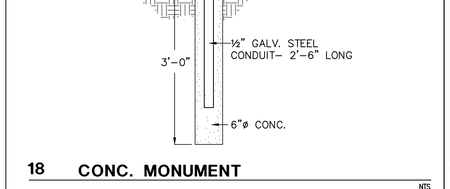
16 6" CONC. WALK / PADS

NTS



17 ADA CURB RAMP

NTS



18 CONC. MONUMENT

NTS

811 Know what's below. Call before you dig.
Call 811 or 1-800-382-5544 Before You Begin Any Digging Project. Call 48 hours or 2 working days before you dig. It's Free, It's Easy and It's the Law in the State of Indiana

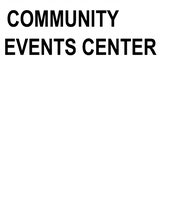
CAUTION !!
THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE BASED UPON ABOVE GROUND SURVEY OF VISIBLE EVIDENCE, SUCH AS MANHOLES, VALVES, INLETS, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH NO RECORDS WERE OBTAINED OR EXISTED, AND FOR WHICH NO SURFACE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

LOCATIONS GIVEN ARE APPROXIMATE AND ARE TO BE SITE VERIFIED PRIOR TO THE START OF CONSTRUCTION. ALL ASPHALT PAVING NOT NOTED FOR WORK IS TO REMAIN – PROTECT DURING CONSTRUCTION TYP. IT'S THE RESPONSIBILITY OF THE CONTRACTOR TO DOCUMENT EX. SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTIONS AND BRING ISSUES WHICH EX. / PROPOSED CONDITIONS TO ARCHITECTS / ENGINEERS PRIOR TO THE START OF CONSTRUCTION TYP

224177.01
MICHIGAN CITY COMMUNITY EVENTS CENTER

MICHIGAN CITY AREA SCHOOLS SCHOOL DISTRICT
408 South Carroll Ave, Michigan City, IN 46360
(219)-873-2000

ARCHITECT
FANNING HOWEY
317-848-0966 WWW.FHAI.COM



KEY PLAN

BID DOCUMENTS

PROJECT MANAGER: DS
DRAWN BY: LH/EB
PROJECT NUMBER: 224177.01
PROJECT CONSTRUCTION ISSUE DATE: 01/16/2026

REV. NO.	DESCRIPTION	DATE
	100% SCHEMATIC DESIGN	06/30/25
	75% DESIGN DEVELOPMENT	08/19/25
	90% DESIGN DEVELOPMENT	10/16/25
	100% DESIGN DEVELOPMENT	10/30/25
	ZONING REVIEW	12/09/25
	COORDINATION	12/17/25
	BID DOCUMENTS	01/16/26
	ADDENDUM #1	02/04/26

TRACK/ FIELD AND SITE DETAILS AND SECTIONS

L-401

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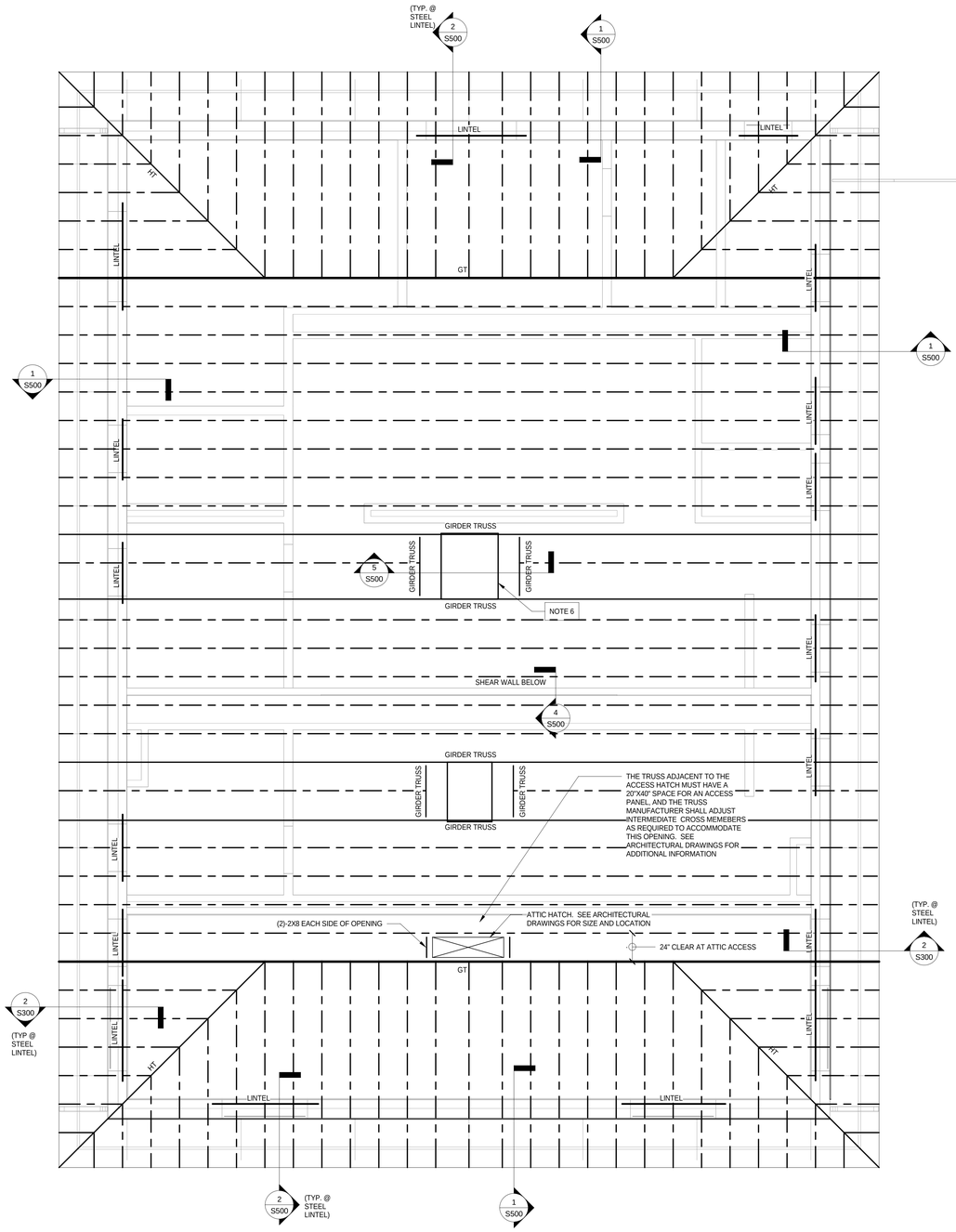
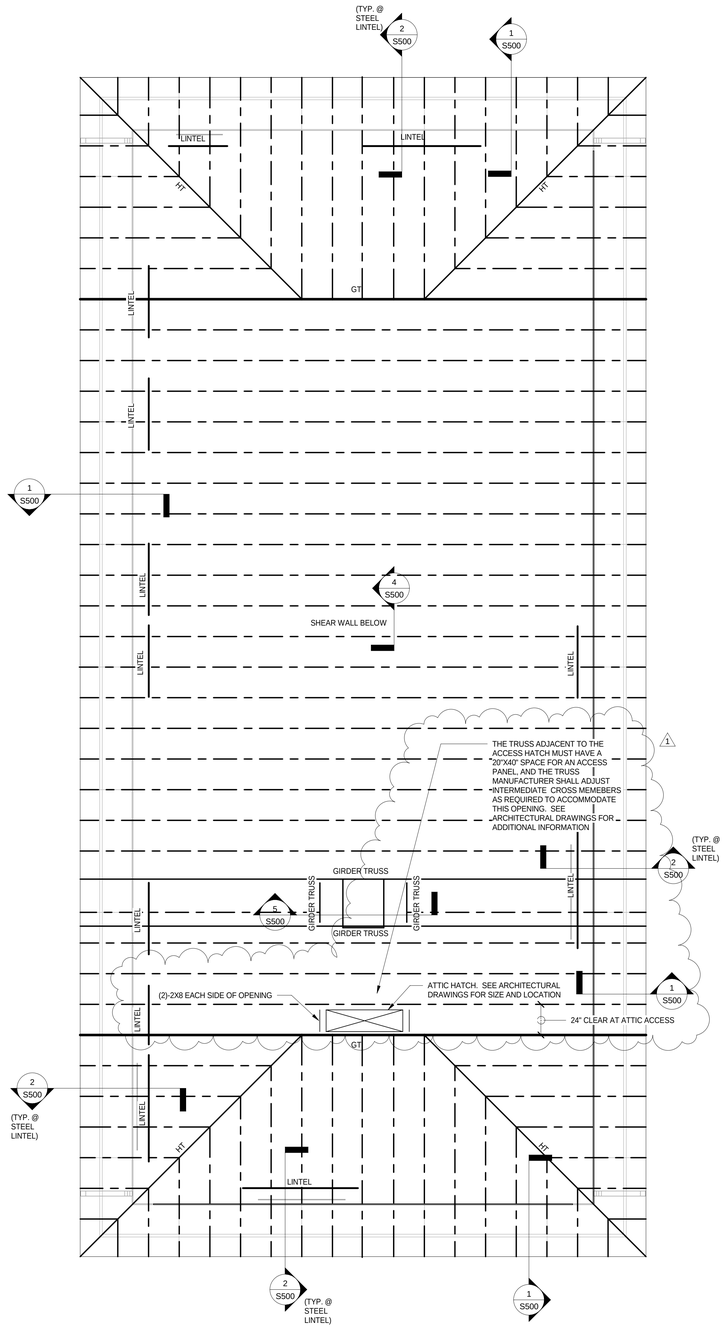


1 S120 ROOF FRAMING PLAN - BUILDING A
1/4" = 1'-0"



2 ROOF FRAMING PLAN - BUILDING B (ALTERNATE)
1/4" = 1'-0"

ROOF FRAMING PLAN NOTES

1. REFER TO SHEETS S001-S004 FOR GENERAL NOTES AND TYPICAL DETAILS
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN.
3. SEE 12/S003 FOR TOP OF INTERIOR NON-LOAD BEARING WALL BRACING DETAIL.
4. ROOF SHEATHING SHALL BE 5/8" THICK EXPOSURE 1 RATED WOOD SHEATHING WITH A PANEL SPAN INDEX (U.S) NOT LESS THAN 16/24 AND BEARING THE TRADEMARK STAMP OF APA, THE ENGINEERED WOOD ASSOCIATION. PANELS SHALL BE NAILED WITH 10d NAILS @6" O.C. AT ALL PANEL EDGES AND 12" O.C. AT ALL INTERIOR SUPPORTS UNLESS NOTED OTHERWISE ON PLAN.
5. UNLESS INDICATED OTHERWISE IN PLAN, LINTELS OVER OPENINGS LARGER THAN 3'-6" WIDE SHALL BE W8x24 LINTELS. SEE S500-02 AND 03 FOR LINTEL SUPPORT CONDITIONS. FOR OPENINGS SMALLER THAN 3'-6" WIDE, IT IS ACCEPTABLE TO USE CMU BOND BEAM LINTELS PER THE TYPICAL DETAILS.
6. PROVIDE GIRDER TRUSSES AROUND THE MECHANICAL UNITS SO THAT THERE CAN BE SUFFICIENT OPEN SPACE IN THE TRUSSES FOR THE UNITS AND FOR SERVICE OF THE UNITS. THE GC SHALL COORDINATE THE SIZE AND LOCATION OF THE MECHANICAL UNITS WITH THE MECHANICAL CONTRACTOR, AND PROVIDE THESE DIMENSIONS TO THE TRUSS MANUFACTURER.

Michigan City Community Event Center

8466 W PAHS RD.
MICHIGAN CITY, IN 46360

MICHIGAN CITY AREA SCHOOLS

ARCHITECT

FANNING HOWEY

317.848.0966 WWW.FHAI.COM
350 East New York Street, Suite 300, Indianapolis, IN 46204

ENGINEER

JPS CONSULTING ENGINEERS
11 MUNICIPAL DRIVE
SUITE 300, FISHERS, IN 46038
317.617.4270 jpsconsultingengineers.com

N

BID DOCUMENTS

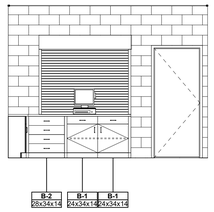
CLINTON E. SPRINKER REGISTERED NO. 10302023 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: CES
DRAWN BY: JCB
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

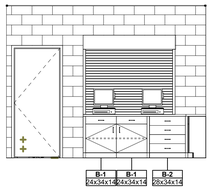
REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	02.04.2026

ROOF FRAMING PLAN

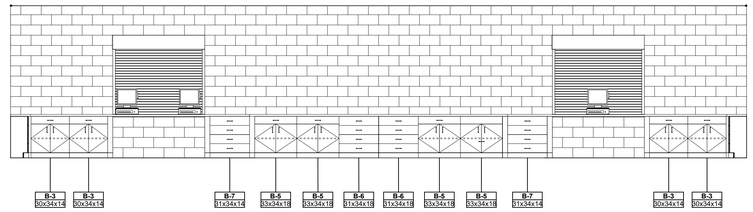
S120



4 RO. A107 - SOUTH INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



3 RO. A107 - NORTH INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



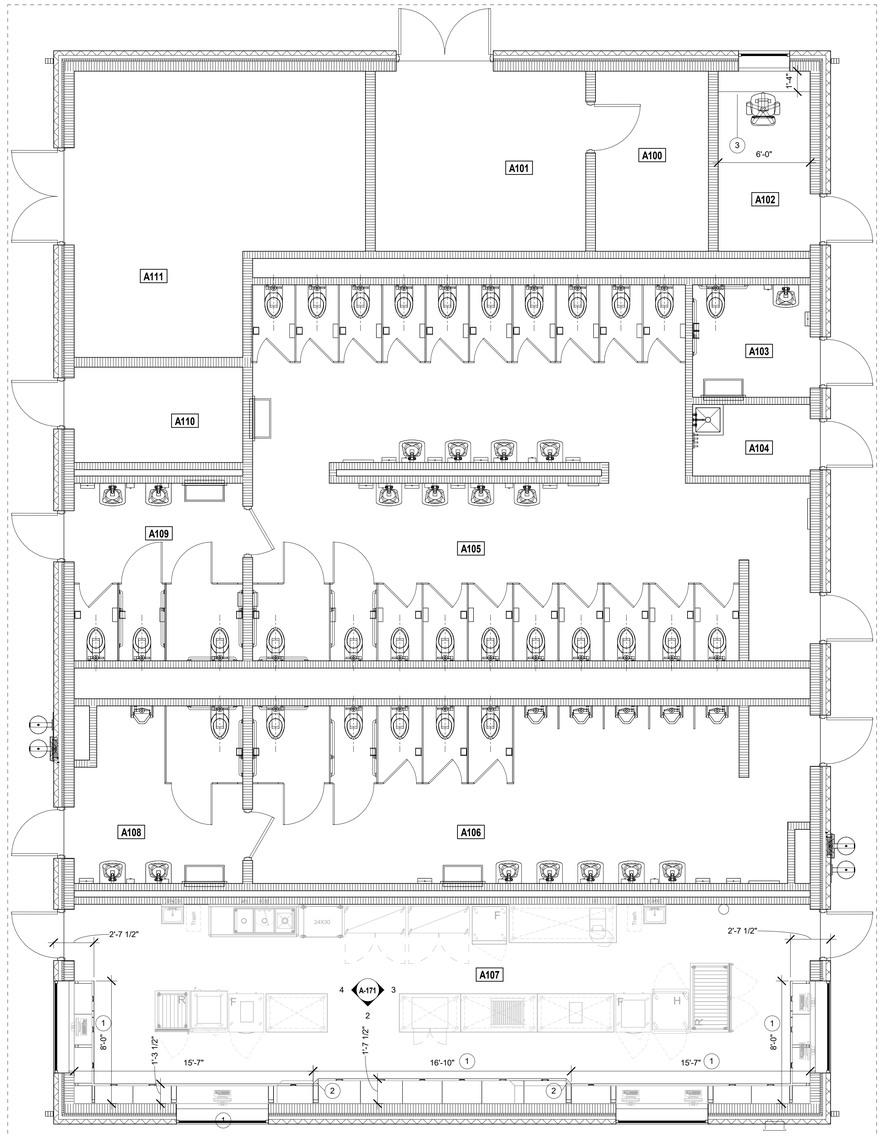
2 RO. A107 - EAST INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

ROOM LEGEND BLDG A

ROOM NO.	ROOM NAME	AREA (SF)
A100	TECHNOLOGY	87 SF
A101	ELECTRICAL	161 SF
A102	TICKET BOOTH	71 SF
A103	FAMILY RESTROOM	56 SF
A104	JANITOR	36 SF
A105	WOMEN'S RESTROOM	758 SF
A106	MEN'S RESTROOM	412 SF
A107	CONCESSIONS	624 SF
A108	MEN'S RESTROOM	122 SF
A109	WOMEN'S RESTROOM	127 SF
A110	MECH/PLUMB	68 SF
A111	STORAGE	299 SF

CASEWORK SCHEDULE

TYPE	NO.	SIZE W	SIZE D	SIZE H	Description
B	1	2'-0"	1'-2"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	2	2'-4"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	3	2'-6"	1'-2"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	4	2'-9"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	5	2'-9"	1'-6"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	6	2'-7"	1'-6"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	7	2'-7"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.



1 EQUIPMENT PLAN - BLDG A
SCALE: 1/4" = 1'-0"

EQUIPMENT GENERAL NOTES

A. REFER TO DRAWING SHEET IN501 FOR TYPICAL CASEWORK DETAILS.
B. VERIFY EXACT SIZE OF CASEWORK AND VISUAL DISPLAY BOARDS IN FIELD PRIOR TO FABRICATION. IDENTIFY ALL MODIFIED DIMENSIONS TO MEET FIELD CONDITIONS ON SHOP DRAWINGS FOR APPROVAL.
C. ALL COUNTERTOPS WHERE SINKS ARE LOCATED TO HAVE CONTINUOUS 4" HIGH BACKSPLASHES AND ENDSPLASHES UNLESS NOTED OTHERWISE.
D. PROVIDE FILLER STRIPS BETWEEN CASEWORK UNITS AND WALL OR BETWEEN ANY UNIT AS REQUIRED. EXTEND COUNTER TO FACE OF WALL OR ADJACENT TALL CABINET.
E. ALL CASEWORK DOORS AND DRAWERS SHALL BE LOCKABLE UNLESS OTHERWISE NOTED.
F. ALL WALL CABINETS 24" DEEP OR GREATER SHALL BE CONSTRUCTED W/ 3/4" THICK BACK AND 1" THICK SHELVES.
G. ALL BASE CABINETS AND FILING CABINETS SHALL BE SET BACK 3/4" 1" FROM EDGE OF COUNTERTOP OR WORKSURFACE UNLESS OTHERWISE NOTED ON DRAWINGS OR A TALL CABINET IS ADJACENT TO THE WORKSURFACE AND BASE CABINETS.
H. WHERE CASEWORK IS LOCATED WALL TO WALL, FIELD VERIFY SIZE AND PROVIDE FILLERS AS REQ'D TO CLOSE OFF ALL SIDES AND TOP.
I. ALL EXPOSED ENDS AND BACKS OF CASEWORK SHALL BE FINISHED. EXPOSED SIDES OF CABINETS WITH DEPTH LESS THAN COUNTERTOP OR WORKSURFACES SHALL HAVE EXTENDED SIDES TO ELIMINATE ANY GAPS BETWEEN CABINETS AND WALLS. FILLER STRIPS ARE NOT ACCEPTABLE.
J. CASEWORK INSTALLER SHALL CUT CASEWORK AS REQUIRED FOR ELECTRICAL/PLUMBING LINES AND CASEWORK INSTALLED EQUIPMENT.
K. CASEWORK INSTALLER SHALL CAULK BETWEEN COUNTERS, BACKSPLASHES, AND WALLS.
L. ALL WALL-MOUNTED CASEWORK SHALL BE MOUNTED WITH THE TOP AT 7'-0" AFF UNLESS OTHERWISE NOTED.
M. REFER TO SHEET A/140 FOR FINISH AND MATERIAL SELECTIONS.
N. HIDDEN LINES ( ) INDICATE ITEMS TO BE PART OF LOOSE EQUIPMENT PACKAGE OR BY OWNER, NOT INCLUDED IN CONSTRUCTION CONTRACTS. DASHED LINES ( ) INDICATE OVERHEAD ITEMS (INCLUDED IN CONSTRUCTION CONTRACTS).

EQUIPMENT NOTES

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

1. STAINLESS STEEL COUNTER TOPS, SS-2
2. MITERED EDGE RADIUS AS CLEVER TO FACILITY COUNTERTOP SHAPE.
3. WORKSURFACE 6' L X 16" W X 30" H

MICHIGAN CITY COMMUNITY EVENT CENTER

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MICHIGAN CITY AREA SCHOOLS

ARCHITECT

FANNING HOWEY

317.848.0966 WWW.FHAI.COM
350 East New York Street, Suite 300 Indianapolis, IN 46204

N

BID DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DS
DRAWN BY: AE
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	02.04.2026

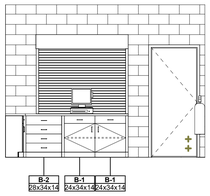
VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

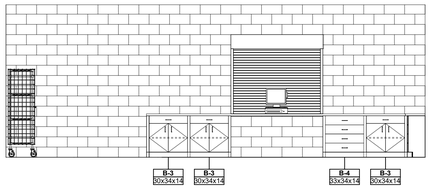
SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

EQUIPMENT PLAN - BLDG A

A-171



3 RO. B106 - SOUTH INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



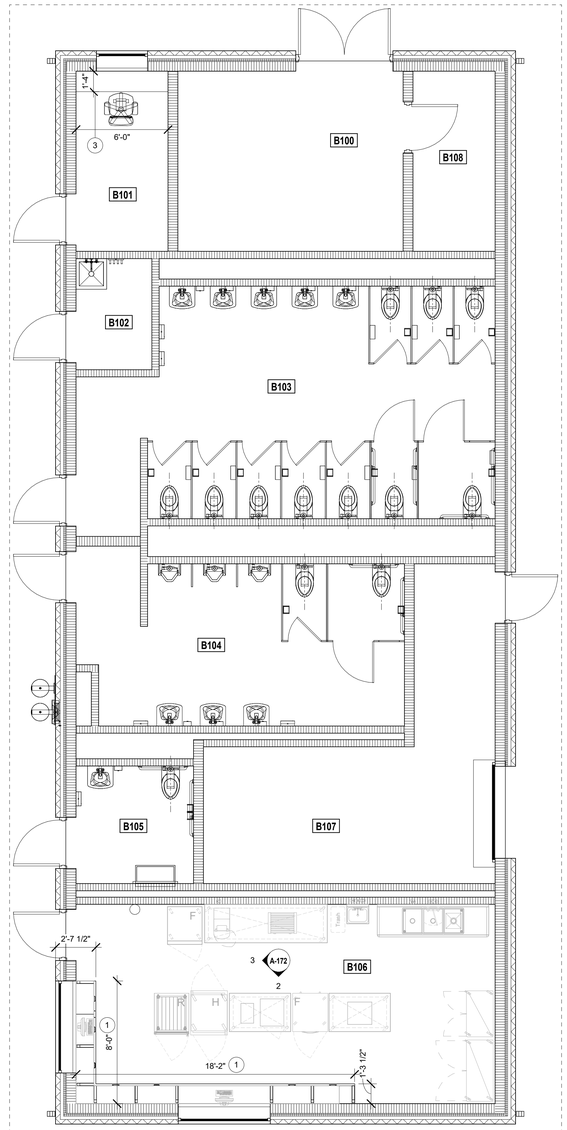
2 RO. B106 - EAST INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

ROOM LEGEND BLDG B

ROOM NO.	ROOM NAME	AREA (SF)
B100	MECH/ELEC	173 SF
B101	TICKET	71 SF
B102	JANITOR	36 SF
B103	WOMEN'S RESTROOM	385 SF
B104	MEN'S RESTROOM	224 SF
B105	FAMILY RESTROOM	59 SF
B106	CONCESSIONS	355 SF
B107	STORAGE	233 SF
B108	TECH	63 SF

CASEWORK SCHEDULE

TYPE	NO.	SIZE W	SIZE D	SIZE H	Description
B	1	2'-0"	1'-2"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	2	2'-4"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	3	2'-6"	1'-2"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	4	2'-9"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	5	2'-9"	1'-6"	2'-10"	BASE UNIT WITH TWO ADJUSTABLE SHELVES, TWO HINGED DOORS, AND TWO DRAWERS
B	6	2'-7"	1'-6"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.
B	7	2'-7"	1'-2"	2'-10"	DRAWER UNIT WITH FOUR EQUAL DRAWERS.



1 EQUIPMENT PLAN - BLDG B
SCALE: 1/4" = 1'-0"

EQUIPMENT GENERAL NOTES

A. REFER TO DRAWING SHEET IN501 FOR TYPICAL CASEWORK DETAILS.
B. VERIFY EXACT SIZE OF CASEWORK AND VISUAL DISPLAY BOARDS IN FIELD PRIOR TO FABRICATION. IDENTIFY ALL MODIFIED DIMENSIONS TO MEET FIELD CONDITIONS ON SHOP DRAWINGS FOR APPROVAL.
C. ALL COUNTERTOPS WHERE SINKS ARE LOCATED TO HAVE CONTINUOUS 4" HIGH BACKSPLASHES AND ENDSPLASHES UNLESS NOTED OTHERWISE.
D. PROVIDE FILLER STRIPS BETWEEN CASEWORK UNITS AND WALL OR BETWEEN ANY UNIT AS REQUIRED. EXTEND COUNTER TO FACE OF WALL OR ADJACENT TALL CABINET.
E. ALL CASEWORK DOORS AND DRAWERS SHALL BE LOCKABLE UNLESS OTHERWISE NOTED.
F. ALL WALL CABINETS 24" DEEP OR GREATER SHALL BE CONSTRUCTED W/ 3/4" THICK BACK AND 1" THICK SHELVES.
G. ALL BASE CABINETS AND FILING CABINETS SHALL BE SET BACK 3/4":1" FROM EDGE OF COUNTERTOP OR WORKSURFACE UNLESS OTHERWISE NOTED ON DRAWINGS OR A TALL CABINET IS ADJACENT TO THE WORKSURFACE AND BASE CABINETS.
H. WHERE CASEWORK IS LOCATED WALL TO WALL, FIELD VERIFY SIZE AND PROVIDE FILLERS AS REQ'D TO CLOSE OFF ALL SIDES AND TOP.
I. ALL EXPOSED ENDS AND BACKS OF CASEWORK SHALL BE FINISHED. EXPOSED SIDES OF CABINETS WITH DEPTH LESS THAN COUNTERTOP OR WORKSURFACES SHALL HAVE EXTENDED SIDES TO ELIMINATE ANY GAPS BETWEEN CABINETS AND WALLS. FILLER STRIPS ARE NOT ACCEPTABLE.
J. CASEWORK INSTALLER SHALL CUT CASEWORK AS REQUIRED FOR ELECTRICAL/PLUMBING LINES AND CASEWORK INSTALLED EQUIPMENT.
K. CASEWORK INSTALLER SHALL CAULK BETWEEN COUNTERS, BACKSPLASHES, AND WALLS.
L. ALL WALL-MOUNTED CASEWORK SHALL BE MOUNTED WITH THE TOP AT 7'-0" AFF UNLESS OTHERWISE NOTED.
M. REFER TO SHEET A/140 FOR FINISH AND MATERIAL SELECTIONS.
N. HIDDEN LINES ( ) INDICATE ITEMS TO BE PART OF LOOSE EQUIPMENT PACKAGE OR BY OWNER, NOT INCLUDED IN CONSTRUCTION CONTRACTS. DASHED LINES ( ) INDICATE OVERHEAD ITEMS (INCLUDED IN CONSTRUCTION CONTRACTS).

EQUIPMENT NOTES (X)

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

1. STAINLESS STEEL COUNTER TOPS, SS-2.
2. INTERIOR SALE PRAMS AT ALLEN TO FOLLOW COUNTERTOP SHAPE.
3. WORKSURFACE 6' L X 16" W X 30" H

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

MICHIGAN CITY COMMUNITY EVENT CENTER

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BID DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DS
DRAWN BY: AE
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	02.04.2026

EQUIPMENT PLAN - BLDG B

A-172

DOOR AND FRAME SCHEDULE BLDG A

DOOR MARK	DOORS		FRAME			DETAILS			FIRE RATING	HARDWARE		STC RATING	REMARKS	DOOR MARK
	DOOR SIZE (WxH)	DOOR TYPE	FRAME MATERIAL	FRAME ELEVATION	JAMB DEPTH	HEAD	JAMB	SILL		SET NO.	KEYSIDE ROOM			
A100	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	10/A-602	11/A-602	-	-	11	A101	-		A100
A101	PR 3'-0" x 7'-2"	F FRP	AL	A2	5 3/4"	1/A-602	2/A-602	3/A-602	-	02	EXT	-		A101
A102A	3'-4" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	A102	-		A102A
A102B	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	04	EXT	-		A102B
A103	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	05	EXT	-		A103
A104	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	01	EXT	-		A104
A105	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		A105
A106	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		A106
A107A	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	04	EXT	-		A107A
A107B	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	A107	-		A107B
A107C	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	A107	-		A107C
A107D	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	A107	-		A107D
A107E	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	A107	-		A107E
A107F	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	04	EXT	-		A107F
A108A	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		A108A
A108B	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	10/A-602	11/A-602	-	-	07	A106	-		A108B
A109A	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		A109A
A109B	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	10/A-602	11/A-602	-	-	07	A105	-		A109B
A110	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	01	EXT	-		A110
A111	PR 3'-0" x 7'-2"	F FRP	AL	A2	5 3/4"	1/A-602	2/A-602	3/A-602	-	08	EXT	-		A111

DOOR AND FRAME SCHEDULE BLDG B

DOOR MARK	DOORS		FRAME			DETAILS			FIRE RATING	HARDWARE		STC RATING	REMARKS	DOOR MARK
	DOOR SIZE (WxH)	DOOR TYPE	FRAME MATERIAL	FRAME ELEVATION	JAMB DEPTH	HEAD	JAMB	SILL		SET NO.	KEYSIDE ROOM			
B100	PR 3'-0" x 7'-2"	F FRP	AL	A2	5 3/4"	1/A-602	2/A-602	3/A-602	-	09	EXT	-		B100
B101A	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	04	EXT	-		B101A
B101B	3'-4" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	B101	-		B101B
B102	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	01	EXT	-		B102
B103	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		B103
B104	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	06	EXT	-		B104
B105	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	05	EXT	-		B105
B106A	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	04	EXT	-		B106A
B106B	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	B106	-		B106B
B106C	6'-0" x 5'-4"	CCD	AL	-	2"	7/A-602	8/A-602	9/A-602	-	03	B106	-		B106C
B107A	6'-0" x 8'-0"	OHCD	STL	-	2"	4/A-602	5/A-602	6/A-602	-	03	B107	-		B107A
B107B	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	1/A-602	2/A-602	3/A-602	-	01	EXT	-		B107B
B108	3'-0" x 7'-2"	F FRP	AL	A1	5 3/4"	10/A-602	11/A-602	-	-	11	B100	-		B108

DOOR AND FRAME SCHEDULE BLDG C

DOOR MARK	DOORS		FRAME			DETAILS			FIRE RATING	HARDWARE		STC RATING	REMARKS	DOOR MARK
	DOOR SIZE (WxH)	DOOR TYPE	FRAME MATERIAL	FRAME ELEVATION	JAMB DEPTH	HEAD	JAMB	SILL		SET NO.	KEYSIDE ROOM			
C101A	3'-0" x 7'-2"	F HM	HM	F1	10 7/8"	-	-	-	-	01	EXT	-	1, 2	C101A
C101B	14'-0" x 10'-0"	SOHD	STL	-	2"	-	-	-	-	03	EXT	-	1, 2	C101B
C101C	14'-0" x 10'-0"	SOHD	STL	-	2"	-	-	-	-	03	EXT	-	1, 2	C101C

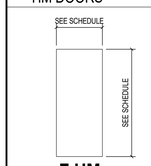
DOOR AND FRAME SCHEDULE BLDG D

DOOR MARK	DOORS		FRAME			DETAILS			FIRE RATING	HARDWARE		STC RATING	REMARKS	DOOR MARK
	DOOR SIZE (WxH)	DOOR TYPE	FRAME MATERIAL	FRAME ELEVATION	JAMB DEPTH	HEAD	JAMB	SILL		SET NO.	KEYSIDE ROOM			
D101	3'-0" x 7'-2"	F HM	HM	F1	6 1/4"	-	-	-	-	01	EXT	-	1, 2	D101
D102	3'-0" x 7'-2"	F HM	HM	F1	6 1/4"	-	-	-	-	01	EXT	-	1, 2	D102
D103	3'-0" x 7'-2"	F HM	HM	F1	6 1/4"	-	-	-	-	01	EXT	-	1, 2	D103
D104	2'-8" x 6'-8"	FG2 HM	STL	-	4"	-	-	-	-	10	EXT	-	1, 2	D104

REMARKS:
1. DOOR AND FRAME BY MANUFACTURER.
2. HARDWARE PER SET NO.

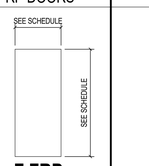
DOOR TYPES

HM DOORS



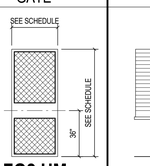
F HM
FLUSH DOOR

FRP DOORS



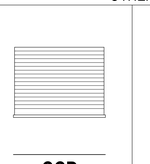
F FRP
FLUSH DOOR

GATE

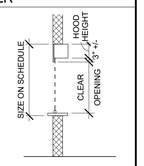


FG2 HM
GATE

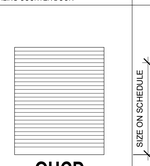
OTHER



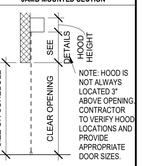
CCD
COILING COUNTER DOOR



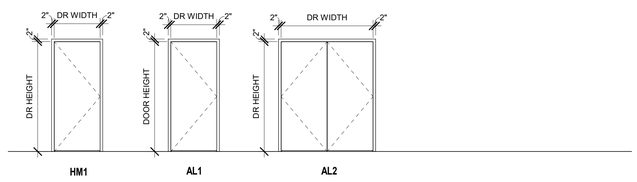
COILING COUNTER DOORS -BETWEEN JAMB MOUNTED SECTION



OHCD
OVERHEAD COILING DOOR



OVERHEAD COILING DOORS AND GRILLES - FACE MOUNTED SECTION



LEGEND - FRAME ELEVATIONS

SCALE: 1/4" = 1'-0"

MICHIGAN CITY COMMUNITY EVENT CENTER

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Michigan City Area Schools

ARCHITECT

FANNING HOWEY

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BID DOCUMENTS

PAULA MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DS
DRAWN BY: BMD
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	02.04.2026

DOOR AND FRAME SCHEDULE

A-601

Coded Notes

1 3" SANITARY FROM DEEP SEAL P-TRAP ABOVE.

2 3" FLOOR SINK FROM ABOVE. COORDINATE EXACT LOCATION WITH FOOD SERVICE CONTRACTOR.

3 4" SANITARY FROM ABOVE.

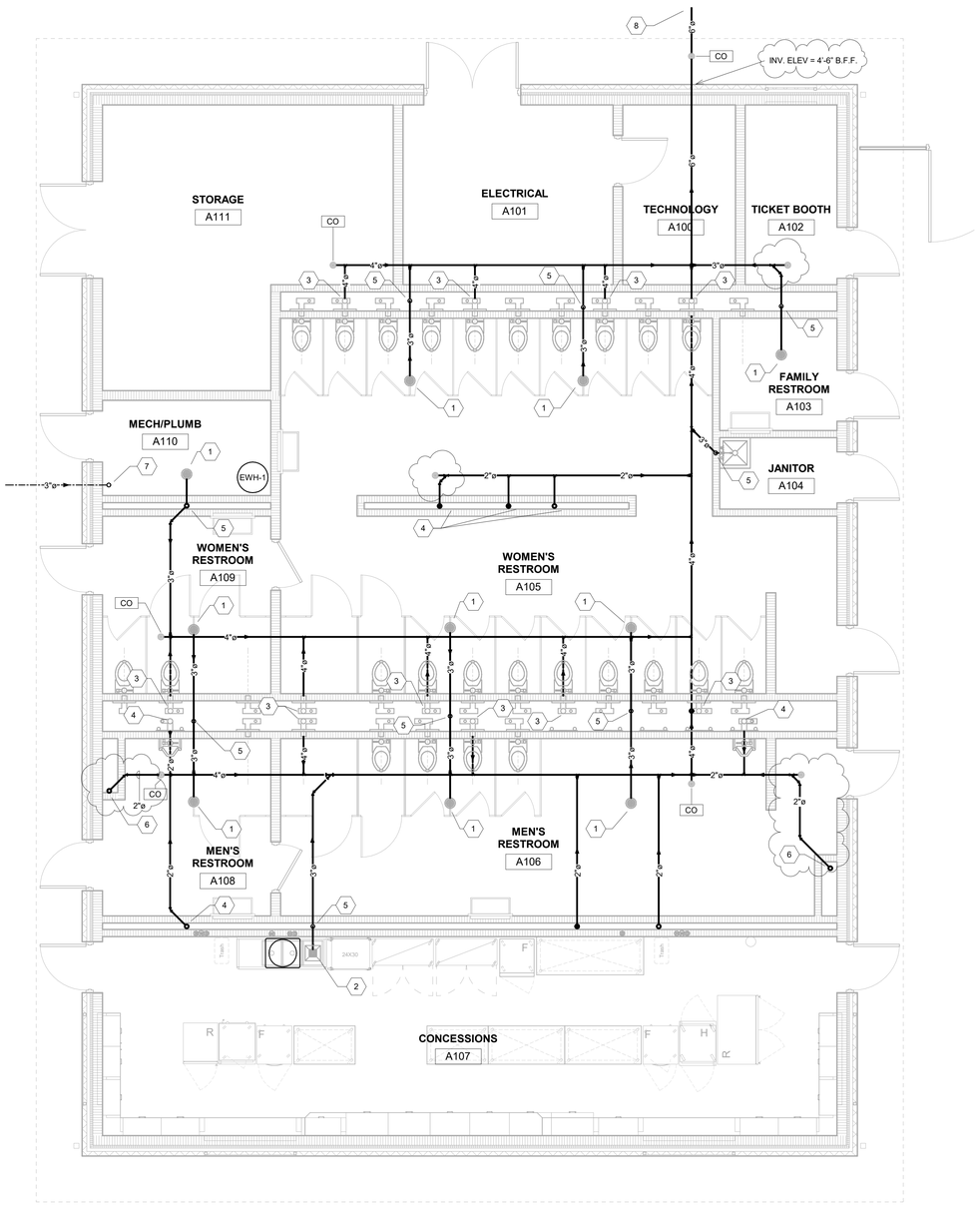
4 2" SANITARY FROM ABOVE.

5 3" SANITARY FROM ABOVE.

6 1 1/2" SANITARY FROM ABOVE.

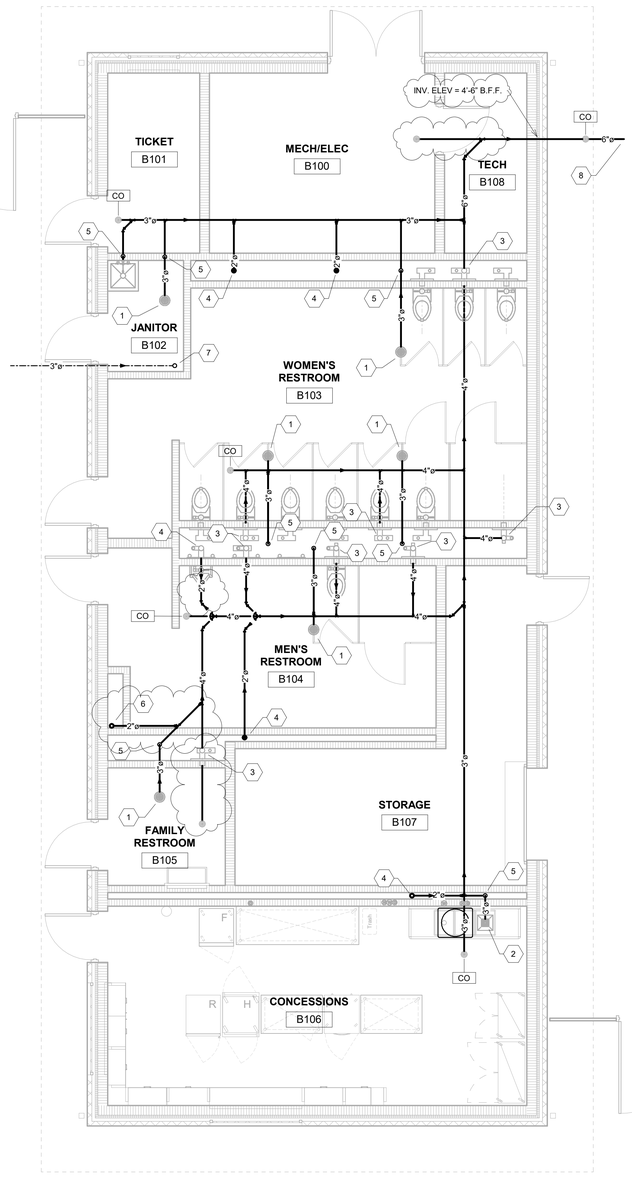
7 3" INCOMING DOMESTIC COLD WATER SUPPLY THROUGH FLOOR. REFER TO DETAIL.

8 PROVIDE CLEANOUT, TEST-Y, AND ROUTE TO LIFT STATION. COORDINATE EXACT LOCATION AND ROUTING WITH SITE UTILITY CONTRACTOR.



1 FOUNDATION PLUMBING PLAN - BLDG A

SCALE: 1/4" = 1'-0"



2 FOUNDATION PLUMBING PLAN - BLDG B

SCALE: 1/4" = 1'-0"

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

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BID DOCUMENTS

MARK Z. HORF REGISTERED No. PE 12005001 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: RS

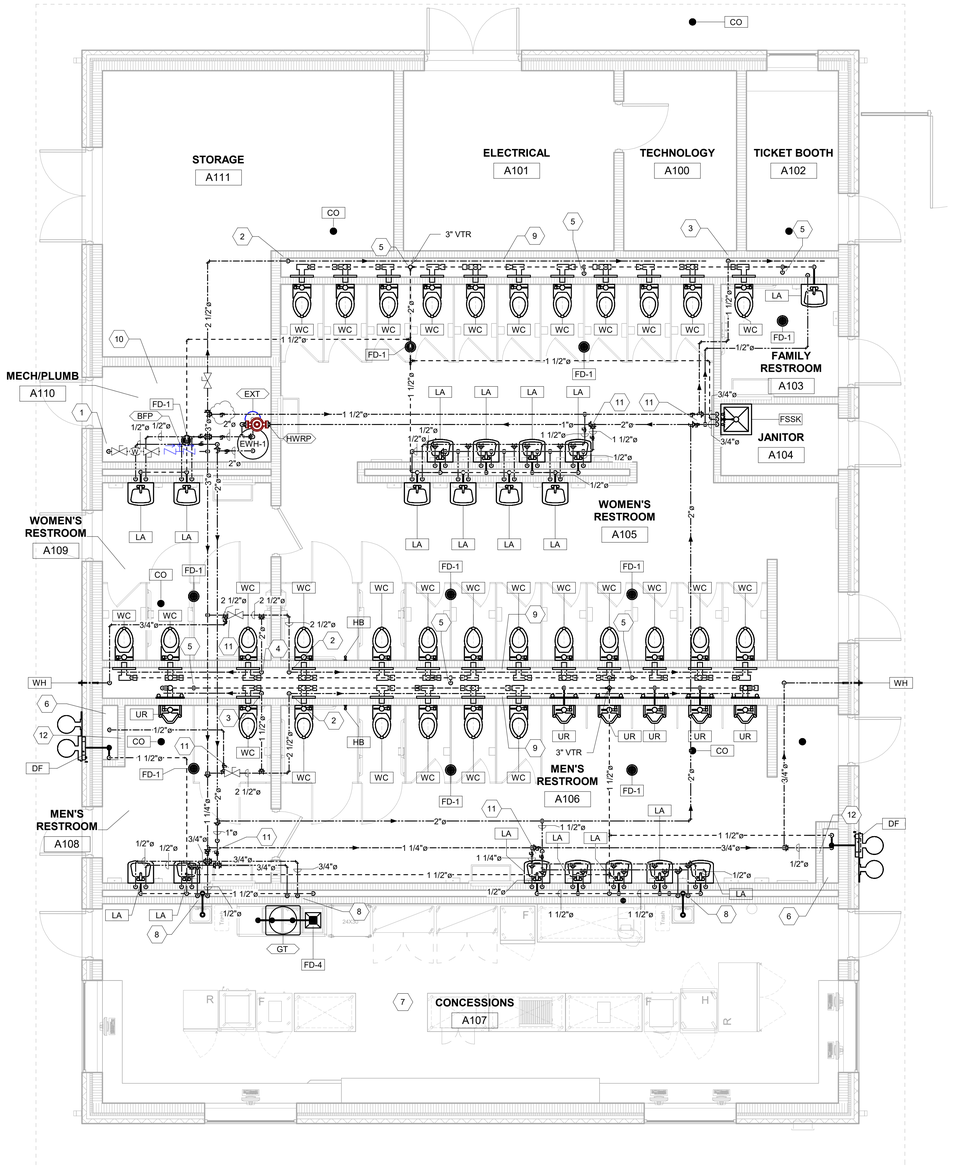
PROJECT NUMBER: 224177.01

PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	02/04/2026

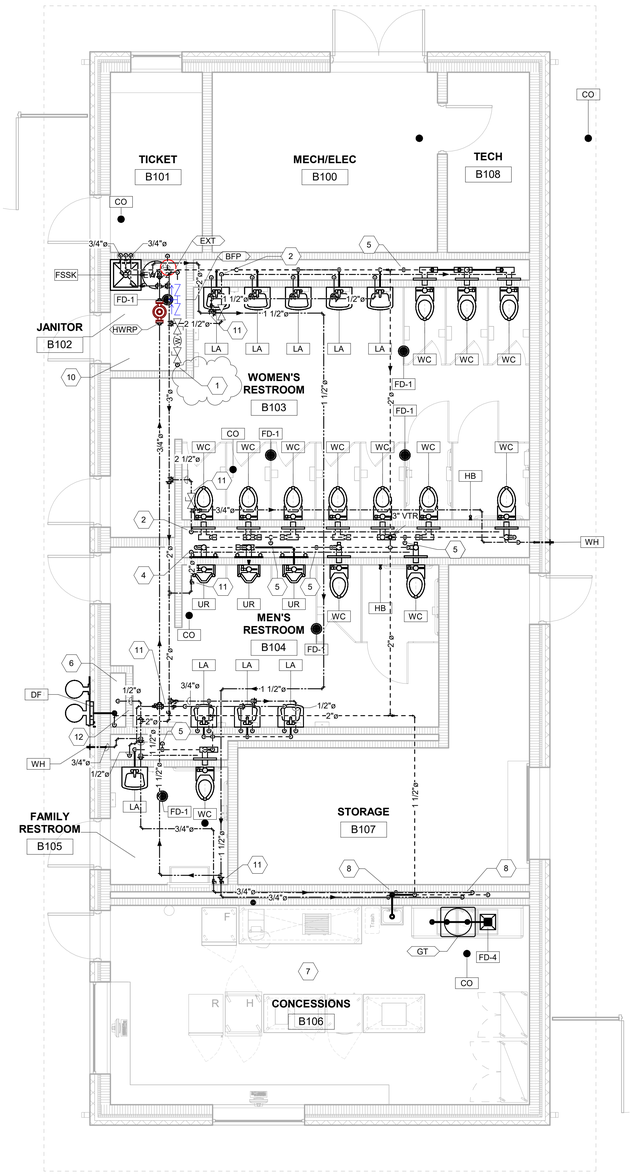
FOUNDATION PLUMBING PLAN

P-110



1 FIRST FLOOR PLUMBING PLAN - BLDG A

SCALE: 1/4" = 1'-0"



2 FIRST FLOOR PLUMBING PLAN - BLDG B

SCALE: 1/4" = 1'-0"

Coded Notes

1. INCOMING 3" DOMESTIC WATER SERVICE. REFER TO DETAIL.
2. 2 1/2" COLD WATER WATER DOWN IN CHASE. EXTEND COLD WATER HEADER FULL SIZE THRU ENTIRE LENGTH OF CHASE. EXTEND COLD WATER TO FIXTURES AS REQUIRED. PROVIDE ACCESSIBLE WATER HAMMER ARRESTER BEFORE LAST FLUSH VALVE CONNECTION. COORDINATE LOCATION OF ACCESS PANEL WITH ALL TRADES.
3. 1 1/2" COLD WATER WATER DOWN IN CHASE. EXTEND COLD WATER HEADER FULL SIZE THRU ENTIRE LENGTH OF CHASE. EXTEND COLD WATER TO FIXTURES AS REQUIRED. PROVIDE ACCESSIBLE WATER HAMMER ARRESTER BEFORE LAST FLUSH VALVE CONNECTION. COORDINATE LOCATION OF ACCESS PANEL WITH ALL TRADES.
4. 2" COLD WATER WATER DOWN IN CHASE. EXTEND COLD WATER HEADER FULL SIZE THRU ENTIRE LENGTH OF CHASE. EXTEND COLD WATER TO FIXTURES AS REQUIRED. PROVIDE ACCESSIBLE WATER HAMMER ARRESTER BEFORE LAST FLUSH VALVE CONNECTION. COORDINATE LOCATION OF ACCESS PANEL WITH ALL TRADES.
5. 1 1/2" VENT FROM BELOW.
6. INSTALL OASIS R8 CHILLER (OR EQUIVALENT) FOR EXTERIOR DRINKING FOUNTAIN. ENSURE CHILLER IS VENTED PROPERLY PER MANUFACTURER'S REQUIREMENTS. ALL WATER AND SANITARY PIPING MUST BE INSTALLED IN INTERIOR OF BUILDING TO ENSURE FREEZE PROTECTION.
7. REFER TO FOOD SERVICE PLAN FOR CONCESSION FIXTURE AND PLUMBING INFORMATION. ENSURE ALL PLUMBING IN THIS AREA IS INSTALLED TO ALLOW FREEZE PROTECTION.
8. CONNECT PIPING TO FIXTURES PROVIDED BY FOOD SERVICE CONTRACTOR.
9. INSTALL ACCESSIBLE WATER HAMMER ARRESTOR AT DENOTED LOCATION.
10. INSTALL SHUTOFF VALVES AND HOT WATER RETURN PUMPS IN ACCESSIBLE AREA BELOW CEILING.
11. CEILING ACCESS PANEL FOR SHUTOFF VALVE ACCESS. COORDINATE WITH ALL TRADES.
12. FULL SIZE ACCESS PANEL FOR DRINKING FOUNTAIN CHASE. COORDINATE WITH ALL TRADES.

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350 East New York Street, Suite 300, Indianapolis, IN 46204

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BID DOCUMENTS

MARK Z. HOSE REGISTERED No. PE 12000301 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: RS
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	02/04/2026

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

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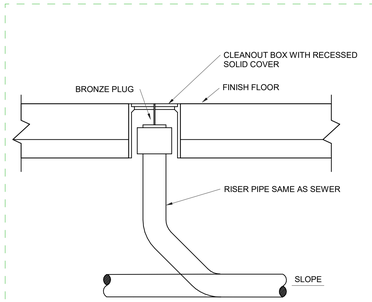
PLUMBING PLAN

P-120

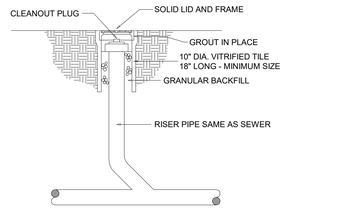
PLUMBING FIXTURE SCHEDULE																	
MARK	FIXTURE						TRIM			ACCESSORIES			CONNECTIONS				COMMENTS
	ITEM	MFGR	MODEL	MATERIAL	TYPE	COLOR	ITEM	MFGR	MODEL	ITEM	MFGR	MODEL	CW	HW	W	V	
DF	DRINKING FOUNTAIN	ELKAY	EZLSSN-EDFP BMV117K	STAINLESS	WALL MTD.	-	CHILLER	OASIS	R8	FILTER	ELKAY	EWF3000	1/2"		2"	1 1/2"	
FSSK	MOP SERVICE BASIN	E.L. MUSTEE AND SONS	63M	FIBERGLASS	FLOOR MTD.	WHITE	FAUCET	CHICAGO FAUCETS	897CP	HOSE	E.L. MUSTEE AND SONS	65.700	3/4"	3/4"	3"	1 1/2"	PROVIDE CHECK VALVES ON HOT AND COLD WATER SUPPLY LINES.
HB	HOSE BIBB	ZURN	Z1300	ROUGH BRONZE	AS NOTED	-	-	-	-	-	-	-	3/4"				
LA	LAVATORY	AMERICAN STANDARD	0356.41	VIT. CHINA	WALL MTD.	WHITE	FAUCET	SLOAN	EBF-650	TMV	POWERS	LFG480	1/2"	1/2"	1 1/4"	1 1/4"	INSTALL ZURN SERIES Z1200 LAVATORY CARRIER. COORDINATE HANDICAPPED FIXTURES WITH ARCHITECTURAL PLANS.
UR	URINAL	AMERICAN STANDARD	6590.0001	VIT. CHINA	WALL MTD.	WHITE	FLUSH VALVE	ZURN	ZER6003AV-TM	-	-	-	3/4"		2"	1 1/2"	INSTALL ZURN SERIES Z1200 URINAL CARRIER. COORDINATE HANDICAPPED FIXTURES WITH ARCHITECTURAL PLANS.
WC	WATER CLOSET	AMERICAN STANDARD	2257.101	VIT. CHINA	WALL MTD.	WHITE	FLUSH VALVE	ZURN	ZER6000AV-TM	SEAT	BEMIS	1655SSCT	1 1/2"		4"	2"	INSTALL ZURN SERIES Z1200 WATER CLOSET CARRIER. COORDINATE HANDICAPPED FIXTURES WITH ARCHITECTURAL PLANS.
WH	WALL HYDRANT	ZURN	Z1300	ROUGH BRONZE	AS NOTED	-	-	-	-	-	-	-	3/4"				

PLUMBING EQUIPMENT SCHEDULE

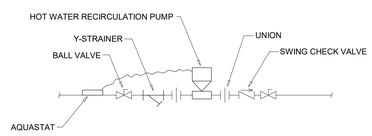
MARK	DESCRIPTION	LOCATION	MANUFACTURER/MODEL NUMBER	CAPACITY	REMARKS	ELECTRICAL DATA					COMMENTS
						HP	KW	V	AMP	PH	
BFP	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER	A110, B102	WATTS MODEL LF909 WITH TWO INDEPENDENT SPRING LOADED POPPET TYPE CHECK VALVE (3")	170 GPM @ 12 PSI DROP MAX.	PIPE DISCHARGE FULL SIZE TO FLOOR DRAIN	-	-	-	-	-	
EWH-1	ELECTRIC TANK TYPE WATER HEATER	A110	A.O. SMITH DEL-30	30 GAL NOMINAL CAPACITY. 18 GPH RECOVERY RATE			2.0	480		3	
EWH-2	ELECTRIC TANK TYPE WATER HEATER	B102	A.O. SMITH DEL-20	20 GAL NOMINAL CAPACITY. 18 GPH RECOVERY RATE			4.5	480		3	
EXT	DOMESTIC HOT WATER EXPANSION TANK	A110, B102	AMTROL MODEL ST-5C-DD	0.9 GAL. MAX ACCEPT VOLUME 2 GAL. TOTAL VOLUME	A.S.M.E. RATED - SECTION VIII	-	-	-	-	-	
GT	GREASE INTERCEPTOR	A107, B106	SCHIER GB1	CAPACITIES - LIQUID: 10 GAL. GREASE: 70 LBS. (9.6 GAL.) @20 GPM GREASE: 64.9 LBS. (8.9 GAL.) @25 GPM GREASE (95%): 15.85 LBS (2.2 GAL.) @20 GPM 99.1% SOLIDS: 1.3 GAL.	PIPE DISCHARGE FULL SIZE TO FLOOR SINK WITH AIR GAP						
HWRP	HOT WATER RETURN PUMP	A105, B102	BELL AND GOSSETT MODEL NO. PL-30 (1BL013LF)	1 GPM @ 24 T.D.H.	ALL BRONZE CONSTRUCTION	1/12	-	115	-	-	PIPE MOUNTED AQUASTAT.



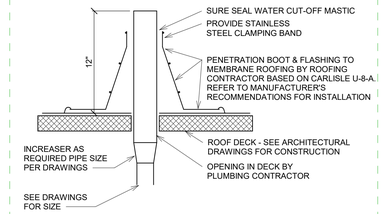
1 **INTERIOR CLEANOUT DETAIL**
SCALE: 12" = 1'-0"



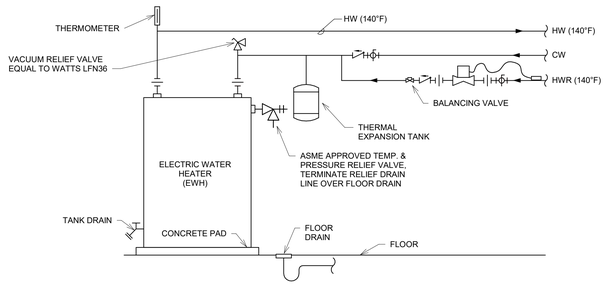
2 **EXTERIOR CLEANOUT DETAIL**
NOT TO SCALE



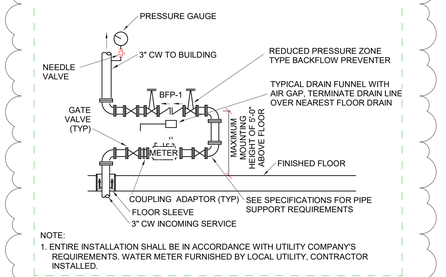
3 **HWR PUMP PIPING DIAGRAM**
NOT TO SCALE



4 **VENT THRU ROOF DETAIL**
NOT TO SCALE



5 **WATER HEATER PIPING DETAIL**
NOT TO SCALE



NOTE:
1. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH UTILITY COMPANY'S REQUIREMENTS. WATER METER FURNISHED BY LOCAL UTILITY, CONTRACTOR INSTALLED.

6 **SINGLE WATER METER PIPING DETAIL**
NOT TO SCALE

Michigan City Community Event Center

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Michigan City Area Schools

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BID DOCUMENTS

MARK Z. HOSE REGISTERED No. PE 12006101 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: RS
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	02/04/2026

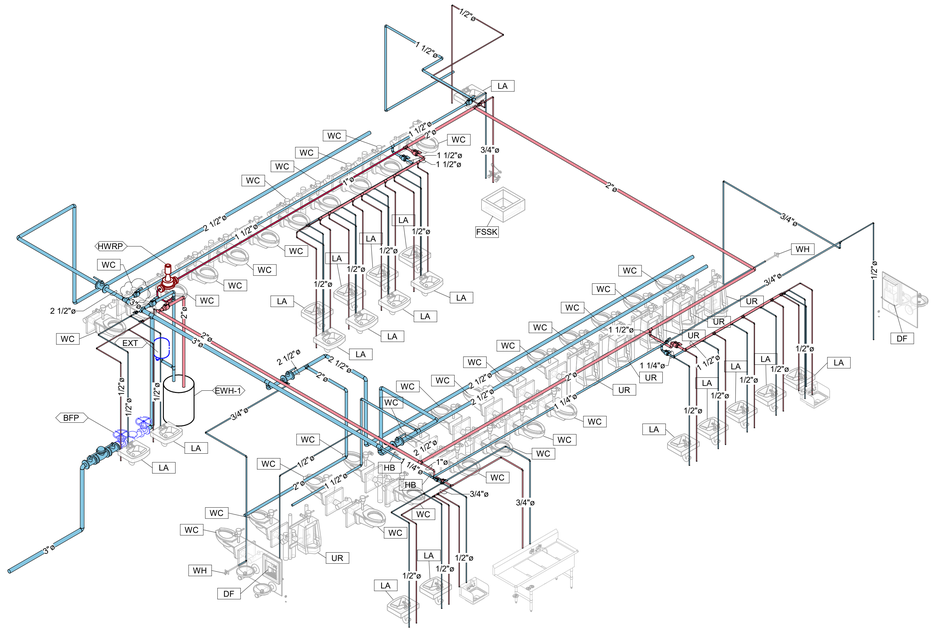
VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

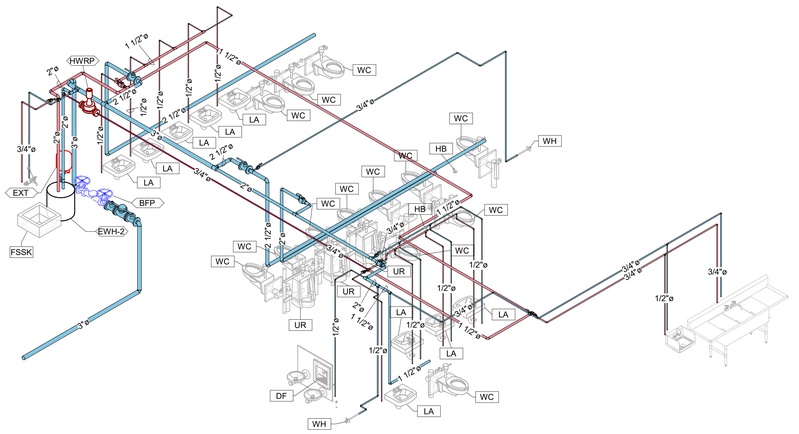
SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

PLUMBING DETAILS AND SCHEDULES

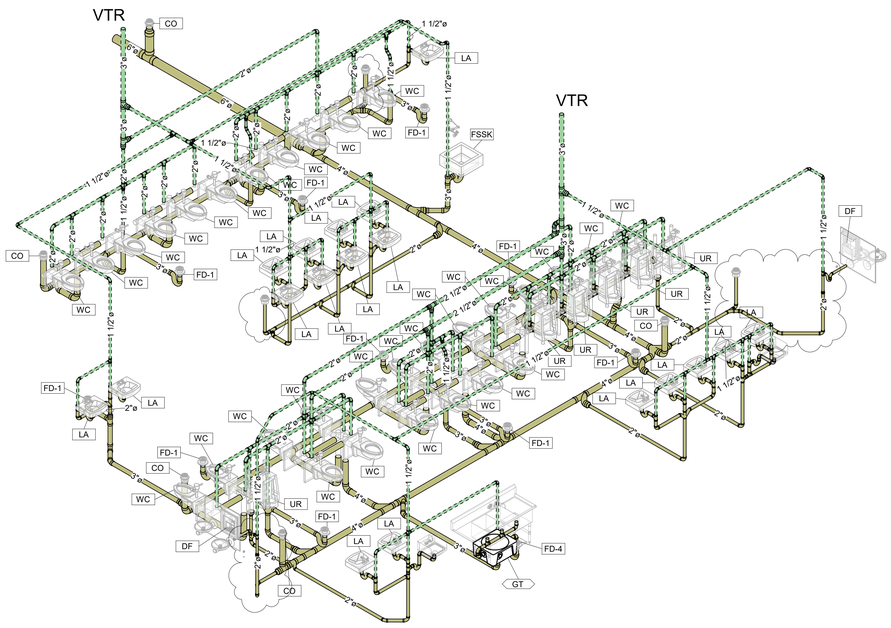
P-501



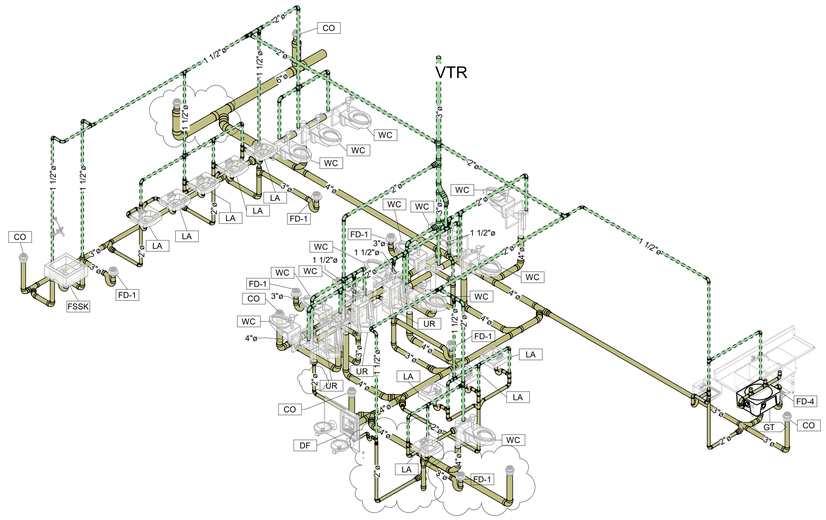
1 DOMESTIC WATER ISOMETRIC BLDG A
SCALE:



2 DOMESTIC WATER ISOMETRIC BLDG B
SCALE:



3 WASTE AND VENT ISOMETRIC BLDG A
SCALE:



4 WASTE AND VENT ISOMETRIC BLDG B
SCALE:

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BID DOCUMENTS

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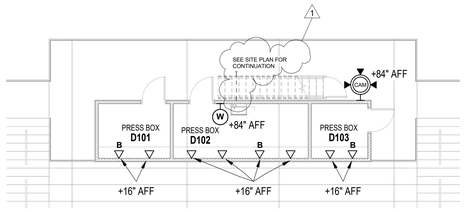
DRAWN BY: RS
PROJECT NUMBER: 224177.01
PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	02/04/2026

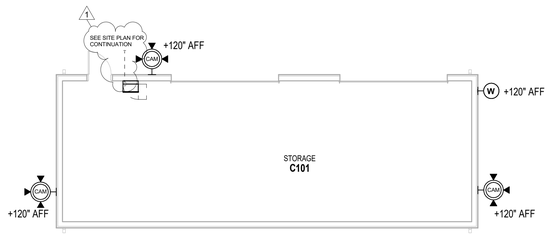
PLUMBING ISOMETRICS

P-901



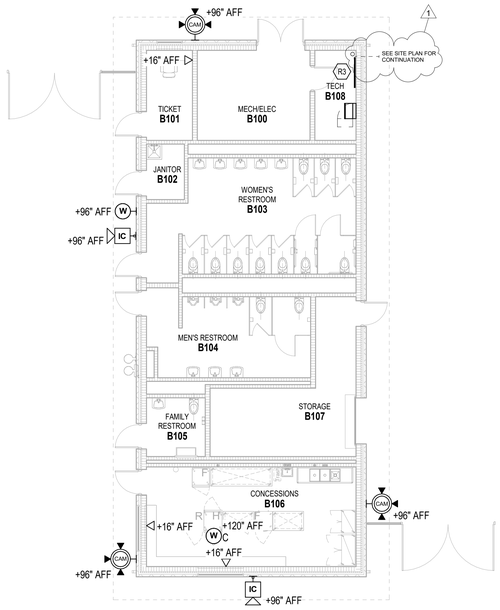
4 TECHNOLOGY ROUGH-IN PLAN - BUILDING D

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



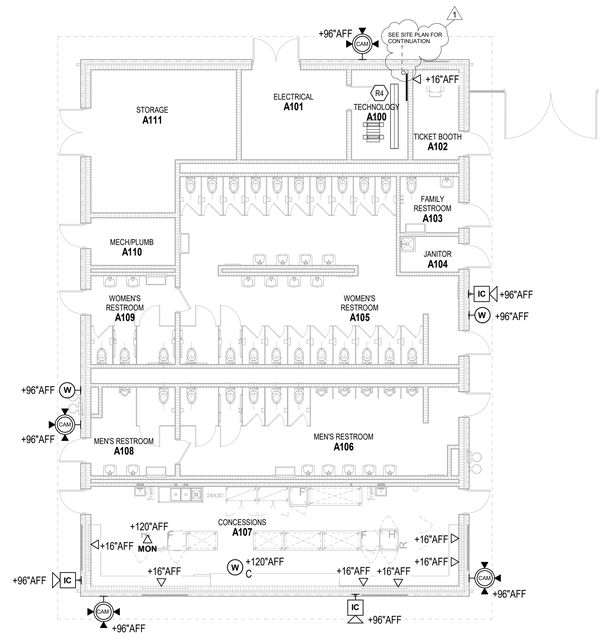
3 TECHNOLOGY ROUGH-IN PLAN - BUILDING C

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



2 TECHNOLOGY ROUGH-IN PLAN - BUILDING B

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



1 TECHNOLOGY ROUGH-IN PLAN - BUILDING A

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

ROOM LEGEND

ROOM NO.	OWNER ROOM NO.	ROOM NAME	AREA (SF)
FF PRESS BOX 31'-1.75"			
D101		PRESS BOX	67 SF
D102		PRESS BOX	126 SF
D103		PRESS BOX	53 SF
FIRST FLOOR			
A100		TECHNOLOGY	87 SF
A101		ELECTRICAL	161 SF
A102		TICKET BOOTH	71 SF
A103		FAMILY RESTROOM	56 SF
A104		JANITOR	36 SF
A105		WOMEN'S RESTROOM	758 SF
A106		MEN'S RESTROOM	412 SF
A107		CONCESSIONS	624 SF
A108		MEN'S RESTROOM	122 SF
A109		WOMEN'S RESTROOM	127 SF
A110		MECH/PLUMB	68 SF
A111		STORAGE	299 SF
B100		MECH/ELEC	173 SF
B101		TICKET	71 SF
B102		JANITOR	36 SF
B103		WOMEN'S RESTROOM	385 SF
B104		MEN'S RESTROOM	224 SF
B105		FAMILY RESTROOM	59 SF
B106		CONCESSIONS	355 SF
B107		STORAGE	233 SF
B108		TECH	63 SF
C101		STORAGE	981 SF

TECHNOLOGY ROUGH-IN GENERAL NOTES

A. DEVICES SHALL BE INSTALLED AT LOCATIONS SHOWN ON DRAWINGS. LOCATIONS OF DEVICES SHALL BE COORDINATED WITH OTHER ELECTRICAL DEVICES/ CASEWORK/ ARCHITECTURAL FEATURES AND OTHER TRADES PRIOR TO ROUGH-IN. IF RELOCATION OF DEVICES IS REQUIRED DUE TO LACK OF COORDINATION BETWEEN ELECTRICAL DRAWINGS AND OTHER TRADES, ANY ASSOCIATED COSTS SHALL BE RESPONSIBILITY OF ELECTRICAL CONTRACTOR.

ROUGH-IN PLAN NOTES

(X)

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

#	NOTE
R3	TR. SEE DETAIL 4 & 5/ET501.
R4	MC/ER. SEE DETAIL 2 & 3/ET501.

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BID DOCUMENTS

BRIAN W. BUTLER REGISTERED No. PE19900108 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: DS

DRAWN BY: CD

PROJECT NUMBER: 224177.01

PROJECT ISSUE DATE: 01.16.2026

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	02/04/2026

TECHNOLOGY ROUGH-IN PLAN

ET11A