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

South Putnam High School Track and Field Renovation

South Putnam Community School Corporation
Greencastle, Indiana

Project No. 222152.06

Index of Contents

Addendum No. 1, 6 items, 1 page
Revised Project Manual Sections: 11 68 33 – Athletic Field Equipment and 32 18 13 – Synthetic Grass Surfacing
New Project Manual Section: 32 31 13 – Fences and Gates
New Drawing Sheet: G1.02 – Site Layout Plan Tension Netting
Revised Drawing Sheets: C1.3, and G1.00
Question and Answer log

Date: February 15, 2024

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

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated January 30, 2024, for South Putnam Community School Corporation, 3999 South US Highway 231, Greencastle, Indiana 46135; as prepared by Fanning/Howey Associates, Inc., Indianapolis, 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. Page 00 01 10-1, DIVISION 32: Add Section 32 31 13 – Fences and Gates.

ITEM NO. 2. REVISED PROJECT MANUAL SECTION

A. Sections 11 68 33 – Athletic Field Equipment and 32 18 13 – Synthetic Grass Surfacing have been revised, dated 2/15/24, and are included with and hereby made a part of this Addendum.

ITEM NO. 3. NEW PROJECT MANUAL SECTION

A. New Project Manual Section 32 31 13 – Fences and Gates is included with and hereby made a part of this Addendum.

ITEM NO. 4. PROJECT MANUAL, SECTION 01 23 00 - ALTERNATES

A. Add 3.1, D., as follows:

"D. Alternate No. 4: Provide Pole to Pole Tension Netting System including foundations along west side of stadium area as indicated on the Drawings and described in Specification Section 11 68 33."

ITEM NO. 5. NEW DRAWING SHEET(S)

A. Drawing Sheet No. G1.02 – Site Layout Plan Tension Netting, is included with and hereby made a part of this Addendum.

ITEM NO. 6. REVISED DRAWING SHEET

A. Drawing Sheets: C1.3 and G1.00 have been revised, dated 2/15/24, and is included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM

SECTION 11 68 33 - ATHLETIC FIELD EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Playfields and equipment, including the following:
   1. TNPP36 Cutom Pole-to-Pole Tension Netting System with #36 Nylon Netting and Accessories
   2. TNPPUS Pole-to-Pole Tension Ball Safety Netting System with Ultra Cross Netting and Accessories
   3. “GPKR30HSPL – Custom; 35’ High Fixed Uprights” Base Plate Mount High School Original GoalPak Combination Football/soccer Goal System and Accessories
   4. Field Goal and Time Clock Protective pads – EAGLES
   5. Concrete encasements

B. Related Sections include the following:
   1. Division 31 Section “Earth Moving”: For excavation for installation of concrete footings.

1.2 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.

1.3 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.

1.4 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements. The most restrictive requirements shall govern.
   1. National Federation of State High School Associations (NFHS)
   2. National Collegiate Athletic Association (NCAA)
   3. International Association of Athletics Federations (IAAF)
   4. Federation International de Football Association (FIFA)
   5. ASTM International
   6. American Sports Builders Association (ASBA)
   7. Manufacturer’s Data and Recommended Installation

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.

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.

2.2 MATERIALS

A. TNPP36 – Custom Pole-to-Pole Tension Netting System and Accessories; includes powder coated black steel poles with welded tabs, cabling, hardware per drawings and specifications and black #36 nylon netting with 1-3/4" square mesh and a rope bound perimeter.
   1. Basis of Design: TNPP36 Custom Pole to Pole Tension Netting System with 336 Nylon Netting 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
      b. Or Approved Equal
   2. System to Include: #36 netting, 40' total system height, 40' H x 80' L, (3) Total Poles, 10.750" x 0.365 Pole Length, 5' pole embedment, 40' max pole spacing
      a. Custom Pole-to-Pole Tension Netting System Upright Support Post and Pole Structures – Fabricated, Sized and Configured as Required:
         1) Height above finish grade as required
         2) Super durable powder coated black finish with enhanced resistance to UV and fade
         3) Ground sleeve, base plate or permanent embedment mount
         4) Hot dipped galvanized assembly hardware – quantities, sizes and configurations as required
      b. Custom Pole-to-Pole Tension Netting System Wire Rope Support Structure:
         1) Length, height and configuration as required
         2) 7 x 19 GAC galvanized aircraft cable – 5/16" diameter main horizontal support, 9,800 lb. minimum breaking strength, 3,267 lb. minimum working load limit
         3) 7 x 19 GAC galvanized aircraft cable – ¼" diameter vertical and bottom horizontal supports, 7,000 lb. minimum breaking strength, 2,333 lb. minimum working load limit
         4) Hot dipped galvanized attachment and assembly hardware quantities, sizes and configurations as required
      c. Custom Pole-to-Pole Tension Netting System Net and Rope Bound:
         1) Length, height and configuration as required
         2) #36 twisted knotted netting
         3) 100% nylon construction
         4) 2.6 mm (0.1023") diameter twine
         5) 87% open mesh areas (see-through visibility)
         6) 13,363 psi minimum breaking strength
         7) 1-3/4" (44 mm) square mesh size, 0.0425 lbs. per square foot
         8) Black multi-filament polypropylene solid braid derby rope sewn binding on perimeter edges – ¼" diameter, 530 lb. minimum breaking strength
         9) UV and weather treated
      d. Included Accessories:

1) Hot dipped galvanized attachment and assembly hardware – quantities, sizes and configurations as required
2) Black rope for net binding attachment to wire rope support structure – quantities and configurations as required
3) Stamped and sealed drawings and calculations by a licensed professional engineer of record in the state of project location
4) One (1) year limited manufacturer's product warranty

3. Include manufacturer's stamped and sealed drawings and calculations by a licensed professional engineer for pole to pole tension style ground sleeve inserts or direct pole embedment ball safety netting systems, structural design details for pole and concrete anchoring foundation, based on local building codes and soil conditions, owner to provide required soils report information.

B. TNPPUC – Custom Pole-to-Pole Tension Ball Safety Netting System with Ultra Cross Netting and Accessories; includes powder coated black steel poles with welded tabs, cabling, hardware per drawings and specifications and black Ultra Cross Knotless Dyneema netting with 1-3/4" square mesh and a rope bound perimeter.

1. Basis of Design: TNPPUC Custom Pole-to-Pole Tension Ball Safety Netting System with Ultra Cross Netting 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
   b. Or Approved Equal
2. System to Include: Ultra Cross Net, 45' H x 102' L – Through 3' masonry wall, 37' x 32' x 33' backstop pole spacing, 45' total net height, (4) total poles @ 10.750 x 0.365, 51' total pole length, 6' pole embedment, (4) pole collars
   a. Custom Pole-to Pole Tension Ball Safety Netting System upright support post and pole structures – fabricated, sized and configured as required:
      1) Height above finish grade as required
      2) Super durable powder coated black finish with enhanced resistance to UV and fade
      3) Ground sleeve, base plate or permanent embedment mount
      4) Hot dipped galvanized assembly hardware – quantities, sizes and configurations as required
   b. Custom Pole-to-Pole Tension Ball Safety Netting System wire rope support structure:
      1) Length, height and configuration as required
      2) 7 x 19 GAC galvanized aircraft cable – 5/16" diameter main horizontal support, 9,800 lb. minimum breaking strength, 3,267 lb. minimum working load limit
      3) 7 x 19 GAC galvanized aircraft cable – ¼" diameter vertical and bottom horizontal supports, 7,000 lb. minimum breaking strength, 2,3333 lb. minimum working load limit
      4) Hot dipped galvanized attachment and assembly hardware – quantities, sizes and configurations as required
   c. Custom Pole-to-Pole Tension Ball Safety Netting System net and rope bound border:
      1) Length, height and configuration as require
      2) Ultra cross knotless netting
      3) Dyneema ultra-high molecular weight polyethylene (UHMWPE) SK-75 black fiber construction
      4) 4 ply, 1,2 mm (0.0472") diameter twine
      5) 95% open mesh areas (see0through visibility)
      6) 58,445 psi minimum elongation at break
      7) -3/4" (44mm) square mesh size, 0.009 lbs. per square foot
      8) 4-strand, braided, continuous monofilament Dyneema fiber
      9) Black multi-filament polypropylene solid braid derby rope sewn binding on perimeter edges – ¼" diameter, 530 lb. minimum breaking strength
      10) Urethane black bonded finish
      11) Strong resistance to ultraviolet (UV) light degradation
      12) Excellent resistance to chemicals and water absorption
   d. Included Accessories:

1) Hot dipped Galvanized attachment and assembly hardware- quantities, sizes and configurations as required
2) Black rope for net binding attachment to wire rope support structure – quantities and configurations as required
3) Stamped and sealed drawings and calculations by a licensed professional engineer or record in the state of project location
4) Model specified hardware kit and installation instructions
5) One (1) year limited manufacturer's product warranty

C. Include manufacturer's stamped and sealed drawings and calculations by a licensed professional engineer for pole to pole tension style ground sleeve inserts or direct pole embedment ball safety netting systems, structural design details for pole and concrete anchoring foundation, based on local building codes and soil conditions, owner to provide required soils report information.

D. 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.
1. Basis of Design: "GPKR30HSPL – Custom; 35' High Fixed Uprights" Base Plate Mount High School Original GoalPak Combination Football/soccer Goal System and Accessories as manufactured and/or supplied by: Sprotsfield Specialties, Inc., P.O. Box 231, 41155 State Highway 10, Delhi, NY 13753, Tel. (888) 975-3342, Fax (607) 746-8481
2. Include manufacturer's standard goal post protective pad. Color as required to match school colors.

E. 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.

F. Monuments: Shall be as indicated.
1. Provide monuments at each corner of the football/soccer field.
2. Provide monuments locating centers of track radii.

PART 3 - EXECUTION

3.1 COMPONENTS

A. GP830HSPL Base Plate Mount High School Football Goal Posts:
1. Single Base Plate Mount Gooseneck Support: Fabricated of 6" schedule 40 Aluminum Pipe (6.625" O.D.), 5' Radius, 8' Offset, Custom Offset available as needed.
2. Base Plate Mounting Kit
3. Crossbar: Fabricated of 6" Schedule 40 Aluminum Pipe (6.625" O.D.)
   a. Length: 23'-4" – High School
   b. Includes Patented AdjustRight feature allowing for easy installation through the adjustment of an internal locking rotating sleeve at both the gooseneck/crossbar and upright/crossbar connections. This adjustment can easily be repeated throughout the life of the football goal post ensuring proper alignment of all components for years of competition and all with the added benefit of no exposed hardware on the face of the goal. Thermal arc sprayed internal textured mating surfaces and anti-vibration enhancements such as serrate washers and nyloc coated bolts ends ensure the AdjustRight Football Goal Posts remain in position.
4. Custom Uprights: Fabricated of extruded 6061-T6 Aluminum Tube (4" O.D.) with Rigid Wire Loop Welded to Upper End
   a. Length: 35'

5. Super Durable Powder Coated Finish with Enhanced Resistance to UV and Fade, Yellow or White
6. Installation Package Consisting of the Following Components:
    a. Base Plate Mounting Kit
    b. Access Frame Kit: 1/8" (0.125") Aluminum Construction with 1" PVC Drain Stub, Includes Two (2) Half Moon Filler Plugs and SG2S Patented Soccer Goal Rear Bottom Ground Bar Retractable Safety Clamp System, Use SG2SGP for Synthetic Turf Installation Applications with the optional Full Size Filler Plug.
7. Included Accessories:
    a. Directional Wind Flags
    b. Touch-up Paint (Powder Coat Finish Specific)
    c. Model Specific Hardware Kit and Installation Instructions
8. Optional Accessories to be provided:
    a. Football Goal Post Pads: 18 oz. Vinyl with Polyester Scrim and Vertically Sewn in Hook and Loop Securement, Standard 6' in Height, color to match school marketing color (RED) , with custom digitally printed lettering and/or graphics reading "EAGLES" in (WHITE) lettering.(owner to have final decision)
        1) GPPR – Round, Fully Encased Vinyl, 18" O.D. and 7" I.D. Polyurethane Foam Core
        2) GPPRDG – Custom Digitally Printed Graphics (to match school marketing logo)
    b. Football end Zone Pylons: Set of Four (4) Orange Vinyl Covered Foam Football End Zone Pylons with Self-Standing Weighted Bases, 18"H x 4"L x 4" W

B. SG824R 8' x 24' Regulation Size Round Faced Soccer Goals:
1. Top Crossbar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
    a. Length: 24' – Regulation Size
    b. 4.375" Square x 4.688" Round Faced Crossbar, 3/16" (0.1875") Wall Thickness
    c. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade
    d. 3/16" (0.1875") Thick Formed Aluminum Channel Crossbar Attachment Brackets with Welded Tap Blocks, Mill Finish
2. One Piece End Frame Construction Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
    a. 4.375" Square x 4.688" Round Faced Corner Post, 8'H, 3/16" (.1875") Wall Thickness
    b. Rolled Side Frame, 2" x 3" x 0.125" Thick Wall, TIG welded to Corner Upright Posts
    c. Radius Backside Corners
    d. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade
3. Rear Bottom Ground Bar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
    a. 2" x 2" x 0.25" Thick Wall with Welded ½" Aluminum End Plates
    b. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade
4. Included Accessories:
    a. Welded Aluminum Net Clips with Lifetime Guarantee
    b. 5mm Braided, Knotless White High Tenacity Polypropylene Soccer Net with Rope Bound Perimeter and 4" Square Mesh – 8.2'H x 24.4'L x 4.3'B x 8.6'D
    c. Model Specific Hardware Kit and Installation Instructions
    d. Ground Stake Storage Compartments
    e. All SG824R 8' x 24' Regulation Size Round Faced Soccer Goals Meet and Exceed Current ASTM F2950-14 Standard Safety and Performance Specification for Soccer Goal and F1938-98 Standard Guide for Safer Use of Movable Soccer Goals
    f. Five (5) Year Limited Manufacturer's Product Warranty
5. Included Components:
    a. SGMobile SGMKR – Internal Soccer Goal Portable Mobility Wheel Kit and Handle:
        1) Welded 13 Gauge Stainless Steel Frame

2) Ultra High Molecular Weight Polyethylene (UHMWPE) Plastic Wheel
3) Stainless Steel Hardware
4) Roll Formed Stainless Steel Rod with Stainless Steel Spring and Cushioned Rubber Handle

b. SG2S – Patented Soccer Goal Safety System:
1) Rear Bottom Ground Retractable Safety Clamp Fabricated of 3/16" (0.187") Aluminum
2) Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade
3) Stainless Steel Assembly Hardware
4) Access Frame and Cover Fabricate of 1/8" (0.125") Aluminum with Gasket Seal and 1" PVC Drain Stub
5) 13 Gauge Stainless Steel Pivot Bar
6) Galvanized Steel Anchoring Hardware
7) Use SG2SGP for Synthetic turf installation

6. Field Goal / Time Clock Protective Pads
a. Round
b. 6' Standard height
c. Premium fully encased construction
d. 5'1/2" high impact foam and outdoor vinyl
e. Custom digital graphic – EAGLES – (White) - owner to have final graphic selections prior to the start of construction
f. Pad Color : (RED) – owner to have final color selection prior to the start of construction

3.2 INSTALLATION

A. All Custom GPKR30HSPL Base Plate Mount High School Original GoalPak Combination Football/Soccer Goal System and Accessories shall be installed as recommended per manufacturer's written instructions and s indicated on the drawings. Concrete anchoring foundations to be determined by others based on local soil conditions and building codes.

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

C. 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.

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

END OF SECTION 11 68 33

SECTION 321813 - SYNTHETIC GRASS SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Section Includes:
   1. Synthetic grass infill system and accessories for Football field.
      a. New synthetic grass infill system on new base and subgrade.

C. Related Work:
   1. Division 31 Section “Site Clearing”: For removal of existing synthetic grass surface.
   2. Division 31 Section “Earth Moving”: For preparation of subgrade and field base materials.
   3. Division 33 Section “Sub-drainage”: 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 cross-section 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. Shock Absorbency: Field shall achieve a minimum of 130 Gmax Shock Absorbency at all tested locations and a maximum of 175.

E. 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 surfaces’ 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.

F. 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 as level as practical. 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. The published standards for the regulatory organizations as 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. The published standards for the regulatory organizations as may be applicable for each sport should be referenced.

G. 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 SUBMITTALS

A. Shop Drawings: Prepare at scale of the construction documents and contain all pertinent information regarding 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, goal post detail, other inserts, etc.

3. Striping plan: layouts for football and soccer 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 manufacturers recommended method.
   1. Color samples of A/E selected colors to match School colors.

C. Product Quality Assurance/Control Submittals:
   1. Product Data: For each type of product indicated.
   2. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer 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 Sub-base, drainage system and aggregate base installation: Manufacturer/installer shall certify acceptance of sub-base, 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.

D. Closeout 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.

1.5 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).
   6. Have proper license, in good standing, and have never had a license revoked.
   7. Have not been disqualified or barred from performing work for any public Owner or other contracting entity.
   8. During Submittal Phase: Identify the foreman, supervisor and crew experience for the team executing this project installation. Include a list of completed projects in the last three (3) years by this specified team.
   9. During submittal Phase: Provide documentation of sources of infill materials. Local and regional sources are encouraged whenever possible.

10. Impact testing: The contractor shall engage a third-party testing agency to perform GMAZ testing at substantial completion. No fewer than eight (8) locations on field shall be collected to compile a diverse, random assessment of the field. The intent of testing is to document newly constructed conditions for analysis and benchmarking in subsequent years. Initial construction is not anticipated to exceed GMAX 175.

1.6 WARRANTIES

A. Turf Warranty: Contractor shall provide a 10-year warranty for outdoor applications. The follow conditions shall apply, when applicable:
   1. Coverage shall be for the full system, including drainage function, UV degradation, and fiber strength / stability of the backing, tufted yarn and seam integrity, base construction, and all other related components of the synthetic turf system.

B. Manufacturer's Warranty: Manufacturer shall warrant artificial grass 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: Eight (8) years from date of Substantial Completion.
      b. Warranty shall include materials and workmanship.
      c. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
      d. 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.
      f. All warranties shall be in writing and remain valid should the manufacturer be acquired by another company prior to the conclusion of said warranty.

1.7 MAINTENANCE SERVICE

A. Maintenance Proposal: Provide a separate maintenance proposal, not included in base bid, 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.

1.8 EXTRA MATERIALS

A. Furnish one additional standard infill container with rubber infill for the owners use. Container shall contain a min of 45 c.f. of rubber infill material.

B. Attic Stock: Provide the Owner with a palette of crumb rubber "attic stock" material (2,000 lbs in either 50 lbs individual-wrapped bags or a single oversized bag) at the conclusion of the project for their future use. Ensure the material is an exact match to the approved and installed rubber ballast on the field.

C. Furnish (2) roll of additional synthetic turf fabric for owners use. Roll shall contain a min. of 2000 s.f of turf fabric.
   1. All salvageable pieces of colored turf used during the installation should be left with the Owner.

D. Maintenance Equipment:
   1. FTMAG 7' Tow Behind Magnet
   2. TCA 1400 Sweeper/groomer

PART 2 - PRODUCTS

2.1 MANUFACTURERS/CONTRACTORS

A. Varsity Football Stadium - Manufacturer: Subject to compliance with requirements, provide products from.
   1. Sprinturf LLC , Predator series , 146 Fairchild st ste 150, Daniel Island, SC 29492
      a. Sales rep Contact : Randy Hammond, Midwest Regional Sales Manager, (765) 437-4385, 3909 Sugar Lane, Kokomo, IN 46902 (BASIS OF DESIGN
   2. Motz, 1 Motz Way, Cincinnati, Ohio 45244
   3. PCC Sports LLC, PO BOX 1000, Lee's Summit, MO 64081

B. 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 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.
   1. With substitution request, manufacturer must submit all information in a matrix format that provides the same product information in the format of Article 3.7.

2.2 SYSTEM COMPONENTS

A. Drainage System, by Division 33, Section "Sub-drainage".

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 sub-base and into the field drainage system.

D. Synthetic Turf System:
   1. Football Field (Basis of Design):
      a. Provide attic stock as describe within the 'Warranties' subsection.
      b. The synthetic turf surface should provide the performance characteristics, components and construction that meet the needs of the declared use for the playing field.
      c. 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 it's entirely to excessive ultraviolet degradation.
      d. Fibers for Tufted Systems: The polypropylene or polyethylene fiber should be of flat film, extruded or texturized slit film for football field.
      e. 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.
      f. 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 pre-coat 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.

g. 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.

h. 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.

i. 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.

j. 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.

k. Turf Characteristics:
   1) Fiber Type: Apex Monofilament with SharkTooth Slit-film (basis of design)
   2) Fiber Microns: Apex Mono 380 microns, SharkTooth Slit-film 140 microns (basis of design)
   3) Yarn: UV-Resistant Polyethylene
   4) Turf Bind Strength: 8-10 lbs/force
   5) Face/Pile Yarn Weight: minimum of 50 oz/sq yd.
   6) Total Weight: minimum of 50 oz. , maximum of 55 oz.
   7) GMax Range: 130-165
   8) Base Bid: Infill materials with shock pad: Sand 4lbs and rubber 3lbs
   9) Pile Height: 2”
   10) Base Bid: 2 inch pile height with Schmitz ProPlay 20 shock pad
   11) Colors: Five minimum, manufacturer’s standard colors – lime green, forest green, lime green / forest green blend, blue, red, and white. Custom colors as required

E. Infill Material: Bas Bid - Infill materials are comprised of rubber 3 lbs and sand 4 lbs, there of 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.
   3. Hybrid: Constitutes the use of sand and rubber or other suitable materials in various combinations.

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 colors as selected by the Owner / Architect from custom color selections, to match school colors. Any colors 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.
   3. Consistency: Synthetic turf and fibers utilized for the tufted or inlaid lines, markings, logos or text should be similar to that used in all other areas of the field and installed to the same tolerances.

G. Inserts: Covers for goal sleeves and anchors to synthetic turf.

1. Consistency: The synthetic turf used for the inserts should be similar to that used in the area adjacent to the insert.
2. Installation: The inserts should be anchored securely to 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: New Installation - The nailer strip shall be 2 inch by 4 inch treated “for ground contact” Southern Pine.

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

J. FTMAG – 7’ Tow Behind Magnet:
1. Basis of Design: FTMAG – 7’ Tow Behing Magnet and Accessories as Manufactured and/or Supplied by:
   a. Sportsfield Specialties, Inc.; P.S. Box 231, 41155 State Highway 10 Delhi, NY 13753, P. (888) 975 – 3343
2. System to Include:
   a. Tow behind magnet system for 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: 150lbs.
   f. Store inside when not in use

2.3 Synthetic Turf Underdrainage System

A. Furnish geo-textile covered perforated flat panel drains with all end caps, adapters, transitions and fittings required for a complete system.

B. Approved manufacturers:
1. Hydraway, (800) 223-7015; 12” Hydraway 2000
2. Advanced Drainage Systems, (800) 821-6710; Model AdvanEdge 12” (if available)
3. Varicore Technologies, Inc., (800) 978-8007; Multi-Flow 12”
4. JDR Enterprises, Inc., (800) 843-7569; J-Drain MVP 12”

C. Collector Drains: Utilize G-Series Plans. Include all associated fittings, transitions, end caps, adapters, couplers, outlets, and connectors.

D. Concrete Curb and Perimeter Nailer:
1. Curb: 3,500 PSI, minimum
2. Nailer: 2x4 composite wood or treated wood nailers appropriate for this application, fastened with tapcon or ramset every 24” on center.

2.4 Aggregate: A1 Stone Drainage Layer – Submit laboratory test providing a complete breakdown of the material and permeability prior to starting work.

A. Sieve Size : Percent Passing
1. 1 ½” – 100%
2. 1” – 95-100%
3. ¾” – 80-100%
4. ½” – 60-80%
5. 3/8” – 30-50%
6. #4 – 20-40%
7. #8 – 10-30%
8. #16 – 7-25%
9. #40 – 5-17%
10. #200 – 0-4%

2.5 Aggregate: A2 Washed Stone Chocker Layer – Minor adjustments to aggregate blends may be approved by the Owner with prudent testing data to support the deviation. Permeability must be

greater than 16” per hour for the finished synthetic system. Submit laboratory test providing a complete breakdown of the material and permeability prior to starting the work.

A. Sieve Size : Percent Passing
   1. ½” – 100%
   2. 3/8” – 95-100%
   3. #4 – 70-85%
   4. #8 – 45-60%
   5. #16 – 25-40%
   6. #40 – 2-12%
   7. #200 – 0-3%

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 INSTALLATION

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 treated nailer for the turf attachment to the trench drain footing and curbs 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 manufacturer’s 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: Tie 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.

3.4 FIELD MARKINGS

A. Installer shall install logos, numbers and additional markings as indicated in accordance with process indicated on shop drawings.

3.5 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.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Contractor is to 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.

3.7 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.

3.8 DISPOSAL

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

3.9 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 323113 - FENCES AND GATES

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. This Section includes the following:
   1. Chain-Link Fencing with gates – match ex.
      (site verify ex. Conditions prior to construction)

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide chain-link fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   1. Minimum Post Size and Maximum Spacing for Wind Velocity Pressure: Determine based on mesh size and pattern specified, and on the following minimum design wind pressures and according to CLFMI WLG 2445:
      a. Wind Speed: 90 mph minimum.
   2. Determine minimum post size, group, and section according to ASTM F 1043 for framework up to 12 feet high and post spacing not to exceed 10 feet.

B. Lightning Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

1.4 SUBMITTALS

A. Shop Drawings: Show locations of fences, gates, posts, rails, tension wires, details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.

B. Quality Assurance/Control Submittals:
   1. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fences and gates.
      a. Fence and gate posts, rails, and fittings.
      b. Chain-link fabric, reinforcements, and attachments.
      c. Gates and hardware.
      d. Accessories: Privacy slats
   2. Product Certificates: For each type of chain-link fence and gate, signed by product manufacturer.
      a. Strength test results for framing according to ASTM F 1043.
   3. Qualification Data: For Installer.

C. Closeout Submittals:
   1. Maintenance Data: For the following to include in maintenance manuals:
      a. Polymer finishes.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

B. Interruption of Existing Utility Service: Do not interrupt utility services to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Architect no fewer than two days in advance of proposed interruption of utility services.
   2. Do not proceed with interruption of utility services without Architect's written permission.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 Articles where titles below introduce lists, the following requirements apply to product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

B. 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 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Height indicated on Drawings. Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with ASTM A 392, CLFMI CLF 2445, and requirements indicated below:
   1. Steel Wire Fabric and Mesh Size: 2-inch mesh, metallic-coated wire with a diameter of 0.148 inch
      a. Provide 1-3/4-inch mesh, 0.120 inch diameter at tennis courts.
      b. Weight of Aluminum Coating: ASTM A 491, Type I, 0.4 oz./sq. ft.
      c. Polymer Coating: Where called for, ASTM D 668, Class 2b over metallic-coated steel wire.
         1) Color: Black, As selected by Architect from manufacturer's full range, complying with ASTM F 934.
      d. Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer's standard clear protective coating.

   2. Selvage: Knuckled at both selvages, unless otherwise noted.
      a. Twisted top and knuckled bottom, at mechanical yard enclosures.

2.3 INDUSTRIAL FENCE FRAMING

A. Posts and Rails: Comply with ASTM F 1043 for framing, ASTM F 1083 for Group IC round pipe and the following:
   1. Group: Provide either IA, round steel pipe, Schedule 40 or IC, round steel pipe, yield strength 50,000 psi.
   2. Fence Height: As indicated.
   3. Post Size and Thickness: According to ASTM F 1043.
      a. Intermediate Posts
         1) Fabric 10 feet and under:
            a) IA: 2.375-inch o.d. with .154-inch wall thickness, 3.65 lbs. per foot.
            b) IC: 2.375-inch o.d. with .130-inch wall thickness, 3.12 lbs. per foot.

2) Fabric over 10 feet high:
a) IA: 2.875-inch o.d. with .203-inch wall thickness, 5.79 lbs. per foot.
b) IC: 2.875-inch o.d. with .160-inch wall thickness, 4.64 lbs. per foot.

b. End, Corner, and Pull Posts
1) General
a) End post will be used to refer to terminal posts.
b) Corner post will be installed where all changes in direction occur in the fence line of 30 degrees or more.
c) Pull post shall be installed at all abrupt changes in grade or at locations directed by the Architect with a maximum spacing between pull posts not to exceed 500 feet.
2) Fabric 10 feet and under
a) IA: 2.875-inch o.d., with .203-inch wall thickness, 5.79 lbs. per foot.
b) IC: 2.875-inch o.d., with .160-inch wall thickness, 4.64 lbs. per foot.
3) Fabric over 10 feet high
a) IA: 4.0-inch o.d. with .226-inch wall thickness, 9.12 lbs. per foot.
b) IC: 4.0-inch o.d. with .160-inch wall thickness, 6.56 lbs. per foot.
4) Tennis Court Fencing
a) IA: 5.0-inch o.d. with .226-inch wall thickness, 9.12 lbs. per foot.
b) IC: 5.0-inch o.d. with .160-inch wall thickness, 6.56 lbs. per foot.
5) Baseball backstop
a) IA: 5.0-inch o.d. with .226-inch wall thickness, 9.12 lbs. per foot.
6) Softball backstop
a) IA: 4.0-inch o.d. with .226-inch wall thickness, 9.12 lbs. per foot.

4. Coating for Steel Framing:
a. Metallic Coating, unless otherwise noted.
1) IA: Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
2) IC: Type C, Zn-5-A1-MM alloy, consisting of not less than 1.8 oz./sq. ft. coating.
b. Polymer coating over metallic coating, BLACK.
5. Posts shall have sufficient length to meet the following embedment requirements:
a. Intermediate Posts: 36 inches (into concrete).
b. End, Corner, and Pull Posts:
1) Fabric 10 feet and under: 36 inches.
2) Fabric over 10 feet: 44 inches.
c. Gate Posts: 48 inches.
d. Tennis Court Fencing, baseball and softball backstops: 60 inches.

B. Post Brace Rails: Match top rail for coating and strength and stiffness requirements. Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and clamps for attaching rails to posts.
1. Provide for fences with fabric 6 feet or more in height.

C. Top Rails: Fabricate top rail from lengths 21 feet or longer, with swedged-end or fabricated for expansion-type coupling, forming a continuous rail along top of chain-link fabric.
1. The top rail shall be 1.660 inches o.d. pipe, provided in lengths not less than 18 feet unless otherwise noted, and fitted with couplings for connecting the lengths into a continuous run.
a. IA: .140-inch wall thickness, 2.27 lbs. per lineal foot.
b. IC: .111-inch wall thickness, 1.836 lbs. per lineal foot.
2. Couplings: Top rail couplings shall be a minimum of 6 inches long and at 21 feet maximum intervals, providing a substantial connection and allowing for expansion and connection of the rail.
3. The top rail shall pass through the line post tops and form a continuous brace from end to end of each stretch of fence.
4. The top rail shall securely fasten to the terminal posts by heavy pressed steel brace bands and malleable rail end connections.

D. Intermediate Rails: Match top rail for coating and strength and stiffness requirements.
   1. Provide for fences with fabric 8 feet and over, unless otherwise noted.

E. Bottom Rails: Match top rail for coating and strength and stiffness requirements.
   1. Provide only if indicated.

2.4 TENSION WIRE

A. General: Provide horizontal tension wire at the following locations:
   1. Location: Extended along bottom of fence fabric, unless otherwise noted.

B. Metallic-Coated Steel Wire: 0.177 inch diameter, marcelled tension wire complying with ASTM A 817/A 824 and the following:
   1. Coating: Type I, aluminum coated (aluminized)
      a. Class 2: Not less than 1.2 oz./sq. ft. of uncoated wire surface.

2.5 SWING GATES (CHAIN-LINK)

A. General: Comply with ASTM F 900 for the following swing-gate types:
   1. Single gate.
   2. Double gate.

B. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1083 and ASTM F 1043 for materials and protective coatings.

C. Frames and Bracing: Fabricate members from round tubing with outside dimension and weight according to ASTM F 900.

D. Frame Corner Construction: As follows:
   1. Welded.

E. Gate Posts: Fabricate members from round galvanized steel pipe with outside dimension and weight according to ASTM F 900 for the following gate fabric heights and leaf widths:
   1. Gate leaf up to 6 feet wide.
      a. IA: 2.875 inch o.d. with 0.203-inch wall, 5.79 lbs. per lineal foot.
      b. IC: 2.875 inch o.d. with 0.160-inch wall, 4.64 lbs. per lineal foot.
   2. Gate leaf over 6 to 13 feet wide
      a. IA: 4 inch o.d. with 0.226-inch wall, 9.10 lbs. per foot.
      b. IC: 4 inch o.d. with 0.160-inch wall, 6.56 lbs. per foot.
   3. Gate leaf over 13 to 18 feet wide.
      a. IA: 6.625 inch o.d. with 0.280-inch wall, 18.97 lbs. per foot.
   4. Gate leaf over 18 feet wide.
      a. IA: 8.625 inch o.d. with 0.322-inch wall, 28.55 lbs. per foot.
   5. Gateposts shall be equipped with tops so designed to exclude moisture from the post.

F. Hardware: Latches permitting operation from both sides of gate, hinges, center gate stops and, for each gate leaf more than 5 feet wide, keepers. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.
   1. Hinges: Shall be adequate strength for gate, and with large bearing surfaces for clamping in position. The hinges shall not turn or twist under that action of the gate. The gates shall be capable of being opened and closed easily by one person. Hinges will be designed with offset arms to permit a 180-degree swing. Provide one pair hinges for each gate leaf.
   2. Latch: Shall have a padlock eye or provision for padlocking (one padlock for locking both gate leaves), and shall permit single gate to swing only in one direction. Latches shall be forked-type for single gates and forked-type plunger bar for double gates to permit operation from both sides of gate. The plunger rod shall be a minimum 1-3/8 inch o.d. The center of the latch is to be 3 feet above grade.

3. Stops: Center stops for double gates shall consist of a device arranged to be set in concrete and to engage the plunger bar of the latch. Stop is to be a mushroom type or flush plate with anchors.
4. Keeper: Provide keepers for each gate leaf over 5 feet wide, which shall consist of a mechanical device for securing the free end of the gate when in a full open position. All vehicle or drive gates shall be equipped with "semi-automatic" outer catches to secure gate in open position (automatically holds gate in the open position until manually released).

2.6 FITTINGS

A. General: Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.

B. Post and Line Caps: Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide weathertight closure cap for each post.
1. Provide line post caps with loop to receive top rail.

C. Rail and Brace Ends: Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:
1. Top Rail Sleeves: Hot-dip galvanized pressed steel or round steel tubing. Not less than 6 inches long.
2. Rail Clamps: Hot-dip galvanized pressed steel. Provide line and corner boulevard clamps for connecting intermediate rails in the fence line to line posts.

E. Tension and Brace Bands: Hot-dip galvanized pressed steel.

F. Tension Bars: Hot-dip galvanized steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Truss Rod Assemblies: Hot-dip galvanized steel rod and turnbuckle or other means of adjustment.

H. Tie Wires, Clips, and Fasteners: Provide the following types according to ASTM F 626:
1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
a. Hot-Dip Galvanized Steel: 0.148-inch diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
2. Round Wire Hog Rings: Hot-dip galvanized steel for attaching chain-link fabric to horizontal tension wires.

2.7 CAST-IN-PLACE CONCRETE

A. General: Comply with ACI 301 for cast-in-place concrete.

B. Materials: Portland cement complying with ASTM C 150 Type I or III, aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94.
1. Concrete Mixes: Normal-weight concrete air entrained with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.

2.8 FENCE GROUNDING

A. Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
1. Material Above Finished Grade: Copper or aluminum.
2. Material On or Below Finished Grade: Copper.

3. Bonding Jumpers: Braided copper tape, 1 inch wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.

2.9 POLYMER FINISHES

A. Supplemental Color Coating: In addition to specified metallic coatings for steel where called for, provide fence components with polymer coating (black).

B. Metallic-Coated Steel Tension Wire: PVC-coated wire complying with ASTM F 1664, Class 2b.

C. Fittings, Post and Line Caps, Rail and Brace Ends, Top Rail Sleeves, Tension and Brace Bands, Tension Bars, Truss Rod Assemblies, Barbed Wire Arms, Clips, and Fasteners: Comply with ASTM F 626 for polymer coating applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces.
1. Polymer Coating: Not less than 10 mil thick PVC.

D. Color: To match chain-link fabric complying with ASTM F 934, unless otherwise noted.

2.10 GROUT AND ANCHORING CEMENT

A. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Erosion-Resistant Anchoring Cement: Factory-packaged, non-shrink, non-staining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

2.11 FENCE GROUNDING

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance.
1. Do not begin installation before final grading is completed, unless otherwise permitted by Architect.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 300 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.

3.4 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacing’s indicated, in firm, undisturbed soil.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
    a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water, unless otherwise noted.
    b. Concealed Concrete, where indicated: Top **2 inches** below grade as indicated on Drawings to allow covering with surface material.
    c. Posts Set into Concrete in Sleeves, where indicated only: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
    d. Posts Set into Voids in Concrete, Contractor's option: Form or core drill holes not less than 5 inches deep and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
3. Dimensions and Profile: As indicated hereinafter, unless otherwise noted on Drawings.
    a. Size of Footings: Concrete is to extend a minimum of 6 inches below bottom of post. Typical footings shall be as follows (see note under Installation for deeper excavations as required in loose soils and for posts with heavy lateral loads).
        1) Intermediate posts up to 10 feet high: minimum 12 inch diameter by 3'-6" below grade.
        2) Intermediate posts 10 feet high and above: minimum 14 inch diameter by 3'-6" below grade.
        3) End, corner, pull posts under 6 feet: minimum 14 inch diameter by 3'-6" below grade.
        4) End, corner, pull posts 6 feet to 10 feet: minimum 18 inch diameter by 3'-6" below grade.
        5) End, corner, pull posts above 10 feet: minimum 18 inch diameter by 4'-2" below grade.
        6) Gate posts under 6 feet wide leaf: minimum 14 inch diameter by 4'-6" below grade.
        7) Gate posts 6 feet to 13 feet wide leaf: minimum 18 inch diameter by 4'-6" below grade.
        8) Gate posts 13 feet to 18 feet wide leaf: minimum 24 inch diameter by 4'-6" below grade.
        9) Baseball backstop (30 feet high) posts: minimum 24 inch diameter by 5' below grade. (Note: 5 feet below 4 inches thick concrete).
        10) Softball backstop (22 feet high back): minimum 18 inch diameter by 5' below grade.
        11) Baseball foul pole posts: minimum 24-inch diameter by 6 feet below grade.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more, unless otherwise indicated.

D. Line Posts: Space line posts uniformly at 10 feet max. o.c., unless otherwise noted.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts.
1. Locate horizontal braces at mid height of fabric 6 feet or higher, on fences with top rail and at 2/3 fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.
   1. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.

G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

H. Intermediate and Bottom Rails: Install, spanning between posts, where indicated or required for performance.

I. Chain-Link Fabric: Apply fabric to outside of enclosing framework, unless otherwise indicated. Leave 1 ½ inches between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
   1. At tennis courts, apply fabric inside of enclosing framework and leave 1 inch gap between top of playing surface and bottom of selvage.

J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at 1 end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
   1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

M. Privacy Slats: Install slats in locations noted vertical and securely locked in place.
   1. Vertically, for minimum privacy factor of 70 to 75.

3.5 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 GROUNDING AND BONDING

A. Fence Grounding: Install at fences 10 feet and over, at maximum intervals of 1500 feet except as follows:
   1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.
      a. Gates and Other Fence Openings: Ground fence on each side of opening.
         1) Bond metal gates to gate posts.
         2) Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches below finished grade.

B. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a maximum distance of 150 feet on each side of crossing.

C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location.

D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
   1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
   2. Make connections with clean, bare metal at points of contact.
   3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
   4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
   5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

F. Bonding to Lightning Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor complying with NFPA 780.

3.7 ADJUSTING

A. Gate: Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

3.8 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's personnel to adjust, operate, and maintain fencing and gates. Refer to Division 01 Section "Closeout Procedures."

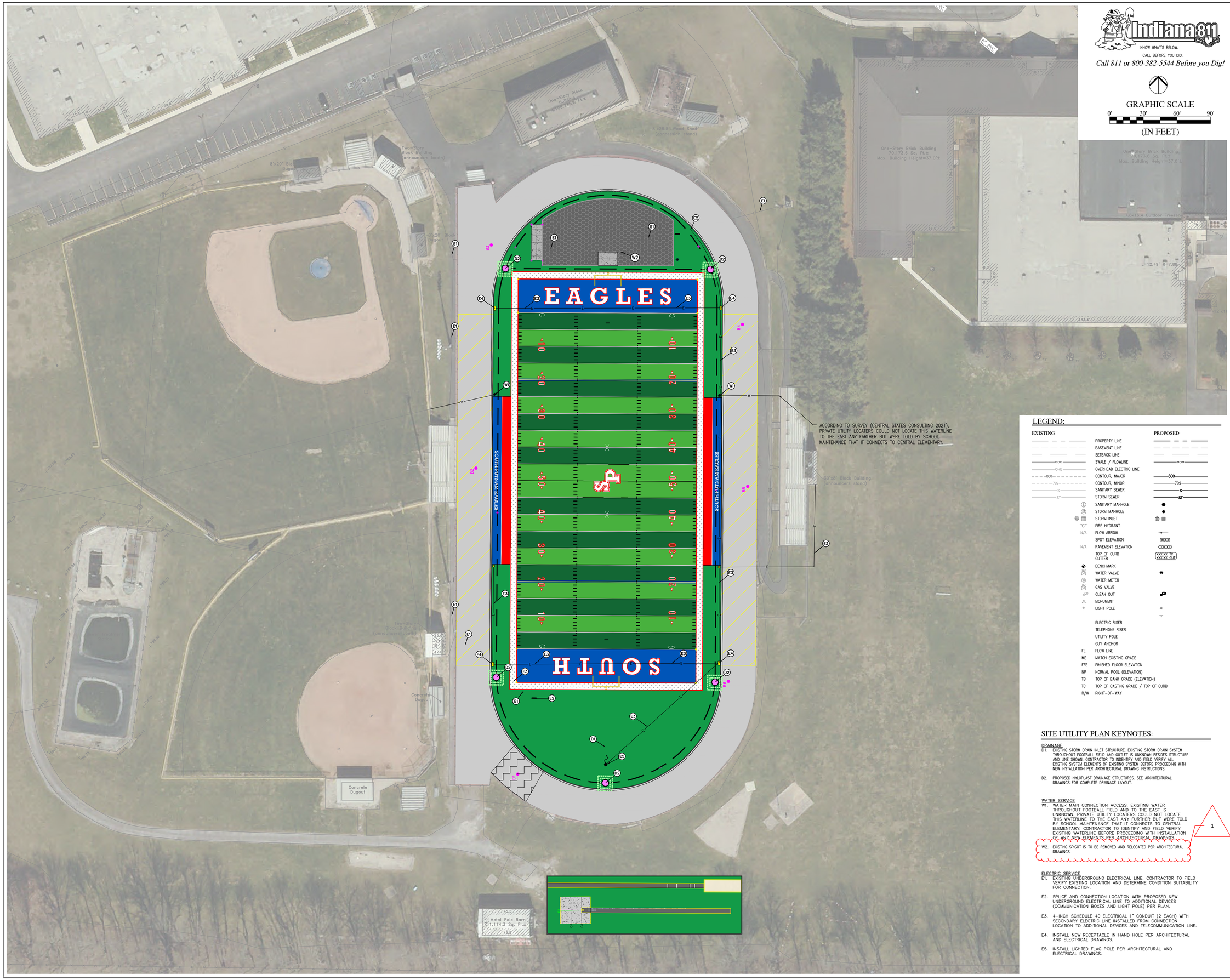
END OF SECTION 323113

SPCSC - SPHS Track & Field Renovations

Items in **RED** represent MKS responses:
Items in **GREEN** represent ARCHITECT HERE responses:

Addendum 1 - Q&A during Pre Bid

#	Question	Page	Location	Date Sent	Answer	Date Answered	Addenda #
1	Notes 6, 8, 9 and 32 on G1.00 direct you to G1.02. G1.02 was not included in the documents. Would help to have a base bid drawing for lettering and logo's and an alternate drawing.	G1.00		2/2/2024	See sheet G1.01 for notes 6, 8, 9 and 32 on G1.00. Issued drawing clearly calls out alternate work, thus a second drawing indicateing alternate work is not necessary.	2/13/2024	1
2	Note 29 directs you to GD1.00. GD1.00 was not included in the documents.	G1.00		2/2/2024	See site demolition plan and electridal drawings for further information.	2/13/2024	1
3	No inverts shown where main collector pipe connects to the nyloplast structures. Notes direct bidder to C1.2 Grading Plan. Nothing on that drawing.	C1.2, C1.3, G series		2/2/2024	Information of existing storm system will need to be investigated on site by contractor. Existing structure, rim elevations and pipe inverts are unknown, thus new elevations can't be provided. New inverts are to be established on site by contractor per plan notes.	2/13/2024	1
4	Budget included a 2'W x 3'D trench for perimeter collector pipe. Detail 14 will increase overall price.	G4.00		2/2/2024	Perimeter trench need to be constructued per detail 14 - trench depth and width taken into drainage calculations.	2/13/2024	1
5	SD Drawings show grass around Long Jump and Pole Vault events. This drawing shows artificial turf. This will raise the overall price on the track.	G1.00		2/2/2024	This is an owner request made during design.	2/13/2024	1



Indiana 811
KNOW WHAT'S BELOW.
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GRAPHIC SCALE
0' 30' 60' 90'
(IN FEET)

LEGEND:

EXISTING		PROPOSED
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK LINE	
ooo	SWALE / FLOWLINE	ooo
OHE	OVERHEAD ELECTRIC LINE	
800	CONTOUR, MAJOR	800
799	CONTOUR, MINOR	799
S	SANITARY SEWER	S
ST	STORM SEWER	ST
S	SANITARY MANHOLE	●
ST	STORM MANHOLE	●
	STORM INLET	
	FIRE HYDRANT	
N/A	FLOW ARROW	
XXX.X	SPOT ELEVATION	XXX.X
N/A	PAVEMENT ELEVATION	XXX.XX
	TOP OF CURB GUTTER	XXX.XX TC XXX.XX GUT
	BENCHMARK	
	WATER VALVE	
	WATER METER	
	GAS VALVE	
	CLEAN OUT	
	MONUMENT	
	LIGHT POLE	
	ELECTRIC RISER	
	TELEPHONE RISER	
	UTILITY POLE	
	GUY ANCHOR	
FL	FLOW LINE	
ME	MATCH EXISTING GRADE	
FFE	FINISHED FLOOR ELEVATION	
NP	NORMAL POOL (ELEVATION)	
TB	TOP OF BANK GRADE (ELEVATION)	
TC	TOP OF CASTING GRADE / TOP OF CURB	
R/W	RIGHT-OF-WAY	

SITE UTILITY PLAN KEYNOTES:

DRAINAGE

D1. EXISTING STORM DRAIN INLET STRUCTURE. EXISTING STORM DRAIN SYSTEM THROUGHOUT FOOTBALL FIELD AND OUTLET IS UNKNOWN BESIDES STRUCTURE AND LINE SHOWN. CONTRACTOR TO INDENTIFY AND FIELD VERIFY ALL EXISTING SYSTEM ELEMENTS OF EXISTING SYSTEM BEFORE PROCEEDING WITH NEW INSTALLATION PER ARCHITECTURAL DRAWING INSTRUCTIONS.

D2. PROPOSED NYLOPLAST DRAINAGE STRUCTURES. SEE ARCHITECTURAL DRAWINGS FOR COMPLETE DRAINAGE LAYOUT.

WATER SERVICE

W1. WATER MAIN CONNECTION ACCESS. EXISTING WATER THROUGHOUT FOOTBALL FIELD AND TO THE EAST IS UNKNOWN. PRIVATE UTILITY LOCATERS COULD NOT LOCATE THIS WATERLINE TO THE EAST ANY FURTHER BUT WERE TOLD BY SCHOOL MAINTENANCE THAT IT CONNECTS TO CENTRAL ELEMENTARY. CONTRACTOR TO IDENTIFY AND FIELD VERIFY EXISTING WATERLINE BEFORE PROCEEDING WITH INSTALLATION OF ANY NEW ELEMENTS PER ARCHITECTURAL DRAWINGS. 1

W2. EXISTING SPIGOT IS TO BE REMOVED AND RELOCATED PER ARCHITECTURAL DRAWINGS.

ELECTRIC SERVICE

E1. EXISTING UNDERGROUND ELECTRICAL LINE. CONTRACTOR TO FIELD VERIFY EXISTING LOCATION AND DETERMINE CONDITION SUITABILITY FOR CONNECTION.

E2. SPLICE AND CONNECTION LOCATION WITH PROPOSED NEW UNDERGROUND ELECTRICAL LINE TO ADDITIONAL DEVICES (COMMUNICATION BOXES AND LIGHT POLE) PER PLAN.

E3. 4-INCH SCHEDULE 40 ELECTRICAL 1" CONDUIT (2 EACH) WITH SECONDARY ELECTRIC LINE INSTALLED FROM CONNECTION LOCATION TO ADDITIONAL DEVICES AND TELECOMMUNICATION LINE.

E4. INSTALL NEW RECEPTACLE IN HAND HOLE PER ARCHITECTURAL AND ELECTRICAL DRAWINGS.

E5. INSTALL LIGHTED FLAG POLE PER ARCHITECTURAL AND ELECTRICAL DRAWINGS.

SOUTH PUTNAM HS TRACK AND FIELD RENOVATION

1780 US-40,
GREENCASTLE,
IN 46135
(765) 653-3148

SOUTH PUTNAM COMMUNITY SCHOOL CORPORATION

ENGINEER

HWC ENGINEERING
317-347-3663 WWW.HWCENGINEERING.COM
135 N. PENNSYLVANIA STREET, SUITE 2800, INDIANAPOLIS, IN. 46204

KEY PLAN

100% CONSTRUCTION DOCUMENTS

RYAN A. ROBINSON REGISTERED No. 11400364 STATE OF INDIANA PROFESSIONAL ENGINEER
Ryan A. Robinson

PROJECT MANAGER: RR

DRAWN BY: BP

PROJECT NUMBER: 222152.06 (FH), 2024-005-S (HWC)

PROJECT ISSUE DATE: JANUARY 30TH, 2024

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM #1	2/15/2024

UTILITY PLAN

C1.3

SITE GRAPHIC PLAN: SP FOOTBALL FIELD

SCALE: 1" = 20'-0"

PROPOSED SITE LEGEND

⁘	CONCRETE PAVING/PADS
▦	NEW D-ZONE 6" CONC. PADS
⬢	NEW DZONE ASPHALT PAVING WITH APPROVED SYNTHETIC TRACK SURFACING SYSTEM
▭	SUBSIDING TRACK RENOVATION WITH NEW APPROVED SYNTHETIC TRACK SURFACING SYSTEM
▨	ALT FULL DEPTH TRACK RENOVATION WITH NEW APPROVED SYNTHETIC TRACK SURFACING SYSTEM
■	NEW TRACK EVENT AREAS WITH NEW APPROVED SYNTHETIC TRACK SURFACING SYSTEM
🟩	NEW SYNTHETIC TURF AREAS
☐	FOOTBALL FIELD OUT OF BOUNDS AREA : WHITE TURF
⊕	(3) NEW WATER ACCESS POINTS
🟨	(6) NEW COMBOX/ELECTRICAL ACCESS POINTS SEE ELECTRICAL DRAWINGS AND PLAN NOTES TYP
●	NYLOPLAST DRAIN STRUCTURE

PLAN LAYOUT NOTES

1. ARTIFICIAL TURF FOOTBALL FIELD WITH ACCESSORIES, SEE DETAILS #1,2 SHT G4.00 FOR FURTHER INFORMATION

2. (2 TOTAL) GOALPAK® COMBINATION FOOTBALL / SOCCER GOAL SYSTEM WITH SAFETY PADS (RED) – TO READ "EAGLES" IN (WHITE) LETTERING – BY SPORTSFIELD SPECIALTIES, OR APPROVED EQUAL. (DO NOT PROVIDE SOCCER GOAL) PROVIDE HIGH SCHOOL REGULATED FIELD GOALS WITH GOOSENECK AND REGUALTION POLES. REFER TO MANUFACTURERS SPECIFICATIONS FOR FURTHER CLARIFICATION ON TYPE AND INSTALL REQUIREMENTS

3. SYNTHETIC TURF END ZONE (BLUE)– TO MATCH SCHOOL BRANDING COLOR, OWNER TO HAVE FINAL COLOR SELECTION

4. INSTALL #3500 COMBOX AS SUPPLIED BY SPORTS FIELD SPECIALTIES, OR APPROVED EQUAL ENCASED IN CONC. PAVING – IN LOCATIONS AS NOTED AND AS DIRECTED BY OWNER/ARCHITECT. PROVIDE ONE COMBOX WITIHIN SYNTHETIC TURF AT TRACK FINISH LINE, RELAY POINTS AS SHOWN AND AT COACH/TEAM BOX LOCATIONS – PROVIDE LID/COVER WITH SYNTHETIC TURF – COMBOX LID/COVER FINISH GRADE IS TO BE FLUSH WITH FINISH GRADE OF SYNTHETIC TURF SURFACING SYSTEM, SEE E001 AND ES101 FOR FURTHER INFORMATION

5. FIELD TURF COLOR – ALTERNATING PANELS AS SHOWN OF – (FOREST GREEN) AND (LIME GREEN) – OWNER TO HAVE FINAL COLOR SELECTION TYP, SEE SHT G1.01 FOR GRAPHICAL REFERENCE

6. SOUTH PUTNAM HIGH SCHOOL : 'SOUTH' AND 'EAGLES' ENDZONE LETTERING OUTLINE (RED) WITH (WHITE ROCKWELL BOLD) LETTERING O.C.. WITHIN ENDZONE, REFER TO SOUTH PUTNAM'S BRANDING REQUIREMENTS FOR FURTHER DETAILS

7. NEW WATER ACCESS POINTS (2) SET AT COAH/TEAM BOX AREAS (SEE PLANS) – INSTALL PER MANUFACTURES WRITTEN RECOMMENDATIONS TYP

8. SOUTH PUTNAM CENTER FIELD 'SP EAGLE' LOGO – TO MATCH APPROVED MARKETING GRAPHIC COLORS FOR SOUTH PUTNAM HIGH SCHOOL – ACQUIRE FROM OWNER

9. COACH/TEAM BOX AREAS : COACH BOX (RED) , TEAM BOX (BLUE) SYNTHETIC TURF (TO MATCH SCHOOL COLOR)

10. EXISTING SCOREBOARD AND SUPPORTS TO REMAIN – SITE VERIFY AND PROTECT DURING CONSTRUCTION – SEE ELECTRICAL DRAWINGS FOR FURTHER INFORMATION

11. FOOTBALL NUMERALS AND MARKINGS, SEE DETAILS #2–4 G1.01

12. RESTRICTED AREA, REFER TO SHT G1.01 FOR FURTHER INFORMATION

13. OUT OF BOUNDS AREAS : (FOREST GREEN / LIME GREEN) TURF AREAS – OWNER IS TO HAVE FINAL COLOR SELECTION PRIOR TO CONSTRUCTION TYP

14. DIRECTIONAL ARROWS OUTLINE (RED) WITH (WHITE) CENTER, REFER TO DETAILS #2–4 G1.01 FOR FURTHER INFORMATION

15. KICK OFF MARKS, SEE DETAIL #3 SHT G1.01

16. SIDELINE AND INBOUND LINES, SEE DETAIL #2 SHT G1.01

17. RELOCATED WATER ACCESS : RELOCATE AND PROVIDE A RECESSED WATER HOSE CONNECTION – PROVIDE BRASS COVER PLATE FLUSH WITH FG OF TURF SYSTEM – INSTALL PER MANUF. WRITTEN RECOMMENDATION

18. CONCRETE LONG JUMP RUNWAYS/PIT (1 TOTAL), SEE DETAILS #10, 12, 13 SHT G4.00

19. CONCRETE POLE VAULT RUNWAY AND PAD (1 TOTAL), SEE DETAIL 11 G4.00

20. HIGH JUMP 6" CONCRETE PAD – PROVIDE CONTROL JOINTS WITHIN PAD AS NEEDED, PROVIDE EXPANSION JOINT AROUND PERIMETER TYP – SEE DETAILS #5, 6, 7, 8 SHT G4.00

21. NEW 1/2" THICK POLYURETHANE SYNTHETIC TRACK SURFACING SYSTEM / ASPHALT PAVING WITHIN NORTH DZONE AND HIGH JUMP APPROACH AREA, SEE DETAIL #3 SHT G4.00

22. EXISTING GRANDSTANDS (2+/–) AND PRESS BOX TO REMAIN – PROTECT DURING CONSTRUCTION, SITE VERIFY EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION TYP

23. TRACK RENOVATION SITE WIDE (BASE BID): CLEAN AND REPAIR CRACKS WITHIN EXISTING TRACK SURFACING PRIOR TO APPLYING A APPROVED POLYURETHANE BINDER TO SUBSIDING AND DELAMINATING BASEMAT AREAS PRIOR TO APPLYING NEW POLYURETHANE TRACK SURFACE WEAR COATS AND RUBBER BROADCAST (3 COATS EACH) AND STRUCTURAL SPRAY (2 COATS) TYP. APPLY NEW TRACK COLOR SYSTEM TO ENTIRE TRACK (GRAY). PROVIDE NEW PAVEMENT MARKINGS AND EVENT MARKINGS WITHIN EXISTING TRACK TO MATCH EXISTING TRACK CONDITIONS – PROVIDE NEW REGULATION EXCHANGE ZONES WITH UPDATED MARKERS – ALL MARKINGS ARE TO ADHERE TO THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFHS) STANDARDS & REQUIREMENTS. SITE VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION – CONTRACTOR IS TO SUBMIT TRACK LAYOUT PLAN FOR OWNER/ARCHITECT APPROVAL PRIOR TO THE START OF CONSTRUCTION TYP. SEE DETAILS #1, 3, 9 SHT G4.00

24. (2) EXISTING TIME CLOCKS, TO BE RE-INSTALLED PER MANUFACTURERS WRITTEN RECOMMENDATIONS/STANDARDS – PROVIDE (2) NEW TIME CLOCK SUPPORT POST (BLACK) PVC COATED AND FOOTINGS – INSTALL FOOTINGS PER LOCAL AND STATE REGULATIONS – SEE ELECTRICAL DRAWING ES101 FOR FURTHER INFORMATION. PROVIDE (2) NEW PROTECTIVE PADS (RED) TO READ "EAGLES" IN (WHITE) LETTERING – BY SPORTSFIELD SPECIALTIES

25. TRACK RENOVATION: SAW CUT AND REMOVE SUBSIDING AREA NOTED IN IT'S ENTIRETY – SITE VERIFY LOCATION PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO CM AND ARCHITECT – ADD SUPPLEMENTAL AGGREGATE BASE COURSE TO EX. BASE AND COMPACT TO REQUIRED TOLERANCES SPECIFIED BY TRACK SURFACING MANUFACTURE AND PROJECT MANUAL PRIOR TO APPLYING NEW BASE COURSE AND SURFACE COURSE ASPHALT. ALLOW ASPHALT PAVING TO CURE 30 DAYS PRIOR TO APPLYING NEW APPROVED $\frac{1}{2}$" POLYURETHANE TRACK SYSTEM , COLOR (GRAY) AND PAVEMENT MARKINGS PER NFHS STANDARDS

26. EXISTING PAVING TO REMAIN – TYP

27. ALL EXISTING LAWN SPACES TO REMAIN – PROTECT DURING CONSTRUCTION TYP

28. PERIMETER CURBING – 6"X10" CONCRETE CURBING, SEE DETAIL 1 SHT G4.00

29. EXISTING ELECTRICAL LINES TO REMAIN – SEE SITE DEMO PLAN AND ELECTRICAL DRAWINGS FOR FURTHER INFORMATION

30. NEW NYLOPLAST STRUCTURES (5) AND PERIMITER 12" PERF. DRAIN MAINLINE – SEE SHT G2.00 FOR FURTHER INFORMATION. PROVIDE TURF CAP OVER STRUCTURE LIDS TYP.

31. TRACK RADIUS POINTS : 6" WIDE BY 10" DEEP CONCRETE CURBING LOCATED AT TRACK "D" ZONES – PROVIDE CONTROL JOINTS EVERY 10' AND EXPANSION JOINTS EVERY 40' UNLESS NOTED OTHERWISE – CURB TO BE INSTALLED PER TURF MANUFACTURES WRITTEN RECOMMENDATIONS, –EXISTING TRACK PAVING SURFACING TO REMAIN – CONTRACTOR IS TO REPAIR ALL DISTURBED AREAS TO REMAIN TYP. SEE DETAIL #1 G4.00 FOR FURTHER INFORMATION

32. 'SOUTH PUTNAM EAGLES' LETTERING (ROCKWELL) O.C. WITHIN COACH/TEAM BOX AREAS (2) – SEE SHT G1.01 FOR FURTHER INFORMATION

33. SAWCUT AND REMOVE 8"+/– OR AS NEEDED OF EXISTING ASPHALT PAVING AND TRACK SURFACING FOR PLACEMENT OF NEW CONC. CURB. , SEE CIVIL SHT C0.1 FOR DEMOLITION PLAN. AT EX. NORTH D-ZONE – SAW CUT AND REMOVE ENTIRE DZONE ZONE PRIOR TO PROVIDING NEW 1/2" POLYURETHANE SYNTHETIC TRACK SURFACING AND PAINTED (WHITE) LANE LINE WITHIN INSIDE EDGE OF LANE ONE – PROVIDE TRACK SURFACING ACROSS 6" CURB @ RADIUS POINTS – INSTALL PER MANUF. WRITTEN RECOMMENDATION

34. PROVIDE USA BLUE 20 YRD LINE INDICATORS – INSTALL PER MANUF. RECOMMENDATIONS

35. NEW FLAGPOLE AND UP LIGHTING: INSTALL PER MANUF. WRITTEN RECOMMENDATION FOR INSTALLATION WITHIN SYNTHETIC TURF FIELD CONDITION – SEE DETAILS #1 SHT G1.01 AND ES101 ELECTRICAL DRAWINGS FOR FURTHER INFORMATION

36. GENERAL SITE NOTE FOR PROJECT SITE ; EXISTING SANITARY SYSTEM LINES AND MANHOLES IDENTIFIED OR NOT TO REMAIN TYP – PROTECT DURING CONSTRUCTION

37. ALT BID; SOUTH PUTNAM EAGLE HEAD ENLARGED LOGO – MATCH COLORS SHOWN TO SP BRANDING GUIDELINES, SEE SHT G1.01 FOR FURTHER INFORMATION

38. NEW 6" CONC. HIGH JUMP PAD, SEE DETAILS 5–8 SHT G4.00

39. ALT BID: NEW 6" CONC. SPECTATOR PAD, SEE DETAILS 5–8 SHT G4.00

40. ALT. FULL DEPTH TRACK RENOVATION: SAW CUT AND REMOVE BOTH STRAIGHTAWAY SECTIONS NOTED IN THEIR ENTIRETY – SITE VERIFY LOCATION PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO CM AND ARCHITECT – ADD 3" DEPTH OF SUPPLEMENTAL AGGREGATE BASE COURSE TO EX. BASE AND COMPACT TO REQUIRED TOLERANCES SPECIFIED BY TRACK SURFACING MANUFACTURE AND PROJECT MANUAL PRIOR TO APPLYING NEW BASE COURSE AND SURFACE COURSE ASPHALT. ALLOW ASPHALT PAVING TO CURE 30 DAYS PRIOR TO APPLYING NEW APPROVED $\frac{1}{2}$" POLYURETHANE TRACK SYSTEM , TRACK SYSTSTEM COLOR (GRAY) WITH (WHITE) PAVEMENT MARKINGS PER NFHS STANDARDS

41. EX. PERIMETER TRACK FENCING RENOVATION: 48" HIGH – CONFIRM ON SITE PRIOR TO CONSTRUCTION. DEMO EXISTING CHAIN LINK FENCE FABRIC, HARDWARE AND ACCESSORIES IN THEIR ENTIRETY AND DISPOSE OFF SITE. PROVIDE NEW (BLACK) PVC COATED FENCE POST SLEEVES OVER EX. POST. PROVIDE NEW FENCE FABRIC, HARDWARE, ACCESSORIES AND GATES (6)+/– (VERIFY). INSTALL PER MANUFACTURES WRITTEN INSTRUCTIONS, SEE DETAILS # SHT G1.02

42. OUT OF BOUNDS LETTERING O.C. WITHIN SPACE: "MARK WILDMAN FIELD", (BLUE) COLORS TO MATCH SCHOOL GRAPHIC STANDARDS.

GENERAL NOTES

All contractors but not limited to the excavating contractor or 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 responsibilty 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 excavating. Verify minimum cover requirements by the utility contractor or contractors or agencies whomever utility companies or agencies whomever has jurisdication so not to cause damage.

All construction methods and materials must conform to current standards and specifications.

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/her expense. All damages shall be restored or replaced to at least their original condition.

All areas where the existing pavement or pavements are damaged during construction from heavy traffic or equipment, fuel oil, oil, gasoline, etc., by the Contractor, Subcontractor, or Suppliers, shall be reconstructed to it's original condition.

The contractor shall be responsibile to provide at his expense all automobile and pedestrain traffic control devices required by Federal, State, County, City or Local

Removal of the existing improvements are as noted on the plans. The materials removed from the site shall be disposed of in a proper and legal manner per Federal, State, County, City, and or Local laws and ordinance.

It is the responsibilty of the contractor or contractors to obtain all Federal, State, County, City, and Local permits for any and all work required.
The contractor or contractors are responsible to pay for

It is the contractor's responsiblity to notify all the utilty companies and departments 72 hours before construction 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 can be present during the excavation to instruct and observe during the excavation.

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 construction schedule. Water may be used for dust control.

The utilities indicated on these plans may not be a complete inventory of all the existing utilities present on and around this site. The locations and sizes 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.

The contractor shall verify all locations , dimensions and elevations in the field before the start of construction. The contractor shall be responsible for all field dimensions and elevations during the entire construction schedule. If any discrepancies are found on the plans from actual field conditions the contractor shall contact the A/E immediately. If any discrepancies are found from actual field conditions the contractor shall contact the A/E immediately for instructions.

All dimensions of pavements are to edge of finish pavement or face of curb unless otherwise noted.

ALL ELECTRICAL BOXES, PEDESTALS, AND LIGHT POLE BASES ARE TO BE LOCATED OUT OF ALL STORM DRAINAGEWAYS AND OR SWALES TYP

LOCATIONS GIVEN ARE APPROXIMATE AND ARE TO BE SITE VERIFIED PRIOR TO THE START OF CONSTRUCTION.

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CAUTION !!

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

SOUTH PUTNAM HS TRACK AND FIELD RENOVATION

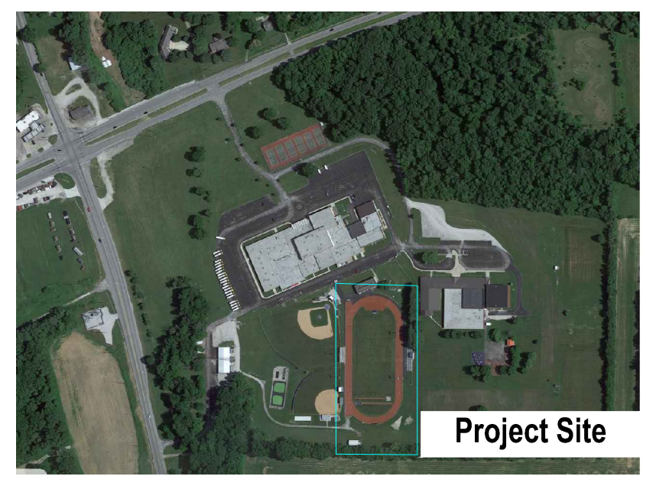
1780 US-40,
GREENCASTLE,
IN 46135
(765) 653-3148

SOUTH PUTNAM COMMUNITY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM
350 E NEW YORK ST # 300, INDIANAPOLIS, IN., 46204



KEY PLAN

PLAN NORTH

100% Construction Documents

PAUL A. MILLER
No. AR10800161
STATE OF INDIANA

PROJECT MANAGER: DR
DRAWN BY: EB
PROJECT NUMBER: 222152.06
PROJECT ISSUE DATE: 01/30/24

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM	02/15/24

SITE LAYOUT / GRAPHIC PLAN

G1.00

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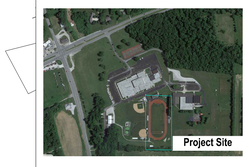


KEY PLAN

PLAN NORTH

100% Construction Documents

PAUL A. MILLER REGISTERED No. 11300161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DR

DRAWN BY: EB

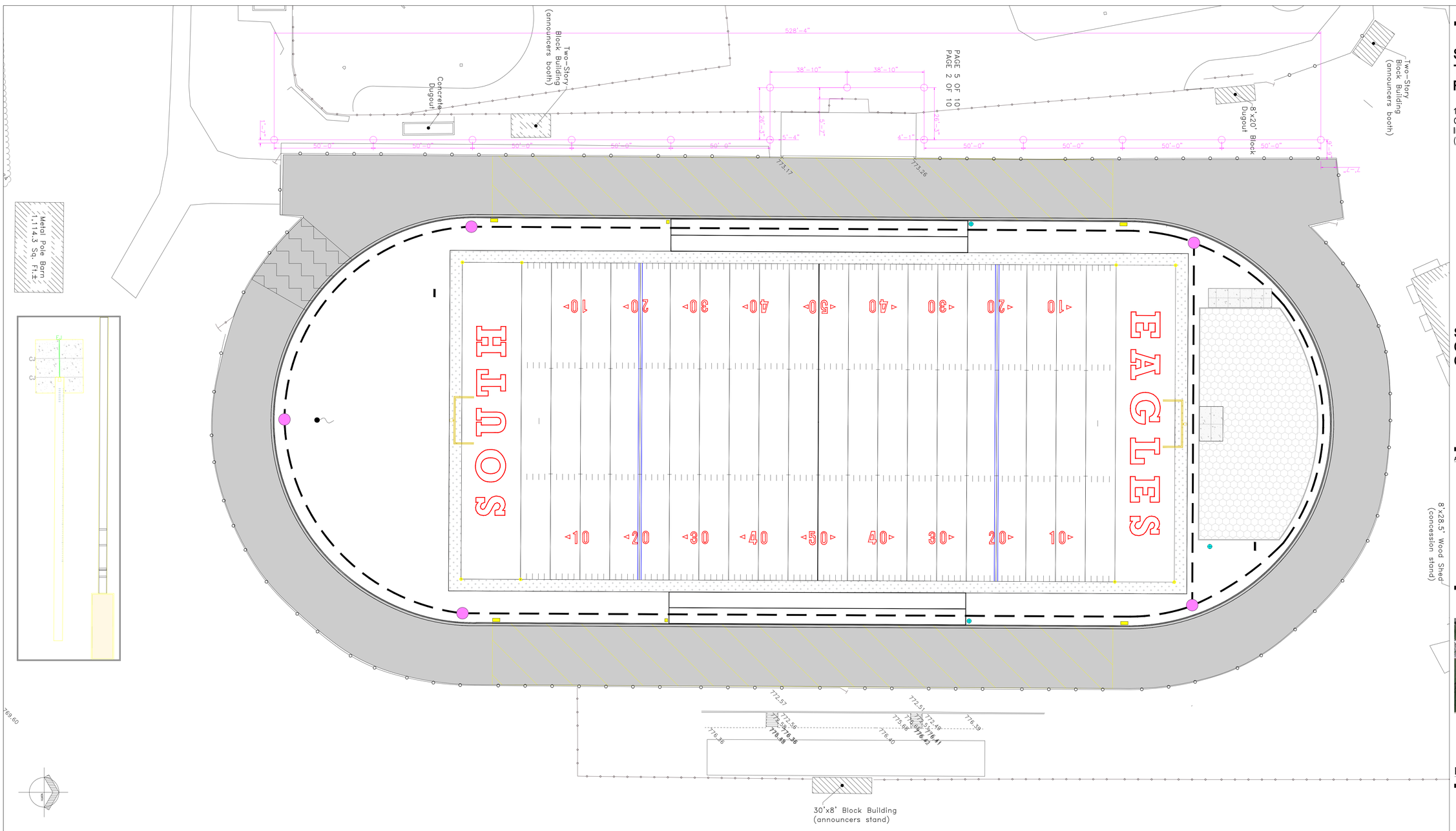
PROJECT NUMBER: 222152.06

PROJECT ISSUE DATE: 01/30/24

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM	02/15/24

SITE LAYOUT PLAN TENSION NETTING

G1.02

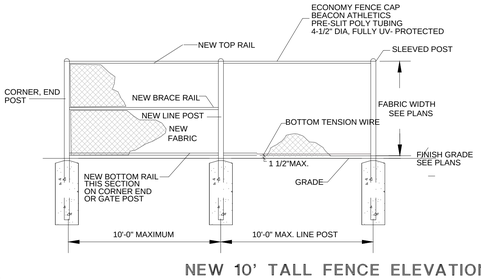


SIT LAYOUT: TENSION NETTING SYSTEM

SCALE: 1" = 20'-0"

GENERAL PLAN NOTES

1. REWORK NEW NETTING TO WORK WITH EX. FENCING AROUND EX. GRANDSTANDS. EX. FENCING IS TO REMAIN UNLESS SPECIFIED TO BE REMOVED BY TENSION NETTING MANUF.
2. INSTALL NEW TENSION NETTING PER NETTING MANUF. WRITTEN RECOMMENDATIONS
3. PROVIDE STAMPED ENGINEERING DRAWINGS FOR NETTING SYSTEM
4. NEW NETTING POST AND FOOTINGS ARE TO MISS ALL EXISTING UTILITIES.



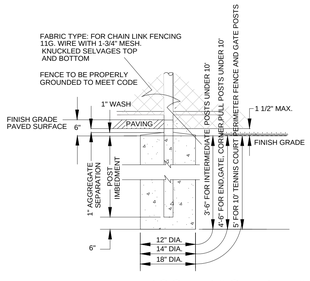
4 NEW 10' TALL FENCE ELEVATION
NTS

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.

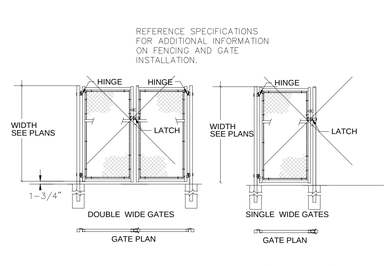
NOTE: CHAIN LINK FENCE FABRIC SHALL HAVE BLACK PVC COATING THERMALLY FUSED TO ZINC COATED WIRE. ALL POSTS, RAILS AND BRACING SHALL ALSO HAVE BLACK PVC COATING, THERMALLY FUSED TO GALVANIZED (ZINC COATED) STEEL PIPE.

NOTE: IN AREAS WHERE PRACTICE BOARD IS ATTACHED TO FENCING INSERT 3-1/2" O.D. SS-40 SLEEVE INSIDE OF THE 4" PIPE AND END AND PLUG WELD

3 CHAIN LINK FENCE/FRAME SCHEDULE
NTS



2 POST BASE DETAIL
NTS



1 GATE DETAIL
NTS

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