ADDENDUM NO. 1

February 10, 2025

CHESTERTON HIGH SCHOOL SOCCER VENUE IMPROVEMENTS AND RELATED WORK
Chesterton, IN 46304

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated January 21, 2025 by Gibraltar Design, Inc. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 1-1 through ADD 1-2, attached Guideline Schedule, and attached Addendum No. 1 from Gibraltar Design, Inc. dated February 4, 2025 and consisting of 4 pages, replacement Specification Section 26 56 68 - Exterior Athletic Lighting, and 13 drawings.

A. SPECIFICATION SECTION 01 12 00 - MULTIPLE CONTRACT SUMMARY

3.02 GENERAL REQUIREMENTS

C. **PROVIDED BY DESIGNATED CONTRACTORS**

1. **Revise:**

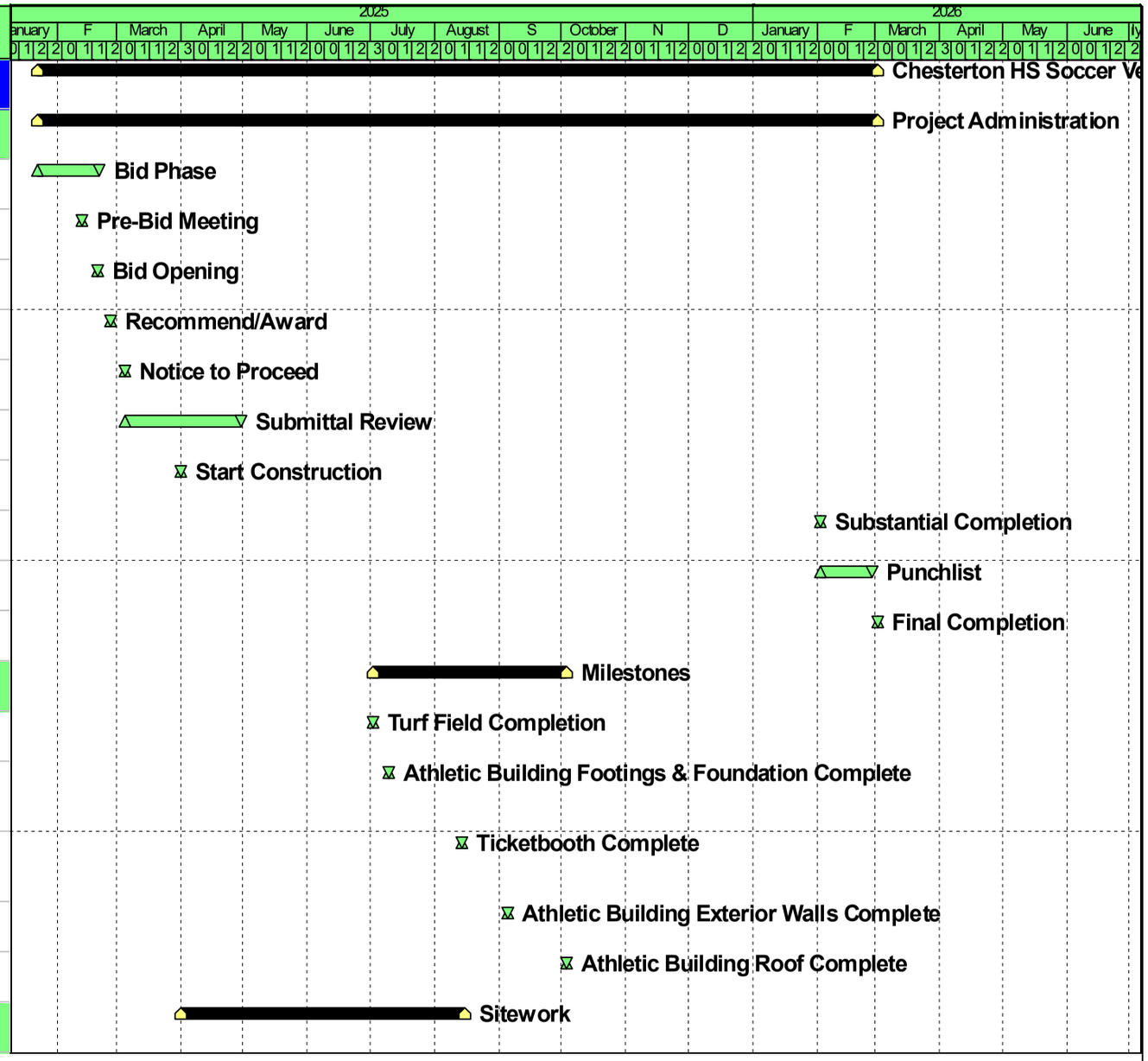
Clarification No. 2:
Autodesk Build is replacing **PlanGrid**. **Autodesk Build** does not require users to purchase a license. **Contractors** will be invited to the project and required to use this tool. **Autodesk Build** will be used as the **Current Set** and **As-Built Record Drawings.** Additionally, it will be used to track **Issues** for **Safety**, **QA/QC**, **Non-Compliance Issues**, **Work Completion List** and **Punch List**.

B. SPECIFICATION SECTION 01 32 00 - SCHEDULES AND REPORTS

1. **Add:**

   The attached Guideline Schedule.

Activity Name	Original Duration	Start	Finish
Chesterton HS Soccer Venue Improvements	**282**	**22-Jan-25**	**02-Mar-26**
Project Administration	**282**	**22-Jan-25**	**02-Mar-26**
Bid Phase	22	22-Jan-25	20-Feb-25
Pre-Bid Meeting	0	12-Feb-25	12-Feb-25
Bid Opening	0	20-Feb-25	20-Feb-25
Recommend/Award	0	26-Feb-25	26-Feb-25
Notice to Proceed	0	05-Mar-25	05-Mar-25
Submittal Review	40	05-Mar-25	29-Apr-25
Start Construction	0	01-Apr-25	01-Apr-25
Substantial Completion	0	02-Feb-26	02-Feb-26
Punchlist	20	02-Feb-26	27-Feb-26
Final Completion	0	02-Mar-26	02-Mar-26
Milestones	**65**	**02-Jul-25**	**03-Oct-25**
Turf Field Completion	0	02-Jul-25	02-Jul-25
Athletic Building Footings & Foundation Complete	0	10-Jul-25	10-Jul-25
Ticketbooth Complete	0	14-Aug-25	14-Aug-25
Athletic Building Exterior Walls Complete	0	05-Sep-25	05-Sep-25
Athletic Building Roof Complete	0	03-Oct-25	03-Oct-25
Sitework	**97**	**01-Apr-25**	**15-Aug-25**



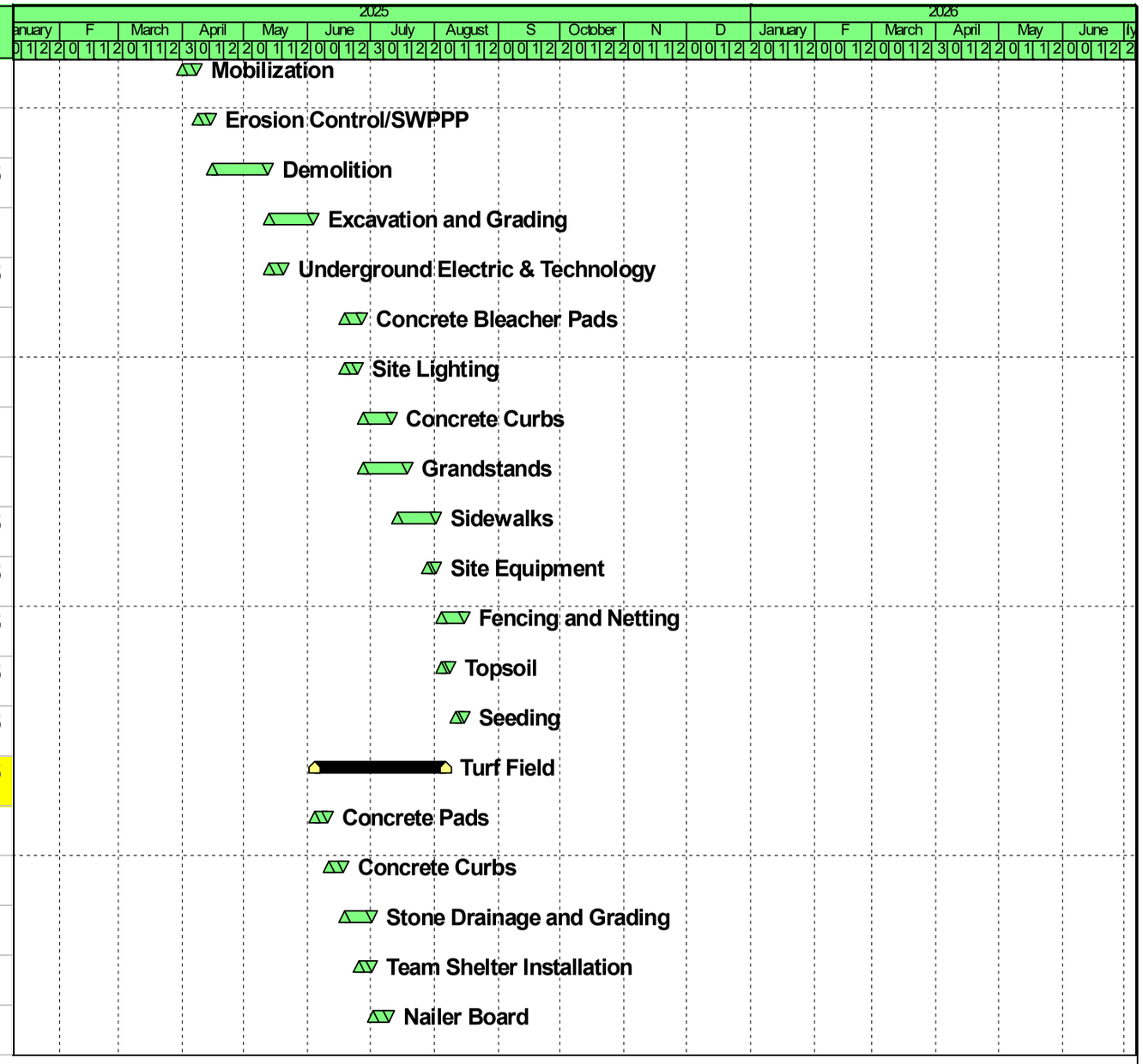
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

220190.15 Chesterton HS Soccer Venue Improvements and Related Work

Guideline Schedule

SKILLMAN

Activity Name	Original Duration	Start	Finish
Mobilization	5	01-Apr-25	07-Apr-25
Erosion Control/SWPPP	5	08-Apr-25	14-Apr-25
Demolition	20	15-Apr-25	12-May-25
Excavation and Grading	15	13-May-25	03-Jun-25
Underground Electric & Technology	5	13-May-25	19-May-25
Concrete Bleacher Pads	7	18-Jun-25	26-Jun-25
Site Lighting	5	18-Jun-25	24-Jun-25
Concrete Curbs	10	27-Jun-25	11-Jul-25
Grandstands	15	27-Jun-25	18-Jul-25
Sidewalks	15	14-Jul-25	01-Aug-25
Site Equipment	5	28-Jul-25	01-Aug-25
Fencing and Netting	10	04-Aug-25	15-Aug-25
Topsoil	5	04-Aug-25	08-Aug-25
Seeding	5	11-Aug-25	15-Aug-25
Turf Field	**45**	**04-Jun-25**	**06-Aug-25**
Concrete Pads	5	04-Jun-25	10-Jun-25
Concrete Curbs	5	11-Jun-25	17-Jun-25
Stone Drainage and Grading	10	18-Jun-25	01-Jul-25
Team Shelter Installation	5	25-Jun-25	01-Jul-25
Nailer Board	5	02-Jul-25	09-Jul-25



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

220190.15 Chesterton HS Soccer Venue Improvements and Related Work

Guideline Schedule

2 of 4

SKILLMAN

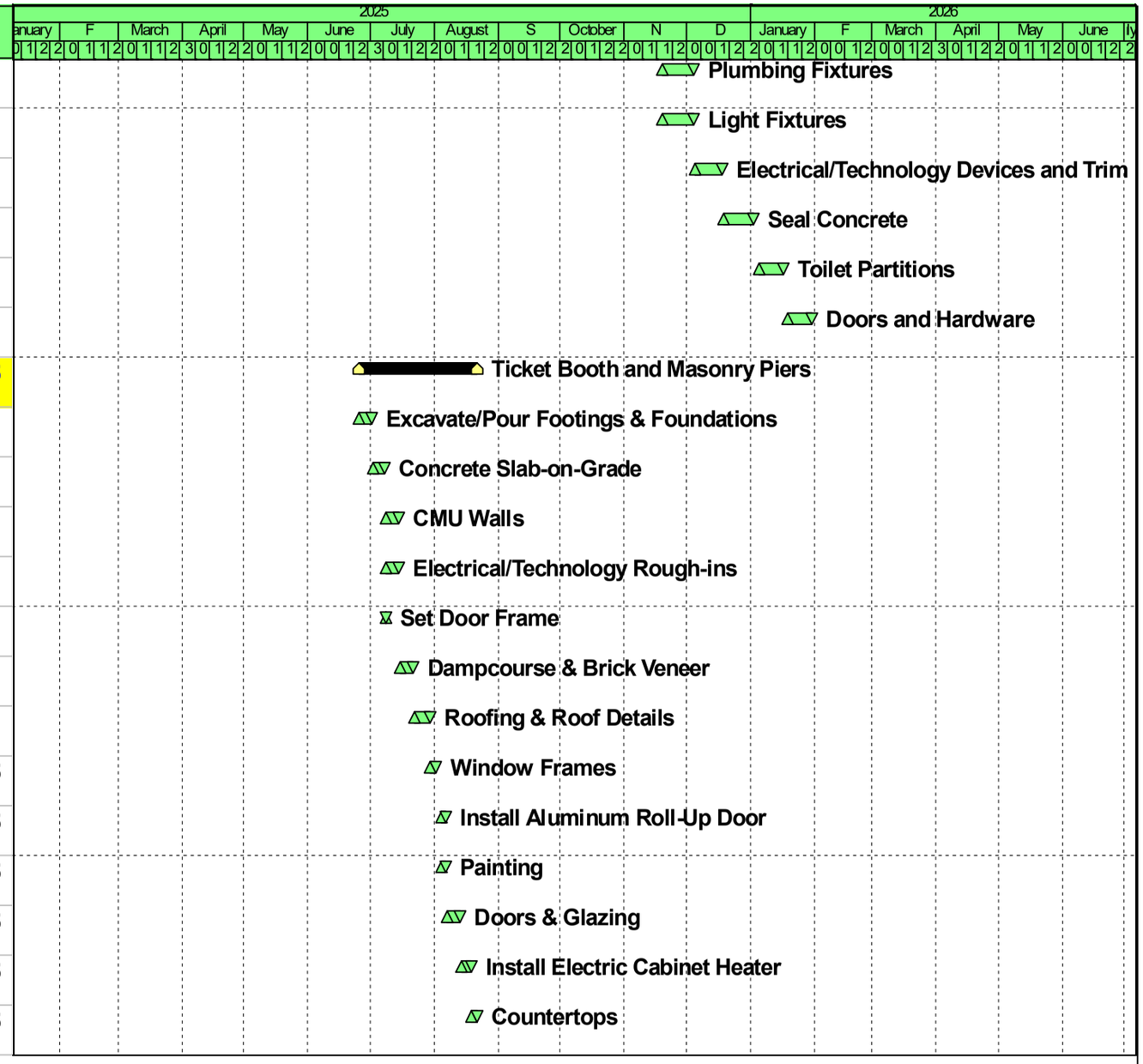
Activity Name	Original Duration	Start	Finish
Turf Installation	20	10-Jul-25	06-Aug-25
Site Buildings	173	28-May-25	30-Jan-26
Athletic Building	173	28-May-25	30-Jan-26
Site Utilities	10	28-May-25	10-Jun-25
Excavate/Pour Footings	10	11-Jun-25	24-Jun-25
CMU Foundations	10	25-Jun-25	09-Jul-25
Underground Electric & Plumbing	10	31-Jul-25	13-Aug-25
Slab-on-Grade	5	14-Aug-25	20-Aug-25
Exterior CMU Walls	10	21-Aug-25	04-Sep-25
HM Door Frames	5	21-Aug-25	27-Aug-25
Roof Trusses	10	05-Sep-25	18-Sep-25
Facebrick	10	19-Sep-25	02-Oct-25
Roofing	10	19-Sep-25	02-Oct-25
Plumbing Rough-ins	10	03-Oct-25	16-Oct-25
Aluminum Gutters, Downspouts, and Soffits	10	03-Oct-25	16-Oct-25
Electrical/Technology Rough-ins	10	03-Oct-25	16-Oct-25
Interior CMU Walls	10	03-Oct-25	16-Oct-25
Mechanical Equipment, Piping, and Ductwork	10	08-Oct-25	21-Oct-25
Drywall and Tape	10	22-Oct-25	04-Nov-25
Paint	10	05-Nov-25	18-Nov-25

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

220190.15 Chesterton HS Soccer Venue Improvements and Related Work
Guideline Schedule

SKILLMAN

Activity Name	Original Duration	Start	Finish
Plumbing Fixtures	10	19-Nov-25	04-Dec-25
Light Fixtures	10	19-Nov-25	04-Dec-25
Electrical/Technology Devices and Trim	10	05-Dec-25	18-Dec-25
Seal Concrete	10	19-Dec-25	02-Jan-26
Toilet Partitions	10	05-Jan-26	16-Jan-26
Doors and Hardware	10	19-Jan-26	30-Jan-26
Ticket Booth and Masonry Piers	**41**	**25-Jun-25**	**21-Aug-25**
Excavate/Pour Footings & Foundations	5	25-Jun-25	01-Jul-25
Concrete Slab-on-Grade	3	02-Jul-25	07-Jul-25
CMU Walls	5	08-Jul-25	14-Jul-25
Electrical/Technology Rough-ins	5	08-Jul-25	14-Jul-25
Set Door Frame	1	08-Jul-25	08-Jul-25
Dampcourse & Brick Veneer	5	15-Jul-25	21-Jul-25
Roofing & Roof Details	6	22-Jul-25	29-Jul-25
Window Frames	3	30-Jul-25	01-Aug-25
Install Aluminum Roll-Up Door	3	04-Aug-25	06-Aug-25
Painting	3	04-Aug-25	06-Aug-25
Doors & Glazing	5	07-Aug-25	13-Aug-25
Install Electric Cabinet Heater	3	14-Aug-25	18-Aug-25
Countertops	3	19-Aug-25	21-Aug-25



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

220190.15 Chesterton HS Soccer Venue Improvements and Related Work

Guideline Schedule

SKILLMAN

ADDENDUM ONE

Addendum One (AD.01) to the drawings and specifications prepared by Gibraltar Design for **Chesterton High School Soccer Venue Improvements** for Duneland School Corporation, Chesterton, Indiana.

All Contractors bidding on this project shall read all of the items covered below and shall comply with all of the requirements as set forth, including any necessary refinements or additions generated by this Addendum and required by the intent of the original contract documents. All Contractors shall acknowledge on their bid form that they have received this Addendum and include the appropriate content of same within their bid proposal.

SPECIFICATIONS

1. Specification Section 13 34 16 Grandstands

A. Add Paragraph 2.1.B.5. as follows: "5. GT Grandstands, Inc., Plant City, Florida."

B. Clarification: Paragraph 2.2.A. indicates minimum width of Stands is 102'-0", however, the length can be reduced if the manufacturer of the stands can satisfactorily meet the minimum 1,000 seat capacity.

C. Clarification: Manufacturer is only required to provide/design to the number of handicap wheel chair spaces as required by Code.

D. Clarification: The Seat Planks are required to be 2 x12 with radius comfort edge as specified.

E. Clarification: Treads are to be Mill Finished.

F. Paragraph 2.3.A.9. Clarification: Column and beam sizing along with Column Bracing located in the gate locations on the backside of the Stadium Stands, is to utilize bracing that allows for vehicle parking and passenger headroom between the columns. Adjust the bracing to accommodate the owners use of the space.

G. Revise Paragraph 2.3.I.1. as follows: "1. Guardrails and Posts shall be of black anodized extruded pipes, 6061-T6 alloy, 1-5/8-inchs O.D.

H. Modify Paragraph 2.3.I.2., end of Paragraph, add the word 'Black' in front of the word anodized.

I. Modify Paragraph 2.3.I.2.a. clarification, that railing system is to be black anodized and/or if angle posts utilized, painted black.

J. Clarification: Paragraph 2.3.I.2.a. reference to black vinyl fencing is to be located along the front of the bleachers only and is not to extend down the stairs or ramps, manufacturer is to utilize the black anodized pickets at these conditions.

2. Specification Section 26 56 68 Exterior Athletic Lighting

A. Replace Specification Section 26 56 68 with New Specification Section 26 56 68 included in this Addendum.

3. Specification Section 32 18 12 Synthetic Turf System

A. Add new Paragraph 2.1.A.7. as follows: "7. Midwest Sports & Turf Systems, LLC, Plainfield Illinois."

4. Specification Section 32 80 00 Underground Sprinkler System

A. Clarification: The water source for the irrigation system is to be from the new irrigation well adjacent to the natural turf field on site plan.

1. Note that the Civil Demolition Drawing will include the demolition of the existing well water and pump system.

DRAWINGS

1. G-101 (Sheet not issued)

A. Remove Sheet M-102 from Sheet Index.

2. Sheet C-1.2

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Add removal of existing well/spigot and cap.

3. Sheet C-2.0

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise fencing around new well.
2. Revise location of the varsity scoreboard and flagpole.
3. Revise size of the team shelter concrete pads.
4. Revise netting and windscreen notes to be by owner.
5. Revise fencing notes.
6. Revise note calling the “existing parking curb to remain” to “new curb”.

4. Sheet C-5.1

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise continental cross walk detail.
2. Add storm sever specification information.

5. Sheet S-102

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Framing at Dormer to accommodate mechanical louver has been added.
2. Hip Jack Trusses now labeled Multi-Ply.

6. Sheet S-402

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise section 10 to adjust truss bearing elevation and overhang dimension.

2. Add sections 12 and 13.

7. Sheet A-102 (Sheet not issued)

A. Revise note 4 to say, "Attic access coordinate location with roof trusses and mechanical equipment".

B. Revise note 20 to say, "Drinking fountain and/or bottle filler, refer to plumbing".

8. Sheet A-102

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise the picket railing system at front of bleachers to be black vinyl chain-link. All other areas of bleachers to remain black pickets.

9. Sheet A-301

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise elevations to show roof dormer and louver.

10. Sheet A-401

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Add detail 5 for the dormer section

2. Remove "integral color and waterproofing" from all CMU notes.

11. Sheet A-402 (Sheet not issued)

A. Revise notes "anodized aluminum interlock treads and risers" and "anodized aluminum stair tread and rises beyond" to remove the word "anodized". Refer to specs for additional information.

12. Sheet M-101

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Added CF-1 to Ticket Booth A-116.

2. Removed roof mounted exhaust fans and associated ductwork.

3. Added inline exhaust fans GEF-1 and TEF-1 in attic space.

4. Revised sizing of transfer air ducts in exterior soffit and added transfer air ducts.

5. Added mechanical section to sheet of new exhaust fans and dormer.

13. Sheet M-102 (Sheet not issued)

1. Sheet removed in this addendum.

14. Sheet M-201

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Added CF-1 to Mechanical Equipment Schedule.
2. Revised TEF-1 and GEF-1 in Mechanical Equipment Schedule.
3. Added note 4 to schedule remarks.

15. Sheet E-101

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Provide a new motor starter and electrical connections for TEF-1. Delete the wiring to the exhaust fans being deleted.
2. Modify some of the circuits shown.

16. Sheet E-102 (Sheet not issued)

A. Delete Athletic Building Electrical Roof Plan due to the exhaust fans penetrating the roof being removed from the scope.

17. Sheet E-601

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Adding Motor Starter MS-2 to the Motor Starter Schedule for TEF-1.

18. Sheet E-602

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Modify Panels "ABL1" and "ABH1".

Pages 1 through 4, inclusive, Specification Section 26 56 68 and Thirteen (13) Full-Size Drawings, constitute the total makeup of **Addendum One**.

GIBRALTAR DESIGN

Joseph P. Briggs

SECTION 26 56 68
EXTERIOR ATHLETIC LIGHTING

Retrofit Lighting System with LED Upgrade

PART 1 – GENERAL

1.1 SUMMARY

A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.

B. The purpose of these specifications is to define the lighting system performance and design standards for Chesterton High School Soccer field using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.

C. The sports lighting will be for the following venues:

1. Soccer Field

D. The primary goals of this sports lighting project are:

1. Energy Efficient Lighting Design – Upgrade by replacing existing HID luminaires with the same number of LED luminaires (or fewer), maintaining existing minimum required light levels and achieving the greatest possible amount of energy savings.

    a. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore, light levels are guaranteed to not drop below specified target values for a period of 25 years.

    b. Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.

    c. Cost of Ownership: In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.

2. Control and Monitoring – To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

    a. Control and monitoring system shall provide contactor control of all existing circuits, replacing existing contactor cabinets. Key switches shall be provided to provide field-level control of existing circuit groups.

1.2 ONFIELD LIGHTING PERFORMANCE

A. Illumination Levels and Design Factors: Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting manufacturers will provide a guarantee that light levels will be sustained over the life of the warranty period. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below.

Manufacturers will provide lumen maintenance data of the LED luminaires used per TM-21-11 and will Incorporate the lumen maintenance projections into the lighting designs to ensure target light levels are achieved throughout the guaranteed period of the system. Per IES guidelines, lumen maintenance hours should be reported based on the 6x multiplier of testing hours.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Soccer	**50 FC**	**2:1**	**84**	**30'**

B. Color Temperature: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

C. Playability: Lighting design and luminaire selection should be optimized for playability by reducing glare on field and providing sufficient uplight.

1. Aiming Angles: To reduce glare, luminaire aiming should ensure the top of the luminaire field angle (based on sample photometric reports) is a minimum of 10 degrees below horizontal.
2. Glare control technology – Luminaires selected should have glare control technology including, but not limited to: external visors, internal shields and louvres. No symmetrical beam patterns are acceptable.
3. Mounting Heights: To ensure proper aiming angles, minimum mountings heights shall be as described below. Higher mounting heights may be necessary for luminaire with lesser glare control to meet field angle requirements of section 1.2.C.1.

SOCCER

# of Poles (Existing/ Relocated)	Pole Designation	Pole Height
2 Relocated	S1-S2	Existing Relocated 70'
2 Existing	S3-S4	Existing 70'

1.3 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

B. Lighting Ordinance: In accordance with Chesterton, IN lighting ordinance, maximum initial horizontal illumination at the property line shall not exceed .1 footcandles.

C. Spill Light and Glare Control: The lighting equipment manufacturer shall assess both spill and glare at all areas of concern on adjacent properties. To minimize impact, values must not exceed the following levels taken at 3 feet above grade. Field measurements of spill light be taken at the areas of concern.

Property Line Spill (East Homes)	Average	Maximum
150' diameter ring around the facility Specified Spill Line Horizontal Footcandles	.1 fc	.1 fc
150' diameter ring around the facility Specified Spill Line Max Vertical Footcandles	.1 fc	.2 fc
150' diameter ring around the facility Specified Spill Line Max Candela (taken at 5 ft above grade)	2100 cd	8500 cd

D. Environmental Glare Impact Scans: Environmental glare impact scans must be submitted showing the maximum candela from the field edge on a map of the surrounding area until 8500 candela or less is achieved.

E. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights. Illumination level shall be measured in accordance with the IESNA RP-6-22 after 1 hour warm up.

F. Sample Photometry: The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five year's experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

G. Field Verification – Lighting manufacturer shall supply field verification of environmental light control using a meter calibrated within the last 12 months:

1. Spill verification: The light sensing surface of the light meter should be held 36 inches above the playing surface with the sensing surface horizontal (for horizontal readings) or vertically pointed at the brightest light bank (for max vertical readings)

1.4 Cost of Ownership

A. Manufacturer shall submit a 25-year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

PART 2 – PRODUCT

2.2 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system is intended to mount to existing structures and shall reuse existing foundations, poles, and underground supply wiring. The system shall consist of the following:

1. Existing equipment: Strength and condition of existing poles and foundations must be verified as strong enough to handle the weight and wind loading of new equipment by calculation and visual inspection

   a). Contractor will be responsible for moving two existing poles per the plans to their new location. Contractor will be responsible for installing new concrete bases for the existing poles to be retrofitted and will need to obtain pricing for bases from Musco.

2. Pole top luminaire assembly: Galvanized steel pole top luminaire assemblies to replace existing pole top by slip fit over the pole sections, bolting to top flange, or clamping to pole. Lighting manufacturer must supply new crossarms, or supply calculations that show crossarms are strong enough to support new loads without deflection.

3. All luminaires, visors, and pole top luminaire assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.

4. Manufacturer will supply all drivers and supporting electrical equipment

   a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.

b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.

5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.

6. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.3 for further details.

7. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.

   a. If grounding is not integrated into the structure, the manufacturer or installer shall supply grounding electrodes, down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780.

8. Safety: All system components shall be UL listed for the appropriate application.

2.1 ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:
   1. Electric power: 277 Volt, 1 Phase
   2. Maximum total voltage drops: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.

B. Energy Consumption: The kW consumption for the field lighting system shall be 42.30kW.

2.3 CONTROLS (BASE BID)

A. Existing. Connect new soccer field lighting fixtures to the existing soccer field lighting controls.

2.4 CONTROLS (ALTERNATE BID - UPGRADE)

A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.

C. Contactor control of lights: To minimize wear on drivers and other electrical components and prevent lights from turning on due to communication loss, circuits must be controlled via contactor switching, not dimming driver output to zero.

D. Dimming: System shall provide for 3-stage dimming (high-medium-low). Dimming will be set via scheduling options (Website, app, phone, fax, email)

E. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

   The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

F. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

G. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility
2. Report hours saved by using early off and push buttons by users.

H. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.

I. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.

2.4 STRUCTURAL PARAMETERS

A. Wind Loads: Wind loads shall be based on the 2012 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 115 and exposure category C.

B. Pole Structural Analysis: The stress analysis and safety factor of the poles shall conform to 2009 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-5).

C. Foundation Analysis: The foundation analysis shall be based on soils that meet or exceed those of a Class 5 material as defined by 2012 IBC Table 1806.2.

D. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

PART 3 – EXECUTION

3.1 Installation

A. Relocate two (2) of the Existing Soccer Field Lighting Poles as shown on the drawings.

B. Remove the bases of the Existing Soccer Field Lighting Poles being relocated.

C. Remove the existing Soccer Field Lighting Fixtures on the Soccer Field Lighting Poles.

D. Provide New Soccer Field Lighting Fixtures as shown on the drawings.

E. Under base bid, connect the new lighting fixtures to the existing controls as shown on the drawings.

F. Under alternate bid, connect the new lighting fixtures to new lighting controls as shown on the drawings.

G. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:

1. Providing engineered foundation embedment design by a registered engineer in the State of Indiana for soils other than specified soil conditions;
2. Additional materials required to achieve alternate foundation;
3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

B. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-22.

C. Field Light Level and offsite Glare Accountability

1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

D. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles, uniformity ratios, and offsite candela readings are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to adjust meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.

A. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.

B. Approved Product: Musco's Light-Structure System™ Retrofit with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.

C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.

D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. ***Submit checklist below with submittal.***

Yes / No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years' experience.
	F	Performanc e Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period. Glare values in candela must be guaranteed to not be exceeded.
	G	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system. They will also provide ten (10) references of customers currently using proposed system in the state of Indiana.
	H	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of Indiana.
	I	Project References	Manufacturer to provide a list of 10 projects where the technology and specific fixture proposed for this project has been installed in the state of Indiana. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.

	J	Product Information	Complete bill of material and current brochures/cut sheets for all products being provided.
	K	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	L	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	M	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years
	N	Environmental Light Control Design	Environmental glare impact scans must be submitted showing the maximum candela from the field edge on a map of the surrounding area until 8500 candela or less is achieved.

The information supplied herein shall be used for the purpose of complying with the specifications for Chesterton High School Soccer Retrofit. By signing below, I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

Manufacturer: _____ **Signature:** _____

Contact Name: _____ **Date:** _____/_____/_____

Contractor: _____ ___ **Signature:** _____