



REQUEST FOR PROPOSALS LIGHTING IMPROVEMENTS TO ATHLETIC FIELDS

Issue Date: Wednesday, June 27, 2018

**JONES COUNTY BOARD OF COMMISSIONERS
166 INDUSTRIAL BLVD./P.O. BOX 1359
GRAY, GA 31032
PHONE: (478) 986-6405
ATTN: JASON RIZNER, COUNTY ADMINISTRATOR
Jason.rizner@jonescountyga.org**

PROPOSALS WILL BE RECEIVED UNTIL JULY 31, 2018 AT 10:00 A.M.

**PROPOSALS ARE TO BE SEALED AND MAILED VIA USPS, FEDEX OR UPS TO THE ABOVE ADDRESS OR HAND
DELIVERED TO THE COUNTY ADMINISTRATOR'S OFFICE LOCATED IN THE JONES COUNTY GOVERNMENT CENTER AT
166 INDUSTRIAL BLVD., GRAY, GA 31032**



JONES COUNTY, GEORGIA
REQUEST FOR PROPOSALS FOR ATHLETIC FIELD LIGHTING IMPROVEMENTS

Jones County is requesting and will accept sealed proposals for improvements to athletic field lighting at the Highway 18 Recreation Complex until Tuesday, July 31, 2018, at 10:00 a.m. local time, by Jason Rizner, County Administrator, at the Jones County Government Center, 166 Industrial Boulevard, Gray, GA 31032 at which time they shall be opened.

A **Pre-Proposal Conference** will be held on **Friday July 13th from 2 PM – 4 PM** at the Highway 18 Recreation Complex – 146 Recreation Road, Gray, GA 31032. The Pre-Proposal Conference is non-mandatory. However, vendors submitting a proposal are required to visit the site and meet with Jones County Recreation Department staff prior to submitting a proposal and must certify this as part of the proposal submission. Site visits other than the Pre-Proposal conference may be arranged by contacting Recreation Director Matt Goins at (478) 256-5884 or matt.goins@jonescountyga.org.

The proposals submitted shall not be subject to public inspection until the contract is awarded. Any contract resulting from a proposals received shall be awarded to the person or entity that submits the best overall proposal as determined by the awarding authority. The factors to be considered by Jones County in awarding the contract include the following:

1. Compliance with Little League® Lighting Standards (50/30)
2. Proposal addresses design guidelines and specifications outlined in RFP
3. Quality of Design and Layout
4. Quality and durability of the proposed equipment
5. Warranty
6. Proposed timeline
7. Price

Notwithstanding the foregoing, Jones County reserves the right to reject any or all proposals and to waive technicalities.

MAILING INSTRUCTIONS

1. Bidder submit a complete, fully executed RFP document.
2. If mailed, proposal should be forwarded by certified U.S. Postal Service. Please address and mark your bid as shown below.

JONES COUNTY BOARD OF COMMISSIONERS
ATTN: JASON RIZNER
166 INDUSTRIAL BLVD.
GRAY, GA 31032
"RFP – ATHLETIC FIELD LIGHTING IMPROVEMENTS"



3. If forwarded other than by U.S. Postal Service, delivery must be made directly to Jones County Administrator Jason Rizner, Jones County Government Center, 166 Industrial Blvd., Gray, GA 31032.

NOTE: IF MAIL OR DELIVERY BY ANY OTHER MEANS IS DELAYED BEYOND THE DATE AND HOUR SET FOR BID OPENING, PROPOSAL THUS DELAYED WILL NOT BE CONSIDERED.



General Information

Jones County is requesting proposals from qualified vendors to furnish material, repair existing lighting, and install lighting poles and at the Jones County Central Recreation Complex located at 146 Recreation Road, Gray, GA 31032. The purpose of this project is to bring lighting on three recreation baseball fields – Curtis Field, McDaniel Field, and Chapman Field – into compliance with the Little League® standards (please see attached).

The contract will be awarded to the person or entity that submits the best overall proposal based on the factors outlined in this Request for Proposals. The factors to be considered by Jones County in awarding the contract include the following:

1. Compliance with Little League® Lighting Standards (50/30)
2. Proposal addresses design guidelines and specifications outlined in RFP
3. Quality of Design and Layout
4. Quality and durability of the proposed equipment
5. Warranty
6. Proposed timeline
7. Price

Insurance and Indemnification

Selected Vendor must provide proof of insurance in accordance with the attached "Contractors Insurance Requirements" document, and the selected contractor must agree to indemnify, defend, and hold the County and County personnel harmless from and against any and all actions, suits, claims, demands, judgments, attorney's fees, costs, damages to persons or property, losses, penalties, obligations, expenses or liabilities that may be asserted or claimed by any person or entity arising out of the willful or negligent acts, errors or omissions of the selected vendor, its employees, agents, representatives or subcontractors in the performance of any task or service performed on behalf of the County whether or not there is concurrent active or passive negligence on the part of the County and/or County personnel, but excluding such claims or liabilities arising from the sole active negligence or willful misconduct of the County or County personnel.

Vendors must provide affidavit verifying status for County Public Benefits and Contractors E-Verify Affidavit with the submittal of the bid (see attached).

Interpretations and Clarifications:

Requests for information or clarification of this RFP must be made via email and directed to Leslie Faulk at the e-mail address listed below. Please reference the RFP page and topic. **Deadline for receipt of questions is July 20th, 2018 at 5:00 PM. An addendum with all submitted questions and answers will be issued on July 25th.**

leslie.faulk@jonescountyga.org

Submission of RFP:

One (1) original hard copy and one (1) electronic copy of the proposal shall be submitted on or before July 31, 2018 at 10:00 a.m. to:



**JONES COUNTY BOARD OF COMMISSIONERS
ATTN: JASON RIZNER
166 INDUSTRIAL BLVD./P.O. Box 1359
GRAY, GA 31032
"RFP – ATHLETIC FIELD LIGHTING IMPROVEMENTS"**

Sealed proposals should be clearly marked "RFP – ATHLETIC FIELD LIGHTING IMPROVEMENTS".

When received, all proposals and supporting materials, as well as correspondence relating to the RFP, shall become the property of the County. **Proposals sent by fax will not be accepted.**

In submitting a proposal, it is understood by the vendor that Jones County reserves the right to accept any proposal, to reject any and all proposals as non-responsive and to waive any irregularities or informalities in proposals when to do so is in the best interest of Jones County.

Any proposal may be withdrawn or modified by written request of the vendor, provided such request is received by the County at the designated address prior to the date and time set for receipt of proposals.

If a proposal includes any propriety data or information, such data or information must be specifically identified as such on every page on which it is found. Data or information so identified will remain confidential to the extent allowed by Georgia law and will be used by Jones County personnel solely for the purposes of evaluating proposals and conducting contract negotiations.

The cost of preparing a response to the RFP will not be reimbursed by the County.

After the RFP issue date, all communications between Jones County and prospective Proposers shall be in writing. Only emailed questions will be accepted. Any inquiries, requests for information, technical questions, clarifications, or additional information shall be directed to Leslie Faulk at Leslie.faulk@jonescountyga.org.

Interested vendors are responsible for examining the site prior to submitting a proposal and notifying the County of any issues prior to submitting their proposal.

The proposal must include the following:

1. A qualifications summary containing a description of the firm's qualifications and a brief list and description of similar projects successfully completed.
2. References – minimum of three (3) references where the vendor completed a similar project within the past two (2) years.
3. Complete detailed specifications for the equipment in the proposal.
4. Warranty Information.
5. Timeframe for completion.
6. Price.

**Scope of Work:**

- Furnish all labor and materials to upgrade lighting on Curtis Field, McDaniel Field, and Chapman Field so that the lighting complies with Little League® standards. Current light levels are indicated on the attached drawings. The Little League® standards are attached for reference. This project consists of the following:
 - Furnish all necessary labor and material to remove light fixtures, arms, and conduit for existing poles.
 - Furnish necessary labor, equipment and material to mount new fixtures to new and existing poles. Furnish necessary IMC conduit and new wire up the poles. Reconnect at bottom of poles to existing underground wire.
 - Furnish all labor and material to remove and dispose of identified wooden poles (see attached drawings).
 - Furnish labor and equipment to off-load new poles.
 - Furnish and install three (3) new wooden poles to replace the three wooden poles indicated on the attached drawings.
 - The base proposal amount should include placing the poles back in their existing locations.
 - The Add Alternate #1 is for pricing to move the three replacement poles closer to the playing fields.
 - The Add Alternate #2 is for pricing to move the four existing outfield poles on McDaniel Field closer to the playing field.
 - Furnish all necessary equipment and labor to re-aim fixtures.
 - Furnish all material and equipment to repair or replace any damage to the facility during the project.
 - Provide independent, third-party verification that light levels meet Little League® standards after installation.

Proposal Review:

All proposals that meet the procurement requirements will be turned over to a proposal review committee. A proposal review committee will be appointed to evaluate all of the proposals received. Each committee member will evaluate each proposal based on the criteria provided in this document.

Verification After Installation

As stated above, vendors are required to provide independent, third-party verification of lighting levels after installation. Vendors shall submit the name of the selected verification contractor to Jones County prior to testing, and said vendor must be approved by Jones County before verification testing can take place. Satisfactory test results must be submitted to Jones County prior to issuance of payment. Additionally, Jones County reserves the right to verify the lighting levels with its own expert and have its own expert review the submission of the contractor.



References

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:



Pricing Information

Checklist

- Contractor complies with insurance requirements
- References attached
- Material specification sheets attached
- Detailed warranty information attached
- Subcontractor information and references attached (if applicable)
- E-Verify Affidavit attached
- Application for Public Benefit attached

I understand that I will need to provide a certificate of insurance as outlined in the attached insurance requirements prior to beginning work.

I further understand that I will be required to submit the attached Prime and Subcontractor's Work Authorization Certification and affidavit verifying status for County Public Benefit Application (copy attached), prior to beginning work.

I certify that I have visited the site and met with a representative of the Recreation Department and that I fully understand the scope of work detailed in the Request for Proposals.

I further certify that the bid below includes the following work and meets all specifications outlined in the bid documents:

Lump Sum Price to Complete the Work Described in the Above Scope of Work \$ _____

Add Alternate #1 – Relocating 3 wooden poles indicated on drawings \$ _____

Add Alternate #2 – Relocating 4 outfield poles on McDaniel Field \$ _____

Company: _____

Address: _____

Contact: _____ E-mail Address: _____

Phone: _____ Fax: _____

Signature of Company Official: _____



Contractor Insurance Requirements

Contractor's Insurance Provisions: During the life of the contract and for such additional time as may be required, the contractor will provide, pay for, and maintain in full force and effect the insurance outlined here for coverages at not less than the prescribed minimum limits of liability, covering the contractor's activities, those of any and all subcontractors, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

Certificate of Insurance: Before starting work, the contractor will give the owner a certificate of insurance completed by a duly authorized representative of their insurer certifying that at least the minimum coverages required here are in effect and specifying that the liability coverages are written on an occurrence form and that the coverages will not be canceled, nonrenewed, or materially changed by endorsement or through issuance of other policy(ies) of insurance without 60 days advance written notice to:

Jones County Board of Commissioners
P. O. Box 1359
Gray, Ga. 31032

Failure of the owner to demand such certificate or other evidence of full compliance with these insurance requirements or failure of the owner to identify a deficiency from evidence provided will not be construed as a waiver of the contractor's obligation to maintain such insurance.

The acceptance of delivery by the owner of any certificate of insurance evidencing the required coverages and limits does not constitute approval or agreement by the owner that the insurance requirements have been met or that the insurance policies shown in the certificates of insurance are in compliance with the requirements.

If the contractor fails to maintain the insurance as set forth here, the owner will have the right, but not the obligation, to purchase said insurance at the contractor's expense. Alternately, the contractor's failure to maintain the required insurance may result in termination of this contract at owner's option.

Insurance Primary: All coverage required of the contractor will be primary over any insurance or self-insurance program carried by the owner.

No Reduction or Limit of Obligation: By requiring insurance, the owner does not represent that coverage and limits will necessarily be adequate to protect the contractor. Insurance affected or procured by the contractor will not reduce or limit the contractor's contractual obligation to indemnify and defend the owner for claims or suits which result from or are connected with the performance of this contract.

Duration of Coverage: All required coverage will be maintained without interruption during the entire term of this contract and following final acceptance of the property by the owner.

Subcontractor's Insurance: The contractor will cause each sub-contractor employed by contractor to purchase and maintain insurance of the types specified below. When requested by the owner, the contractor will furnish copies of certificates of insurance evidencing coverage for each subcontractor.

Insurance Limits and Coverage: To the extent applicable, the amounts and types of insurance will conform to the minimum terms, conditions, and coverages of Insurance Service Office (ISO) policies, forms, and endorsements.



If the contractor has any self-insured retentions, or deductible under any of the following minimum required coverages, the contractor must identify on the certificate of insurance the nature and amount of such self-insured retentions or deductible and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retentions or deductible will be the contractor's sole responsibility.

Commercial General Liability: The contractor will maintain commercial general liability insurance covering all operations by or on behalf of the contractor on an occurrence basis against claims for personal injury (including bodily injury and death) and property damage (including loss of use). Such insurance will have these minimum limits and coverage:

Minimum limits: \$1,000,000 each occurrence
 \$2,000,000 general aggregate with dedicated limits per project site
 \$2,000,000 products and completed operations aggregate

Worker's Compensation: The contractor will maintain workers' compensation and employer's liability insurance.

Minimum limits: Workers' compensation – statutory limit
 Employer's liability:
 \$1,000,000 bodily injury for each accident
 \$1,000,000 bodily injury by disease for each employee
 \$1,000,000 bodily injury disease aggregate



Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of (Jones County) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 201__ in _____(city), _____(state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 201__.

NOTARY PUBLIC

My Commission Expires:



Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (name of contractor) on behalf of Jones County has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

(THIS SHOULD BE 5 TO 6 NUMBERS)

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 201__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 201__.

NOTARY PUBLIC

My Commission Expires:



Affidavit Verifying Status County Public Benefit Application Jones County Board of Commissioners

By executing this affidavit under oath, as an applicant for a Jones County Georgia Business Occupation Tax Certificate, Alcohol License, Taxi Permit or other public benefit as referenced in O.C.G.A. Section 50-36-1, I am stating the following with respect to my application for a Jones County Business Occupation Tax Certificate, Alcohol License, Taxi Permit or other public benefit for _____. [Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

1) _____ I am a United States citizen

OR

2) _____ I am a legal permanent resident 18 years of age or older or I am an otherwise qualified alien or non-immigrant under the Federal Immigration and Nationality Act 18 years of age or older and lawfully present in the United States.*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant: _____

Date _____

Printed Name: _____

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

____ DAY OF _____, 20__

*

Alien Registration number for non-citizens

Notary Public _____

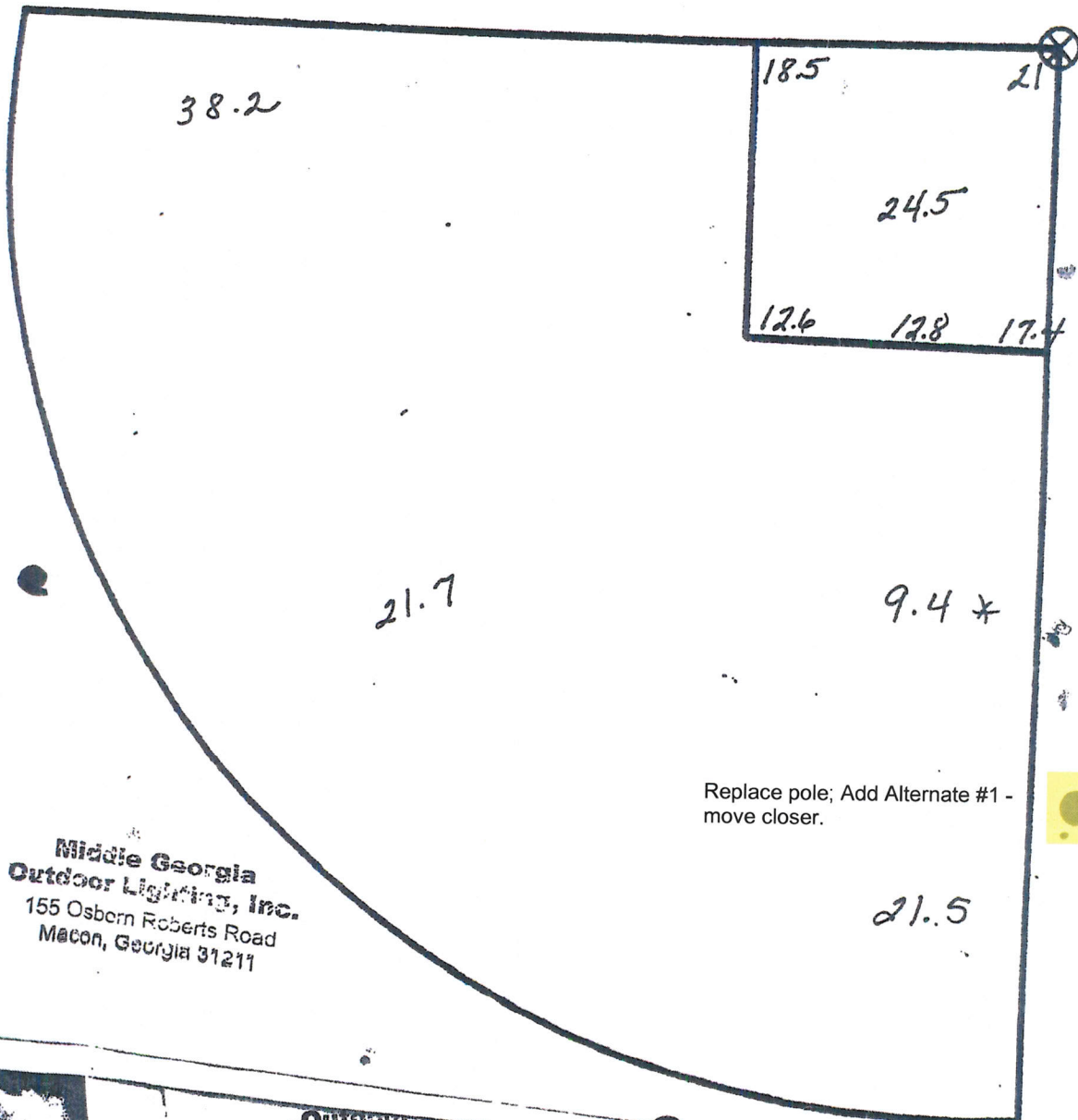
My Commission Expires: _____

***Note:** O.C.G.A. § 50-36-1(e)(2) requires that aliens under the federal Immigration and Nationality Act, Title 8 U.S.C., as amended, provide their alien registration number. Because legal permanent residents are included in the federal definition of "alien", legal permanent residents must also provide their alien registration number. Qualified aliens that do not have an alien registration number may supply another identifying number below:

10-26-17

16
16
16
16
16

Curtis Field



Replace pole; Add Alternate #1 -
move closer.

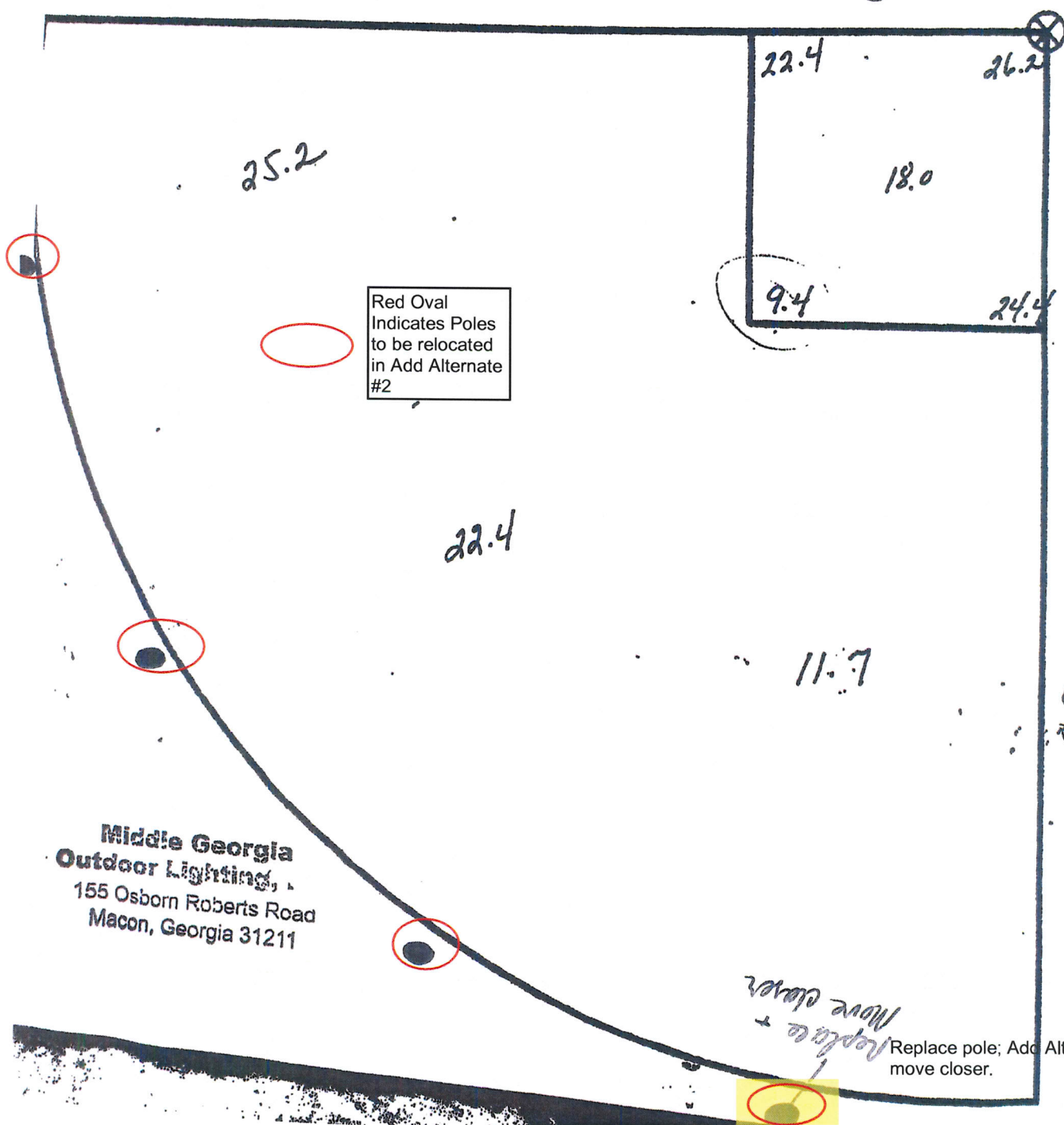
Replace
Move closer?

Middle Georgia
Outdoor Lighting, Inc.
155 Osborn Roberts Road
Macon, Georgia 31211

Outdoor
155 Osborn Roberts Road
Macon, Georgia 31211

10U
12U

Ms Daniel Field



Middle Georgia
Outdoor Lighting,
155 Osborn Roberts Road
Macon, Georgia 31211

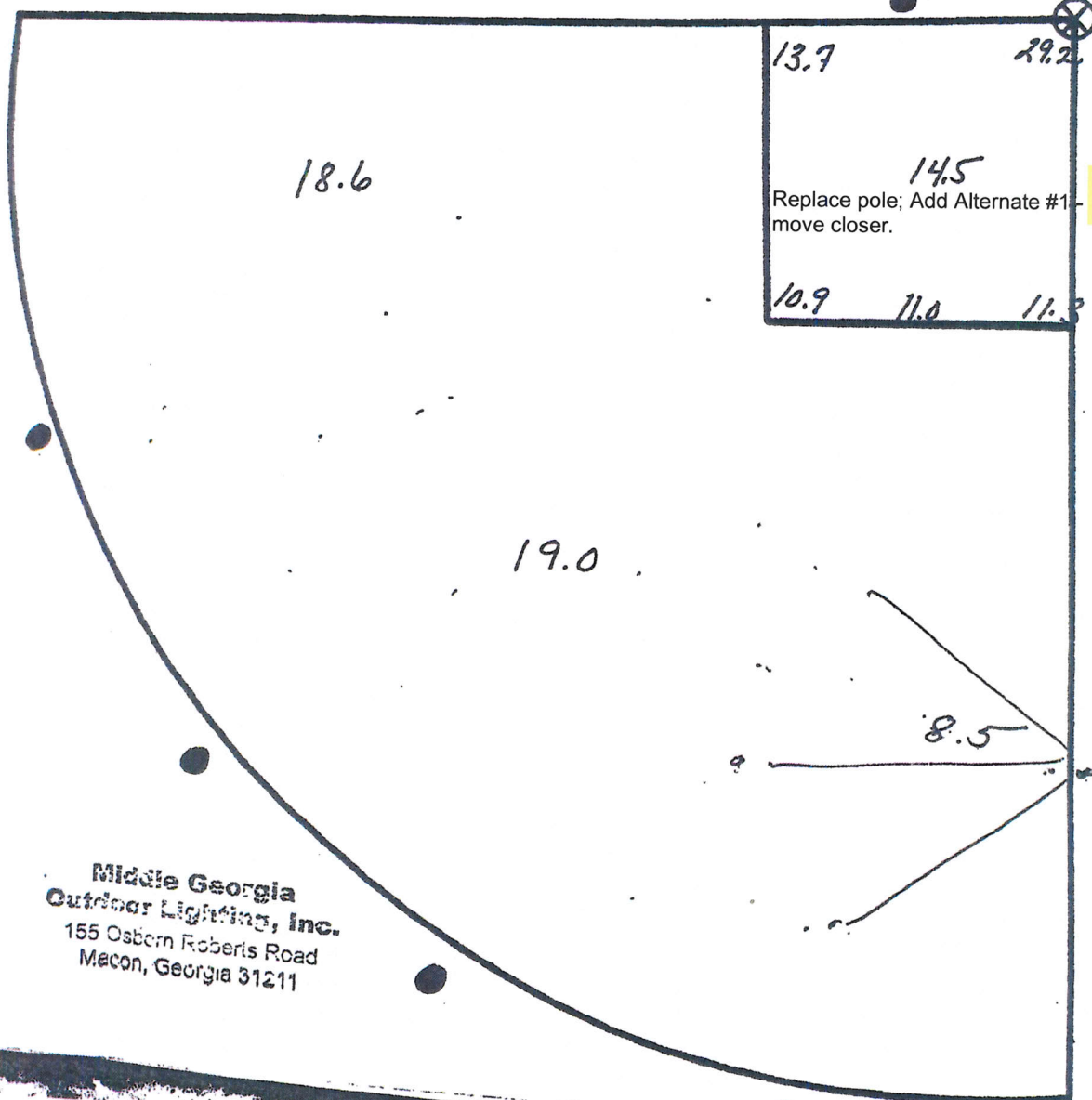
Replace pole;
Add Alternate #1 -
move closer.

Replace pole; Add Alternate #1 -
move closer.

11 17

10-26-17

Chapman Field



Replace pole; Add Alternate #1 - move closer.

Replace pole - move closer

Middle Georgia
Outdoor Lighting, Inc.
155 Osborn Roberts Road
Macon, Georgia 31211

2017 Little League[®] Lighting Standards & Safety Audit



Supplementing the Little League[®] 2017 Operating Manual Lighting Information

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Lighting

Night games have been permitted in Little League® programs starting in 1957 with the second Little League International Congress in Chicago. Standards set by the Illuminating Engineering Society (IES) of North America were adopted by Little League Baseball in 1957, and have been updated with recommendations from the National Electric Code, the Uniform Building Code, and others.

Over the years, these standards have been refined and have been adopted by Little League Baseball, the National Recreation Society and other organizations. **THE IMPORTANCE OF ADHERING TO THESE STANDARDS CANNOT BE OVERSTATED, TO ENSURE THE UNIFORMITY OF LIGHTING LITTLE LEAGUE FIELDS. ALL LIGHTING SYSTEMS MUST COMPLY WITH LITTLE LEAGUE STANDARDS, WITHOUT REGARD TO WHO INSTALLS OR FINANCES THE SYSTEM** (such as city, county, private individual, etc.).

Many leagues operate in conjunction with other organizations or municipalities. This does not need to be a roadblock in making sure that standards are met. Instead, it is a matter of educating people at all levels on this vital aspect of league operations.

The District Administrator (and each local Little League President) are directly responsible for ensuring that any fields on which night games are played within his/her league or district are up to these standards. The potential liability risks we all face make compliance even more imperative.

As the Little League program grows and leagues charter more divisions, the demand for fields increases dramatically. For many leagues, a less costly alternative to constructing new fields is the installation of lighting, providing optimum use of available fields within the curfew limitations for each division. In planning for lights, it is most important that minimum lighting standards be attained. Every precaution should be taken to guard against mishaps that might result because of the installation of an inadequate lighting system. **The local district administrator must pre-approve plans for any new lighting system as being adequate and within minimum standards for play.** The District Administrator and President of the league must check the system after installation to determine that the installed system complies with the plans and meets or exceeds the minimum standards for play. Lighting systems must be checked once per year, and should be done before the season begins. Copies of project plans must be submitted to the District Administrator, for prior approval that the plans and installation comply with required standards.

The following standards have been adopted by Little League. They are divided into required minimum standards and desirable optional features. The minimum standards establish criteria which are important to the Little League activities. The desirable features are established to provide guidelines for adding important value to your lighting system.

Notice: Any upgrade or addition of lighting equipment to existing systems after July 1, 1992, must be done so that the systems will be in complete compliance with current standards.

Increasing field sizes – such as extending the outfield fence – and/or increasing the base path distances – such as from a 60-foot base path to a 70-foot base path – on a lighted Little League field involves many potential variables that need to be examined on a per-field basis. A lighting audit of such a field change must be performed to show the lighting on the increased area will still meet Little League standards. If it does not, any proposed update to the existing lighting system for a field should be done such that the manufacturer shows the Little League lighting standards will be maintained with the new design.

Standards for Lighting

I. Required Minimum Standards

These minimum standards are required for all lighting installations after the date of adoption of these standards. Any modification in existing lighting systems after this date should be done so as to result in a lighting system in compliance with these standards. To be in compliance, a system must meet all required minimum standards.

PART 1 – GENERAL

1.1 LIGHTING PERFORMANCE

A. Light Levels – Optic System Performance

The quantity of equipment needed to produce the target light levels on a field is determined by the efficiency of the lighting system.

Newest metal halide technology is capable of delivering equal or better results with as little as half the amount of equipment as common metal halide systems. This generation of lighting has high performance optic characteristics that enable reductions in the quantities of luminaires needed to meet design targets. The lighting designs for the specified field will show a reduced fixture count for systems using a high-performance optic system. Manufacturers should provide assurance that target light levels will be met over the life of the system.

As light emitting diode (LED) technology improves and costs decrease, LED lighting systems become more viable for sports facilities. LED light sources can have a much greater lifespan than metal halide light sources with significantly less lumen depreciation over typical sports lighting operating hours. For example, a metal halide light source may reach 70% lumen maintenance in as little as 2,100–3,000 hours while an LED light source may take 100,000 hours or more.

B. Light Levels – Sustaining Targets Over Time

The two methods of design to meet specified light levels are: to provide a constant light level during the guarantee period, or to apply a recoverable light loss factor to the initial design.

1. Constant Light Level Method

a. Metal Halide Light Source

The basics of this method are described under “Lumen Maintenance” in the IESNA Lighting Handbook Reference and Application, Tenth Edition, page 16-8: “Lumen maintenance control strategy calls for reducing the initial illumination of a new system to the designed minimum level. As lumen depreciation occurs, more power is applied to the lamps in order to maintain constant output.”

The term constant is intended to include any system that provides target light levels at 100 hours and maintains the target light levels throughout the system life. Light levels should be guaranteed with this technology.

Manufacturers should provide an independent test report signed by a licensed professional engineer certifying the lumen maintenance strategy and field performance of any constant light system.

b. Light Emitting Diode (LED) Light Source

Due to the increased lifespan of LED light sources the lumen maintenance strategy will need to be considered based on the expected operating hours. For low annual usage hours applying an appropriate recoverable factor to account of lumen maintenance is likely the preferred approach. For high annual usage hours applying a lumen maintenance strategy to adjust the power to the LEDs as depreciation occurs may be the better option to maintain constant light levels. When using lumen maintenance strategy based on power adjustments the TM-21-11 reports will not apply.

Level of Play/Description	Average Constant or Target Light Levels (Horizontal)	Maximum to Minimum Uniformity Ratio	Maximum Rate of Change
Standard — Competition	50 footcandles – Infield 30 footcandles – Outfield	2:1 – Infield 2.5:1 – Outfield	10% per 10 feet

2. Recoverable Light Loss Factor Method

a. Metal Halide Light Source

Computer designs are done using two sets of values. One shows the calculated “initial light levels” when lamps are new. The other predicts “target maintained light levels” after the lamps have passed through depreciation in light output. It is important to have the lighting designer use a maintenance factor adequate to account for this depreciation in light output throughout the life of the lamp.

According to best sports lighting practices, the recoverable light loss factor, or the value applied to the initial light level to predict the maintained light level values, should be in accordance with recommendations in the Pennsylvania State University report “Light Loss Factors for Sports Lighting,” published in IES’s Leukos, Vol. 6, No. 3, Jan., 2010, pages 183–201. The report’s findings show a recoverable light loss factor of 0.65 should be used if lamps will be replaced at 3000 hours. Quality manufacturers are willing to provide guarantees of lighting performance.

b. Light Emitting Diode (LED) Light Source

The life of an LED is significantly longer than metal halide, and depreciation is more gradual early in life. If the amount of lumen depreciation will impact the target light levels during the system life then an appropriate lumen maintenance factor should be applied. It is recommended to obtain the lumen maintenance report per TM-21-11, of the fixture being proposed.

Level of Play/Description	Initial Light Levels (Horizontal)	Average Constant or Target Light Levels (Horizontal)	Maximum to Minimum Uniformity Ratio	Maximum Rate of Change
Standard — Competition	77 footcandles – Infield 46 footcandles – Outfield	50 footcandles – Infield 30 footcandles – Outfield	2:1 – Infield 2.5:1 – Outfield	10% per 10 feet

C. Performance Requirements — Quantity

Playing surfaces shall be lit to an average target light level and uniformity as specified in the above charts. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified beginning on page 11 of these standards with the light meter held horizontally 36 inches above the field surface. Measured average illumination level shall be measured at the first 100 hours of operation.

D. Performance Requirements — Quality

The uniformity ratio of the lighting helps ensure the playing surface is uniform in appearance and there is the proper amount of light for the players. The comparison of the highest measure of quantity of light on the field to the lowest measurement shall not be greater than the ratios listed in the above charts. On the entire field area, the change in the quantity of horizontal footcandles should not occur at a greater rate than 10 percent per 10 feet, except for the outside perimeter readings which may change at a greater rate.

E. Glare for Participants

Pole heights, pole locations and fixture placements should be as shown on the layouts in the Appendix to enhance playability. Aiming angles are a function of both pole height and the distance from fixture to aiming point. Minimum pole heights and minimum aiming angles must be met to be in compliance.

1. Light fixtures which are set back from the foul lines between home plate to third base and between home plate to first base shall be mounted at a height above the playing surface such that a line from the lighting fixture to the point on the field where its maximum intensity is aimed is a line that is at least 25 degrees below horizontal.
2. Light fixtures positioned beyond the outfield fence or along the foul line beyond third base and first base shall be mounted at a height with a minimum aiming angle of 25 degrees below horizontal for fixtures aimed toward the infield and 21 degrees for fixtures aimed across the outfield.
3. Light fixtures should not be located in glare zones as indicated by Fig. A.

Certain situations (spill and glare control, enhanced playability, and/or physical obstructions) may result in the light fixtures being located in glare zones. These fixtures should still be aimed as described above but also include shielding such that the glare when viewed from home plate is less than 1000 candela per fixture (measured at 60 inches above the field surface).

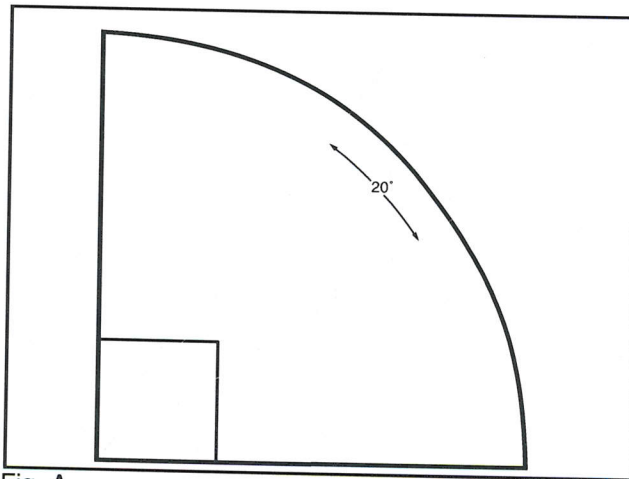


Fig. A.

1.2 **ENVIRONMENTAL LIGHT CONTROL**

Many facilities are located near residential or commercial properties or roadways, creating the possibility of spill and glare onto adjoining properties. Consideration should be given to this issue during the initial lighting design stage to minimize this effect. Some communities are implementing ordinances designed to minimize light pollution. Contact your local planning committee or zoning board.

The lighting equipment manufacturer can assist in assessing this issue and provide drawings showing maximum footcandles and candela at any points of concern on adjacent properties. Do not hesitate to investigate a manufacturer's reputation, abilities, and past experiences in working with local authorities and private property owners regarding glare and spill issues.

When considering lighting equipment that uses an LED light source, the off site light control should be at least as good as that of a metal halide source. Typically an LED light source can provide lower spill light values, but the glare from the fixture can end up being worse than a metal halide source if not properly designed.

1.3 **LIFE-CYCLE COSTS**

Leagues continue to struggle with operating budgets. Because the efficiency of lighting systems currently available can vary greatly, a life-cycle operating cost analysis should be considered when evaluating lighting systems. Owners should expect a quality lighting system to last many years. Regardless of source technology, the basics of lighting maintenance remain the same: relamping (metal halide), cleaning, monitoring, aiming alignment, and troubleshooting.

These standards provide a 10-year Life-Cycle Operating Cost Evaluation form to assist with the process. Items that should be included are energy consumption based upon the facility's expected usage, cost for spot relamping and maintenance, and any additional savings in energy or labor cost provided by automated on/off control systems. Contract price and life-cycle operating cost should both be considered in determining a lighting manufacturer for the project.

1.4 WARRANTY AND GUARANTEE

Product warranties are a good gauge of a manufacturer's confidence in their products. Prior generation equipment can range from 5 years to 10 years, and details of covered items and conditions vary greatly. New generation technology comes with warranty periods that may extend up to 25 years and includes guaranteed light levels, parts, on-site labor, lamp replacements, energy usage, monitoring and control services, spill light control, and structural integrity. The manufacturer should provide specially-funded reserves to ensure fulfillment of the warranty for the full term. It is highly recommended you consider these all-inclusive warranties to limit your league's future exposure to escalating costs and maintenance hassle.

LED products also range from 5 year to 10 year warranties. While the diodes themselves will typically outlast the length of the warranty, it is the other components that need to be covered in order to provide a system that will be operational for the length of the warranty. The basics of lighting maintenance remain the same: cleaning, monitoring, aiming alignment, and troubleshooting.

PART 2 – PRODUCT

2.1 LIGHTING SYSTEM CONSTRUCTION

A lighting system should consist of lighting, electrical, and structural components designed to work together as a system that is durable and provides safety features.

A. Outdoor lighting systems should consist of the following:

1. Galvanized steel poles and crossarm assembly. Wood poles are not allowed after September 1, 1994. Poles should be hot-dip galvanized to ASTM A123 standards. All accompanying hardware shall be galvanized or stainless steel. Direct burial of steel poles is not recommended because of the potential for deterioration at or below ground at critical stress points. If direct bury steel poles are used, leagues should have a foundation design completed by a structural engineer.
2. Reinforced concrete pole foundation. Foundations should provide for pole attachment a minimum of 18 inches above ground to avoid corrosive deterioration. Concrete should cure a minimum of 28 days to develop adequate strength before stress loads are applied unless a shorter cure time is approved by the structural engineer of record.
3. All ballasts, or drivers, and supporting electrical equipment shall be mounted onto the pole, away from the fixtures and crossarm to avoid problems of misalignment caused by the weight of these components. It is recommended that this equipment be placed in aluminum enclosures mounted remotely approximately 10 feet (3 meters) above grade. The enclosures shall be lockable and include safety disconnect and surge protection per circuit for each pole structure. Enclosures should be kept locked except during times of maintenance.
4. All wiring conductors above ground must be enclosed in rigid cover. It is recommended that the lighting system include a wire harness complete with an abrasion protection sleeve and strain relief.
5. The approved metal halide lamp for play is a 1500-watt ANSI code – M48/E.
6. For an efficient LED system the diodes should have a minimum color temperature of 5700 K and a CRI of 65+.

B. Manufacturing Requirements

It is recommended that all components be designed and manufactured as a system. All luminaires, wire

harnesses (if provided), ballast/driver and other enclosures should be factory assembled, aimed, wired and tested for reduced installation time and trouble-free operation.

C. Durability

It is recommended that all exposed components be constructed of corrosion resistant material and/or coated to help prevent corrosion. Look for items like hot dip galvanizing for steel poles, stainless steel fasteners, powder coat painted aluminum, and wiring enclosed within the crossarms, conduit, pole, or electrical enclosure.

D. Lightning Protection:

All outdoor structures need to be equipped with lightning protection meeting NFPA 780 standards. If lightning grounding is not integrated into the structure, it may be necessary to supplement with grounding electrodes, copper down conductors, and exothermic weld kits.

E. Safety

All system components need to be UL Listed for the appropriate application. All electrical conductor wires for distribution of power around the playing field should be buried underground at depths provided by local code.

F. Maximum total voltage drop

Voltage drop to the disconnect switch located on the poles should not exceed 3% of the rated voltage per IESNA RP-6-15, Annex D.

2.2 STRUCTURAL PARAMETERS

A. Location

Poles shall be located as shown on the drawings in the appendix to these standards. Whenever possible, poles should be located outside of fences to avoid causing an obstruction or safety hazard to the participants.

B. Foundation Strength

Project specific foundation drawings stamped by a licensed structural engineer shall be required, illustrating that the foundation design is adequate to withstand the forces imposed from the pole, fixtures, and other attachments to prevent the structure from leaning.

C. Wind Load Calculator

Wind load of poles and other support structures, fixtures, brackets, arms, bases, anchorages, and foundations shall be determined based on the 50-year mean recurrent isotach wind maps for the appropriate municipality per the state building code.

D. Structural Design

The stress analysis and safety factor of the poles shall conform to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

E. Soil Conditions

The design criteria for these specifications are based on soil design parameters as outlined in the geotechnical report. If a geotechnical report is not provided by the school, the foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC, Table 1806.2.

PART 3 – EXECUTION

3.1 FIELD QUALITY CONTROL

A. Illumination Measurements

Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, League Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-15, Annex B.

B. Correcting Non-Conformance

If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles, uniformity ratios, and maximum kilowatt consumptions are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be liable to any or all of the following:

1. Manufacturer shall, at his expense, provide and install any necessary additional fixtures to meet the minimum lighting standards. The Manufacturer shall also either replace the existing poles to meet the new wind load (EPA) requirements or verify by certification by a licensed structural engineer that the existing poles will withstand the additional wind load.
2. Manufacturer shall minimize the Owner's additional long term fixture maintenance and energy consumption costs created by the additional fixtures by reimbursing the Owner the amount of \$1,000 (one thousand dollars) for each additional fixture required.
3. Manufacturer shall remove the entire unacceptable lighting system and install a new lighting system to meet the specifications.

3.2 ONGOING QUALITY ASSURANCE

- #### **A.**
- Full light and safety audits should be performed every year. See Lighting Safety Audit at the back of these standards.

II. Desirable Features

The following practices are recommended for increasing the lighting system performance.

4.1 CONTROL AND MONITORING SYSTEM

A remote control and monitoring system will provide ease of operation and management for your facility. Manufacturers providing systems with a long-term warranty of at least 10 years will use this system to ensure your lighting performs as required.

A. Remote Monitoring

Monitoring systems can check the lighting system each time it is turned on for luminaire outages.

When an outage is detected, the manufacturer should notify the owner so that appropriate maintenance can be scheduled.

B. Remote Lighting Control

Lighting control systems allow owners and users with a security code to schedule on/off system operation in a variety of methods including web sites, phone, app, fax, or email. Look for manufacturers that provide trained staff available 24/7 to provide scheduling support. Also evaluate features such as memory back up in the event of power outages.

C. Management Tools

Some manufacturers provide a web-based database of actual field usage and provide reports by facility and user group.

D. Communication Costs

Leagues should request that manufacturers include communication costs for operating the control and monitoring system for the life of the lighting system.

4.2 AUXILIARY BRACKETS

Sports lighting manufacturers can provide accommodations for mounting auxiliary equipment, such as speakers and security lights, on sport lighting poles. This ensures poles will be sized to accommodate the weight, dimensions, and EPA of the additional equipment. Brackets shall be welded to the pole and fabricated from hot-dip galvanized steel with a covered hand hole access and internal wiring in the pole.

4.3 FIELD PERIMETER LIGHTING

The parking areas, major areas utilized for passage, and areas immediately bordering the facilities should be lighted. The spill light from the playing field may provide illumination for some of these areas when the field is in use. When a sports field is not in use its sports lights should be turned off. Then other security lighting would be needed. For appropriate levels, see local codes. Care should be taken to eliminate darkly shadowed areas.

For additional information, contact: Little League® International

PO Box 3485

Williamsport, PA 17701

570/326-1921

Fax: 570/326-1074