

ADVERTISEMENT FOR BIDS

1. **Sealed Bids to be Received:** Sealed submissions will be received by the Commissioner c/o State Parks Division of the Alabama Department of Conservation and Natural Resources, Folsom Administration Building, Ste. 538, 64 N. Union Street, Montgomery, Alabama 36130, until **2:00 PM Central Time, Thursday, September 14th, 2023**. No bids shall be accepted after the time stated for receipt of bids. Bidders are responsible for assuring their bids are received prior to bid date and time. Sealed bids will be publicly opened and read for:

GOLF COURSE DRIVING RANGE LIGHTING
at
OAK MOUNTAIN STATE PARK
SHELBY COUNTY
PELHAM, ALABAMA
PROJECT NO. 2023-037-29CM

2. **Scope of Work:** This project generally consists of electrical contracting work installing new LED sports lighting fixtures (aerial lighting) with controls and monitoring to the golf course driving range. The contractor will install all new underground wiring. Contractor will be responsible for all labor and materials to complete this project, and must repair any damaged items, leaving the site in same or better condition as upon arrival or start of project. Contractors must be duly licensed as a General Contractor in the State of Alabama.
3. **Bid Opening:** Proposals will be publicly opened and read at State Parks Division of the Department of Conservation and Natural Resources, Folsom Administration Building, Ste. 538, 64 N. Union Street, Montgomery, Alabama 36130, at 2:00 PM Central Time, Friday, September 15th, 2023.
4. **Bid Package:** Bid documents, including required bid forms, drawings, and specifications may be obtained from the State Parks Division by contacting Dennis Grooms at (334) 353-7996 or email to dennis.grooms@dcnr.alabama.gov. Proposals must also include a signed and notarized copy of the Disclosure Statement required by Act 2001-955. Plans and Specification may be found on the Alabama State Parks website: <https://www.alapark.com/construction-permits-easement-and-research-applications>. Look for the Project Name under the CURRENT INVITATIONS TO BID.
5. **Submission of Sealed Bids:** Sealed Bids must be accompanied by a certified check or bid bond in an amount not less than five percent (5%) of the contract price, but not to exceed \$10,000.

6. **Award**: The Department will award the project to the responsive and responsible qualified bidder quoting the lowest total cost to the Department of Conservation and Natural Resources that is within the project budget. The Department reserves the right to compare specific items, at its discretion, to determine the lowest responsible bidder. It is anticipated that the award will be made within 30 days of the bid opening.
7. **Bond and Insurance**: A performance bond in the amount of 100% of the contract price and a payment bond in the amount of 100% of the contract price shall be required of the successful bidder. Evidence of insurance required in the bid documents will be required at the signing of the Contract.
8. **Prequalification Information**: A mandatory Pre-Bid Conference is scheduled for Thursday, September 7th, 2023 at 10:00 AM. All General Contractors expecting to submit a qualified bid are required to attend this conference. The conference will be held at the park office at Oak Mountain State Park, 200 Terrace Drive, Pelham, Alabama. If you have any questions, please contact Dennis Grooms at (334) 353-7996 or email dennis.grooms@dcnr.alabama.gov or visit <https://www.alapark.com/construction-permits-easement-and-research-applications>.
9. **Open Trade**: By submitting a bid, proposal, or qualification, the submitter represents that he/she and the business entity he/she represents is not currently engaged in the boycott of a person or entity based in or doing business with a jurisdiction with whom the State of Alabama can enjoy open trade, as defined in Act 2016-312.
10. **Economic Boycott**: In compliance with Ala. Act No. 2023-409, by signing this contract, Grantee provides written verification that Grantee, without violating controlling law or regulation, does not and will not, during the term of the contract engage in economic boycotts as the term “economic boycott” is defined in Section 1 of the Act.
11. **Immigration / E-Verify**: In compliance with the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, as a condition for the award of any contract by the state to a business entity or employer that employs one or more employees, the business entity or employer shall provide documentation establishing that the business entity or employer is enrolled in the E-Verify program. The successful bidder will be required to acknowledge that it will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.
12. **Non-Discrimination**: The Department of Conservation and Natural Resources does not discriminate on the basis of race, color, religion, age, sex, pregnancy, national origin, genetic information, veteran status or disability in its hiring or employment practices nor in admission to, access to, or operations of its programs, services, or activities.
13. **Force Majeure**: In the case of a Force Majeure Event as defined herein, DCNR reserves the right to immediately terminate the Agreement without prior notice to Concessionaire. Should this occur, neither Party shall be liable for or be considered in breach of this Agreement due to any failure to perform its obligations as a result of a cause beyond its control, including, without limitation: (i) acts of God; (ii) flood, fire or explosion; (iii) actions, embargoes, quarantines, or blockades in effect on or after the date of this Agreement; (iv) national, state, or regional emergency, whether ongoing or occurring on or after the date of

this Agreement; (v) public health emergencies, outbreak, epidemic, or pandemic, whether ongoing or occurring on or after the date of this Agreement, including, without limitation, **COVID-19**; or (vi) any other event which is beyond the reasonable control of such party (each of the foregoing, a “Force Majeure Event”).

14. **General Information:** For contracts in excess of \$50,000, Contractor must be licensed as a General Contractor. Title 34, Chapter 8, Code of Alabama, 1975. All responses received will be subject to the Alabama Open Records Act, Ala. Code § 36-12-40, (1975), as amended, and may be subject to public disclosure upon request. If there is any reason for believing that collusion exists among the BIDDERS any or all bids may be rejected, and those participating in such collusion may be barred from submitting bids on the same or other work the Alabama Department of Conservation and Natural Resources.
15. The right to reject any/all bids is reserved and the Department reserves the right to waive any informalities in the bidding.

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

Christopher M. Blankenship,
Commissioner

LIGHTING INSTALL SPECIFICATION
PREPARED FOR

Oak Mountain Driving Range Lighting Project

DCNR-SPD #2023-037-29CM

LED Install SPEC

Pelham, AL

Project Scope

This project will consist of electrical contractor installing new LED sports lighting fixtures with controls and monitoring as specified. The contractor will install all new underground wiring. Contractor will be responsible for all labor and materials to complete this project and must repair any damaged items and leave site in same condition as upon arrival or start of project.

PART 1 – GENERAL

1.1 ELECTRICAL SYSTEM REQUIREMENTS

- A. Contractor Responsibility: The installing contractor shall be responsible for providing the equipment, labor and installation of the specified sports lighting system.. The system must be installed and operational as per sports lighting manufactures recommendations. The electrical contractor shall coordinate with the owner and there designated sports lighting manufacture all install requirements.
- B. Electric Power Requirements for the Sports Lighting Equipment:
Electric power: Volt, Phase (To be confirmed by Contractor) and wire sized according to carry load and account drop not to exceed 3%
- C. System Design
 - 1. The electrical system equipment shall consist of:
 - a. All new 70 foot poles, fixtures and controls
 - b. Grounding conductors and grounding methods for the following:

- (1) The lighting contactor enclosure. (per NEC or local codes)
 - (2) Each electrical component enclosure mounted on the lighting poles. (Equipment Grounding System) (per NEC or local codes)
 - (3) Lightning Protection for individual poles as follows (per NFPA 780):
 - i. All structures shall be equipped with lightning protection meeting NFPA 780 standards.
2. Electrical---All electrical wiring shall be copper wire. Any ground conduit or elbows on the poles shall be rigid galvanized steel. Conduit elbows located at the electrical panel shall be rigid galvanized steel.
- D. Trenching or Directional Boring(Optional)
1. The installing contractor shall be responsible for locating all underground utilities including, but not limited to: natural gas, electric, water, sewer, cable TV, and telephone.
 2. The owner shall be responsible for locating and staking any underground facilities that are not utility related. Owner accepts responsibility for damage to such facilities that are not properly located or staked.
 3. If any trenching is required the Trenching depth and width shall be adequate to install appropriately sized conduit and to meet local and National Electrical Codes.
 4. Trenches shall be back-filled with excavated soil and compacted to approximately the same density of the surrounding soil to minimize settlement.
 5. No trench line or feeder circuit shall cross the playing area.
- E. Design Standards
1. All work shall meet local and National Electrical Codes. It shall be the installing contractors' responsibility to correct any work deemed unacceptable by local electrical inspectors.
 2. All electrical components shall be UL Listed for the appropriate application.

PART 2 – EXECUTION

2.1 CONTRACTOR'S DUTIES

All work performed under this contract shall be performed in accordance with all provisions of these specifications and drawings. Any deviations from the specifications or plans must be approved in writing by the owner or his representative.

- A. Initial site inspection: The contractor shall be presumed to have made a reasonable inspection of the premises prior to the time of bidding and shall be held responsible for all information available through such inspection. The contractor shall immediately upon discovery, bring to the attention of the owner any conflicts that may occur among the various provisions of the specifications and plans. Failure of the contractor to bring conflicts or exceptions to the attention of the owner shall allow the owner to require any change deemed necessary before acceptance by the owner.
- B. Insurance Requirements:
1. Contractor's and Subcontractor's Insurance: The contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the owner, nor shall the contractor allow any subcontractor to commence work on his sub-contract until the insurance required of the subcontract has been so obtained and approved.
 2. Workman's Compensation Insurance: The contractor shall procure and shall maintain during the life of the contract, Workman's Compensation Insurance and Death Liability Insurance for all of the employees engaged in work on the project under the contract, and in case any such work is

sublet, the contractor shall require the subcontractor similarly to provide Workman's Compensation Insurance and Death Liability Insurance for all of the latter's employees engaged in such work unless such employees engaged in hazardous work on the project under his contract are not protected under Workman's Compensation Statute, the contractor shall provide and shall cause each subcontractor to provide adequate employer's general liability insurance for the protection of such of his employees not otherwise protected.

3. Contractor's Public Liability and Property Damage Insurance: The contractor shall procure and shall maintain during the life of this contract, Contractor's Public Liability Insurance in an amount not less than \$500,000 for injuries, including accidental death to any one person and subject to the same limit for each person in an amount not less than \$500,000 on account of one accident, the Contractor's Property Damage Insurance in an amount not less than \$100,000 each occurrence and aggregate.
 4. Subcontractor's Public Liability and Property Damage Insurance: The contractor shall require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage Insurance of the type specified in subparagraph 3 hereof in the amount specified.
 5. Automobile Public and Property Damage Insurance: The contractor shall require each of his subcontractors to procure and to maintain during the life of his subcontract, Automobile Public Liability Insurance in an amount not less than \$500,000 single limit for injuries, including accidental death and property damage. Insurance for automobiles shall include: the contractor's owned automobiles and trucks, hired automobiles and trucks, and automobiles and trucks not owned by the contractor.
- C. Bonding: The successful contractor shall furnish a performance bond in an amount equal to one hundred percent (100%) of the contract as security for the faithful performance of this contract, and a labor and material payment bond in an amount of one hundred percent (100%), or in the penal sum not greater than that prescribed by state, territory, or local law, as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. The bonds shall be written by a surety licensed to do business in the locale in which the work is being performed and shall be satisfactory to the owner.

The successful contractor shall, upon completion of the project, protect the owner against defective materials or faulty workmanship for a period of one year. The contractor, at the owner's request, shall furnish a maintenance bond for the above outlined maintenance term. This bond shall be in an amount not to exceed one hundred percent (100%) of the contract price.

- D. Codes, Permits and Licenses: All work shall comply with the applicable rules of the National Electrical Code, the National Electrical Safety Code, the National Fire Codes, (published by the National Fire Protection Association), state and local codes and ordinances, and the terms and conditions of the services of the electrical utility, as well as any other authorities that may have lawful jurisdiction pertaining to the work specified. None of the terms or provisions of this specification shall be construed as waiving any of the rules, regulations or requirements of these authorities. The contractor shall procure all necessary permits or licenses to carry out his work, and shall pay the lawful fee therefore, as well as for any inspection fee or the cost of a certificate of approval.

In any instance where these specifications call for materials for construction of a better quality or larger size than required by the codes, the provisions of these specifications shall take precedence. The codes shall govern in the case of direct conflict between the codes and the plans and the specifications.

2.2 MATERIALS

- A. Approved Materials: All materials supplied by the contractor under the provisions of these specifications and plans shall be new materials of the kind and character called for by the specifications. Defective equipment or material damaged in the course of installation or tests shall be replaced or repaired in a manner satisfactory to the owner. All materials and equipment to be furnished under these specifications shall be the standard product of a manufacturer regularly engaged in the production of such material and shall be the manufacturer's current standard design.
- B. Alternate Materials: The materials specified have been determined by the owner and are specified as per the owners request for the purposes of this project. The owner reserves the right to reject any or all bids.

2.3 SITE ACCESS

- A. Contractor Access: For the performance of the contract, the contractor will be permitted to occupy such portions of the site as shown on the plans, or as permitted by the owner or his representative. A reasonable amount of tools, materials or equipment for construction purposes may be stored in such place, but not more than is necessary to avoid delays in construction. Excavated and waste materials shall be piled or stocked in such a way as to not interfere with spaces that may be designated to be left free and unobstructed, not to inconvenience other contractors or the owners. No open ditches or holes shall be left un-marked overnight without safety tape or safety precautions in place.
- B. Owner's Access: The owner's representative shall at all times have access to the work site. The contractor shall keep the owner advised of the progress of the project and shall provide opportunity for the owner or his representative to inspect each phase of the project. The contractor shall provide proper and safe facilities for such access and for inspection.

2.4 REPLACEMENT OF DAMAGED PROPERTY

The contractor shall replace all property damaged by him including fences, trees, plants, grass, walks, drives, building surfaces, etc.

2.5 INSTALLATION

- A. Manufacturer's Instructions: Written instructions for the installation of the sports lighting equipment shall be provided by the manufacturer. The contractor shall review the instructions prior to beginning installation and review any areas of concern with the manufacturer.
- B. Installation of Equipment: Contractor shall install lighting equipment per manufacturer's stated requirements to ensure lighting performance is achieved.
- C. Manufacturer Representative: A qualified representative from the sports lighting manufacturer shall be available to provide installation guidance if required by the contractor.
- D. Handling and unloading of Equipment: The lighting equipment shall be unloaded by the contractor and handled in an appropriate manner to ensure safe installation and prevent damage to the equipment. Repair or replacement of damaged component shall be the responsibility of the installing contractor.
- E. Rigging: Use the appropriate rated web fabric slings to lift components into position. Chains or cables shall not be allowed due to potential failure and damage to components.
- F. Completion Time: All construction, after Notice to Proceed, is to be completed in 90 days. If construction is not completed within the specified period, and the delay is due to the fault of the contractor, the owner may charge the contractor liquidated damages in the amount of \$500 per day.

- G. Clean-up: Upon completion of the work and before acceptance and final payment is made, the contractor shall clean and remove from the site of the work, surplus and discarded materials, temporary structures and debris of every kind. The contractor shall leave the site of work in a neat and orderly condition equal to that which originally existed. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to the owner.

2.6 **FIELD QUALITY CONTROL**

- A. 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 by the lighting manufacture and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-01, Appendix B.
- B. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual install is not in conformance with the requirements of the lighting manufacture the Contractor shall be liable to any or all of the following if installation of the lighting equipment does not conform to manufacturer's stated requirements:
 - 1. Contractor shall at his expense correct any incorrectly installed materials.
 - 2. The system must be operational upon completion of install.
 - 3. The contractor will coordinate with the lighting manufacture to verify light levels and that aiming is correct.

2.7. Site Contact and Bid Information:

- 1. The site contact for this project will be Mr. Dennis Grooms. All questions concerning this project should be directed to him in writing at dennis.grooms@dcnr.alabama.gov.
- 2. Bids are due September 14th, 2023 by 2:00PM at the State Parks Office. Bids will be opened and read publicly September 15th, 2023 at 2:00PM at the State Parks Office. A virtual meeting invite will be supplied to contractors attending the prebid.
- 3. All bids shall be submitted to: DCNR – State Parks Division, 64 N. Union Street, Suite 523, Montgomery, AL 36130.
- 4. All bids shall be submitted in a sealed envelope with the contractor's company name, address, State of Alabama General Contractors number, name of project and State Parks Project Number shown on the outside of the envelope.
- 5. A MANDATORY Pre-bid Meeting will take place on September 7th, 2023 at 10:00AM at Oak Mountain State Park Office.
- 6. Bid documents and process can be found online at : <https://www.alapark.com/construction-permits-easement-and-research-applications>.

LIGHTING SPECIFICATION

PREPARED FOR

Oak Mountain Driving Range Lighting Project

DCNR-SPD 2023-037-29CM

SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

Lighting System with LED Light Source

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 the Oak Mountain Driving Range 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. Driving range Tee Box
 - 2. Putting Green
 - 3. Driving Range Landing Area with Bunker Lights
- D. Manufacturer to provide a list of 5 projects where the technology and **specific fixture** proposed for this project has been installed in the state of AL. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
- E. The primary goals of this sports lighting project are:
 - 1. **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**.
 - 2. **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.
 - 3. **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.
 - 4. **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.

1.2 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 calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the

IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Driving Range	30 foot-candles	3:1		30' x 30'

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

C. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
2	P1 an P2	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.

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. Manufacturer shall provide certificate of manufacturing stating that the lighting system as a whole contains at least 55% domestic USA content. Manufacturer will be rejected if supporting documentation is not provided.
- C. 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.
- D. System Description: Lighting system shall consist of the following:
 - 1. Galvanized steel poles and cross-arm assembly. Alternate: Concrete pole with a minimum of 8,000 psi and installed with concrete backfill will be an acceptable alternative provided building code, wind speed and foundation designs per specifications are adhered to.
 - 2. Non-approved pole technology:
 - a. Square static cast concrete poles will not be accepted.
 - b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
 - 3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
 - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
 - 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. Manufacturer must show 10 projects in the state of AL where remote drivers have been installed.

- 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. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
 7. All manufacturers submitting for approval to bid this project must manufacture the fixture they are submitting for approval. No third-party manufacturers will be approved.
 8. Control cabinet to provide remote on-off control and monitoring features of the lighting system will be provided with electronically held contactors to allow for complete turn off of the lighting system. Digital contactors will not be allowed. See Section 2.3 for further details.
 9. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
 - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.
- D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 1. Electric power: Volt, Phase
 2. Maximum total voltage drop: 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 12.08kW.

2.3 CONTROL

- 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. 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.

- D. 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).
- E. 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.
- F. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.
- G. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication. Wireless Control system is not allowed.

2.4 **STRUCTURAL PARAMETERS**

- A. Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 160mph and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
- C. If no geotechnical report is available, 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.
- 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 SOIL QUALITY CONTROL

- A. 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 Alabama 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 8 weeks from receipt of approved submittals and receipt of complete order information. Delivery timing will need to be provided on bid form.**

3.3 FIELD QUALITY CONTROL

- E. 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 LM-5-04.
- F. Field Light Level 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.
- G. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to 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. Warranty will be provided by the manufacturer of the fixture, not a third-party provider. Documents will be provided to show proof of fixture and component manufacturing.

- B. **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.
- C. Manufacturer shall supply certification of manufacturer which will provide in detail that 55% of the system is manufactured in the USA. Inability to provide such documentation will result in disqualification of bid.

PART 4 – DESIGN APPROVAL

4.0 SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The owner / engineer will review submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 2 business days following bid opening. 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™ 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 2 business days following bid opening. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued following the bid opening 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 5 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: <ul style="list-style-type: none"> 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 luminaires, total kilowatts, average tilt factor; light loss factor.
	D	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.
	E	Performance 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.
	F	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Alabama.
	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 Alabama.
	H	Electrical Distribution	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the

		Plans	state of Alabama.
	I	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of Alabama.
	J	Certificate of Manufacturing	Manufacturer shall provide required documentation to prove that 55% of the system is manufactured in the USA. Failure to provide such documentation will result in rejection of bid.
	K	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 AL. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	L	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	N	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	O	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

The information supplied herein shall be used for the purpose of complying with the specifications for Oak Mountain State Park Driving Range. 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:

Oak Mountain Driving Range Lighting Project
DCNR-SPD #2023-037-29CM

Bid Delivery Date: September 14th, 2023

Bid Delivery Time: 2:00pm

Bid Opening Date: September 15th, 2023 at 2:00pm

Reference ASPD Form 5-C (Instructions to Bidders) for required documentation in bid package. See link above.

Contractors shall submit bids on ASPD Form 5-E to be considered for this project. No other form will be accepted.

