



**CITY OF MILAN**  
**UPDATED: REQUEST FOR PROPOSALS**  
**INSTRUCTIONS TO BIDDERS**

**SPORTS FIELD LIGHTING**  
**Wilson Park Football/Soccer Field**  
**BID OPENING: April 12, 2018**  
**at 2:00 p.m. Eastern Time**

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1. Unless otherwise specified, two original signed copies of the Bidder's proposal must be submitted.
2. Bidders must carefully read and thoroughly comply with these Instructions to Bidders, the Terms and Conditions, and the Specifications (together, the "Invitation to Bid"). The Instructions to Bidders, Terms and Conditions, Specifications, and the Bidder's proposal, including all attachments and accompanying documents, shall become part of the contractual agreement entered into with the successful bidder.
3. Proposals shall include all applicable taxes, licensing, permitting, regulatory, import and other fees and costs applicable to the contract (the "taxes and fees"). Generally, the City is exempt from State and Federal taxes. In the event that taxes and fees must be paid on any materials or work necessary to complete the contract, the Bidder shall bear the cost and responsibility of all such taxes and fees and must take such costs into account in submitting its proposal. To the extent any taxes and fees apply, they must be separately identified and itemized in the proposal.
4. The Bidder shall be required to comply with all provisions of the Federal Davis-Bacon Act (Federal prevailing wages): Yes  No
5. The Bidder shall be required to comply with all Community Development Block Grant requirements: Yes  No
6. The City reserves the right to award the bid in whole or in part, to reject any or all proposals, to waive informalities, and to negotiate the terms of the proposals with a Bidder of the City's choosing.
7. Bidders shall submit their proposals, including additional documentation as is necessary or appropriate, by the date and time specified (*no exceptions will be made*) in a sealed envelope addressed as follows:
- 8.

City of Milan Proposal for SPORTS FIELD LIGHTING  
Wilson Park Football/Soccer Field

\_\_\_\_\_  
147 Wabash Street  
Milan, Michigan 48160-1594

9. Failure to properly address or deliver the proposal may result in premature opening and disqualification of/or failure to open and disqualification of the proposal. The Bidder assumes all risks regarding the City's receipt of the proposal and the proposal's compliance with the Instructions to Bidders and the Terms and Conditions.

# CITY OF MILAN

## TERMS AND CONDITIONS

### SPORTS FIELD LIGHTING Wilson Park Football/Soccer Field

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#### 1. PREPARATION OF BIDS/PROPOSAL:

- a. Any person contemplating submitting a proposal in doubt as to the true meaning of any part of the request for proposals may submit a written request for clarification to the City, attention Purchasing Division. Persons submitting requests for clarification will be responsible for its prompt delivery. Any interpretation or clarification will be made only by written addendum duly issued by the City. A copy of each addendum will be mailed or delivered to each person in receipt of the request for proposals.
- b. In responding to this request for proposals, each Bidder shall furnish all information required and such information shall be furnished on the forms contained herein, if any.
- c. The Bidder's proposal shall not contain any condition purporting to limit the Bidder's liability for damages, actual, consequential or otherwise, to the price of the contract, and any such condition shall be null, void, and of no force or effect.

#### 2. SUBMISSION OF BIDS/PROPOSALS:

- a. Each bid shall include a description of the Bidder, the state in which it is licensed to do business (if other than Michigan), and shall include the names, resumes, and experience of the personnel to be assigned to this project. The City at its reasonable discretion may require further information from the Bidder, including detailed financial information, which information shall be promptly provided.
- b. Proposals shall remain valid for at least ninety (90) days from the date set for bid opening.
- c. Prior to the date and time set for bid opening, Bidders may withdraw their proposal by giving written notice to the City, attention Purchasing Department. After the date and time set for bid opening, no bid may be withdrawn or canceled.
- d. Any alternate bids that are submitted may be considered, in the sole discretion of the City.
- e. All bids must be accompanied by a bid deposit in the amount of \$0.00. The bid deposit of the successful Bidder will be held until the contract has been duly executed by the City. The amount of the bid deposit may be forfeited to the City as liquidated damages upon the refusal or neglect of the Bidder to proceed. Bid deposits of unsuccessful bidders will be returned by the City within forty-five (45) days after the date set for bid opening.
- f. Bidders are advised that after the date and time set for the opening of bids, all proposals and information submitted with their bid will constitute public records subject to disclosure under the Michigan Freedom of Information Act.

Bidders are solely responsible for any and all costs to prepare their bid, including any site visits and engineering analysis.

**3. CONSIDERATION OF BIDS/PROPOSALS:**

- a. The City Administrator and the City's Building Director shall each be authorized to represent the City in all matters pertaining to this Request for Proposals, provided however, that final approval and award of the bid, if any is made, shall be by official action of the City Council.
- b. Proposals varying from the Specifications will only be considered when such substitutions are clearly identified and described in the Bidder's proposal. The determination of whether to consider such substitutions shall be at the City's sole discretion.

In cases where an item requested is identified by a manufacturer's name, trade name, catalog number or specific reference, it is understood that the Bidder proposes to furnish the specific item so identified and does not propose to furnish an "equal" unless the proposed "equal" is definitely indicated by submission of the Substitution Proposal form. Bids of "equal" items will only be considered when the Bidder's proposal clearly identified and described the proposed "equal" to be furnish, including such information as condition, quality, warranty, and price.

- c. Every bid shall include a sworn statement disclosing any familial relationship that exists between the owner or any employee of the Bidder and any City official or City employee, and disclosing any substantial interest held by any City official or City employee or their immediate family in the Bidder's business. The sworn statement shall be in the form of the Bidder Disclosure Statement included in this Invitation to Bid. The City will not accept a bid that does not include this sworn disclosure statement.

**4. FAIR EMPLOYMENT PRACTICE AND NON-DISCRIMINATION:**

The Bidder and its subcontractors shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, marital status or handicap. The Bidder shall take affirmative action to ensure that applicants are employed and employees are treated during employment without regard to race, color, religion, sex, age, national origin, marital status or handicap. Such action shall include, but not be limited to, the following: employment, promotion, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rate of pay or other forms of compensation; and selection of training, including apprenticeship. Breach of this covenant may be regarded as a material breach of contract.

**5. COMPLIANCE WITH FEDERAL, STATE AND MUNICIPAL LAWS:**

Bidder shall comply with all Federal, State, and municipal laws, rules and regulations in the performance of the contract and in the employment of persons, and shall obtain all necessary licenses and permits and pay all fees, taxes and other charges required thereby, and furnish, upon the City's request, evidence of compliance with any law and the payment of any fee, tax or charge. Bidder will defend, indemnify and hold harmless the City against any and all claims, charges, liens, garnishments and levies arising out of Bidders failure to comply as required by this paragraph.

## **6. INDEMNIFICATION**

Bidder shall to the fullest extent permitted by law indemnify, defend and hold harmless the City of Milan and its elected and appointed officials and officers, agents, servants, employees and successors from and against any and all liabilities, claims, causes of action or lawsuits seeking damages on account of personal injury or death to any person, including employees of the Bidder, or property damage, including claims for loss of use which arise out of performance of the contract by the Bidder or its subcontractors. The Bidders defense, indemnity, and hold harmless obligation shall include:

- a. Indemnify even if damages sought were caused in part by the negligence or fault of City or any of its officials, employees, agents or officers.
- b. Indemnify for all damages and judgment interest, all costs and fees, including attorney's fees, relating to or arising out of any claim, cause of action or lawsuit requiring indemnity by the Bidder.
- c. All expenses incurred in securing indemnity from the Bidder if the Bidder wrongly refuses to fulfill any of the indemnity obligations assumed under this contract.
- d. This section shall not be read as to require the Bidder to defend the City or any other party from claims, or to assume any liability or indemnify the City or any other party for any amount greater than the degree of fault of the Bidder.

The Bidder shall also, at its expense, indemnify, defend and hold harmless the City and its elected and appointed officials and officers, agents, servants, employees and successors from and against any and all claims against the City for alleged infringement of any United States patents related to components, equipment, or hardware manufactured, installed, or provided by the Bidder as part of this contract.

## **7. INSURANCE PROVISIONS**

Contractor shall purchase and maintain the following minimum insurance policies throughout the term of the contract from insurance companies duly licensed and authorized to conduct business in Michigan, and shall provide to the City with certificates of insurance, demonstrating compliance with this provision:

- A. Statutory Worker's Compensation and Employers Liability Insurance as required by law.
- B. Contractor shall procure and maintain during the life of this contract, Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$1,000,000 per occurrence combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (A) Products and Completed Operations; (B) Broad Form General Liability Extensions or equivalent, plus a one million dollar "follow form" umbrella policy, to protect Contractor and the City against liability or claims of liability which may arise out of Contractor's (including Contractor's employees and agents) performance under this Contract. In addition, Contractor agrees that such policy shall provide an endorsement stating that such insurance shall be primary and that insurance carried by the City shall be excess and non-contributory.

- C. Additional Insureds: Commercial General Liability, as described above, shall include an endorsement stating the following shall be *Additional Insureds*: The City of Milan, including all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and board members, including employees and volunteers thereof. This coverage shall be primary to any other coverage that may be available to the additional insureds, whether any other available coverage be primary, contributing or excess.
- D. Contractor shall furnish the City with a certificate issued by the insurance company indicating such coverage is in effect during the entire term of this contract and shall furnish the City with a complete copy of such policy(ies) upon the City's request. Each such insurance policy shall contain a provision prohibiting its cancellation or expiration, or the reduction of its coverage limits, without at least thirty (30) days' prior written notice to the City. In the event that Contractor shall fail to obtain or maintain in force any insurance required hereunder, the City, in its sole discretion, may deem Contractor to be in default or may, but shall not be required to, procure and pay for such insurance on Contractor's behalf, and the sums so paid shall be deducted from Owner's payment to Contractor for work performed under this contract.
- E. Adequate property insurance for Contractor's equipment and personal property.
- F. For any motor vehicle owned or leased by it, General Liability, Comprehensive and Property Damage Insurance with \$1,000,000 combined single limits, per occurrence and in the aggregate, and if needed, casualty insurance.

**8. USE OF PREMISES**

- a. Bidder shall keep the premises and the work which this contract relates free and clear of all claims and mechanic liens, and will promptly pay for all labor (including social security contributions and applicable fringe benefits), material and services used in connection with this contract. Bidder shall furnish the City with such certificates of payment, waivers of claims (including claims against any payment bond), waivers of mechanics liens, releases and sworn statements in form satisfactory to the City when submitting request for payment for work completed.
- b. Bidder shall not use or permit any of their employees to use any equipment, hoists, staging, scaffolds, or any other material or equipment belonging to the City without prior written consent.

**9. INCORPORATION OF TERMS OF BID DOCUMENTS**

- a. The terms set forth in the Instructions to Bidders, the Terms and Conditions, the Specifications, the Invitation to Bid, addendums thereto, if any, and the Bidder's

response to the Invitation to Bid, including all attachments and materials submitted therewith, are all hereby incorporated into this contract in full by reference.

**10. MISCELLANEOUS**

- a. The Bidder agrees that the City of Milan, the Federal grantor agency and its governmental affiliates, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access, during regular business hours, to any books, documents, papers and records of their company which are directly pertinent to this agreement, for the purpose of making audits, examinations, excerpts and transcriptions. The company shall maintain all records for three years after all pending matters under this agreement are closed, during which period this provision shall survive the completion or any termination of this contract.
- b. The Bidder shall notify the City of the names and addresses of all subcontractors to be employed on the project. Bidder agrees that City has the right to reasonably approve or disapprove any subcontractors performing work for the Bidder on this contract.
- c. In performing its duties, Bidder shall at all times act in the capacity of an independent contractor and not as agent of the City.

**11. ALTERNATIVE DISPUTE RESOLUTION**

Unless the parties agree otherwise, any claims, disputes or other matters in controversy arising out of or related to the contract shall be subject to mediation as provided herein as a condition precedent to litigation:

- a. The party bringing a claim shall give notice to the other party and, in writing, propose a meeting within seven (7) days after the claim arises in which to discuss and attempt to resolve the claim.
- b. In the event the meeting between the parties to resolve the claim does not resolve the dispute or does not take place within said seven (7) day period, the parties shall designate, by mutual agreement, an independent mediator who shall convene a meeting of the parties within a period of fourteen (14) days of the later of the initial meeting between the parties or the date notice was given pursuant to subparagraph (1) above. The mediator shall render his or her decision within fourteen (14) days of said meeting. The parties may, by mutual written agreement, extend the time periods required under this subparagraph.
- c. The purpose of mediation is to attempt to resolve the dispute between the parties. The mediator shall not be empowered with the authority to render a binding opinion or award.
- d. In the event the independent mediator's attempt to resolve the dispute between the parties fails, then each party will be free to pursue recover of claims at law.
- e. During the pendency of this alternative dispute resolution process, the parties agree that any statute of limitations applicable to all claims that are the subject of this process shall be tolled.

**12. SEVERABILITY OF CONTRACT**

In the event any one or more of the provisions contained in this contract shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this contract, but this contract shall be construed as if such invalid or unenforceable provisions had never been

contained. Further, in the event that any provision of this contract shall be held to be unenforceable by virtue of its scope, but may be made enforceable by a limitation thereof, such provision shall be deemed to be amended to the minimum extent necessary to render it enforceable under the laws of the jurisdiction in which enforcement is sought.

**13. NO WAIVER OF SUBROGATION**

This contract shall not contain a waiver of subrogation.

**14. AMENDMENTS TO CONTRACT**

When awarded, the contract shall not be changed, modified, altered, or amended in any respect without the mutual written consent of the Bidder and the City.

**15. PERFORMANCE OF THE CONTRACT**

The Bidder shall furnish at its own cost and expense all labor, tools, equipment and materials necessary to expeditiously complete the contract, and all work and performance shall in a good and workmanlike manner, and shall be in conformance with generally accepted standards for quality, skill and construction of similar work. The Bidder shall assure that no work is defective, that all materials and equipment provided are in good and working order, and that all work and materials have been performed and provided in accordance with this contract and completed on schedule.

**16. INSPECTION**

The City may on occasion assign an inspector to review the Bidder's performance for the purpose of determining compliance with the specifications and maintaining records, including the time records for service charges and allocation of appropriate amount of labor and equipment for the work assigned. Any work or materials found to be defective, substandard or not in accordance with the provisions of this contract shall be repaired or replaced to the satisfaction of the City at the sole expense of the Bidder.

**17. CERTIFICATION REGARDING IRAN-LINKED BUSINESS**

By submitting its proposal, the Bidder shall be deemed to have certified that it is not an "Iran-Linked Business" as defined in Act 517, Public Acts of Michigan, 2012, being MCL 129.311 et. seq.

**18. PAYMENTS**

The Bidder may periodically submit invoices for services rendered under this contract to the City no more frequently than on a monthly basis. The City shall review and arrange for prompt payment of properly submitted invoices generally within thirty (30) days of actual receipt of the invoice. The Bidder understands that the City is a governmental unit and the approval process for such payments requires approval by the City Council.

**19. DEFAULT**

Except as otherwise provided herein, if either party fails to carry out the obligations set forth herein or fails to meet the requirements of this contract, they shall be given a written notice describing the failure and shall be given ten (10) days to remedy such failure. Failure to promptly remedy the failure, shall give the non-defaulting party the right to immediately terminate this contract and permit the non-defaulting party the right to seek its remedies as may be available under this contract or the law.

**20. TERMINATION BY BIDDER**

If the City fails to make payment for work within forty-five (45) days of receipt of an invoice from Bidder, the Bidder may, upon seven (7) additional days' written notice to the City, terminate this contract and recover from the City payment for work executed including

reasonable overhead and profit on work executed, and reasonable costs incurred by reason of such termination.

**21. TERMINATION BY CITY**

The City may, at any time, upon ten (10) days written notice to Bidder, terminate this contract for the City's convenience and without cause. The Bidder shall be entitled to receive payment for work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit, but shall not be entitled to any compensation for work not executed.

**22. JURISDICTION**

This contract shall be subject to the laws of the State of Michigan.

**Bidder hereby agrees to all of the terms and conditions set forth in the Instructions to Bidders, the Terms and Conditions, the Specifications, the Invitation to Bid, and addendums thereto, if any.**

Duly signed and authorized by the Bidder on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

SIGNED: \_\_\_\_\_

Title: \_\_\_\_\_

Bidder: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_



**BIDDER DISCLOSURE STATEMENT  
SPORTS FIELD LIGHTING  
Wilson Park Football/Soccer Field**

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***Disclosure of Familial Relationship***

The Bidder hereby represents and warrants, except as provided below, that no familial relationship exists between the owner(s) or any employees of the Bidder and any City official or City employee.

List and describe any familial relationships:

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***Disclosure of Substantial Interest in Business***

The Bidder hereby represents and warrants, except as provided below, that no City official or City employee or their immediate family has any substantial interest in the Bidder's business.

List and describe any substantial interest held by a City official, City employee, or their immediate family in Bidder's business:

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I certify and swear that to the best of my knowledge, information and belief the above information is true, accurate, and complete.

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Bidder: \_\_\_\_\_

Dated: \_\_\_\_\_

**Specifications and Pricing  
SPORTS FIELD LIGHTING  
Wilson Park Football/Soccer Field**

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**SPECIFICATIONS/REQUIREMENTS:**

The City of Milan is seeking proposals to design and install of sports lighting equipment for Wilson Park Football/Soccer Field. This project will replace existing lights that were installed 30 years ago. The park is located adjacent to City Hall at 147 Wabash St, Milan, MI 48160.

**Mandatory pre-bid meeting to be held on March 22, 2018 at 1:30 p.m. Meet at Milan City Hall 147 Wabash St, Milan, MI 48160**

**Alternate bids will be accepted.**

**Statements of Vendor Qualifications must detail the following:**

- A list of projects you have worked on in the last three (3) years and the contact information for those jobs.
- Once contract is awarded, the maximum number of days before install can be started.

**Sports Field Lighting specifications for the project:**

PART 1 - GENERAL

SUMMARY

Section Includes:

This section includes electrical & field lighting systems as specified herein.

Related Documents:

Drawings and General Provisions of the Contract apply to this Section.

REFERENCES

IES RP-6-2015, Current Recommended Practice for Sports Lighting, current edition

DEFINITIONS

Coefficient of variance (CV): A measure of uniformity. The formula for calculating CV values is given in IES RP-6, section 2.2.2 (page 3).

Uniformity gradient (UG): A measure of uniformity. UG is a measure of the rate of change of illuminance expressed as a ratio between the illuminance level of adjacent measuring points on a uniform grid

Primary playing area: An area including the playing field and extending 15 feet beyond the boundaries of the playing field in all directions.

## SYSTEM DESCRIPTION

### Electrical Design Requirements:

Scope of work includes new galvanized steel pole sports lighting system.

Field Lighting includes: electrical service, NEMA 3R enclosures to be mounted on galvanized channel horizontally and vertical down legs shall be galvanized angle, concrete pad for the electrical service. All wiring to be copper.

Feeders to poles shall be routed underground in PVC schedule 40 conduit. Route all conduit between and around fields, do not trench across fields. Install Quazite open bottom junction boxes as needed. All poles are to be erected in place with all fixtures aimed, wired and ready for operation.

Power company transformer to be installed within 25 feet of service and the service shall be located within 40 feet of field. Electrical service to be 480 volt 3 phase. Any voltage below 240 will not be permissible.

All feeders shall be sized with no more than 3% voltage drop back to the power company transformer.

Install meter socket (provided by power company).

Pay ALL permit fees associated with the project. Owner to pay local utility charges.

Obtain all inspections and schedule utility installation with power company.

All electrical installation must meet Local and National Electrical Code requirements.

Successful bidder to provide electrical design drawings (wire, conduit, MDP, breakers, contactors, voltage drop calculations, etc.) stamped by a professional engineer as required by the State of Michigan.

Successful bidder to perform final light tests with Owner and make any adjustments necessary to meet specifications. A typed photometric report of actual light levels on each field must then be submitted prior to final payment being released.

### Lighting System Design Requirements:

The initial illuminance level shall be calculated using the appropriate ballast factor for the lamp/ballast combination in accordance with the manufacturer's specification sheet. Initial light levels for "constant light level" systems must be 10% higher than specified maintained light levels.

The initial illuminance level shall be calculated using a LLD value of 1.00.

The maintained illuminance level shall be calculated using the published lumen output of the lamp, at 100 percent of the rated lamp life as per the manufacturer's specification sheet. The maintained illuminance level shall also be calculated using the combined light loss factor (LLF).

The maintained illuminance level shall be calculated using the appropriate ballast factor for the lamp/ballast combination in accordance with the manufacturer's specification sheet.

The maintained illuminance level shall be calculated using a LTF value as per the manufacturer's specification sheet.

The maintained illuminance level shall be calculated using a LLD value of 1.0.

The maintained illuminance level shall be calculated using a LDD value of 1.0.

Glare and spill light control: Glare and spill light control may be achieved by internal and/or external hardware. Glare shall be minimized from the lamp and the reflector when standing in front of the lighting assembly beyond the property line and when standing 90 degrees perpendicular to the lighting assembly beyond the property line. Structural Strength: The luminaire assembly as shown in the manufacturer's submittal shall be capable of withstanding forces equal to **90 MPH wind speeds based on AASHTO structural design criteria for this region.**

Lighting System Performance Requirements:

The calculated horizontal average maintained illuminance level for each primary playing area shall be as follows:

<b>Field/Court:</b>	<b>Maintained Footcandles**</b>
<b>Soccer Field Lighting</b>	<b>50 footcandles</b>

The maximum-to-minimum uniformity ratio for all lighting on the primary playing area shall not exceed 1.98.

The coefficient of variance for the primary playing area shall be per IES RP-6-15. The uniformity gradient of the primary playing area shall be per IES RP-6-15.

The lighting design is to be based on a minimum of 4 poles. Mounting Heights shall be minimum 70' to bottom row of fixtures on all poles based on setbacks from the playing surface.

Illumination Trespassing Limitations on Neighboring Property:

The limit of illumination trespassing on neighboring property from stadium lighting shall be by zoning of the neighboring property. Maximum computed or measured footcandles at the neighboring property line shall not exceed the local ordinances/codes or the following, whichever is more stringent:

Footcandles

	<u>Horizontal</u>	<u>Vertical</u>
Single family and two-family residential districts	1.0	3.0
Multiple family residential districts	1.0	3.0
Non-residential districts, streets	3.0	3.0
Light industrial districts	5.0	5.0

SUBMITTALS

**Alternate suppliers must submit the following information with bid submission for consideration:**

**Photometric design layout for specified light level showing point by point “maintained” footcandle levels for each field meeting requirements of these specifications.**

**Photometric IES Files for fixtures being offered.**

**Letter on light system manufacturer’s letterhead guaranteeing light levels will be met. Letter on light system manufacturer’s letterhead guaranteeing control system meets specification.**

**Letter on light system manufacturer’s letterhead guaranteeing warranty and financial reserves.**

**Letter on light system manufacturer's letterhead guaranteeing energy consumption will not increase over time.**

**Descriptive literature on all proposed lighting equipment.**

**Exceptions: Statement of exceptions and discrepancies to bid specifications if any.**

Product Data:

The submittal package shall include product data on the following: Controls

Luminaires

Pole assemblies

Engineered foundation

Waveform Corrector

Wireless Control System

Shop Drawings:

The submittal shall include the following shop drawings before construction:

The supplier shall supply drawings for each pole foundation. Drawings shall be sealed and signed by a professional engineer licensed in the **State of Michigan**. Drawings shall include depth, diameter and reinforcement.

The manufacturer shall submit a computer derived lighting plan showing the point-by-point horizontal maintained illuminance levels.

The manufacturer shall submit a computer derived lighting plan showing the point-by-point horizontal initial illuminance levels.

The two above shop drawings shall indicate illuminance levels on a 30 foot by 30-foot square grid. The grid shall be oriented such that one of the calculation points is offset fifteen feet in each direction from a point at the midpoint of the playing field.

In addition to the point-by-point illuminance levels, each of the two above shop drawings shall indicate the following:

The maximum to minimum ratio of the primary playing area. The coefficient of variance of the primary playing area.

The greatest uniformity gradient in the primary playing area. The mounting height to the lowest row of the luminaires.

The number of luminaires used at each pole or location.

The kilowatt consumption of the lighting system. The lamp lumens used in the calculations.

Light aiming point plan: The contractor shall submit an aiming plan indicating the horizontal degree setting and the vertical degree setting of each fixture on each of the pole assemblies.

A drawing or cut sheet of the luminaire assembly and its interface with the required poles.

QUALITY ASSURANCE

Qualifications:

Bidders who do not currently possess the necessary qualifications, trained and experienced personnel, financial

capacity, and meet the other requirements herein described will be disqualified.

The contractor that installs the sports lighting system shall have been in business at least five consecutive years under the same name and shall have installed, under that name, at least ten sports lighting systems similar to this project.

The contractor shall be fully experienced in the installation of the lighting systems as herein specified, and shall furnish with the bid an itemized list of the installations of this type. The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of the person to contact for reference.

The Sports Lighting Supplier shall be dedicated to sports lighting with in-house engineering, sales and support personnel. Supplier shall maintain inventory and personnel who are qualified to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up, instruct the Owners representatives in the proper operation of the system and provide service throughout the warranty period.

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

Before using the bid of a subcontractor as part of his bid, the General Contractor shall satisfy himself that the proposed subcontractor can satisfy all of the requirements expressed above. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that the bidder and/or any subcontractor he proposes can properly qualify to carry out the obligation of any part of the contract, and to complete the work contemplated therein.

The ability of any bidder to obtain plans and provide a performance bond shall not be regarded as the sole qualification of such bidder's competency and responsibility to meet the requirements and obligations of the contract.

Any bidder who bids products that do not meet specifications will be rejected. If bidder desires to propose alternate products, they must be submitted (per submittal section of bid specifications) for approval a minimum of 10 days prior to bid. Acceptable alternates will be approved by written addendum a minimum of 5 days prior to bid date.

#### Regulatory Requirements:

All materials furnished under this Contract shall be new, free from defects of any kind, of the quality and design hereinafter specified, and shall conform to the standards of Underwriter's Laboratories Inc., except for equipment which U.L. does not list or provide label service.

#### 10 Year WARRANTY

##### Light System Maintenance Free Warranty:

Lighting Manufacturer must repair or replace any part of the sports lighting fixture or wiring that proves to be defective for a period of 10 years. Warranty must cover the cost for both labor and material. Warranty also guarantees light levels, aiming and energy consumption. Energy consumption will not increase as the system ages.

##### Structural Warranty:

Lighting Manufacturer must repair or replace any structural component that proves to be defective for a period of 10 years. Warranty must cover both parts and labor.

Manufacturer's Warranty:

Lighting Manufacturer must maintain specifically funded financial reserves to assure fulfillment of the warranty for the full term. Warranty excludes fuses, storm damage, vandalism, abuse and unauthorized repairs or alterations

PART 2 - PRODUCTS

MANUFACTURED UNITS

Pole Foundations:

The pole foundations shall be designed for allowable stresses in accordance with latest AASHTO standards. Foundation must be designed by Structural Engineer Licensed in the State of Michigan. Installation based on wind speed criteria of these specifications.

Sports Lighting Poles:

The sports lighting pole system shall consist of concrete encased galvanized steel poles with a factory pre-wired cross arm assembly. All wiring/connections should be factory assembled from the fixture mounting location to the base of the pole. Strain relief device(s) must be factory installed in pre-wired cross arm assembly to ensure no weight or tension is placed on electrical connections.

The sports lighting pole structure shall consist of a modular pole assembly. This shall consist of no more than two shaft components. No single component shall weigh over 1500 pounds to allow handling by City equipment.

The entire sports lighting system (pole structure, wiring and fixtures) must be supplied by a single Company who underwrites warranty. Combining components of various Manufacturers is not acceptable.

Pole Shaft:

The Structure shall be designed for the combined effective projected area (EPA) and weight of all applicable appurtenances (i.e. mounting brackets) and fixtures. Concrete poles or pole sections are not acceptable due to excessive weight.

Wind Speed & Design Criteria:

Wind velocities of 90-Mph and AASHTO 2001 design parameters shall be utilized for design purposes.

Pole Shaft:

Each section of the pole shaft shall be of single-ply material and be made from a single sheet of steel with no circumferential welded splices.

The pole shafts cross-section shall be round. The pole shaft sections shall be high-strength steel meeting the requirements of ASTM A570 GR65(65 KSI yield) and/or ASTM A595 GR55(55 KSI yield).

Each slip joint shall be assembled in the field by telescoping the upper female section over the lower male section by a minimum lap of 1.5 times the inside diameter of the "female" section. The female, telescoped area must be welded both inside and out to insure 100% weld penetration in an area equal to the minimum slip distance plus 10".

Embedment Shaft Section:

The shaft section of the pole structure shall be a single piece round tapered shaft section. The taper rate and material cross section properties shall match the adjoining section.

The lower shaft section shall be embedded into the earth a minimum distance of 10% of the free standing height of

the structure plus 2' or as recommended by Engineer.

The shaft section shall be galvanized in accordance with ASTM A123 specifications. The entire embedded shaft portion shall also be externally coated with Corrocote II epoxy coating up to 6" above the ground line. Concrete stub pole sections are not acceptable due to excessive weight.

Foundation shall be 3000 psi concrete. Galvanizing:

Pole shaft sections shall be hot dip galvanized in accordance with the requirements of ASTM A123 specifications. Each shaft assembly must be completely coated, inside and out, in a single dip. Double dipping will not be permitted in compliance to USGA (United States Galvanizing Association) recommended practices and procedures to prevent acid entrapment. All miscellaneous connecting hardware shall be galvanized in accordance with ASTM A153 specifications.

Cross arms:

All cross arms shall be factory pre-wired and assembled. The sports lighting pole system shall consist of concrete encased galvanized steel poles with a factory pre-wired cross arm assembly. All wiring/connections should be factory assembled from the fixture mounting location to the base of the pole. No field connections, plugs or Brad-Harrison type connectors are allowed. Strain relief device(s) must be factory installed in pre-wired cross arm assembly to ensure no weight or tension is placed on electrical connections.

All factory pre-wiring must be done in a manner that requires no electrical connections inside the pole or cross arm assembly to be made in the field. Sports lighting supplier must provide warranty as outlined in these specifications.

#### LED Luminaire Requirements:

Product Requirements:

**1. LED Luminaire must be an integral unit with maximum distance of 18 inches between power supply, driver and LED's to minimize power loss and EMI (electromagnetic interference). Entire fixture must be factory assembled and vacuum sealed.**

2. Luminaire must be UL Certified for wet locations at an operating temperature range rating between -40°C and +65°C.

3. Luminaire must be 3<sup>rd</sup> party NEMA 4X certified based on NEMA 250 standards for external icing, hose-down, and 200-hours salt spray test.

4. Luminaire must be 3<sup>rd</sup> party tested and certified to UL 844 vibration requirements.

5. Luminaire must be 3<sup>rd</sup> party tested and certified to ANSI C136.31, 3G vibration requirements.

6. Luminaire must be IP66 certified tested to IEC 60598-1 standards to meet dust-tight and powerful water jet-proof test.

7. Luminaire shall have a Correlated Color Temperature (CCT) of 5600K with a tolerance of  $\pm 300$ K, and a CRI of  $>68$ .

8. Luminaire shall be third-party verified to be flicker free at super slow motion speeds up to 2400 FPS and use pulse width modulation greater than 18 Khz with a flicker index rating  $<.06$ .

9. Luminaire shall have lumen depreciation, L70 rating, greater than 100,000 hrs. certified through



CREE Tempo-24 Testing or equivalent.

10. Luminaire shall include an integrated and thermal isolated power supply with wide input range 240VAC-480VAC, **remote power supply's or drivers shall be located within 24" of the LED board to eliminate Electromagnetic interference and higher Total Harmonic Distortion which will generate heat on power lines and components connected to the distribution system and cause premature failures of those components.**

Integrated power supply shall have the following features:

a. Efficiency - Greater than 95% from 240VAC to 480VAC with full load applied b.

Hold Up Time – Greater than 25msec

c. Restrike Time - Less than 3.0sec to meet UL924 Emergency Lighting requirements

d. Thermal Sensors – Monitor temperature readings of critical components, and self-protect when conditions exceeded, and report conditions wirelessly to remote site

e. Ultra-Low Standby Power – Less than 0.20% Standby power consumed with primary output disabled

f. In-field Upgradable – remote wireless interface to program and update firmware/software.

10. Luminaire must have a fully integrated health telemetry capability. The following metrics at a minimum must be continuously monitored and reported on a remote computer with the ability to print out reports.

- a. Life Time Run Hours
- b. Life Time Power Consumed
- c. Power Supply Temp
- d. Peak Power Supply Temp
- e. Average Current
- f. Peak Current
- g. Input Voltage
- h. Peak Input Voltage
- i. Average Power
- j. Life Time Watt Hours

11. Luminaire shall weigh less than 50lbs, including power supply, shade, bracket, and RF system.

12. Luminaire shall have an EPA of 1.4 square feet or less.

13. Luminaire shall have a power factor greater than 0.98 @ 277VAC and 0.97 @480VAC

14. Luminaire shall have a THD (Total Harmonic Distortion) Less than 10% at 240VAC with full load and less than 14% at 480VAC at full load.

15. Luminaire must have an integrated pressure and humidity sensor.

16. Luminaire must have an integrated accelerator for aiming, commissioning, and feedback on light positioning.
17. Luminaire shall include custom lensing injection molded from optical grade, impact resistant lens with a UV additive to provide more than 25 years of long-term sunlight exposure.
18. Luminaire lensing shall be TIR (Total Internal Reflection) based.
19. Luminaire shall be constructed as a single pressure cavity vessel system. Enclosure shall include a breathable vent for pressure fluctuation reduction and increased seal life.
20. Aluminum shall be chromate conversion coated and then two-stage architectural grade powder coated for long term resistance to corrosion and UV exposure.
21. Luminaire shall include separate control cards to current balance each LED array into no less than 5 strings for effective lifetime management

#### Wireless Control System

1. Wireless control system shall provide local control and monitoring of the LED fixtures via a secure, self-forming, self-healing mesh network.
2. Wireless control system shall be utilized to switch lights on/off as well as dimming the system to specified levels with the Wireless Control Hub.
3. Wireless control system shall have the capability to link to external devices such as smartphones and tablets as well as desktop and laptop systems via Bluetooth, Wi-Fi, LAN or cellular connection.
4. System shall be FCC/IC certified
5. System shall be capable of storing power data, behaviors, alarms and critical events locally for maintenance and troubleshooting.

#### PART 3 EXECUTION

##### DELIVERY

The entire sports lighting system shall be delivered to the jobsite by the sports lighting supplier. All material (poles, fixtures, cross arm assemblies, etc.) shall arrive the same day. The supplier shall off-load all material and stage required material at each pole location to eliminate possibility of lost or damaged material. Delivery shall be made within 21 days after notice to proceed.

##### ERECTION

The erection of the poles shall be in accordance with the manufacturer's instructions.

The installation of the light fixtures shall be in accordance with the manufacturer's instructions.

##### CONSTRUCTION

###### Interface with Other Work:

Grounding: Each pole shall be grounded. The ground resistance shall be no less than 2.5 ohms. Ground terminals shall be located not less than 2 feet from the pole.

##### FIELD QUALITY CONTROL

###### Site Tests:

Testing for acceptance shall be by the Sports Lighting Supplier.

Test methods, instruments, and test intervals shall meet the approval of the Owners representative prior to testing.

Testing Equipment: Testing equipment for measurement of footcandle levels shall be performed using a Konica Minolta T-10 Illuminance Meter. Supplier must show proof of calibration prior to testing as required by the manufacturer. Accuracy shall be  $\pm 4\%$  or less of recording. Measuring functions shall be in footcandles.

Readings shall be recorded for each point and the results confirmed by Owner and/or Engineer. Horizontal illuminance readings shall be taken in accordance with "IES Standard for Photometric Measurement of Area and Sports Lighting Installations".

Measurements shall be taken at 36" inches above grade, with meter held horizontally. Dark clothing shall be worn by individuals performing test.

The contractor shall take voltage and current readings at each pole base during the time of the test for the purpose of ascertaining the approximate fixture operating condition. Voltage at the pole base shall be adjusted within  $\pm 5\%$  of rated ballast voltage.

The contractor shall provide stakes or other identifiable markings at all test points on the field at the time of the test.

The measured values shall be within plus or minus ten percent of the calculated values indicated on the computer derived lighting plan of the initial illuminance levels.

Failure to meet criteria shall require that the fixtures be re-aimed and retested and added to until satisfactory results are obtained. Any expense of re-aiming, subsequent retesting additional fixtures and installation, if any, shall be borne by the supplier with no additional cost to the Owner, Architect or Engineer.

#### ADJUSTING

Apparent "hot spots" or "dark spots" shall be eliminated by further fixture adjustment as required.

If in the judgment of the Owner's Representative, the manufacturers computed results cannot be obtained, this contractor shall furnish and install additional fixtures, wire, conduit, breakers, etc., as required to achieve the manufacturers predicted results at no additional cost to the Owner, Architect or Engineer.

A formal light test shall be conducted in the presence of the owner, contractor, and lighting representative. Actual readings must meet the required levels and uniformities as specified. Testing to be conducted per IES recommended standards.

Lighting systems not meeting performance criteria for this project shall be upgraded at the manufacturer's expense until the owner is satisfied that all lighting, structural, and electrical components meet the specifications.

Winning Bidder shall provide within three (3) business days after notification of award full bonded and electronic submittals, to include all pole cut sheets, cross arm details, point by point photo metrics and aiming diagrams.

**Total price of project to be detailed out and reflect delivery, all parts and materials, applicable labor, and taxes.**

**Correcting Non-Conformance**

If, in the opinion of the Owner, the actual performance levels including foot candles, uniformity ratios and maximum kilowatt consumptions are not in conformance with the requirements of the performance specification and submitted information, the 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 or verify by certification by a licensed structural engineer that the existing poles will withstand the additional load.

**TOTAL PRICING:** \_\_\_\_\_

**Please attach detailed line item pricing.**

**ADDITIONAL INFORMATION:**

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All questions must be emailed to Robert Grostick at [Robertg@milanmich.org](mailto:Robertg@milanmich.org)

# CITY OF MILAN

## REFERENCES SPORTS FIELD LIGHTING Wilson Park Football/Soccer Field

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### Reference #1

Business Name:	
Contact:	
Address:	
Phone Number:	
<u>E-mail Address:</u>	

### Reference #2

Business Name:	
Contact:	
Address:	
Phone Number:	
<u>E-mail Address:</u>	

### Reference #3

Business Name:	
Contact:	
Address:	
Phone Number:	
<u>E-mail Address:</u>	