

CITY OF ELIZABETHTON, TENNESSEE

Purchasing Department

136 SOUTH SYCAMORE STREET
 ELIZABETHTON, TN 37643
 423-542-1505

Date: 01/05/2017

**(This is NOT an Order)
 REQUEST FOR BID**

TERMS: _____
 DELIVERY DATE: _____

BID # 577
BID OPENING DATE: 01/30/2018
BID OPENING TIME: 11:00 am

ALL QUOTATIONS MUST BE F.O.B. ELIZABETHTON, TENNESSEE

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
			Furnish and Install Sports Lighting Equipment at City Park Babe Ruth Field and Little League Field. Specifications are attached and is an integral part of this bid.		\$ _____

Person to contact regarding this bid: David McQueen 423-895-0802 or Greg Workman 423-542-1505

DELIVERY INSTRUCTIONS
CITY OF ELIZABETHTON 136 S. Sycamore Street Elizabethton, TN 37643

In submitting the above, the undersigned agrees to sell to the City the material or service at the price shown and further agrees to all terms and conditions contained in this bid agreement. Acceptance of any or all of the above within a reasonable period will constitute a contract between both parties.

 NAME OF FIRM
 (Purchase Order will be issued to the above vendor)
 By _____
 Address _____

BID MUST BE SIGNED TO BE VALID**GENERAL CONDITIONS
(READ CAREFULLY)****1. PREPARATION OF BIDS.**

1. Only bids submitted on bid forms furnished by the City will be considered. The City may consider telegraphic bids received prior to the closing time specified if promptly confirmed on bid forms furnished by the City and received two (2) days prior to the bid award date. NO TELEPHONE BIDS WILL BE ACCEPTED.
2. Bids to be enclosed in a sealed envelope, plainly identified in the upper left hand corner with the company name and address and in the lower left hand corner, the bid number and due date.
3. All bids must be delivered or mailed to the Director of Purchasing, City of Elizabethton, 136 South Sycamore Street, Elizabethton, TN 37643 unless otherwise directed on the bid form.
4. It is the bidder's responsibility to insure that the written bid is delivered at the proper time and place of the bid opening.
5. No bid received after closing time will be considered. Late bids will be returned unopened.
6. If not offering a bid, bidder must return the bid form marked 'NO BID' and state reason for not responding

2. PRICING.

Each item must be priced separately. Unit prices shall be shown. In case of error in the extension of prices in the bid, the unit price will govern. No bid shall be altered, amended or withdrawn after specified time for bid opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

3. BID OPENINGS.

Bids will be opened and read aloud at the specified time and date set in the Invitation to Bid. These meetings are open to the public.

4. SIGNATURE ON BIDS.

Each bid must give full name and business address of the bidder and be signed, in ink, by the official of the company authorized to bind his company in contract.

5. ACCEPTANCE & REJECTION.

The City reserves the right to reject any or all bids, to waive informalities and to accept the bid to bids in its judgement is in the best interest of the City. If a bidder fails to state a time in which a bid must be accepted, it is understood and agreed that the City shall have sixty (60) days to issue a purchase order.

6. BID EVALUATION.

Bids will be evaluated according to the criteria set forth in the Invitation to Bid with the degree of importance to be determined by the City.

7. AWARD.

Contracts and purchases will be entered into or made with the lowest responsible compliant bidder meeting specifications for material or services as deemed in the best interest and advantage of the City except as otherwise specified in the Invitation to Bid.

8. MULTIPLE ITEM BIDS.

When more than one item is specified in the Invitation to Bid, the City will determine that low bidder either on the basis of the individual items or on all the items included in the bid. ALL OR NONE bids must be clearly identified on the bid form and will be considered only if in the best interest of the City.

9. TIME OF DELIVERY.

Time of delivery is a part of the consideration and must be stated in definite terms and adhered to. If time varies on different items, the bidder shall so state. When no time of delivery is stated, it is understood and agreed that delivery is to be made within two (2) weeks after receipt of order. The contractor shall be required to maintain or have available an inventory sufficient to make shipment within the time stated in his bid. The vendor may request a delivery extension in a letter to the Director of Purchasing if conditions arise that would prevent him from meeting his quoted delivery schedule. The City reserves the right to accept or reject this request.

10. DEFAULT.

In case of default of the Contractor, the City may procure the articles or services from other sources and hold the contractor responsible for any excess cost resulting from this action.

11. BRAND NAMES.

Specifications furnished in the Invitation to Bid are intended to establish a desired quality of performance level or other minimum requirements which will provide the City with the best product available at the lowest possible price.

If a bidder offers an alternate he must include the brand name and/or model he proposes to furnish and include complete descriptive literature and specifications that clearly describes the article offered and how it differs from the referenced brand. Reference to literature previously furnished will not satisfy this provision.

12. SAMPLES.

The City may request a sample product as part of a bid. This will be provided at no charge to the City.

Samples remain in the Purchasing Department for a period of two (2) weeks following the award of a bid. Vendors are responsible for picking up their samples during that period. Samples not collected by the specified time allowed will become the property of the City. Samples of successful bidders will be retained until delivery is received and is accepted as being equal to their sample.

13. DISCOUNT PERIOD.

Time in connection with discount offered will be computed from the date of satisfactory delivery at destination, or from the date of satisfactory delivery at destination, or from the date the correct invoice is received, whichever is later.

14. FOB POINT.

All prices quoted are to be FOB delivered to the using department, City of Elizabethton, Tennessee (unless another FOB point is stated on the bid form). The successful bidder will assume all responsibility for damage in transit.

15. TAXES.

The City is exempt from Federal excise taxes and state and local sales or use taxes. Exemption certificates will be furnished upon request.

16. CONDITION STANDARDS.

It is understood and agreed that any item offered or shipped as a result of this bid shall be new and unused and shall be the manufacturer's latest model unless otherwise stated in the bid.

17. INSPECTION.

All supplies or materials are subject to inspection and rejection by the City. Rejected materials shall be returned at the bidder's expense.

18. SAFETY STANDARDS.

Unless otherwise stipulated in the bid all manufactured items and fabricated assemblies shall comply with applicable requirements of OSHA and any standards thereunder.

19. PARTS AND SERVICE.

The successful bidder must be able to provide adequate parts and service for items bid.

20. BID TABULATIONS.

Tabulations of bids will be furnished upon request.

PENALTIES

Bidders may be removed from our active bid file for a period determined by the City as a result of any of the following:

1. Failure to respond to a bid request.
2. Failure to meet delivery requirements.
3. Failure to furnish specified items as a result of a bid award
4. Offers of gratuities or favors to any employee of the City.

Bids may be removed from consideration for the following reasons:

1. Bid received after bid opening time.
2. Bid not signed.
3. Descriptive literature not included with bid.
4. Sample not provided with bid if requested.



CITY OF ELIZABETHTON
136 S. SYCAMORE ST.
ELIZABETHTON, TN 37643-3328
(423) 547-6200

POST DATE: 01/08/2018

CITY OF ELIZABETHTON TENNESSEE BASEBALL FIELD LIGHTING PROJECT

Sealed bids must be received by 01/30/2018 at 11:00 am

Greg Workman
Purchasing Director
City of Elizabethton, Tennessee 37643
136 South Sycamore Street Suite 203

The outside of the envelope must be marked with the bidder's company, name, item bid, time of bid opening, date of bid opening, bid #577, and must be marked "sealed bid, do not open".

Bids are opened and read aloud to the public at the City of Elizabethton, Tennessee Purchasing Department, 136 South Sycamore Street, Suite 203, Elizabethton, Tennessee 37643 immediately after the bid receipt deadline. Each vendor may submit more than one bid provided each bid meets the stated specifications. Each bid must be submitted in a separate sealed envelope with the appropriate notation on the outside. All bids must be signed by an authorized agent and submitted on the prescribed forms. Submission of bids by telegraph, telephone, or other electronic means is strictly prohibited. Any brand name called for the bid specifications is provided as a reference only. Alternate brand name items offered for bid must be equivalent as to function, basic design, type and quality of material, method of construction, and any required dimensions. Bidder must attach a letter of exception to specifications.

For assistance with bid procedures contact Greg Workman, Purchasing Director, City of Elizabethton, Tennessee at 423-542-1505 or by email: gworkman@cityofelizabethton.org

For onsite visit contact David McQueen at 423-895-0802 or by email at dmcqueen@cityofelizabethton.org

Note: The City of Elizabethton, Tennessee reserves the right to reject any or all bid, to waive any technicalities or informalities, and to accept any bid deemed in the best interest of the City. All bids will be considered in accordance with Title VI and without regard to age, sex, color, race, creed, national origin, religious persuasion, marital status, political belief, or disability that does not prohibit the performance of duty.

Pre-Bid Meeting

There will be a **Mandatory** pre-bid meeting held on Tuesday, January 16, 2018 at 10:00 am at 136 South Sycamore Street Suite 200 (City Manager Conference Room), Elizabethton, Tennessee 37643. Weather permitting a visit to the job site may be necessary.

SPORTS LIGHTING BID SPECIFICATION
City Park Baseball Fields
City of Elizabethton Parks and Recreation

1. PART 1-INSTALLATION

1.1 SCOPE OF WORK

SCOPE OF WORK

1. Furnish and Install Sports Lighting Equipment at City Park Babe Ruth Field and Little League Field that meets the Lighting Standards for tournament play per Torrence Sports Lighting, Inc Drawing Number A031017TSL1 Dated March 10th, 2017. There will be (6) sports lighting direct burial steel poles and a minimum of (54) 1500 watt sports lighting fixtures.
2. Locate any underground lines before digging. Contractor required to contact Elizabethton Electric Department prior to mobilization to discuss the close proximity of the existing transmission and electrical lines. It will be the responsibility of the bidding electrical contractor to verify and repair any underground utilities.
3. Any underground irrigation lines currently installed at the fields to be marked by the City of Elizabethton.
4. Any fencing damages or removal to be replaced by the contractor.
5. Contractor to demo existing sports lighting poles and lights and dispose of old lights and poles. Existing wood poles to be pulled or cut below grade level.
6. Sports Lighting Direct Burial Steel poles, crossarms, and GE or Hubbell Sports Lighting Fixtures or approved equal per attached written specifications and photometric drawing.
7. Provide and Install new breaker panel for 480 Volt 3 Phase feed to each pole. Each pole will be turned on by individual breakers. The panel to be sized for future two additional poles and lights for Babe Ruth Field just in case field size increases in the future.
8. Electrical equipment should be specified as ITE Siemens, Square D, or Cutler Hammer.
9. 480 Volt Three Phase Service to be used for the new lighting poles, fixtures and panel. Contractor to make all final connections. The Transformer is located in right field corner of the little league field.
10. Provide and install all new underground copper wiring to each pole.
11. No trenches can cross the baseball fields
12. Trenches are to be filled with Top Soil mix and tamped finished, straw, and reseed.
13. All permits will be obtained by the contractor. Any charges for permits responsibility of contractor.
14. Contractor to provide a set of Tennessee Stamped Electrical Drawings for this project.
15. All taxes to be included in the contractor's proposal.
16. Encounter of any embedded rock removal to be quoted per cubic yard. Please see bid form for unit costs.

City Park Baseball Fields
City of Elizabethton Parks and Rec

17. A mandatory pre-bid meeting will be on January 16th 2018 at 10:00am EST. Meeting location to be at 136 South Sycamore Street Suite 200 (City Manager Conference Room) Elizabethton, Tennessee.
18. Contact for this project will be David McQueen with the Elizabethton Parks and Recreation at (423) 895-0802 or email: dmcqueen@cityofelizabethton.org
19. Any questions in regards to the specification or scope of work during pre-bid meeting up until 5 days prior to bid date to be emailed in writing to David McQueen. Questions will be addressed and provided to all bidding electrical contractors prior to bid date.
20. Job Site Address: City Park, 900 East Elk Avenue, Elizabethton, TN 37643
21. 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 set forth in written specifications.
22. Lighting systems not meeting performance criteria for this project shall be upgraded at the contractor's expense until the owner is satisfied that all lighting, structural, and electrical components meet the specifications herein.
23. Contractor must provide a list of references of sports lighting projects completed in last 18 months with the bid.
24. Contractor to provide all insurance requirements prior to contract award by City of Elizabethton. Proof of 1,000,000.00 per incident insurance policy and a 2,000,000.00 insurance umbrella policy required by contractor.
25. The sports lighting representative to assist with the aiming of the lights and provide light test commission reports per bid document specifications.
26. It is intent of the City of Elizabethton to award this job no later than February 9th, 2018. Baseball Season starts in April 2018 so the City of Elizabethton requests project to be completed by April 22, 2018.
27. The winning bidder will provide all materials and labor and other needs according to the scope of work above to City of Elizabethton Parks and Recreation Department.
28. Sales Tax on Materials to Be Included with Total Bid Cost.

2. PART 2 – PRODUCTS

2.1 TABLE OF LIGHTING FIXTURE PRODUCTS

Baseball Fields	Qty (54)	GE or Hubbell Sports Lighting Fixtures
-----------------	----------	--

The products listed above are to establish the standard of quality. The local representative is Mike Torrence with Torrence Sports Lighting, Inc at 704-953-0680.

2.2 LIGHTING PERFORMANCE

The purpose of these specifications is to define the performance and design standards for the lighting of this project. The manufacturer shall supply lighting equipment and computer generated point by point analysis that meets or exceeds the following:

A. Performance Criteria

1. The lamp shall be a 1500 watt metal halide lamp and shall meet ANSI code M48 and be a GE MVR1500/U/Sports or approved equal. Lamps shall have Initial Vertical Lumens of 170,000.
2. All computer generated point-by-point light scans shall be based on an approved lamp manufacturer's published initial lumen output based (after 100 hours burn in). The lamp manufacturer's 1500 watt lamp specification sheet must be provided.
3. A tilt factor of 1.0 shall not be acceptable for any type of lamp, and all computer generated point-by-points shall be calculated based on each individual optical units actual tilt and required tilt factor for the degree variance from the lamp measured and published operating position.
4. The specified light levels shall be derived by applying Light Loss Factors to the Initial and Maintained lighting designs in the following manner (Per IESNA Recommended Practice for Sports & Recreation Area Lighting – RP-6-01). Manufacturers that provide “constant light” for approval must provide scans that are equal to the fixture count specified in this specification to be considered.
5. Initial Light Levels are to be based on foot-candles as calculated from the photometric report of the luminaire (per the lamp manufacturer's 100 hour lamp lumens) x Ballast Factor x Voltage Factor x Ambient Temperature Factor x Lamp Tilt Factor.

<u>Area of Lighting</u>	<u>Average Entire Field</u>
Infield	62.5 foot-candles
Outfield	37.5 foot-candles

6. Target (or Maintained) Light levels are based on Initial Light Levels multiplied by the Recoverable Light Loss Factor (LLF) of 0.80. Recoverable LLF = LLD x LDD = .80
 Target Light Levels shall meet or exceed the following. All other manufacturers submitting for approval must provide initial and maintained lighting designs for approval per IESNA RP-6-01 Section 2.2.5.

<u>Area of Lighting</u>	<u>Average Entire Field</u>
Infield	50 foot-candles
Outfield	30 foot-candles

7. The manufacturer guarantees initial field light intensity levels and uniformity ratios after initial start-up or within the first One Hundred (100) hours of operation (Per IES and Lamp Manufacturer Initial Lumen Output Ratings). Light level readings shall be taken at the grid point locations as detailed in the point by point analysis specification at 3' above field grade.
8. If manufacturer uses a purchased ballast in their fixture/enclosure, the manufacturer must apply the appropriate ballast factor (per ballast manufacturer's data) in their lighting calculation to account for wattage losses of a ballast operating “hot in the fixture/enclosure”. A ballast factor of 1.0 shall not be allowed, unless the ballast and fixture/enclosure are from the same manufacturer and have been rated and tested to operate the lamp at its design center hot in the fixture/enclosure.

B. Performance Criteria - Light Uniformity: In order to ensure the optimal playability and visual appearance of the field, all lighting designs shall meet the following:

1. Maximum to Minimum Uniformity Ratio - The uniformity of the playing field shall be measured by comparing the maximum reading to the minimum reading. This ratio shall not exceed the following:

City Park Baseball Fields
City of Elizabethton Parks and Rec

Area of Lighting	Maximum to Minimum Uniformity Ratio
Infield	1.91:1.52
Outfield	1.52:1.35

2. Coefficient of Variance (CV): The ratio of the standard deviation for all of the light level readings to the mean light level for the defined set of grid points shall not exceed the following:

Area of Lighting	Coefficient of Variance
Infield	0.09
Outfield	0.17

2.3 POINT BY POINT ANALYSIS

A. Computer Models - Test Stations

Submitted computer models depicting the measurements of light shall be generated on a grid of specified number of points covering a stated area on an equally spaced grid. See the chart below for the exact specifications of points, areas and grid spacing for each field:

Area of Lighting	Target Points	Size of Area	Grid Spacing
Infield	25	Entire infield	30' x 30'
Outfield	82	Entire outfield	30' X 30'

1. Bidder shall submit two (2) different models, one depicting initial design and the second depicting light levels with described maintenance factor applied.

B. Meter Orientation

1. Horizontal foot-candles - models shall represent readings taken with the meter test cell positioned horizontal 36 inches above grade.
2. Maximum Vertical foot-candles - models shall represent readings taken with the test cell positioned 36 inches above grade and aimed towards the center of the field at 30' intervals.

2.4 INSPECTION AND VERIFICATION

A. Test and Measurement Procedures

1. Testing of the facility shall be done based at the test points as described in section 2.3.
2. All testing will be done with entire facility illuminated and shall be done after 100 hours of lighting systems use (per IES recommended practice) to allow the lamps to depreciate to their stated initial lumen output per manufacturer's lamp technical data sheet.
3. In the event that the actual spill light readings exceed those defined in Section 2.2 D, ambient light readings shall be taken and subtracted from the respective light readings. The ambient readings must be taken at the same location and orientation as the previously recorded readings.

4. The manufacturer will be required to grid the complete field(s) based on the computer models submitted requirements and take readings at each grid point. The manufacturers will be required to utilize a calibrated, cosine corrected light meter for test measurements. The average of the two meter readings will be recorded as the light intensity of each grid point.
7. For final approval of the project the manufacturer shall provide a final report from the test results that shall provide the following items:
 - a. Identification of number and location of the test stations, that shall agree in number and location with description provided in 2.3.
 - b. Actual horizontal foot-candle readings taken at each test station.

2.5 SPORTS LIGHTING SYSTEM

The sports lighting system shall be a GE or Hubbell Sports Lighting System with Direct Burial Steel Poles.

Any proposed substitutions must submit complete system information and documentation including required computer generated lighting models for approval 10 days prior to bid date.

- A. General Description – The Sports Lighting System shall consist of the listed equipment features below,
 1. Direct Burial Steel Poles. Poles to be rated for Wind Load per Elizabethton, Tennessee and applied gust factor. Pole Mounting height to be 60 feet and 70 feet per photometric drawings.
 2. Hot-dip galvanized steel crossarms
 3. Integral Fixture consisting of die-cast aluminum ballast assembly, lamp, lamp socket, reflector, lens, lamp support, reinforcing retaining ring.

2.6 LUMINAIRE STRUCTURE

- A. Factory Construction: The integral luminaire shall be factory assembled as two primary components – Ballast Assembly and Optical Assembly.
- B. Single Photometric Unit: Each fixture shall be attached to the cage in such a way that it's aiming position has been determined relative to all other fixtures on the pole so that all luminaires on the assembly are oriented to form a single photometric unit.
- C. Lamps: Lamps shall be a 1500 watt metal halide and shall meet ANSI designation M48-1500BU. The lamps shall be GE MVR1500/U/Sports or approved equal. Venture Sport 60 lamps or proprietary lamps will not be considered.
- D. Reflector and Lamp Supports: The reflector shall be fastened to the ballast assembly with a heat resistance reinforcing retaining ring which centers and stabilizes the lamp in the reflector and provides heat shield to protect the lamp socket from heat.
- E. Lens: A hinged and removable lens of impact and thermal resistant glass with silicone gasket shall be centered in a zinc rich painted galvanized steel lens rim and attached to the reflector with a minimum four (4) stainless steel clamps.

- F. **Aiming:** The manufacturer shall provide a memory positioning device for each luminaire on the assembly. The device shall provide for automatic repositioning of the aiming after relamping.
- G. **Aiming Alignment:** Luminaire assembly shall be provided from the factory to the job site as a unit which may be universally oriented in a manner that the entire luminaire assembly can be field aimed as a single unit.
- H. **Materials and Coatings:** All steel components shall be hot dip galvanized to the most current ASTM A-123 standards. High purity reflector grade aluminum shall be anodized and coated with a thin layer of heat-cured glass that is chemically bonded to the reflector for corrosion protection, greater smoothness, better reflectivity and ease of cleaning. All non-current carrying fasteners, hinges, and latches shall be stainless steel and shall be cadmium plated or coated with thermoset epoxy type organic coatings such as Empigard to prevent galvanic interaction.
- I. **Crossarm Welding:** Crossarm sections for the luminaire assembly shall be welded before galvanizing. Any additional fasteners used for the attachment of accessories to the crossarm shall be stainless steel, hot-dipped galvanized or coated with Empigard or equivalent. All weld joints utilized will be pre-qualified per the American Welding Society or qualified by an AWS certified inspector or testing firm.
- J. **Structural Strength:** To assure continued alignment of the critical aiming of the luminaires and to avoid wind damage to the crossarms or its components, the crossarms, fixture, reflector, and its attachment to the pole shall be designed to withstand winds per local builder's code. Luminaires shall be attached to the crossarm by a minimum of one bolt.

2.7 SAFETY SPECIAL CONDITIONS

- A. **UL Listing:** There shall be provided a UL listing for all electrical components from its connection to the feeder conductors, to its completion at the lamp socket including all connections. This listing shall be based upon UL testing and evaluation of the compatibility of the enclosures and the components for use in combination in this application in addition to the individual components being UL listed or recognized.
 - 1. Bidder shall supply, in advance of bid, a page summarizing the Underwriters laboratory listing numbers covering the entire luminaire assembly being bid for the owner's review and retention.
- B. **Codes - Sports Lighting Structure** shall meet National Electrical Code.

2.8 WARRANTY

- A. **Assurance – Manufacturer warrants the sports lighting system (excluding fuses and lamps) to be free from defects as related to materials for a period of 5 years from the date of delivery.**
 - 1. **Labor – Contractor agrees to provide a turn key warranty for a period of 1 year to replace defective ballasts or lamps and repair defects on workmanship per manufacturer warranty details.**
 - 2. **Lamps – Lamps are warranted not to fail for one year from the date of delivery. Lamps which fail during the first year will be replaced at no charge by contractor per manufacturer warranty details.**
 - 3. **Limitations – The following are not covered by this warranty:**
 - a. **Fuses**

- b. Damage from weather condition events such as lightning, hail, or excessive wind from tornadoes or hurricanes;
- c. Improper installation, vandalism, or abuse;
- d. Unauthorized repairs or alterations.

2.9 INSTALLATION

- A. Backfill and Auger Size for Steel Poles to be per manufacturer recommendation.
- B. Assembly: The pole to be properly plumbed and aligned per manufacturer requirements.

2.10 MANUFACTURER'S REPRESENTATIVE ON SITE VISIT

Manufacturer shall provide a qualified, factory trained, representative on-site after the completion of the project installation. The manufacturer shall make any necessary adjustments to the aiming in order to ensure that the specified lighting performance is met. This service is to be provided free of charge, provided the lighting equipment was installed in accordance with the manufacturer's design and specifications.

2.11 DELIVERY REQUIREMENT

- A. The equipment must be on-site 6-8 weeks from the receipt of signed purchase order, acceptance of order and receipt of complete order information.

2.12 ALTERNATE SUBMITTAL DATA TO BE PROVIDED

- A. Failure to provide any of the following information with the alternate submittal will be grounds for rejection of the alternate. Each item listed below shall be provided in the form of clear and concise statements and/or plans and drawings which can be easily read and clearly interpreted. Each item shall also be clearly lettered to correspond with the following list. All items shall be assembled in the order indicated and secured or bound in a neat and orderly fashion for easy use and reference. Faxed bids will not be accepted. Owner must notify all bidders of any approved alternate by addendum only. Bidders requesting to use equipment other than that specified shall submit 10 days prior to bid opening the following:
 - 1. Lighting layout design showing luminaire mounting heights, aiming focus points, reflector types, number of luminaires per pole and kilowatt consumption for initial and maintained designs per fixture counts set forth and initial foot-candles per this specification.
 - 2. A drawing of the Sports Lighting Structure meeting or exceeding specified criteria.
 - 3. Computer generated point-by-point analysis of field light values as set forth in accordance with lighting performance specifications.
 - 4. Complete photometric reports produced by an independent testing laboratory for each type of reflector to be utilized to achieve performance criteria.
 - 5. Computer generated spill/glare analysis in accordance with lighting performance specifications.
 - 6. Written statements of model number and manufacturer for all equipment bid.
 - 7. Written warranty from the manufacturer covering entire structure as outlined in specifications.

City Park Baseball Fields
City of Elizabethton Parks and Rec

8. Certified engineer shall verify and stamp wind load tests of luminaire assembly to meet or exceed structural strength as described in specifications. Please note, EPA test does not constitute mis-alignment verification.
9. UL Test Number
10. Manufacturer shall submit a letter guaranteeing that foot-candle levels and uniformity as specified will be met. In addition, manufacturer's remedy to deficiencies will be noted.
11. There shall be provided by the manufacturer sufficient data and calculations to show that the specified criteria will be met, including a foundation design certified by a professional engineer.

Failure to provide any of the above-described documentation will be grounds for proposal rejection.

Sealed Bids are due on or before _____ at 2pm eastern standard time.

The Address to delivery bids:

29. It is the intent of City of Elizabethton Parks and Recreation Department to award and notice to proceed by February 9th, 2018.
30. The project to be completed by April 22nd, 2018

BASE BID - As shown in scope of work above: \$ _____

* Base Bid price includes all labor, materials, permits taxes, and anything else to complete project

UNIT PRICES:

No. UP-1 Partially Weather Rock Removal per LF Unit Price (\$): _____

No. UP-2 Rock Removal per LF Unit Price (\$): _____

COMPANY NAME: _____ DATE: _____

ELECTRICAL LICENSE NUMBER: _____

COMPANY ADDRESS: _____

CONTACT NAME: _____

CONTACT SIGNATURE: _____

COMPANY FAX: _____ COMPANY PHONE: _____

EMAIL ADDRESS: _____

City Park Baseball Fields
City of Elizabethton Parks and Rec

Insuring that quotes are received by the City of Elizabethton Parks and Recreation and received on time is the sole responsibility of the bidding contractor. City of Elizabethton Parks and Recreation takes no responsibility for the lost or late submissions. You can submit a quote on your company quote form/letterhead if you are not using the attached bid form. Be sure to include the pertinent information. Bids will not be accepted by fax or email.

All prices and notations shall be printed in ink or typewritten. Errors shall be crossed out and corrections entered and initialed by the person signing the bid. Erasures or use of typewriter correction media may be cause for rejection of the bid. No bid shall be altered or amended after the specified time for opening.

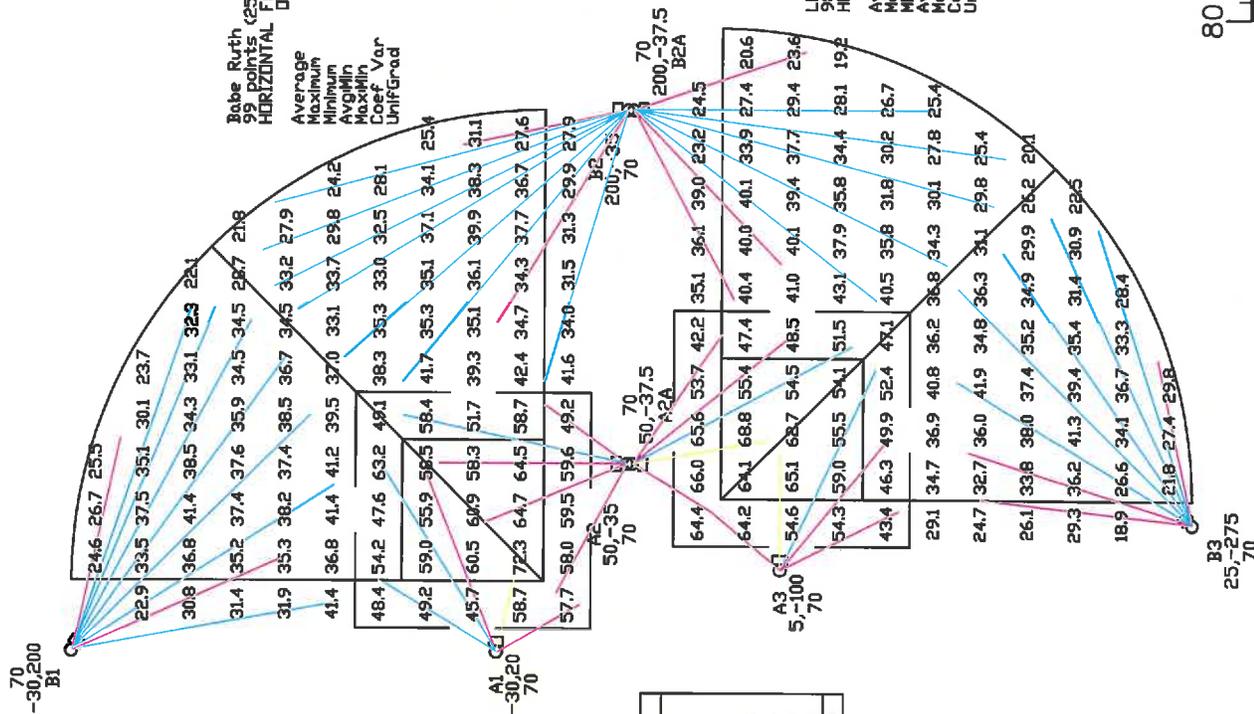
City of Elizabethton Parks and Recreation reserves the right to reject portions of a bid, as well as any and all bids in their entirety and to waive minor irregularities in the bid that, in the opinion of the foundation, do not affect the overall validity of the bid.

NEMA 5
 HUBBELL SLS1500Hx5x
 Initial Lumens per lamp = 170000
 Light Loss Factor = 0.800
 Watts per luminaire = 1610
 Candela File name: sls1500h-5IES
 Number luminaires used = 3
 kw these luminaires = 4.8

NEMA 4
 HUBBELL SLS1500Hx4x
 Initial Lumens per lamp = 170000
 Light Loss Factor = 0.800
 Watts per luminaire = 1610
 Candela File name: sls1500h-4IES
 Number luminaires used = 22
 kw these luminaires = 35.4

NEMA 3
 HUBBELL SLS1500Hx3x
 Initial Lumens per lamp = 170000
 Light Loss Factor = 0.800
 Watts per luminaire = 1610
 Candela File name: sls1500h-3IES
 Number luminaires used = 29
 kw these luminaires = 46.7

Pole	x-loc	y-loc	height	NEMA 3	NEMA 4	NEMA 5	Total	kw
A1	-30	20	70ft	2	2	1	5	8.1
A2	50	-35	70ft	1	4	1	5	8.1
A2A	50	-37.5	70ft	1	3	1	5	8.1
A3	5	-100	70ft	1	3	1	5	8.1
B1	-30	200	70ft	7	2	2	9	14.5
B2	200	-35	70ft	7	2	2	9	14.5
B2A	200	-37.5	70ft	5	3	3	8	12.9
B3	25	-275	70ft	5	3	3	8	12.9
Total				29	22	3	54	86.9



Babe Ruth
 99 points (25 infield, 74 outfield) at z=3, sp 20ft by 20ft
HORIZONTAL FOOTCANDLES
 Infield
 Average 33.8
 Maximum 42.4
 Minimum 21.8
 AvgMin 1.55
 Maximum 1.94
 Coef Var 0.11
 UnifGrad 1.33

Little League
 98 points (25 infield, 73 outfield) at z=3, sp 20ft by 20ft
HORIZONTAL FOOTCANDLES
 Infield
 Average 32.1
 Maximum 43.1
 Minimum 18.9
 AvgMin 1.71
 Maximum 1.43
 Coef Var 0.19
 UnifGrad 1.27



PO BOX 410129
 CHARLOTTE, NC 28241
 OFFICE (704) 587-6692
 FAX (704) 587-3318
 www.tsportslight.com

Calculated light levels and visualizations are based on specific information that has been supplied to TSL. Any differences in luminaire installation, ligand area geometry and other factors may produce different results from the prediction. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will affect results.

DATE:	3/10/17	REV:		CHECK BY:	
DRAWING NUMBER:	A031017TSL1	DRAWN BY:	TSL		

CITY PARK BASEBALL
TORRENCE SPORTS LIGHTING