May 2, 2011

ORIGINAL

To: All Prospective Bidders

City of Key West Bid No. 11-015 Retrofit Local Park Ball Field Lighting contains the following documents:

a. Cover letter one (1) page in length
b. General Conditions of Invitation to Bid eight (8) pages in length
c. Statement of No Bid one (1) page in length
d. Specifications eight (8) pages in length
e. Bid Response Form two (2) pages in length
f. Submittal Information two (2) pages in length
g. Granting Agency Requirement eight (8) pages in length
h. Granting Agency Forms three (3) pages in length
i. Anti-Kickback Affidavit one (1) page in length
j. Public Entity Crimes Certification three (3) pages in length
k. Non-Collusion Declaration
l. Local Vendor Certification two (2) pages in length

Please review your bid package to ensure it contains all of these documents. If not, contact Sue Snider, City of Key West Purchasing Agent at (305) 809-3815, immediately, to obtain copies of any missing document(s).

If your firm determines that a "No Bid" response is required, please complete and return the "Statement of No Bid". Firms/corporations submitting to bid should ensure that the following documents are completed, certified, and returned as instructed: Bid Response Forms, Anti-Kickback Affidavit, Public Entity Crimes Certification, copy of current Occupational License.

m. Bid Bond, two pages (2)

n. Addendum I, three pages (3)

o. Addendum II, two pages (2)

p. Addendum III, Four pages (4)

ORIGINAL

COVER LETTER

SUBJECT: BID NO. 11-015 Retrofit Local Park Ball Field Lighting

ISSUE DATE: May 2, 2011

MANDATORY PRE BID MEETING: May 11, 2011, 0900 at the Clayton Sterling Baseball Complex Concession Stand located off Kennedy Drive, Key West, FL. The other sites as per the RFQ will also be visited immediately following the first site.

MAIL BIDS TO: CITY CLERK
CITYOF KEY WEST
525 ANGELA STREET
KEY WEST, FL 33040

DELIVER BIDS TO: SAME AS ABOVE

BIDS MUST BE RECEIVED: June 1, 2011

NOT LATER THAN: 3:30 PM

SUE SNIDER
PURCHASING AGENT
CITY OF KEY WEST

ses

Enclosures

General Conditions of Invitation to Bid

1. PREPARATION OF BIDS:

Bids will be prepared in accordance with the following:

(a) The enclosed Bid Response Form is to be used, other forms may be rejected.
(b) All information required by the BID form shall be furnished. The bidder shall print or type his/her name and manually sign the Bid Response Form plus each continuation sheet on which an entry is made.
(c) Proposed delivery time must be shown and shall include Sundays and holidays.
(d) Bidder shall thoroughly examine the specifications, drawings, schedule, instructions, and all other contract documents.
(e) All bids shall be submitted with two (2) originals hard copies and three (3) USB flash drives or three (3) CD ROMs each with one PDF file.
(f) Bidders are advised that all City contracts are subject to all legal requirements provided for in City ordinances and/or State and Federal Statutes.

2. DESCRIPTION OF SUPPLIES:

(a) Any manufacturer's name trade name, brand name, or catalog number used in the specifications is for the purpose of describing and establishing general quality levels. SUCH REFERENCES ARE NOT INTENDED TO BE RESTRICTIVE. Bids will be considered for any brand, which meets the quality of the specifications for any item.

3. SUBMISSION OF BIDS:

(a) Bids and changes thereto shall be enclosed in sealed envelopes addressed to the City Clerk, City of Key West. The name and address of the bidder, the date and hour of the bid opening and the bid number shall be placed on the outside of the envelope.
(b) Bids must be submitted on the form furnished. Telecopier bids will not be considered.
(c) Unless otherwise indicated, all City of Key West Bids may be awarded on a line item basis.

4. REJECTION OF BIDS:

(a) The City may reject bids:
   1. For budgetary reasons, or
   2. The bidder misstates or conceals a material fact in its bid, or
   3. The bid does not strictly conform to the law or is non- responsive to bid requirements, or
   4. The bid is conditional, or
   5. A change of circumstances occurs making the purpose of the bid unnecessary to the City.

(b) The City may also waive any minor informalities or irregularities in any bid.

5. WITHDRAWAL OF BIDS:

(a) Bids may not be withdrawn after the time set for the bid opening for a period of time as specified in the Instruction to Bidders.
(b) Bids may be withdrawn prior to the time set for bid opening. Such request must be in writing.

6. LATE BIDS OR MODIFICATION:

(a) Bids and modifications received after the time set for the bid opening will not be considered.

(b) Modifications in writing received prior to the time set for the bid opening will be accepted.

7. LOCAL, STATE, AND FEDERAL COMPLIANCE REQUIREMENTS:

(a) Bidders shall comply with all local, state and federal directives, orders and laws as applicable to this bid and subsequent contract(s) including, but not limited to:

1. Equal Employment Opportunity (EEO), in compliance with Executive Order 11246, as applicable to this contract.
2. Minority Business Enterprises (MBE), as applicable to this contract.
3. Occupational Safety and Health Act (OSHA), as applicable to this contract.

8. COLLUSION:

(a) The bidder by affixing his signature to this Invitation to Bid, agrees to the following: "Bidder certifies that his/her bid is made without previous understanding, agreement, or connection with any person, firm, or corporation making a bid for the same items and is in all respects fair, without outside control, collusion, fraud, or otherwise illegal action.

9. VARIANCE IN CONDITIONS:

(a) Any and all special conditions and specifications attached hereto which vary from General Conditions shall have precedence.

10. APPROPRIATIONS CLAUSE:

(a) If the contract or delivery extends beyond the current fiscal year, which ends on September 30, the contract shall be contingent upon the availability of funds appropriated for such purposed in the City's annual budget for the next succeeding fiscal year.

11. CLARIFICATION OR OBJECTION TO BID SPECIFICATIONS:

(a) If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of the specifications or other bid documents or any part thereof, he may submit to the Community Services Deputy Director on or before five (5) days prior to scheduled opening a request for clarification. All such requests for information shall be made in writing and the person submitting the request will be responsible for prompt delivery. Any interpretation of the bid, if made, will be made only by Addendum duly issued. A copy of such Addendum will be mailed or delivered to each person receiving an Invitation to Bid. The City will not be responsible for any other explanation or interpretation of the proposed bid made or given prior to the award of the contract. Any objection to the specification and requirements as set forth in the bid must be filed in writing with the Community Services Deputy Director on or before five (5) days prior to the scheduled opening. Community Services Deputy Director is Rod Delostrinos at rdelostr@keywestcity.com.

12. DISCOUNTS:

(a) Bidders may offer a cash discount for prompt payment; however, such discount shall not be considered in determining the lowest net cost for bid evaluation proposed. Bidders are encouraged to reflect cash discounts in the unit price quoted.

(b) In connection with any discount offered, time will be computed from the date of receipt of supplies or services or form the date a correct invoice is received, whichever is the later date. Payment is deemed to be made on the date of mailing of the check.

13. AWARD OF CONTRACT:

(a) The contract will be awarded to the lowest responsive and responsible bidder whose bid, conforming to the Invitation to Bid, is most advantageous to the City, prices and other factors considered.

(b) The City reserves the right to accept and award item by item, and/or by group or in the aggregate, unless the bidder qualifies his bid by specified limitations as provided in 4 (a) (3).

(c) If two or more bids received are for the same total amount or unit price, quality and service being equal, the contract will be awarded to the bidder that maintains an office inside the city limits of Key West. Monroe County will be the determining factor. When neither of these conditions exists, bids for identical amounts will be determined by the drawing of lots in public by the Finance Director.

(d) Prices quoted must be f.o.b. Key West, Florida, with all transportation charges prepaid unless otherwise specified in the Invitation to Bid.

(e) Successful Bidder will enter into a contract in accordance with the bid document in a form sufficient to the City Attorney.

14. LOCAL PREFERENCE:

(a) In Accordance with City of Key West Code of Ordinances Sec. 2-798, policy of local preference is applied to bids submitted by qualified local businesses. Under a competitive bid solicitation, when a responsive nonlocal business submits the lowest price bid, and the bid submitted by one or more responsive, responsible local businesses is within five percent of the price submitted by the nonlocal business, then the local business with the apparent lowest bid offer (ie.., lowest local bidder) may have the opportunity to submit an offer to match the price(s) offered by the lowest, qualified and responsive bidder within three working days of a notice of intent to award. If the lowest local bidder submits a bid that fully matches the lowest bid from the lowest nonlocal bidder tendered previously, then the award shall be made to such local bidder. If the lowest local bidder declines or is unable to match the lowest nonlocal bid price(s), then the award shall be made to the nonlocal business.

15. DAMAGE:

(a) Successful bidder(s) will be responsible for making any and all claims against carriers for missing or damaged items.

16. TRAVEL AND REIMBURSABLE OUT OF POCKET EXPENSE:

(a) Should there be travel and/or reimbursable out of pocket expenses relevant to this contract, Florida Statute 112.061 (Per diem and travel expenses of public officers, employees, and authorized persons) will be followed.

IF A TABULATION OF BIDS IS DESIRED, PLEASE ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE WHEN SUBMITTING YOUR SUBMITTAL.

17. INSURANCE AND LIABILITY

A. GENERAL: The Contractor shall provide (from insurance companies acceptable to the Owner) the insurance coverage designated hereinafter and pay all costs. Before commencing work as specified in the contract CONTRACTOR shall obtain at its own cost and expense the following insurance in insurance companies authorized in the State of Florida, with an A.M. Best rating of A-:VI or higher and shall provide evidence of such insurance to the Owner. The policies or certificates shall provide thirty (30) days prior to cancellation notices of same shall be given to the Owner by registered mail, return receipt requested, for all of the required insurance policies stated below. All notices shall name the CONTRACTOR and identify the agreement or contract number. The City of Key West (Owner), all Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees are to be added as "additional insureds" as respects liability arising out of activities performed by or on behalf of the CONTRACTOR. CONTRACTOR shall maintain limits no less than those stated herein and shall include waiver of subrogation as to the City of Key West, CONTRACTOR and their respective officers, agents, employees and subcontractors:

B. CONTRACTOR AND SUBCONTRACTOR INSURANCE: The Contractor shall not commence work under this Contract until he has obtained all the insurance required hereunder and such insurance has been reviewed by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until insurance specified below has been obtained. Review of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

C. COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE: The Contractor shall maintain during the life of this Contract the statutory amount of Workmen's Compensation Insurance, in addition, Employer's Liability Insurance in an amount as specified in the Supplementary Conditions, for each occurrence, for all of his employees to be engaged in work on the project under this Contract. In case any such work is subcontracted, the Contractor shall require the Subcontractor to provide similar Workmen's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees to be engaged in such work.

D. GENERAL LIABILITY INSURANCE (INCLUDING AUTOMOBILE) The Contractor shall maintain during the life of this Contract such general liability, completed operations and products liability, and automobile liability insurance as will provide coverage for claims for damages for personal injury, including accidental death, as well as for claims for property damage, which may arise directly or indirectly from performance of the work under this Contract. The general liability policy shall include contractual liability assumed by the Contractor under Article INDEMNITY. Coverage for property damage shall be on a "broad form" basis with no exclusions for "X, C & U". The amount of insurance to be provided shall be as specified in the Supplementary Conditions.

In the event a Subcontractor performs any work under this Contract, the Contractor shall be responsible for any liability directly or indirectly arising out of the work performed by the Subcontractor to the extent such liability is not covered by the Subcontractor's insurance.

The Owner and Engineer, their officers, agents, and employees shall be named as Additional Insureds on the Contractor's and any Subcontractor's general liability and automobile liability insurance policies for any claims arising out of work performed under this Contract.

Proof of Standard Insurance and Liability Requirements

a. Workers' Compensation: Insurance covering all employees meeting Statutory Limits in compliance with the applicable state and federal laws. The coverage must include Employer's Liability with a limit of $1,000,000.00 each accident.
b. Comprehensive General Liability: Coverage shall have minimum limits of $2,000,000 Per Occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability. This shall include Premises and/or Operations; Independent Contractors; Products and/or Completed Operations; Broad Form Property Damage, XCU and a Contractual Liability endorsement.
c. Business Auto Liability: Shall have a minimum limit of $1,000,000 Per Occurrence, Combined Single Limit For Bodily Injury Liability and property Damage Liability. This shall include: Owned Vehicles, Hired and Non-Owned Vehicles and Employees Non-Ownership.

d. Excess/Umbrella shall have minimum limits of $2,000,000 per occurrence/aggregate.
e. All insurance required shall include a waiver of subrogation as to the Owner, the Contractor, and their respective officers, agents, employees, and subcontractors.
f. It shall be the responsibility of the CONTRACTOR to ensure that all subcontractors comply with the same insurance requirements that he or she is required to meet.

6. If Architectural Services are to be offered, proof of Professional Architectural Certificate for the State of Florida

7. If Engineering Services are to be offered, proof of Professional Engineering Certificate for the State of Florida.

8. List of any and all project related Claims or Litigation for the last five years against the Proposer or Proposers subcontractors.

9. A list of current projects and a schedule indicating availability of firm to properly staff the project for the quick turnaround required for this project.

E. BUILDERS RISK ALL RISK INSURANCE

Unless otherwise modified in the Supplementary Conditions, the Contractor shall secure and maintain during the life of this Contact, Builders Risk All Risk Insurance Coverage in an amount equal to the full value of the facilities under construction. DeductITBle shall be no greater then $5,000. Such insurance shall include coverage for earthquake, landslide, flood, collapse, loss due to the result of faulty workmanship or design, and all other normally covered risks, and shall provide losses to be paid to the Contractor, Owner, and Engineer as their interests may appear.

The Owner and Engineer, their officers, agents, and employees shall be named as additional insureds on the Contractor's and any subcontractors Builders Risk All Risk insurance policies for any claims arising out of work performed under this Contract.

This insurance shall include a waiver of subrogation as to the Engineer, the Owner, the Contractor, and their respective officers, agents, employees, and subcontractors.

F. NO PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions hereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

G. SURETY AND INSURER QUALIFICATIONS

All bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or insurance company, having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or insurance company shall be duly licensed and qualified to do business in the State of Florida. If requested, Contractor shall provide proof of Florida Licensure for all insurance companies.

35. INDEMNITY

A. Contractor shall indemnify and hold harmless the Owner, its officers and employees, from liabilities, damages, losses, and costs, including, but not limited to reasonable attorney's fees, to the extent caused by the negligence, recklessness or intentional wrongful misconduct of Contractor and persons employed or utilized by Contractor in the performance of this Contract. Except as specifically provided herein, this Contract does not require Contractor to indemnify the Owner, its employees, officers, directors, or agents from any liability, damage, loss, claim, action, or proceeding. These indemnifications shall survive the term of this Contract. In the event that any action or proceeding is brought against the Owner by reason of any such

claim or demand, Contractor shall, upon written notice from the Owner, resist and defend such action or proceeding by counsel satisfactory to the Owner.

B. The indemnification provided above shall obligate Contractor to defend at its own expense to and through appellate, supplemental or bankruptcy proceeding, or to provide for such defense, at the Owner's option, any and all claims of liability and all suits and actions of every name and description covered by Part A of this section above which may be brought against the Owner whether performed by Contractor, or persons employed or utilized by Contractor.

18. EXCLUSION OF CONTRACTOR CLAIMS

In performing its obligations, the Engineer and its consultants may cause expense for the Contractor or its subcontractors and equipment or material suppliers. However, those parties and their sureties shall maintain no direct action against the Engineer, its officers, employees, agents, and consultants for any claim arising out of, in connection with, or resulting from the engineering services performed or required to be performed.

19. TAXES AND CHARGES

The Contractor shall withhold and pay any and all sales and use taxes and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever, which are now or may hereafter be required to be paid or withheld under any laws.

20. REQUIREMENTS OF STATE LAW FOR PUBLIC WORKS PROJECTS

When the Contract Documents concern public works of the state or any county, municipality, or political subdivision created by its laws, the applicable statutes shall apply. All parties to this Contract shall determine the contents of all applicable statutes and comply with their provisions throughout the performance of the Contract.

21. CODES, ORDINANCES, PERMITS, AND LICENSES

The Contractor shall keep himself fully informed of all local codes and ordinances, as well as state and federal laws, which in any manner affect the work herein specified. The Contractor shall at all times comply with said codes and ordinances, laws, and regulations, and protect and indemnify the Owner, the Engineer and their respective employees, and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. All permits, licenses and inspection fees necessary for prosecution and completion of the work shall be secured and paid for by the Contractor, unless otherwise specified.

A. PERMIT FOR WORK WITHIN LOCAL RIGHTS-OF-WAY

The Contractor shall obtain from the City of Key West the necessary permits for work within the rights-of-way. The Contractor shall aBide by all regulations and conditions, including maintenance of traffic, FDOT Standard.

B. NOISE ORDINANCE

The Contractor shall comply with the City of Key West Noise Ordinance.

C. LICENSES: BIDDER must represent that he holds all applicable state, county, and City of Key West licenses and permits required to do business as a contractor with respect to the work described in the Contract Documents before he may Bid on the project.

The following licenses and certificates are required as a minimum:

1.) All licenses or certificates required by federal, state or local statutes or regulations.

2.) A valid Business Tax Receipt issued by the City of Key West, if required.

3.) A valid Certificate of Competency issued by the Building Official of the City of Key West which shall remain valid throughout the time period of the Contract, if required.

Pursuant to the Public Bid Disclosure Act, each license, permit, or fee a Contractor will have to pay the City of Key West before or during construction or the percentage method or unit method of all licenses, permits, and fees REQUIRED BY THE CITY OF KEY WEST and payable to the City by virtue of this construction as part of the Contract is as follows:

- Key West, Business Tax Receipt – Fees dependant on square footage leased and range from $115.00 to $800.00 per year.
- Appropriate Contractor's License
- HARC Permit as required

Note: Licensed Contractor shall verify each license, permit, or fee before submitting the Bid.

LICENSES, PERMITS, AND FEES THAT MAY BE REQUIRED BY THE STATE OF FLORIDA, STATE AGENCIES, OR BY OTHER LOCAL GOVERNMENTAL ENTITIES ARE NOT INCLUDED IN THE ABOVE LIST.

Further, the successful BIDDER must, within ten (10) calendar days of Notice of Award, furnish documentation showing that, as a minimum, he has complied with the provisions of Chapter 91 of the Code of Ordinances of the City of Key West in order to enter into the Agreement contained in the Contract Documents.

Bid Bond in the amount of 5% of the maximum bid, payable to the City of Key West, as evidence of good faith and guaranteeing that the successful bidder will execute and furnish to the City of Key West a good and sufficient performance bond as required by Florida Statute Section 1013.47 in the penal sum of 100% of the escalated amount of the contact guaranteeing the performance of said contract.

STATEMENT OF NO BID # 11-015

NOTE: IF YOU DO NOT INTEND TO BID, PLEASE RETURN THIS FORM ONLY

CITY OF KEY WEST
FINANCE DEPARTMENT
P.O. BOX 1409
KEY WEST, FLORIDA 33040
ATTN: S. SNIDER

We, the undersigned have declined to bid on the above-noted Invitation to Bid for the following reason(s)

___ Insufficient time to respond to Invitation to Bid
___ Do not offer this product
___ Our schedule will not permit us to perform
___ Unable to meet specifications
___ Specifications unclear (please explain below)
___ Remove us from your "Bidder Mailing List"
___ Other (Please specify below)

N/A

_____
_____
_____

We understand that if a "No Bid" statement is not returned, our name may be removed from the Bidder's list of the City of Key West.

COMPANY NAME:_____

AUTHORIZED AGENT:_____

COMPANY ADDRESS:_____

DATE:_____ TELEPHONE:_____

BID SPECIFICATIONS

SPORTS FIELD LIGHTING

PART 1 – GENERAL: It is the intent of these specifications to describe the goods and services in sufficient detail to secure comparable bids for the performance of this service. This service shall not be subcontracted without written approval. All prospective bidders must have proper licenses, insurance, bonds, and workman's compensation coverage.

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 performance and design standards for Key West. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth by the criteria set forth in these specifications.

C. The sports lighting will be for the following Parks:
   1. Clayton Sterling Complex
      a) Large Baseball
      b) 130' softball field
      c) 175' softball field
      d) 200' softball field
   2. Dewitt Roberts Softball
   3. George Mira Football
   4. Rosa Hernandez Softball
   5. Pepe Hernandez Softball
   6. Nelson English Park
      a) Basketball
      b) Playground Area

D. The primary goals of this sports lighting project are:
   1. Life Cycle Cost: 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, and the field(s) should be proactively monitored to detect fixture outages over a 10 year life cycle. 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.

   2. Environmental Light Control: It is the primary goal of this project to minimize spill light and glare.

Area of Lighting	Maximum Spill at 100' from playing field
Clayton Sterling Complex	1.50 fc
Dewitt Roberts Softball	.80 fc
George Mira Football	1.24 fc
Rosa Hernandez Softball	.83 fc
Pepe Hernandez Softball	.80 fc
Nelson English Park	.24 fc

   3. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore the lighting system shall be designed such that the light levels are guaranteed for a period of 10 years. Note: Please provide all appropriate lamp change-outs to conform to all lighting performances for the entire 10 Year warrantee period. Lamp change-outs shall not void or shorten the 10 Year warranty period.

   4. Energy Efficiency and Conservation Block Grant (EECBG) Program: This project has been submitted for EECBG funding and must meet all requirements for application and reporting.

E. The Scope of Work does not include demolition of existing applications. The Owner is responsible for the removal of existing lights and cross arm assemblies. The Owner will coordinate with its grant partner, Keys Energy Services, for the removal of existing lights and cross arm assemblies in which labor will be used a grant match. Further, the Owner reserves the right to retain 50 Lights and 20 metal crossarms. The disposal of the remainder will be the contractor's responsibility.

1.2 LIGHTING PERFORMANCE

A. Performance Requirements: Playing surfaces shall be lit to an average constant light level and uniformity as specified in the chart below. Light levels shall be held constant for 10 years. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Measured average illumination level shall be predicted mean in accordance with IESNA RP-6-01, and measured at the first 100 hours of operation.

Area of Lighting	Average Constant Light Levels	Maximum to Minimum Uniformity Ratio	Grid Spacing
Infield(Baseball fields)	50 footcandles	2.0:1.0	30' x 30'
Outfield (Baseball fields)	30 footcandles	2.5:1.0	30' x 30'
Infield(Softball fields)	50 footcandles	2.0:1.0	20' x 20'
Outfield (Softball fields)	30 footcandles	2.5:1.0	20' x 20'
Football	30 footcandles	2.5:1.0	30' x 30'
Basketball	30 footcandles	3.0:1.0	10' x 10'
Playground	15 footcandles	10.0:1.0	20' x 20'

Area of Lighting	Number of Grid Spaces Infield	Number of Grid Spaces Outfield	Grid Spacing
Clayton Sterling Field 1 (270')	25	50	30' x 30'
Clayton Sterling Field 2 (200')	25	73	20' x 20'
Clayton Sterling Field 3 (180')	25	56	20' x 20'
Clayton Sterling Field 4 (150')	25	31	20' x 20'
DeWitt Roberts Softball	25	167	20' x 20'
Rosa Hernandez Softballl	25	61	20' x 20'
Pepe Hernandez Softball	25	94	20' x 20'
George Mira Football		72	30' x 30'
Nelson English Basketball		45	10' x 10'
Nelson English Playground		86	20' x 20'

1. Lumen maintenance control strategy: A constant light system shall use automatic power adjustments to achieve a lumen maintenance control strategy as described in the IESNA Lighting Handbook 9th Edition Lighting Controls Section pages 27-2 and 27-3: "Lumen maintenance control strategy calls for reducing the initial illumination of a new system to the designed minimum level. As lumen depreciation occurs, more power is applied to the lamps in order to maintain constant output." Note: Any submission of Constant or Continuous Light Systems that do not conform to the IESNA definition above shall be rejected.

2. Independent Test Report: Manufacturers bidding as a constant light system must provide an independent test report verifying the field performance of the system for the duration of the life of the lamp, signed by a licensed professional engineer with outdoor lighting experience. If report is

not provided at least 10 days prior to bid opening, the manufacturer shall provide the initial and maintained designs called for in this specification in section 1.8.

3. Project References: Manufacturers bidding any form of a constant light system must provide a minimum of five (5) project references within the state of Florida that have been completed within the last calendar year utilizing this exact technology that have a minimum of 500 hours of operation and field testing to verify light levels. Manufacturer will include project name, project city, contact name, and contact phone number for each reference.

1.3 LIFE CYCLE COSTS

A. Energy Consumption: To comply with Federal EECBG Grant application, the average kWh consumption for the field lighting system for each park shall be as follows:

1. Any substitute submittals must be equal to or less than the kW consumption amounts listed below. If not, this shall be grounds for immediate rejection.

	Average kWh Consumption
Clayton Sterling Complex	125 kWh
Dewitt Roberts Softball	44 kWh
George Mira Football	36 kWh
Rosa Hernandez Softball	26 kWh
Pepe Hernandez Softball	30 kWh
Nelson English Park	16 kWh

B. Complete Lamp Replacement: Manufacturer shall include all group lamp replacements required to provide 10 years of operation based upon 500 usage hours per year.

   a. If Remote Control System is not able to record hours of usage, then an hour meter shall be placed in the remote ballast enclosure of 2 poles per field.

C. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 10 years from the date of equipment shipment. Individual lamp outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire 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 manufacturer shall notify the owner of outages within 24 hours, or the next business day. The controller shall determine switch position (Manual or Auto) and contactor status (open or closed).

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

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

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

F. Management Tools: Manufacturer shall provide a web-based database of actual field usage and provide reports by facility and user group.

G. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 10 years.

H. 10-Year Life Cycle Cost: Manufacturer shall submit 10-year life cycle cost calculations as follows. Equipment price and total life cycle cost shall be entered separately on bid form.

a.	**Luminaire energy consumption** # ____ luminaires x ___kW demand per luminaire x .20 kWh rate x 500 annual usage hours x 10 years		
c.	**Cost for spot relamping and maintenance over 10 years** Assume 10 repairs at $ 500 each if not included with the bid	+	
d.	**Cost to relamp all luminaires during 10 years** 500 annual usage hours x 10 years / 2100 hours x $125 lamp & labor x # ___ of luminaires if not included with the bid	+	
e.	**Extra energy used without base bid automated control system** $ Energy consumption in item a. x 10% if control system not included with the bid	+	
f.	**Extra labor without base bid automated on/off operation** $8.00 per hour x .5 hours per on/off cycle x 2,500 cycles over 10 years if control system not included with the bid	+	
	TOTAL 10-Year Life Cycle Operating Cost	=	

1.4 Energy Efficiency and Conservation Block Grant (EECBG) Program: This project has been submitted for EECBG funding and must meet all requirements for application and reporting. Manufacturers must supply the following data per www.eecbg.energy.gov requirements.

A. Jobs created and/or retained
B. Life Cycle Costs Savings Analysis – as described in item 1.3 above
C. Carbon dioxide (CO2) emission reduction – energy kW savings provided by the lighting system shall be converted into CO2 savings according to the EPA guidelines found at http://www.epa.gov/cleanenergy/energy-resources/refs.html.
D. "Buy American" provision – products used for this project must be manufactured in the United States and meet the "Buy American" provision of the ARRA – American Recovery and Reinvestment Act of 2009.

1.5 WARRANTY AND GUARANTEE

A. 10-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 10 years. Warranty shall guarantee light levels; lamp replacements; system energy consumption; monitoring, maintenance and control services, spill light control, and structural integrity. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty may exclude fuses, storm damage, vandalism, abuse and unauthorized repairs or alterations. Note: Please provide all appropriate lamp change-outs to conform to all lighting performances for the entire 10 Year warranty period. Lamp change-outs shall not void or shorten the 10 Year warranty period.

B. Individual Lamp Change-outs – The Manufacturer is responsible for replacing single lamp outages when light levels are affected in such a manor as to drop below IESNA Standards, referenced in Section 1.2, A. The Manufacturer is responsible to all costs of such repairs, including, but not limited to materials, crane and labor. It is also the responsibility of the Manufacturer to bring the site back to its' original condition, including ruts, grass, concrete and asphalt damage.

C. Wind Speed – All cross arms, fixtures and aiming shall be designed to withstand up to 150 MPH winds, including Hurricane Wind Damage. Note: Manufacturer cannot void the warranty when wind speeds exceed 75 MPH and classified as an Act of God. Impact damage and Vandalism are not included in this warranty.

1.6 DELIVERY TIMING

A. Equipment On-Site: The equipment must be on-site 4-6 weeks from receipt of approved submittals and receipt of complete order information.

1.7 PRE-BID SUBMITTAL REQUIREMENTS

A. Approved Product: Musco's Light-Structure Green™ and Sports Cluster Green™ Systems are the approved product. Substitutions are permitted; however, those substitutions must meet or exceed the approved product's specifications. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs. Any manufacturer's name trade name, brand name, or catalog number used in the specifications is for the purpose of describing and establishing general quality levels. **SUCH REFERENCES ARE NOT INTENDED TO BE RESTRICTIVE.** Bids will be considered for any brand, which meets the quality of the specifications for any item.

B. Design Approval: The owner / engineer will review pre-bid shop drawings from the manufacturers to ensure compliance to the specification. If the design meets the design requirements of the specifications, a letter will be issued to the manufacturer indicating approval for the specific design submitted.

1.8 ALTERNATE SYSTEM REQUIREMENTS

A. Compliance to Specifications: Acceptance of a bid alternate does not negate the contractor and lighting manufacturer's responsibility to comply fully with the requirements of these specifications. Any exceptions to the specifications must be clearly stated in the prior approval submittal documents.

B. Light Level Requirements: Manufacturer shall provide computer models guaranteeing light levels on the field over 10 years. If a constant light level cannot be provided, a maximum Recoverable Light Loss Factor of 0.70 shall be applied to the initial light level design to achieve the following Initial and target/maintained light levels. For alternate systems, scans for both initial and maintained light levels shall be submitted.

Area of Lighting	Average Initial Light Levels	Average Target/Maintained Light Levels	Maximum to Minimum Uniformity Ratio	Number of Grid Readings	Grid Spacing
Infield(Baseball fields)	71.5 footcandles	50 footcandles	2.0:1.0		30' x 30'
Outfield (Baseball fields)	42.8 footcandles	30 footcandles	2.5:1.0		30' x 30'
Infield(Softball fields)	71.5 footcandles	50 footcandles	2.0:1.0		20' x 20'
Outfield (Softball fields)	42.8 footcandles	30 footcandles	2.5:1.0		20' x 20'
Football	42.8 footcandles	30 footcandles	2.5:1.0		30' x 30'
Basketball	42.8 footcandles	30 footcandles	3.0:1.0		10' x 10'
Playground	21.4 footcandles	15 footcandles	10.0:1.0		20' x 20'

C. Revised Electrical Distribution: Manufacturer shall provide revised electrical distribution plans to include changes to service entrance, panel, and wire sizing.

PART 2 – PRODUCT

2.1 LIGHTING SYSTEM CONSTRUCTION

A. System Description: Lighting system shall consist of the following:

1. Galvanized crossarm assembly for attachment to existing concrete structures.
2. All luminaires shall be constructed with a die-cast aluminum housing or external hail shroud to protect the luminaire reflector system.

3. Manufacturer will remote all ballasts and supporting electrical equipment in aluminum or stainless steel enclosures mounted approximately 10' above grade. The enclosures shall include ballast, capacitor and fusing for each luminaire. Safety disconnect per circuit for each pole structure will be located in the enclosure.

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

5. Controls and Monitoring Cabinet to provide on-off control and monitoring of the lighting system, constructed of NEMA Type 4 aluminum or stainless steel. Communication method shall be provided by manufacturer. Cabinet shall contain custom configured contactor modules for 30, 60, and 100 amps, labeled to match field diagrams and electrical design. Manual Off-On-Auto selector switches shall be provided.

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

C. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed steel shall be hot dip galvanized per ASTM A123. All exposed hardware and fasteners shall be stainless steel of at least 18-8 grade, passivated and polymer coated to prevent possible galvanic corrosion to adjoining metals. Pole mounting hardware to attach crossarms shall be hot-dip galvanized per ASTM 153. All exposed aluminum shall be powder coated with high performance polyester. All exterior reflective inserts shall be anodized, coated with a clear, high gloss, durable fluorocarbon, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All wiring shall be enclosed within the crossarms, pole, conduit or electrical components enclosure. Note: All hot dip galvanized steel components must have a minimum thickness of 4 mils, and shall be tested and verified in the field.

6. Lightning Protection: All structures shall be equipped with lightning protection meeting NFPA 780 standards. Contractor shall verify compliance or supply and install a ground rod of not less than 5/8" in diameter and 8' in length, with a minimum of 10' embedment. Ground rod should be connected to the structure by a copper main down conductor with a minimum size of #2 for poles with less than 75' mounting height and 2/0 for poles with more than 75' mounting height. Each ballast enclosure and contactor cabinet to include appropriate surge protection.

B. Safety: All system components shall be UL Listed for the appropriate application.

C. Electric Power Requirements for the Sports Lighting Equipment:

1. Electric power: To be verified per site.

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.

PART 3 – EXECUTION

3.1 FIELD QUALITY CONTROL

A. **Illumination Measurements**: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-01, Appendix B.

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

1. Manufacturer shall at his expense provide and install any necessary additional fixtures to meet the minimum lighting standards. The Manufacturer shall also either replace the existing poles to meet the new wind load (EPA) requirements or verify by certification by a licensed structural engineer

that the existing poles will withstand the additional wind load.

2. Manufacturer shall minimize the Owner's additional long term fixture maintenance and energy consumption costs created by the additional fixtures by reimbursing the Owner the amount of $3,000.00 (three thousand dollars) for each additional fixture required.

3. Manufacturer shall remove the entire unacceptable lighting system and install a new lighting system to meet the specifications.

WORK SCHEDULE
City of Key West has a noise ordinance against unreasonable noise in a residential district. The Martin Luther King Community Center is located in a residential district. Unreasonable noise is defined by code as any noise in or emanating from a residential district which equals or exceeds a measured sound of 75 dBA between 8:00 a.m. and 7:59 p.m. and 60 dBA from 8:00 p.m. to 7:59 a.m. (maximum permitted sound level in decibels) collectively for more than 30 seconds of any measurement period which shall not be less than five minutes. For construction/demolition activity, sound levels produced from tools and equipment in commercial construction, demolition, drilling, or reasonably similar activities must comply with the ordinance. The tools and equipment must be muffled and maintained equal to the functional industry standards.
Hours: All noise generating work as defined above must be accomplished between the hours of **8:00 A.M. and 7:00 P.M.** Monday through Friday and Saturday between **9:00 A.M. and 5:00 P.M.** No exceptions contained in this subsection shall apply on Thanksgiving Day, Christmas Day and New Year's Day. Contractor may perform work prior to and after these aforementioned hours; however, no violation of the noise ordinance is allowed.

3.2 FIELD LIGHT LEVEL ACCOUNTABILITY

A. Manufacturer shall provide a Goosen 5032C Light Meter to the Owner. Meter shall be calibrated and certification papers provided. Meter provided upon initial light test.

B. Light levels are guaranteed not to fall below the target maintained light levels for the entire warrantee period of 10 Years.

If the owner feels that light levels have fallen below the target maintained value identified in the specification at any time during the warrantee period, the Owner may request Manufacturer to conduct a full grid light test to verify compliance to specification. If results are found to meet specified levels, the Owner shall pay Manufacturer up to $100 for conducting the light test. If light levels do not meet the target maintained value identified in the specification, Manufacture shall be required to resolve the problem and bring light levels to the target maintained value identified in the specification within 2 weeks.

Control System and Illumination Summary Attached at the end of Package following page 41

BID SUBMITTAL

Key West Retrofit Bid SUBMITTAL
Lighting Project Key West, FL

The Bidder further Proposer to accept as full payment for the work Proposer herein the amounts computed under the Provisions of the Contract Documents and based on the following unit Price amounts, it being expressly understood that the unit Prices are independent of the exact quantities involved. The Bidder aggress that the unit Prices represent a measure of the labor and materials required to perform the work, including all allowances for overhead and Profit for each type and unit of work called for in these Contract Documents. The amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern. Unit price line items may be deleted, reduced or increased as needed by the City. The City reserves the right to modify phase scheduling as required.

The undersigned bidder, in compliance with your request for bids for the lighting equipment at the above project, having examined specifications, related documents, and site of the proposed project, hereby proposes to furnish the lighting equipment material as described in the specifications. These prices are for all labor and materials and are to cover the specified equipment and delivery charges. The contract for bid item "A" will be based on the bid item "C" (The total cost of bid item A and bid item B).

A. Contract Prices:	Unit Price Figure	Unit Price Words
Clayton Sterling Complex	$ _384,000.00_	Three hundred eighty-four thousand dollar
Dewitt Roberts Softball	$ _125,000.00_	One hundred Twenty-five thousand dollars
George Mira Football	$ _102,000.00_	One hundred Two thousand dollars
Rosa Hernandez Softball	$ __94,000.00_	Ninety-Four thousand dollars
Pepe Hernandez Softball	$ _126,000.00_	One hundred Twenty-Six thousand dollars
Nelson English Park	$ _175,000.00_	One Hundred Seventy-five thousand dollars

B. 10-Year Life Cycle Operating Cost Total: $_283,084.00_ Two hundred Eighty-three thousand eighty-four dollars
(From Section 1.3, Item H)

C. Total Project Cost: $_1,289,084.00_ One Million Two hundred eighty nine thousand eighty-four dollars
(Add Bid item "A" and "B") Total Price in Words

PRICE FOB KEY WEST, FLORIDA
PAYMENT TERMS: 45 days after delivery
DELIVERY ***30*** DAYS ARO

BIDDER REPRESENTATION

I represent that this bid is submitted in compliance with all terms, conditions and specifications of the Call for Bid and that I am authorized by the owners/principals to execute and submit this bid on behalf of the business identified below:

BUSINESS NAME: Canseco Electrical Contractors Inc

STREET ADDRESS: 7175 SW 43rd St

CITY/STATE/ZIP: Miami/Fl/33155

PRINT NAME OF AUTHORIZED REPRESENTATIVE: Barbara Canseco

TITLE/POSITION OF AUTHORIZED REPRESENTATIVE: President

DATE SUBMITTED: TELEPHONE: 06/01/2011 (305) 265-9909

BID SUBMITTAL - Extra Line Item

Key West Retrofit Bid SUBMITTAL
Lighting Project Key West, FL

As per Addendum # 3: Page 2 and 3 of 4 - Question # 9 and answers # 9 - please see below separate line items exclusive of the parks line item:

A -1. separate line items exclusive of the parks:	Permit Cost 2.5%	Disposal of the lighting and crossarms (as an option to the city)
Clayton Sterling Complex	$ 9,600.00	1,920.00
Dewitt Roberts Softball	$ 3,125.00	625.00
George Mira Football	$ 2,550.00	510.00
Rosa Hernandez Softball	$ 2,350.00	470.00
Pepe Hernandez Softball	$ 3,150.00	630.00
Nelson English Park	$ 4,375.00	875.00

Presented to:

City of Key West Retrofit

Ball Field Lighting Project
Key West, Florida
May 26, 2011

Clayton Sterling Complex - #141839
Dewitt Roberts Softball - #141846
George Mira Football - #141847
Rosa Hernandez Softball - #141845
Pepe Hernandez Park - #150167
Nelson English Park - #146480

Submitted by:

Musco Sports Lighting, LLC
2107 Stewart Road
PO Box 260
Muscatine, Iowa 52761
Local Phone: 563-263-2281
Toll Free: 800-756-1205
Fax: 800-374-6402

Table of Contents

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Table of Contents

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Tab A

SUBMITTAL CHECKLIST

Design Submittal Data Checklist and Certification

All items listed below are mandatory, shall comply with the specification, and be submitted 10 days prior to bid.

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	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by, and other pertinent data b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y),or homeplate for baseball/softball fields. Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, as well as luminaire information including wattage, lumens and optics d. Height of 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 and uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor. f. If bidding constant light, refer to Section 1.2, A, 2 of this specification. g. Alternate manufacturers shall provide both initial and maintained light scans using a maximum 0.70 Light Loss Factor to calculate maintained values.
C	Off Field Lighting Design	Lighting design drawing showing initial horizontal spill light levels along the boundary line (100 Ft) in footcandles. Horizontal levels shall be at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at horizontal per section 1.2, A.
D	Life Cycle Cost Calculation	Document life cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaires, maintenance cost for the system including spot lamp replacement, and group relamping costs as called for in Section 1.3, H. All costs should be based on 10 years.
E	Luminaire Aiming Summary	Document showing each luminaire's aiming angle and the poles on which the luminaries are mounted. Each aiming point shall identify the type of luminaire.
F	EECBG Grant Data	Submit documents/data per the requirements of www.eecbg.energy.gov: a. Jobs created and/or retained b. Life Cycle Cost Savings Analysis detailing energy kW reduction c. Carbon dioxide (CO2) emission reduction d. Signed statement from company officer stating manufacturer meets "Buy American" provision of the ARRA.
G	Control & Monitoring	Manufacturer shall provide written definition and schematics for automated control system to include monitoring. They will also provide examples of system reporting and access for numbers for personal contact to operate the system.
H	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 per specification for 10 years.
I	Warranty	Provide written warranty information including all terms and conditions.
J	Project References	Manufacturer to provide a list of project references of similar projects completed within the past three years. Reference Section 1.2, A, 2, a.
K	Product Information	Complete set of product brochures for all components, including a complete parts list, and UL Listings.
L	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications.
M	Compliance	Manufacturer shall sign off that all requirements of the specifications have been met at 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 item N – Non-Compliance.
N	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information, per section 1.6, A.

I understand that the information supplied herein shall be used for the purpose of complying with the specifications for City of Key West Retrofit Ball Field Lighting. 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.

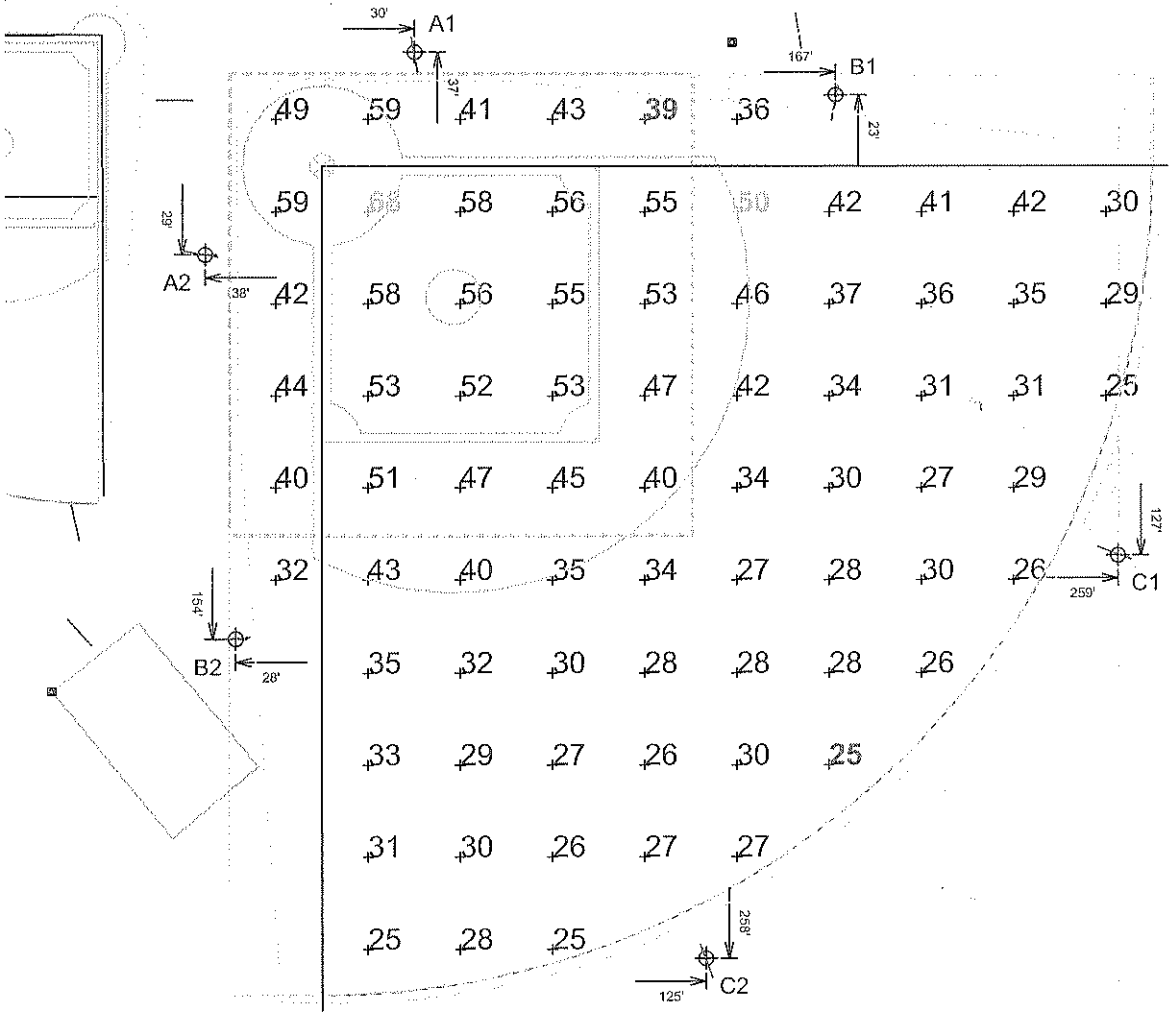
Manufacturer: Musco Sports Lighting, LLC **Signature:** _____

Contact Name: Jennifer Thompson **Date:** May 26, 2011

Tab B

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	1500W MZ	5	5	0
1	B1	65'	-2'	63'	1500W MZ	7	7	0
1	B2	65'	-1'	64'	1500W MZ	7	7	0
1	C1	63'	-2'	61'	1500W MZ	3	3	0
1	C2	63'	-3'	60'	1500W MZ	3	3	0
6	← TOTALS →					30	30	0



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Field A

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Field A

- Size: 270'/270'/270' - basepath 90'
- Grid Spacing = 30.0' x 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	50
Average:	50.5	31.9
Maximum:	68	50
Minimum:	39	25
Avg/Min:	1.29	1.29
Max/Min:	1.75	2.04
UG (Adjacent Pts):	1.43	1.42
CV:	0.15	0.19

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	30
Avg KW over 5,000:	46.92
Max KW:	51.0

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

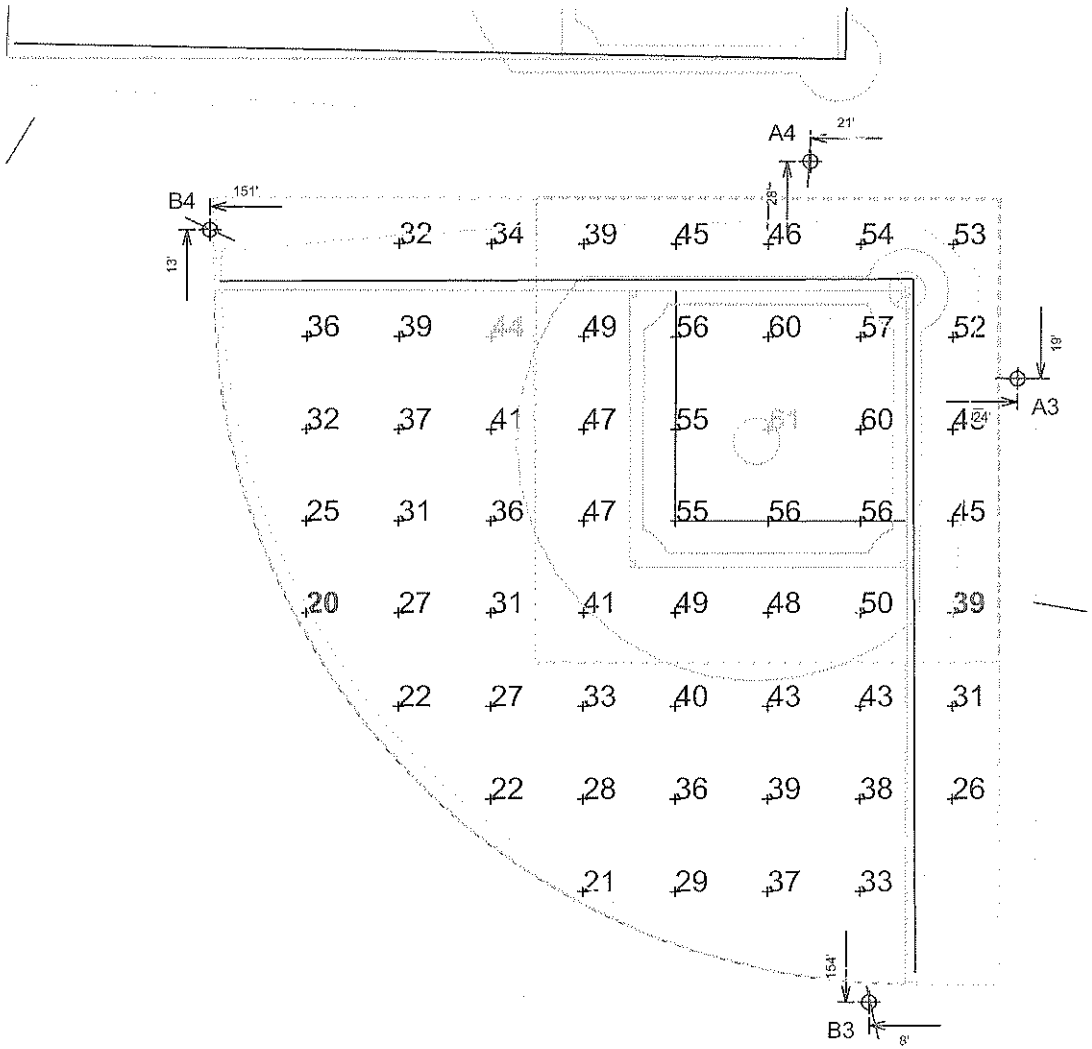
By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

Print Date (05/Jan/2011) & Time (16:11)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A3-A4	60'	-	60'	1500W MZ	3	3	0
1	B3	60'	-2.8'	57.2'	1500W MZ	3	3	0
1	B4	60'	-2'	58'	1500W MZ	3	3	0
4	← TOTALS →					12	12	0



SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) + dimensions are relative to 0,0 reference point(s) ◎

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Field B

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Field B

- Size: 150'/150'/150' - basepath 60'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	31
Average:	50.6	32.8
Maximum:	61	44
Minimum:	39	20
Avg/Min:	1.29	1.62
Max/Min:	1.55	2.17
UG (Adjacent Pts):	1.34	1.50
CV:	0.13	0.21

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	12
Avg KW over 5,000:	18.77
Max KW:	20.4

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

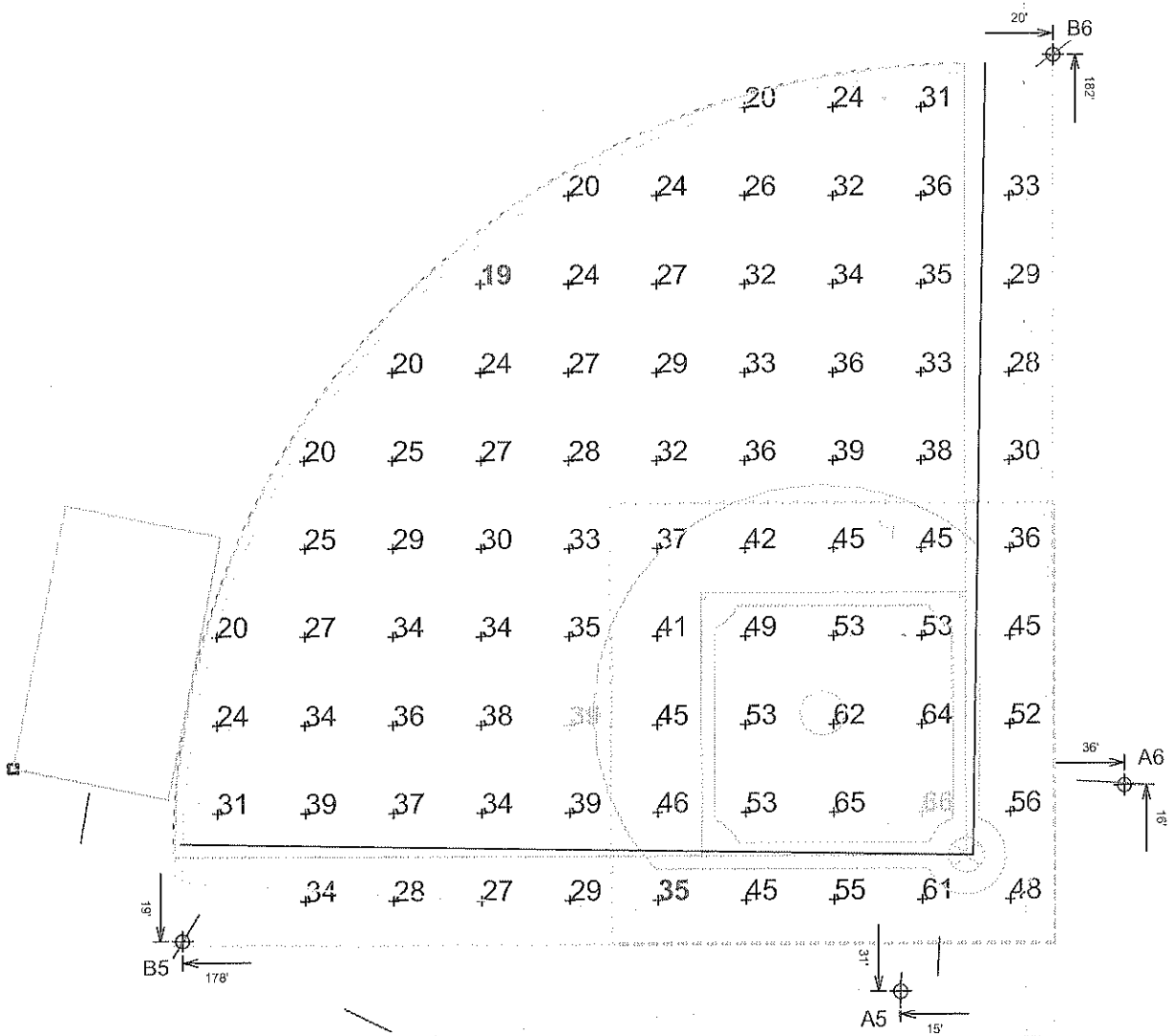
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A5-A6	60'	-	60'	1500W MZ	3	3	0
1	B5	60'	-1.9'	58.1'	1500W MZ	4	4	0
1	B6	60'	-1.6'	58.4'	1500W MZ	4	4	0
4	← TOTALS →					14	14	0



SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Field C

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Field C

- Size: 180'/180'/180' - basepath 60'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	56
Average:	50.1	30.1
Maximum:	66	39
Minimum:	35	19
Avg/Min:	1.41	1.55
Max/Min:	1.86	2.04
UG (Adjacent Pts):	1.29	1.40
CV:	0.18	0.19

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	14
Avg KW over 5,000:	21.9
Max KW:	23.8

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

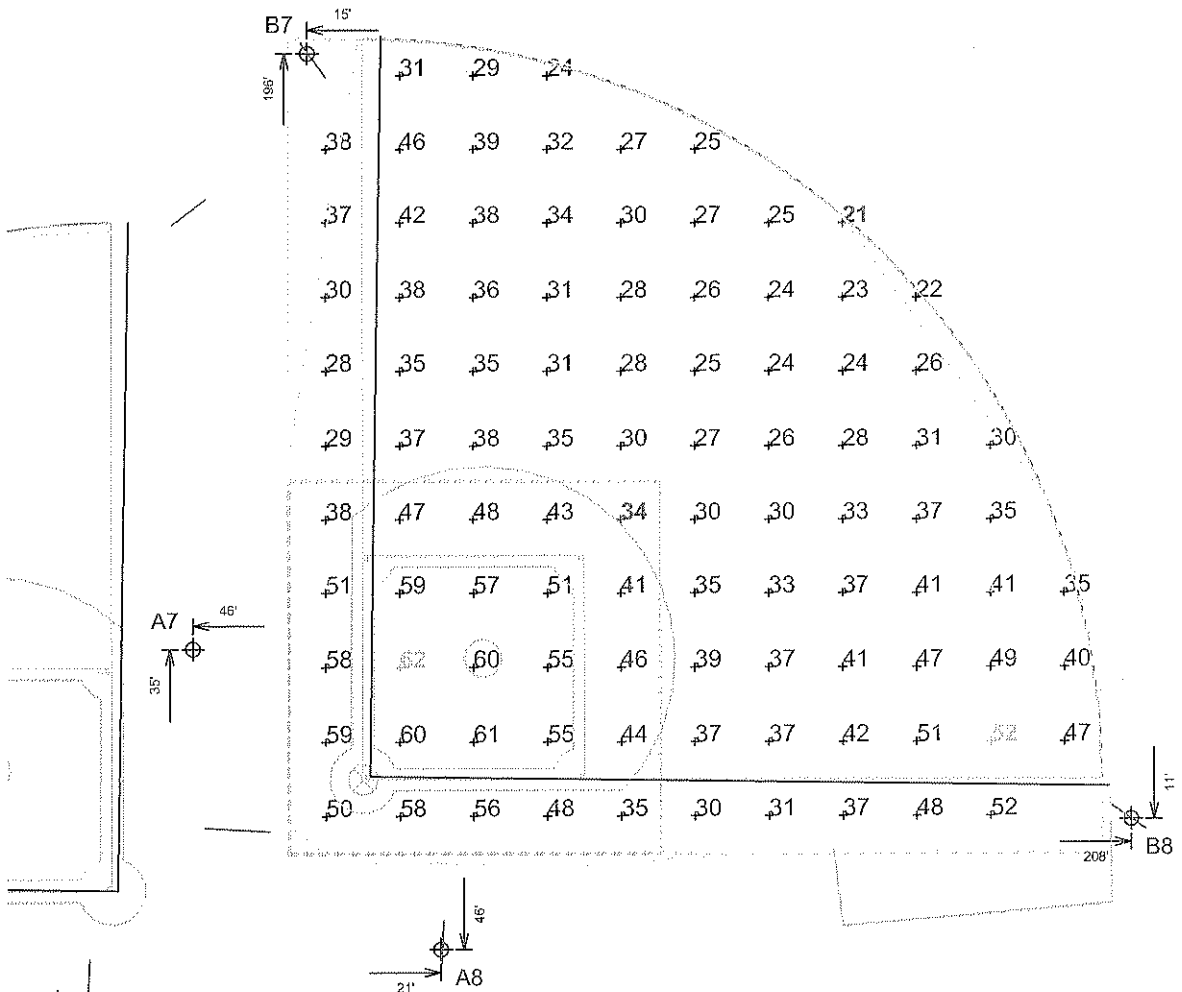
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A7-A8	60'	-	60'	1500W MZ	3	3	0
1	B7	60'	-2.4'	57.6'	1500W MZ	6	6	0
1	B8	60'	-2.4'	57.6'	1500W MZ	7	7	0
4	← TOTALS →					19	19	0



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Field D

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Field D

- Size: 200'/200'/200' - basepath 60'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	73
Average:	51.0	33.9
Maximum:	62	52
Minimum:	34	21
Avg/Min:	1.49	1.59
Max/Min:	1.80	2.45
UG (Adjacent Pts):	1.37	1.47
CV:	0.17	0.22

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	19
Avg KW over 5,000:	29.72
Max KW:	32.3

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

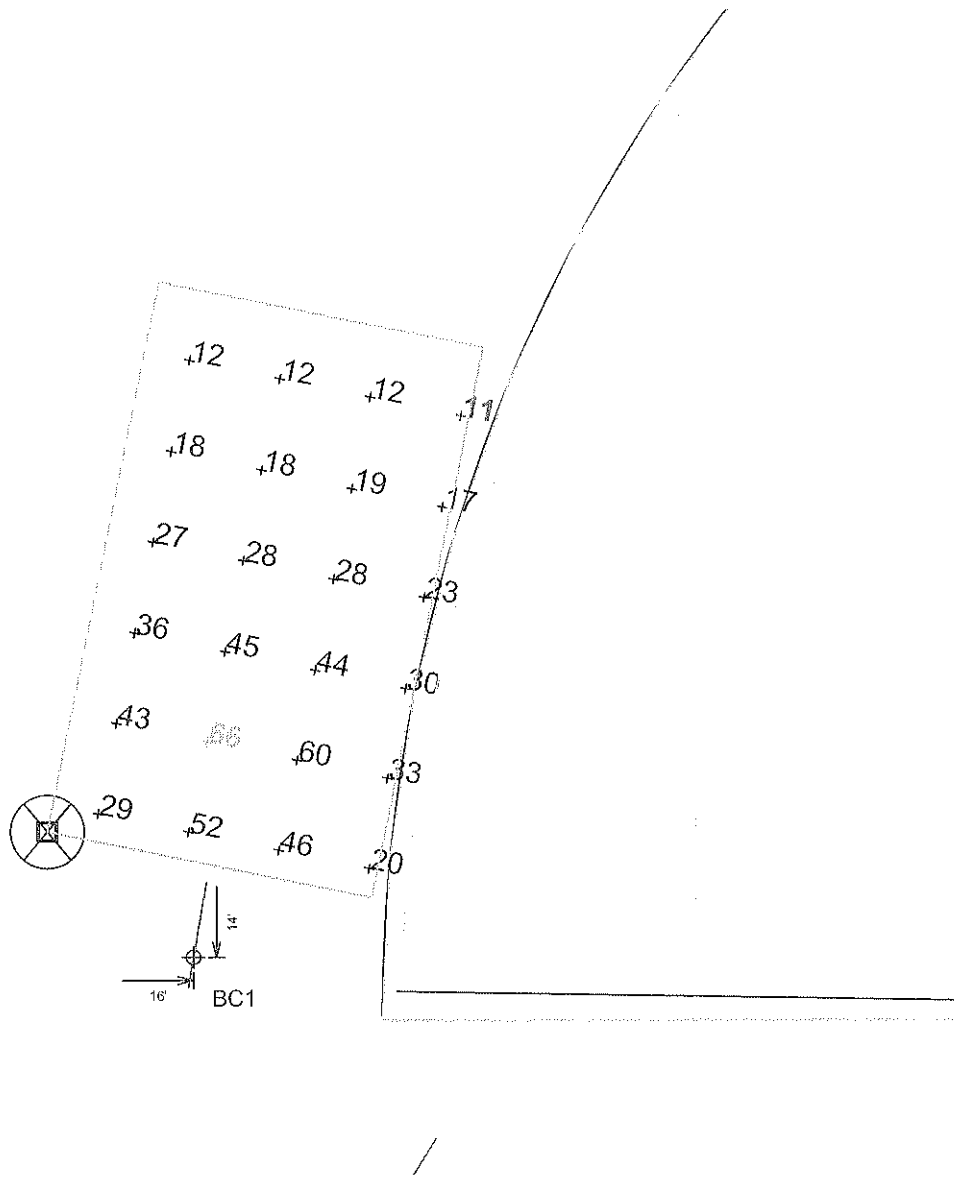
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	BC1	25'	2.76'	27.76'	1000W MZ	2	2	0
1	← TOTALS →					2	2	0



SCALE IN FEET 1 : 20

0' 20' 40'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Batting Cage 1

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Batting Cage 1

- Grid Spacing = 10.0' x 10.0'
- Values given at 2.8' above grade

Luminaire Type:	Green Generation
Rated Lamp Life:	12,000 hours
Avg Lumens/Lamp:	88,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	24
Average:	30.4
Maximum:	66
Minimum:	11
Avg/Min:	2.67
Max/Min:	5.81
UG (Adjacent Pts):	2.31
CV:	0.52

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	2
Avg KW over 12,000:	2.24
Max KW:	2.6

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

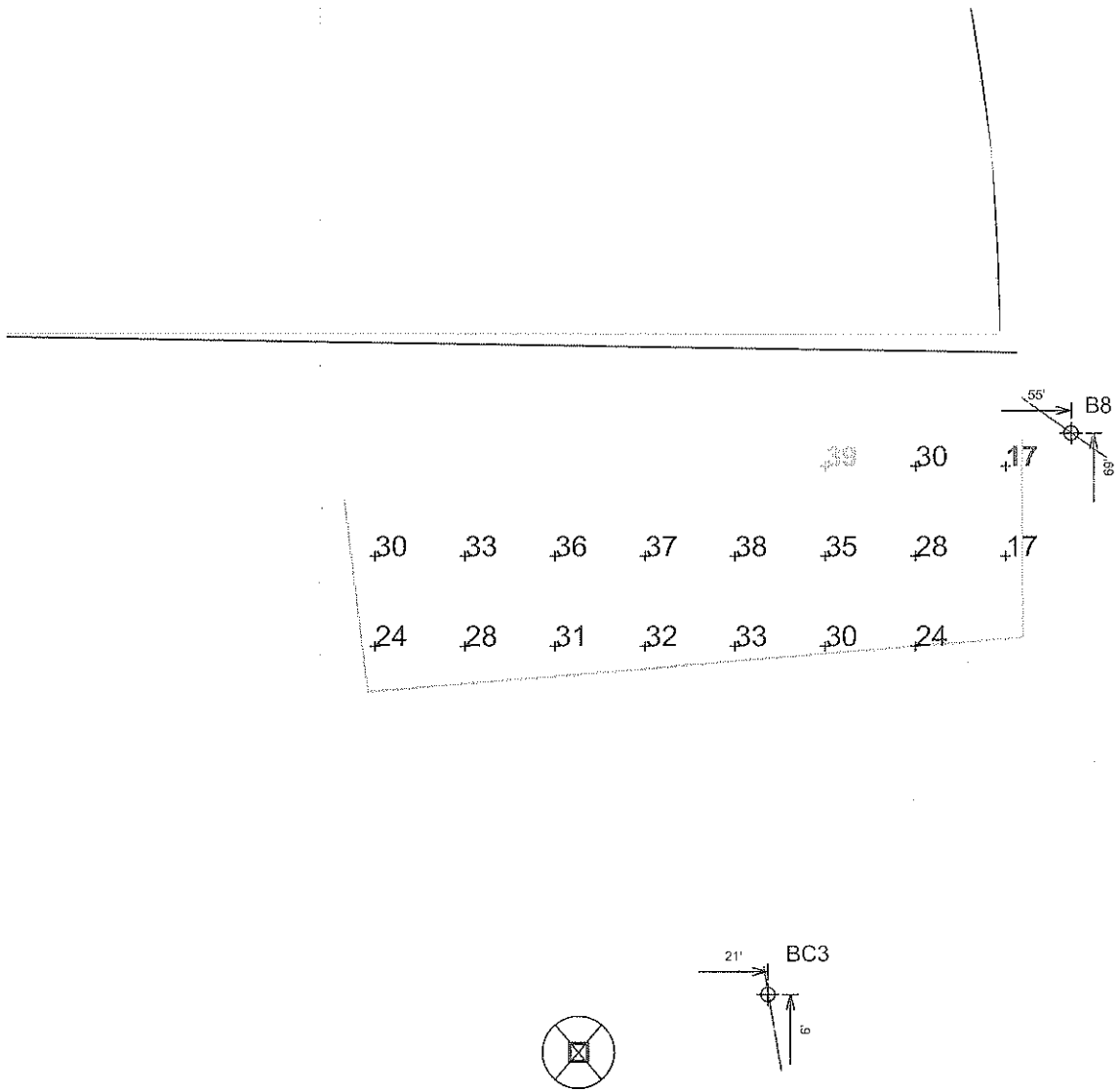
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A7-A8	60'	-	60'	1500W MZ	3	3	0
1	B7	60'	-2.4'	57.6'	1500W MZ	6	6	0
1	B8	60'	-2.4'	57.6'	1500W MZ	7	7	0
4	← TOTALS →					19	19	0



MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Batting Cage 4

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Batting Cage 4

- Grid Spacing = 10.0' x 10.0'
- Values given at -0.3' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	18
Average:	30.1
Maximum:	39
Minimum:	17
Avg/Min:	1.76
Max/Min:	2.27
UG (Adjacent Pts):	1.74
CV:	0.21

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	19
Avg KW over 5,000:	29.72
Max KW:	32.3

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 20

0' 20' 40'

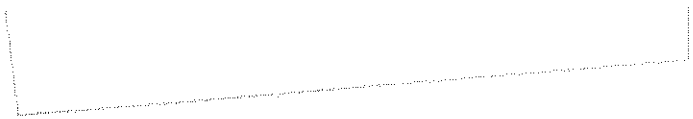
Pole location(s) + dimensions are relative to 0,0 reference point(s)

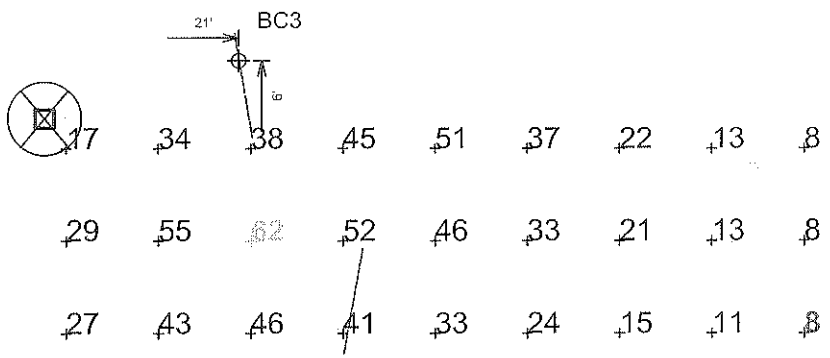
By: Joel Stout

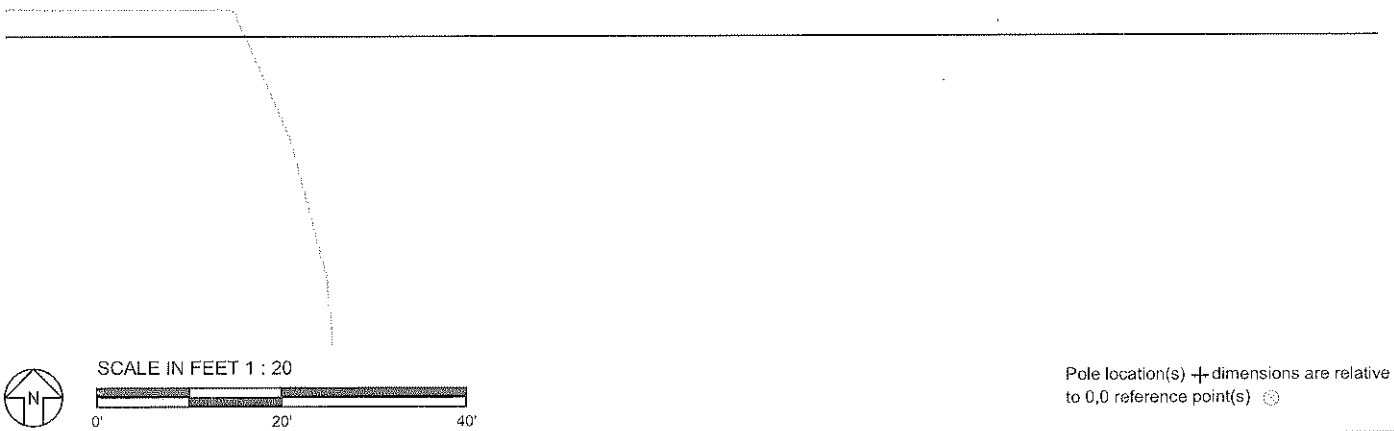
File #: 141839R1 Date: 05-Jan-11

Print Date (05/Jan/2011) & Time (16:11)

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	BC3	25'	1.77'	26.77'	1500W MZ	2	2	0
1	← TOTALS →					2	2	0







SCALE IN FEET 1 : 20

0' 20' 40'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Batting Cage 3

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Batting Cage 3

- Grid Spacing = 10.0' x 10.0'
- Values given at -0.3' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	27
Average:	30.8
Maximum:	62
Minimum:	8
Avg/Min:	4.03
Max/Min:	8.11
UG (Adjacent Pts):	1.96
CV:	0.52

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	2
Avg KW over 5,000:	3.13
Max KW:	3.4

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

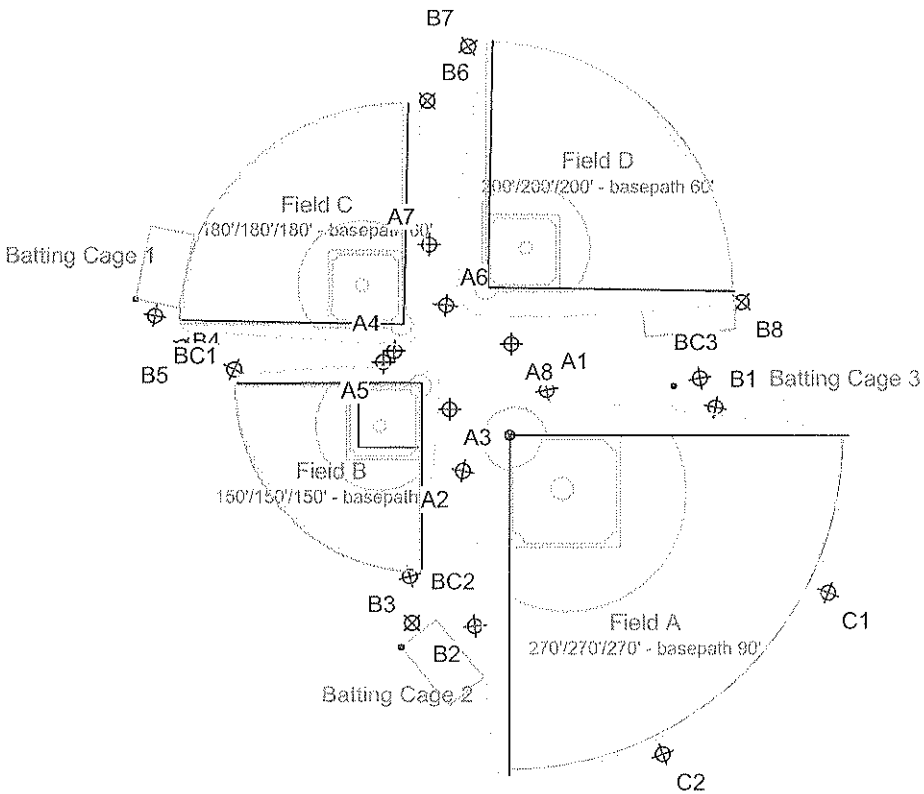
Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11



SCALE IN FEET 1 : 150

0' 150' 300'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

EQUIPMENT LAYOUT

Clayton Sterling Complex-Key West Retrofit
Key West,FL

INCLUDES:
- Batting Cage 1
- Batting Cage 2
- Batting Cage 3
- Field A
- Field B
- Field C
- Field D

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

	Pole			Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
2	A1-A2	60'	-	60'	1500W MZ	5
6	A3-A8	60'	-	60'	1500W MZ	3
1	BC1	25'	2.76'	27.76'	1000W MZ	2
1	BC3	25'	1.77'	26.77'	1500W MZ	2
1	BC2	25'	2'	27'	1000W MZ	2
1	B1	65'	-2'	63'	1500W MZ	7
1	B2	65'	-1'	64'	1500W MZ	7
1	B3	60'	-2.8'	57.2'	1500W MZ	3
1	B4	60'	-2'	58'	1500W MZ	3
1	B5	60'	-1.9'	58.1'	1500W MZ	4
1	B6	60'	-1.6'	58.4'	1500W MZ	4
1	B7	60'	-2.4'	57.6'	1500W MZ	6
1	B8	60'	-2.4'	57.6'	1500W MZ	7
1	C1	63'	-2'	61'	1500W MZ	3
1	C2	63'	-3'	60'	1500W MZ	3
21			TOTALS			81

SINGLE LUMINAIRE AMPERAGE DRAW CHART

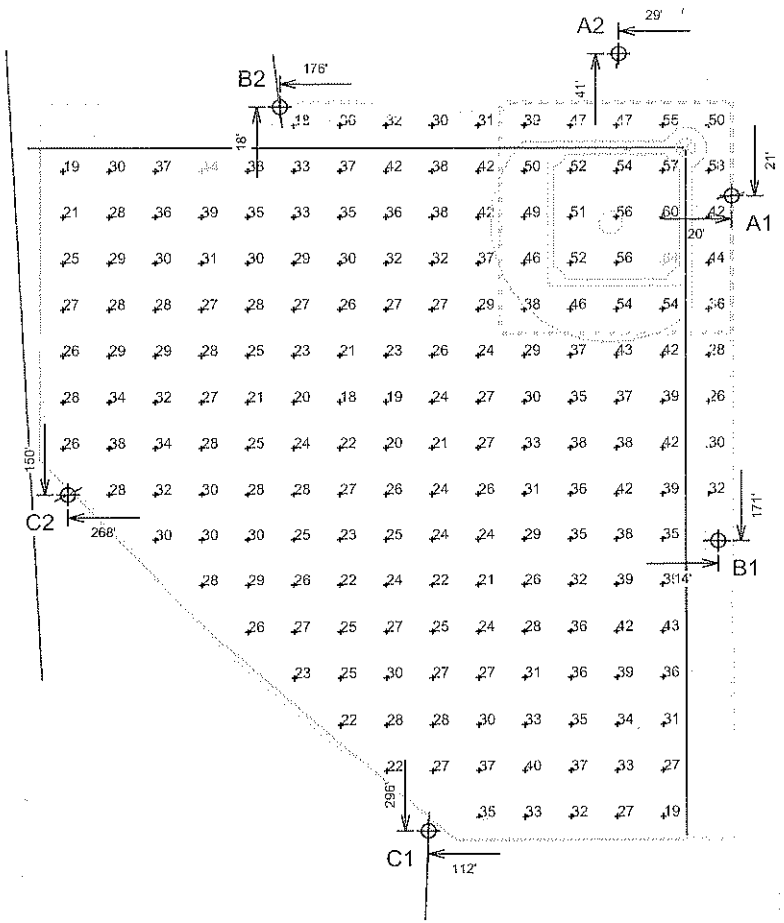
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	15.0	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7
1000 watt MZ	11.4	6.5	5.8	5.8	4.9	4.0	3.6	-	2.9

By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	50'	-	50'	1500W MZ	3	3	0
2	B1-B2	50'	-	50'	1500W MZ	7	7	0
1	C1	50'	-	50'	1500W MZ	4	4	0
1	C2	50'	-2'	48'	1500W MZ	4	4	0
6	← TOTALS →					28	28	0



GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Softball

Dewitt Roberts Softball-Key West Retrofit
Key West,FL

Softball

- Size: Irregular 300.0' / 295.0' / 280.0'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	166
Average:	50.3	30.1
Maximum:	64	44
Minimum:	36	18
Avg/Min:	1.39	1.66
Max/Min:	1.77	2.45
UG (Adjacent Pts):	1.48	1.98
CV:	0.14	0.20

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	28
Avg KW over 5,000:	43.79
Max KW:	47.6

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

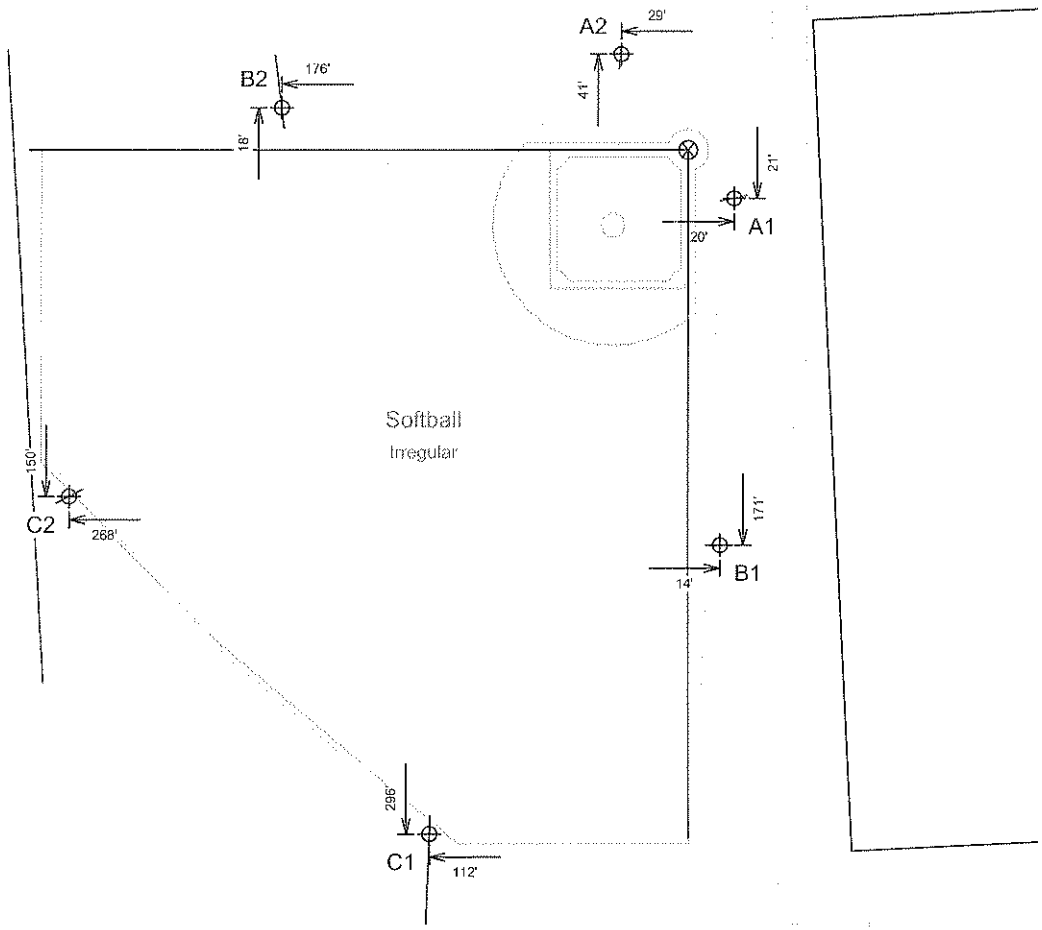
SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

By: Joel Stout

File #: 141846R1 Date: 04-Jan-11



GUARANTEED PERFORMANCE

EQUIPMENT LAYOUT

Dewitt Roberts Softball-Key West Retrofit
Key West,FL

INCLUDES:
- Softball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
2	A1-A2	50'	-	50'	1500W MZ	3
2	B1-B2	50'	-	50'	1500W MZ	7
1	C1	50'	-	50'	1500W MZ	4
1	C2	50'	-2'	48'	1500W MZ	4
6	← TOTALS →					28

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	15.0	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7

SCALE IN FEET 1 : 80

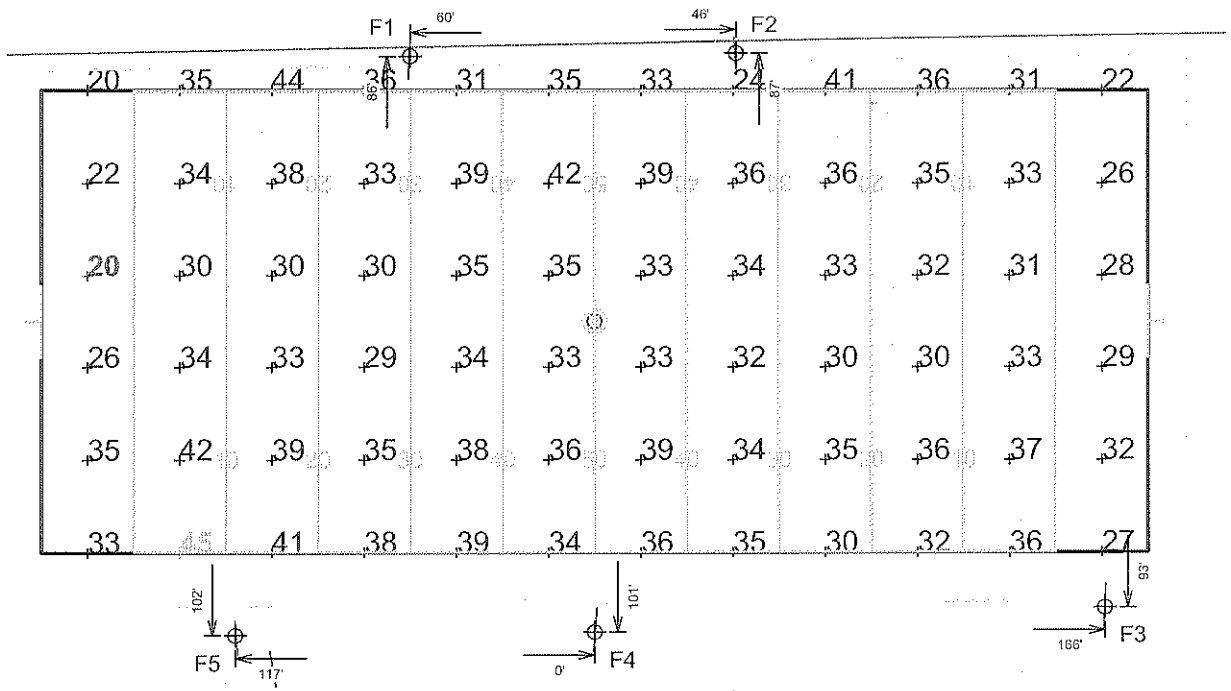
0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s) ⊗

By: Joel Stout

File #: 141846R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
3	F1-F2, F5	50'	-	50'	1500W MZ	5	5	0
1	F3	50'	-	50'	1500W MZ	4	4	0
1	F4	50'	1.3'	51.3'	1500W MZ	4	4	0
5	← TOTALS →					23	23	0



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Football

George Mira Football-Key West Retrofit
Key West,FL

Football

- Size: 360' x 150'
- Grid Spacing = 30.0' x 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	72
Average:	33.4
Maximum:	45
Minimum:	20
Avg/Min:	1.67
Max/Min:	2.26
UG (Adjacent Pts):	1.76
CV:	0.15

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	23
Avg KW over 5,000:	35.97
Max KW:	39.1

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141847R1 Date: 04-Jan-11

GUARANTEED PERFORMANCE

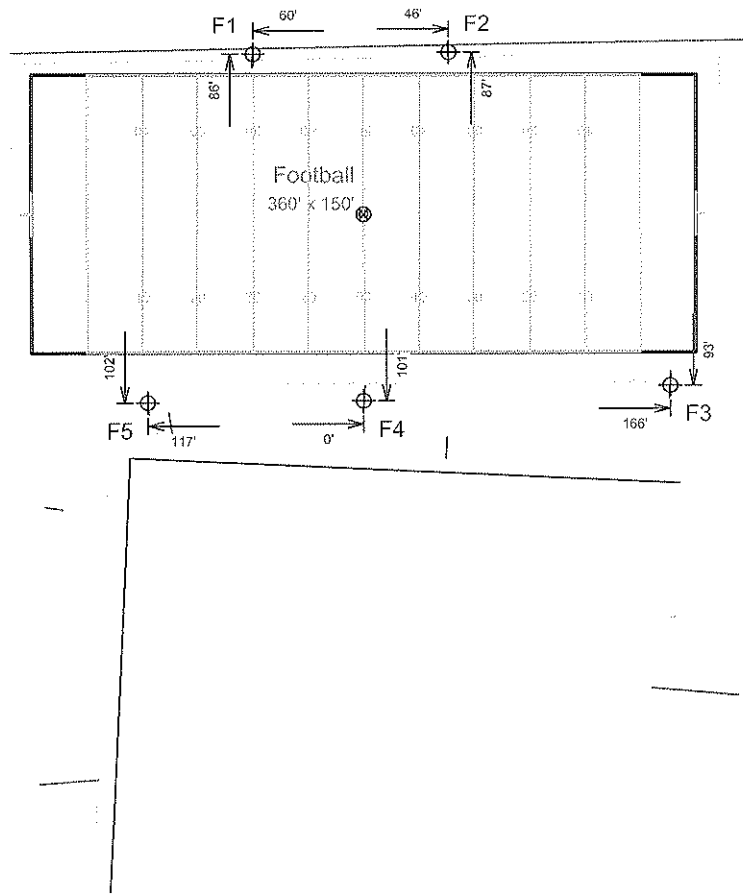
EQUIPMENT LAYOUT

George Mira Football-Key West Retrofit
Key West,FL

INCLUDES:
· Football

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



EQUIPMENT LIST FOR AREAS SHOWN

Pole			Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
3	F1-F2, F5	50'	-	50'	1500W MZ	5
1	F3	50'	-	50'	1500W MZ	4
1	F4	50'	1.3'	51.3'	1500W MZ	4
5	← TOTALS →					23

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	15.0	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7

SCALE IN FEET 1 : 100

0' 100' 200'

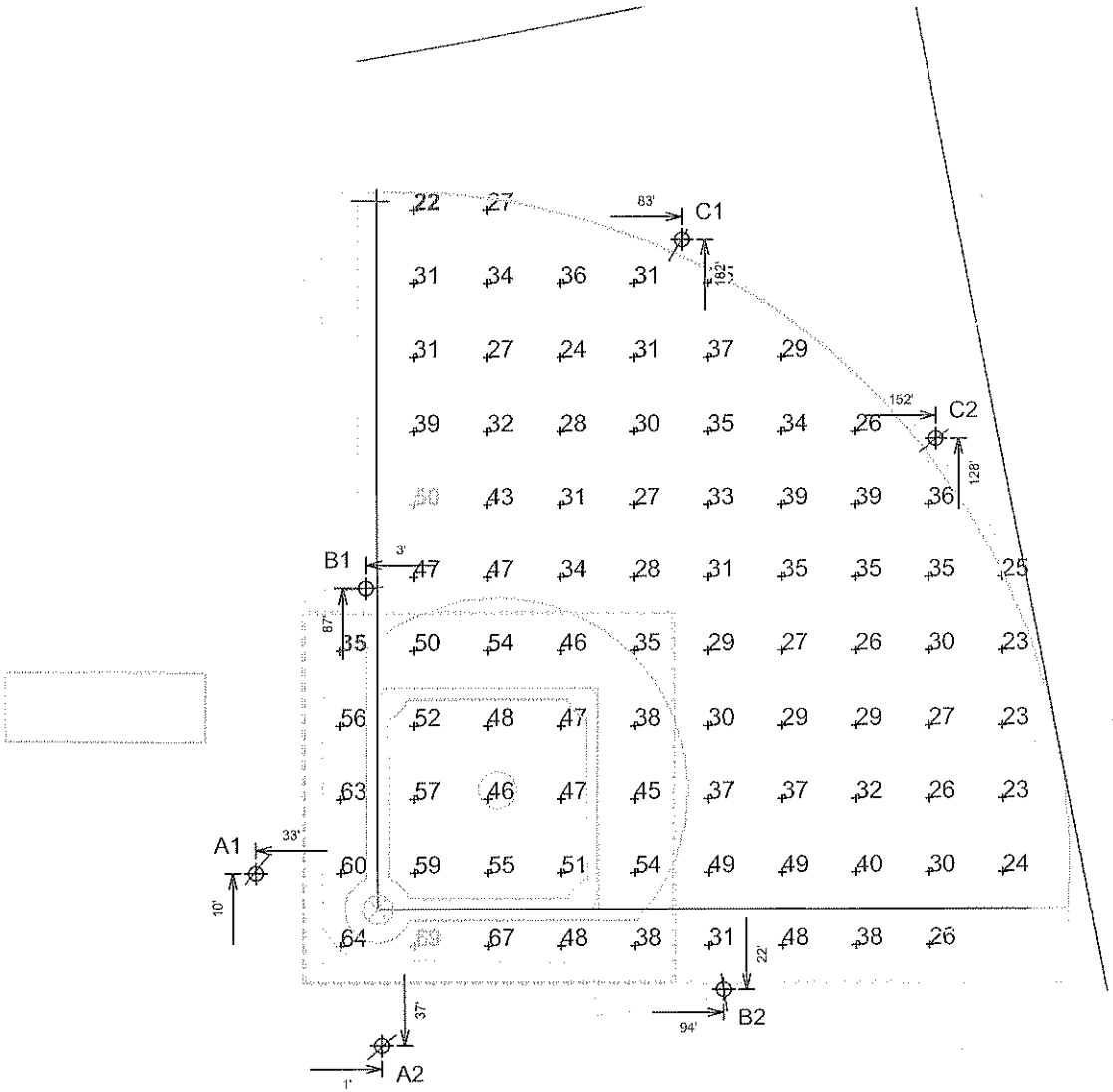
Pole location(s) + dimensions are relative to 0,0 reference point(s)

By: Joel Stout
File #: 141847R1 Date: 04-Jan-11

Print Date (04/Jan/2011) & Time (08:20)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A2 B1-B2	45'	-	45'	1500W MZ	3	3	0
2	C1-C2	45'	-	45'	1500W MZ	2	2	0
6	← TOTALS →					16	16	0



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Girls Softball

Rosa Hernandez Softball-Key West Retrofit
Key West,FL

Girls Softball
- Size: 195'/195'/188' - basepath 60'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

- Luminaire Type: Green Generation
- Rated Lamp Life: 5,000 hours
- Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	61
Average:	51.2	32.6
Maximum:	69	50
Minimum:	35	22
Avg/Min:	1.45	1.50
Max/Min:	1.96	2.29
UG (Adjacent Pts):	1.59	1.56
CV:	0.18	0.22

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	16
Avg KW over 5,000:	25.02
Max KW:	27.2

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

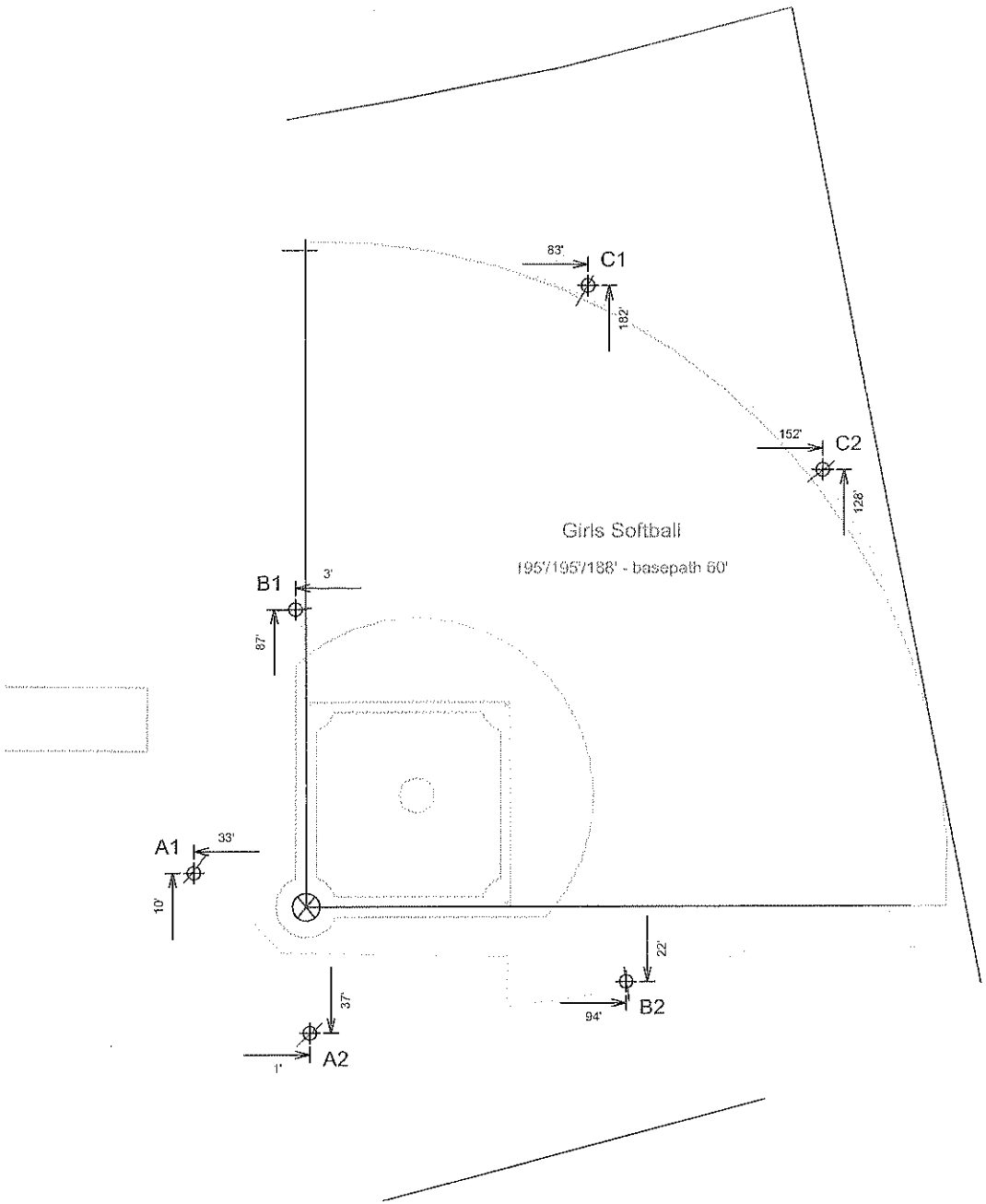
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141845R1 Date: 04-Jan-11

Print Date (04/Jan/2011) & Time (08:51)



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

EQUIPMENT LAYOUT

Rosa Hernandez Softball-Key West Retrofit
Key West,FL

INCLUDES:
- Girls Softball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

	Pole			Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
4	A1-A2 B1-B2	45'	-	45'	1500W MZ	3
2	C1-C2	45'	-	45'	1500W MZ	2
6	← TOTALS →					16

SINGLE LUMINAIRE AMPERAGE DRAW CHART

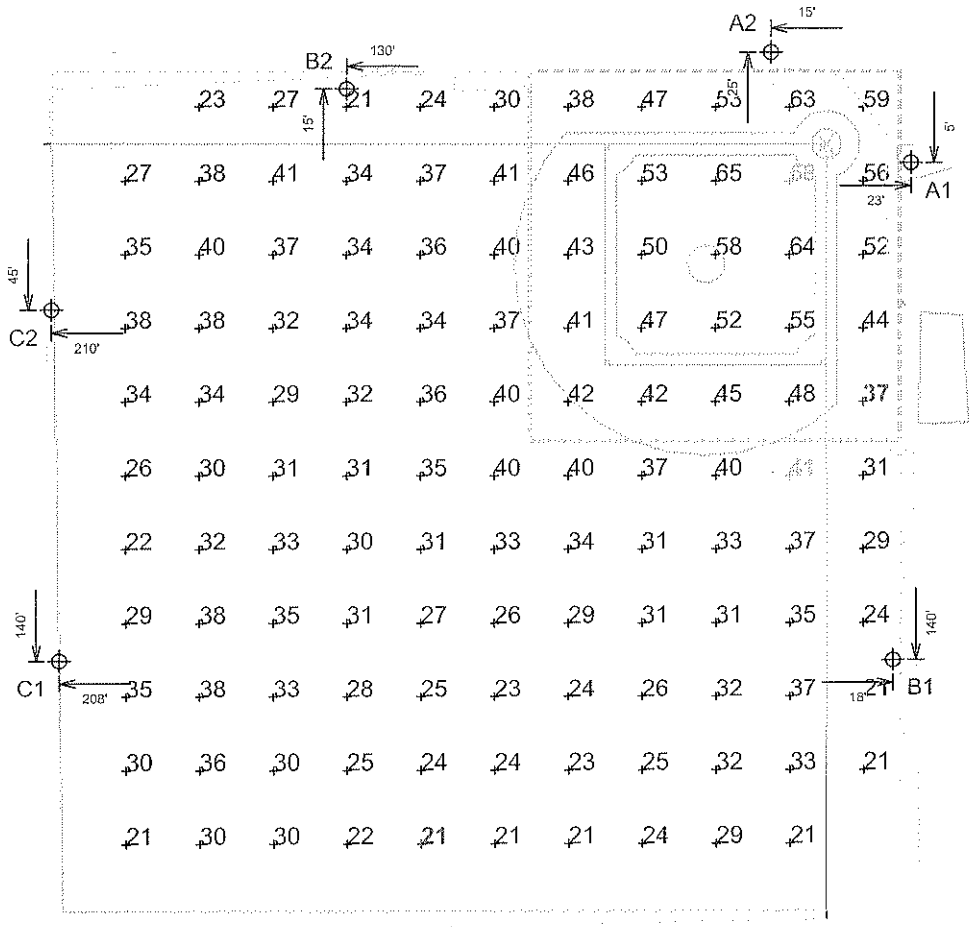
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	15.0	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7

By: Joel Stout

File #: 141845R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
5	A1-A2, B2 C1-C2	60'	-	60'	1500W MZ	3	3	0
1	B1	60'	-	60'	1500W MZ	4	4	0
6	← TOTALS →					19	19	0



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Multi Purpose

Pepe Hernandez Park EECBG Key West
Key West,FL

Multi Purpose
- Size: Irregular 208.0' / 293.0' / 210.0'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	94
Average:	50.7	30.9
Maximum:	68	41
Minimum:	37	21
Avg/Min:	1.38	1.49
Max/Min:	1.84	1.98
UG (Adjacent Pts):	1.31	1.77
CV:	0.17	0.19

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	19
Avg KW over 5,000:	29.72
Max KW:	32.3

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

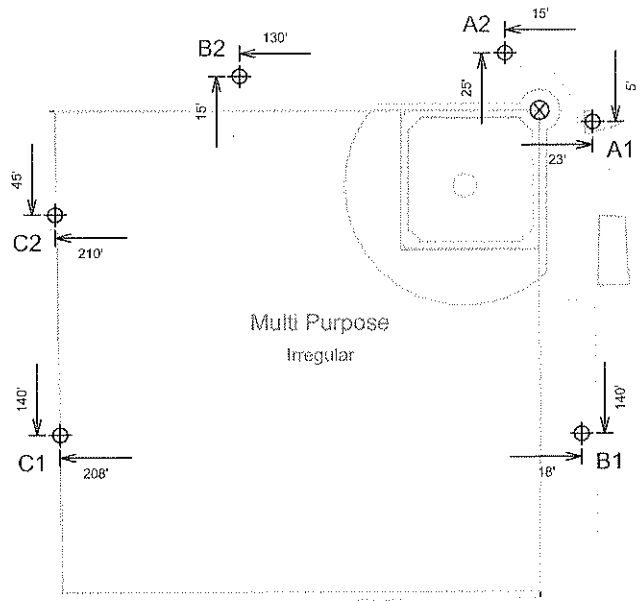
Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 150167R1 Date: 04-Jan-11



GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

EQUIPMENT LAYOUT

Pepe Hernandez Park EECBG Key West
Key West,FL

INCLUDES:
- Multi Purpose

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
5	A1-A2, B2 C1-C2	60'	-	60'	1500W MZ	3
1	B1	60'	-	60'	1500W MZ	4
6	← TOTALS →					19

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	15.0	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

By: Joel Stout

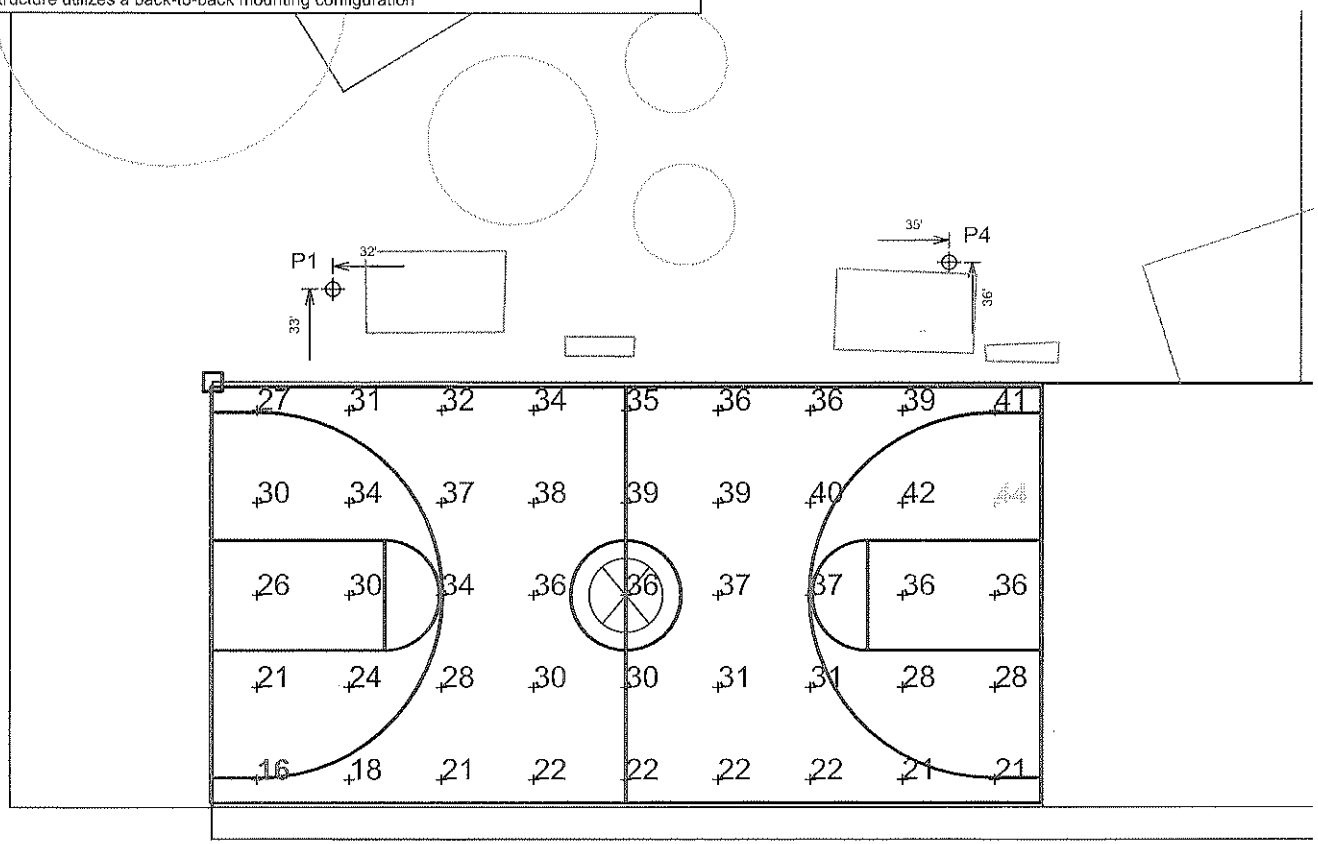
File #: 150167R1 Date: 04-Jan-11

Print Date (04/Jan/2011) & Time (08:16)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	P1	50'	-	50'	1000W MZ	2/2*	4	0
1	P2	50'	-	50'	1000W MZ	2/1*	3	0
1	P3	50'	-	50'	1000W MZ	2	2	0
1	P4	50'	-	50'	1000W MZ	3/2*	5	0
4	← TOTALS →					14	14	0

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 20

0' 20' 40'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Basketball

Nelson English Park EECBG Key West Retro Fit
Key West,FL

Basketball

- Size: 90' x 45'
- Grid Spacing = 10.0' x 10.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	12,000 hours
· Avg Lumens/Lamp:	88,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	45
Average:	31.1
Maximum:	44
Minimum:	16
Avg/Min:	1.91
Max/Min:	2.68
UG (Adjacent Pts):	1.39
CV:	0.23

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	14
Avg KW over 12,000:	15.68
Max KW:	18.2

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

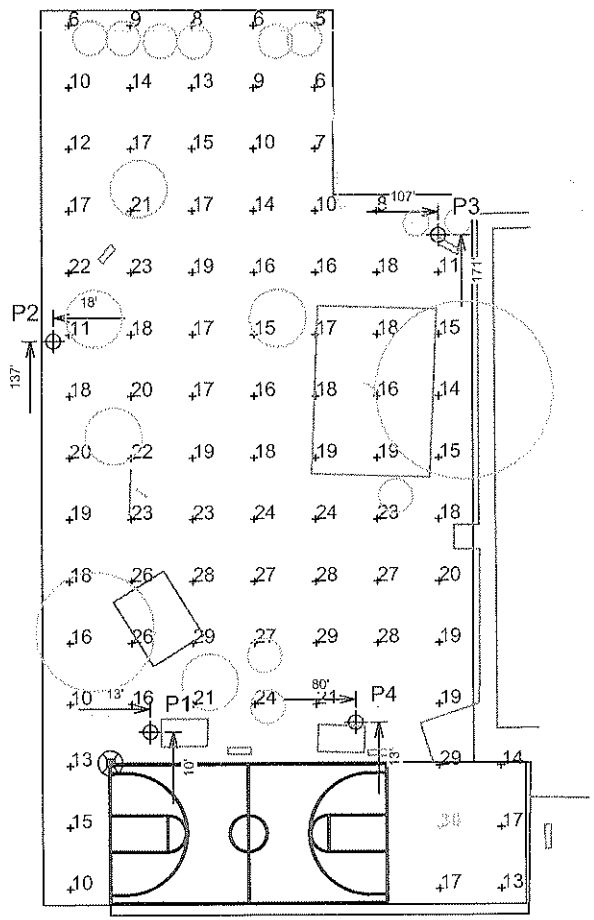
By: Joel Stout

File #: 146480R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	P1	50'	-	50'	1000W MZ	2/2*	4	0
1	P2	50'	-	50'	1000W MZ	2/1*	3	0
1	P3	50'	-	50'	1000W MZ	2	2	0
1	P4	50'	-	50'	1000W MZ	3/2*	5	0
4	← TOTALS →					14	14	0

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Playground Area

Nelson English Park EECBG Key West Retro Fit
Key West,FL

Playground Area

- Size: 2' x 2'
- Grid Spacing = 20.0' x 20.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	12,000 hours
· Avg Lumens/Lamp:	88,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	86
Average:	17.6
Maximum:	30
Minimum:	5
Avg/Min:	3.58
Max/Min:	6.13
UG (Adjacent Pts):	2.33
CV:	0.35

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	14
Avg KW over 12,000:	15.68
Max KW:	18.2

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 146480R1 Date: 04-Jan-11

GUARANTEED PERFORMANCE

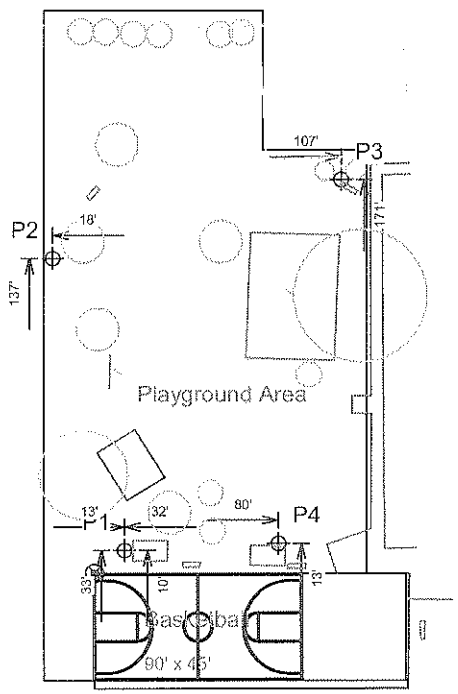
EQUIPMENT LAYOUT

Nelson English Park EECBG Key West Retro Fit
Key West,FL

INCLUDES:
- Basketball
- Playground Area

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
1	P1	50'	-	50'	1000W MZ	2/2*
1	P2	50'	-	50'	1000W MZ	2/1*
1	P3	50'	-	50'	1000W MZ	2
1	P4	50'	-	50'	1000W MZ	3/2*
4	TOTALS					14

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1000 watt MZ	11.4	6.5	5.8	5.8	4.9	4.0	3.6	-	2.9

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

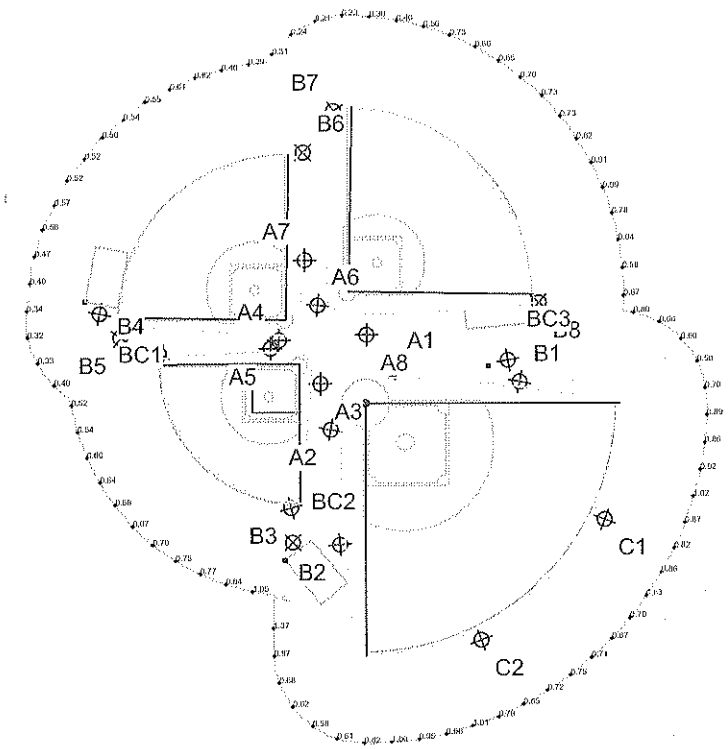
By: Joel Stout
File #: 146480R1 Date: 04-Jan-11

Print Date (04/Jan/2011) & Time (16:27)

Tab C

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	1500W MZ	5	5	0
6	A3-A8	60'	-	60'	1500W MZ	3	3	0
1	B1	65'	-2'	63'	1500W MZ	7	7	0
1	B2	65'	-1'	64'	1500W MZ	7	7	0
1	B3	60'	-2.8'	57.2'	1500W MZ	3	3	0
1	B4	60'	-2'	58'	1500W MZ	3	3	0
1	B5	60'	-1.9'	58.1'	1500W MZ	4	4	0
1	B6	60'	-1.6'	58.4'	1500W MZ	4	4	0
1	B7	60'	-2.4'	57.6'	1500W MZ	6	6	0
1	B8	60'	-2.4'	57.6'	1500W MZ	7	7	0
1	C1	63'	-2'	61'	1500W MZ	3	3	0
1	C2	63'	-3'	60'	1500W MZ	3	3	0
18	← TOTALS →					75	75	0



SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Spill Grid

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Spill Grid
- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	80
Average:	0.676
Maximum:	1.42
Minimum:	0.21

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	75
Avg KW over 5,000:	117.3
Max KW:	127.5

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

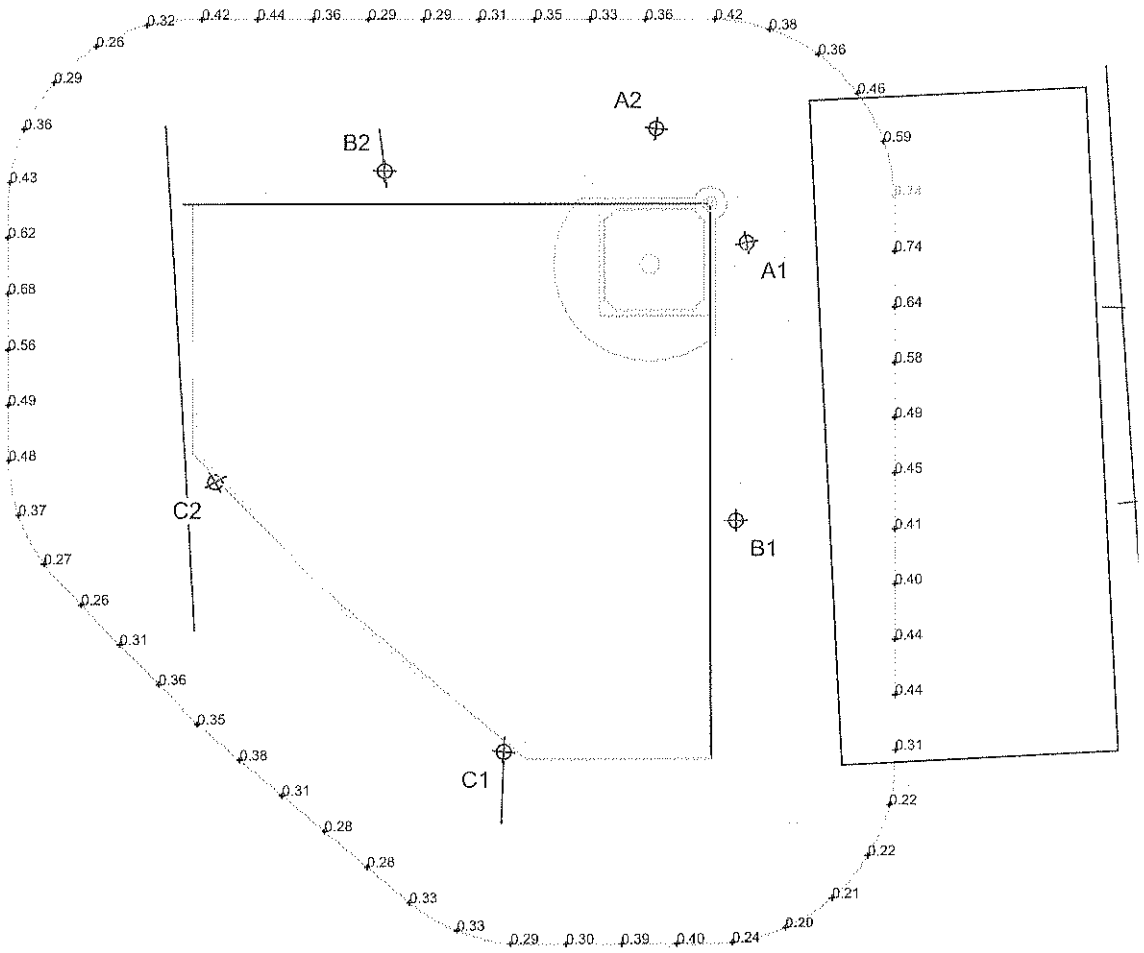
By: Joel Stout

File #: 141839R1 Date: 05-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	50'	-	50'	1500W MZ	3	3	0
2	B1-B2	50'	-	50'	1500W MZ	7	7	0
1	C1	50'	-	50'	1500W MZ	4	4	0
1	C2	50'	-2'	48'	1500W MZ	4	4	0
6	← TOTALS →					28	28	0

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE



ILLUMINATION SUMMARY

Softball

Dewitt Roberts Softball-Key West Retrofit
Key West,FL

Softball Spill

- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	56
Average:	0.389
Maximum:	0.74
Minimum:	0.20

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	28
Avg KW over 5,000:	43.79
Max KW:	47.6

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

By: Joel Stout

File #: 141846R1 Date: 04-Jan-11

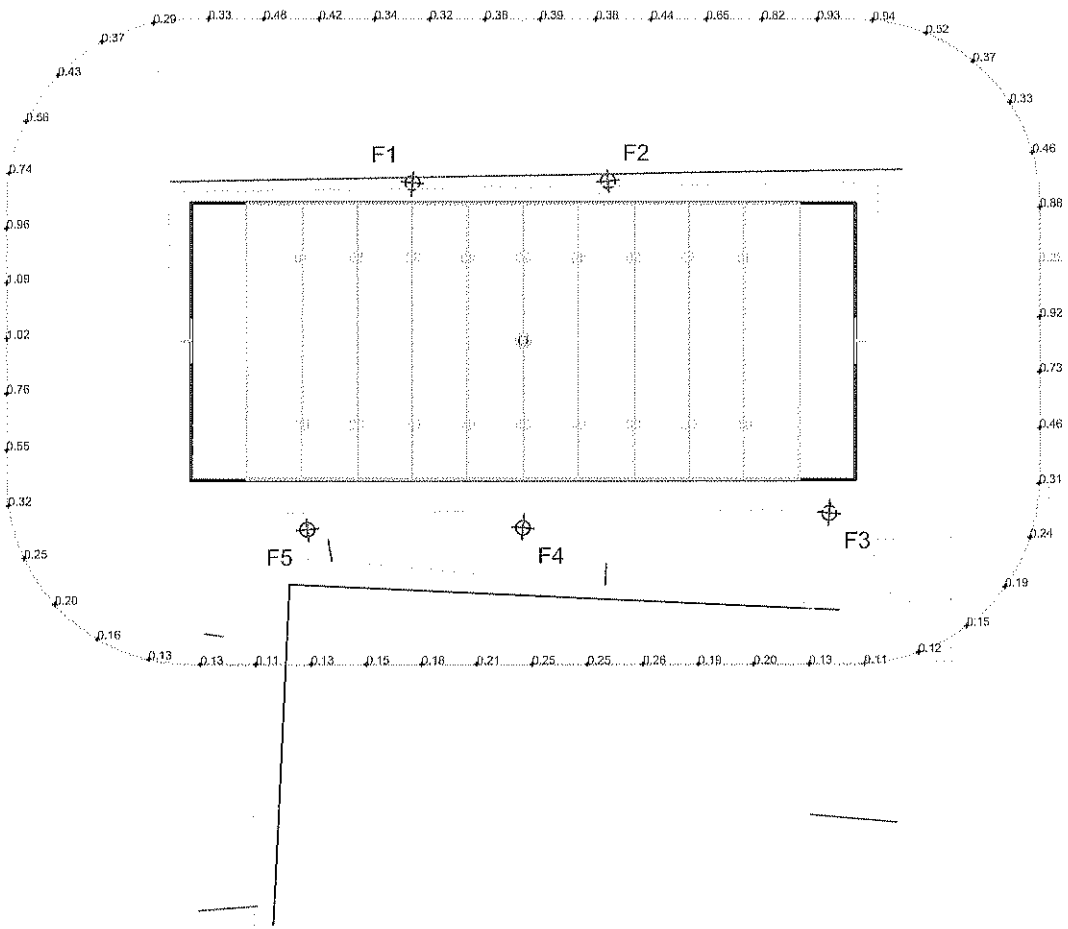
Print Date (04/Jan/2011) & Time (09:29)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
3	F1-F2, F5	50'	-	50'	1500W MZ	5	5	0
1	F3	50'	-	50'	1500W MZ	4	4	0
1	F4	50'	1.3'	51.3'	1500W MZ	4	4	0
5	← TOTALS →					23	23	0

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

ILLUMINATION SUMMARY

Football

George Mira Football-Key West Retrofit
Key West,FL

Football Spill
- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	55
Average:	0.434
Maximum:	1.22
Minimum:	0.11

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	23
Avg KW over 5,000:	35.97
Max KW:	39.1

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

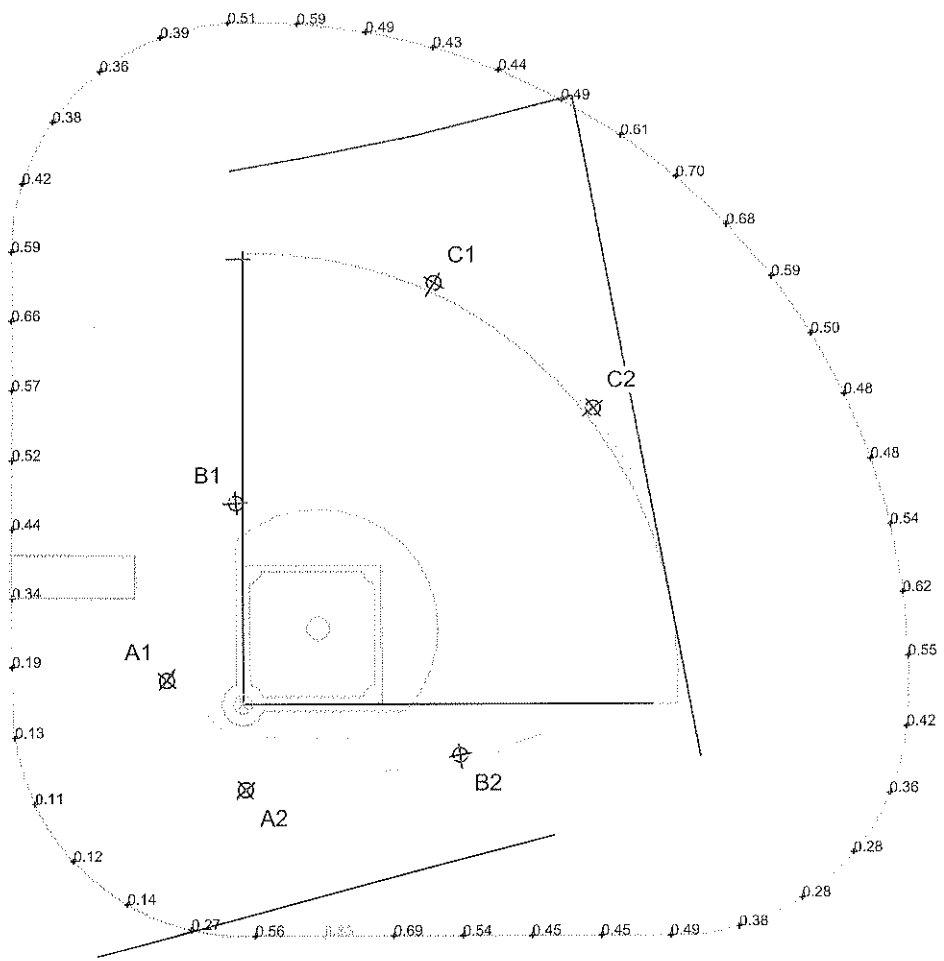
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141847R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A2 B1-B2	45'	-	45'	1500W MZ	3	3	0
2	C1-C2	45'	-	45'	1500W MZ	2	2	0
6	← TOTALS →					16	16	0



SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Girls Softball

Rosa Hernandez Softball-Key West Retrofit
Key West,FL

Girls Softball Spill
- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	44
Average:	0.456
Maximum:	0.83
Minimum:	0.11

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	16
Avg KW over 5,000:	25.02
Max KW:	27.2

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

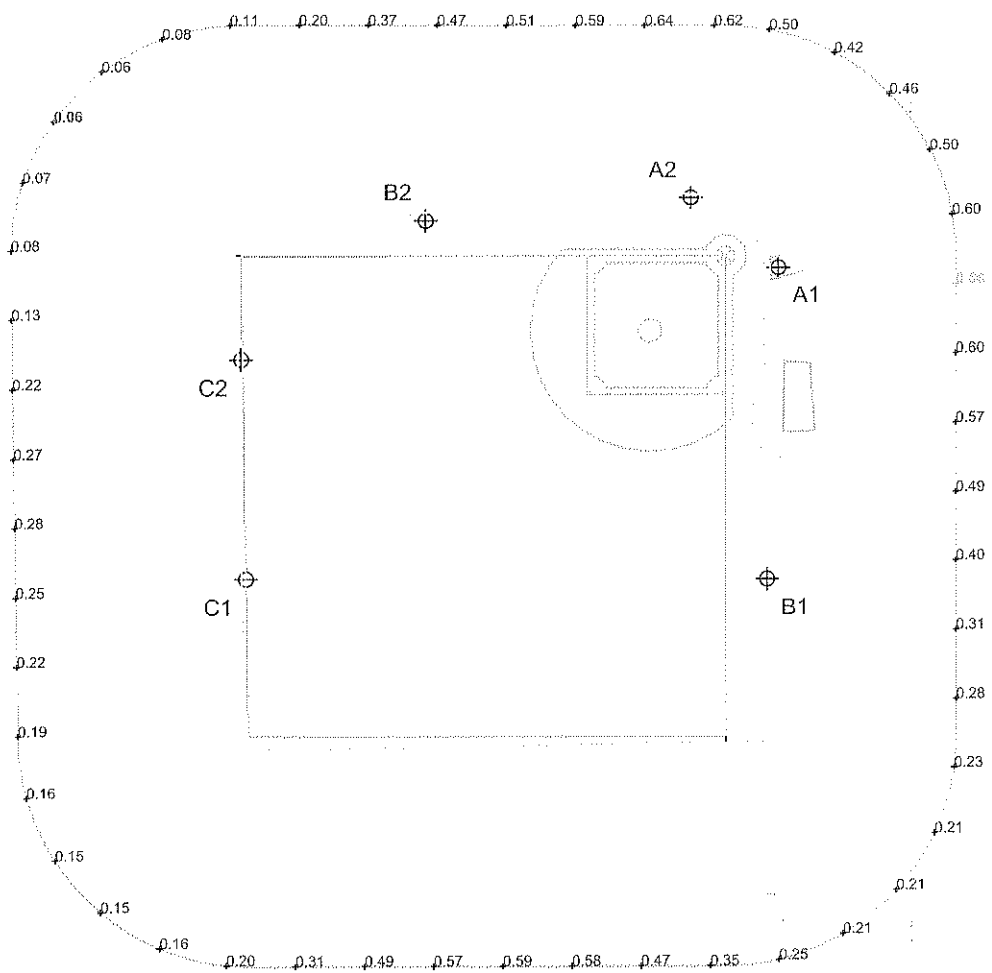
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 141845R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
5	A1-A2, B2 C1-C2	60'	-	60'	1500W MZ	3	3	0
1	B1	60'	-	60'	1500W MZ	4	4	0
6	← TOTALS →					19	19	0



GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Multi Purpose

Pepe Hernandez Park EECBG Key West
Key West,FL

Multi Purpose Spill

- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	5,000 hours
· Avg Lumens/Lamp:	134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	49
Average:	0.336
Maximum:	0.66
Minimum:	0.06

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	19
Avg KW over 5,000:	29.72
Max KW:	32.3

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

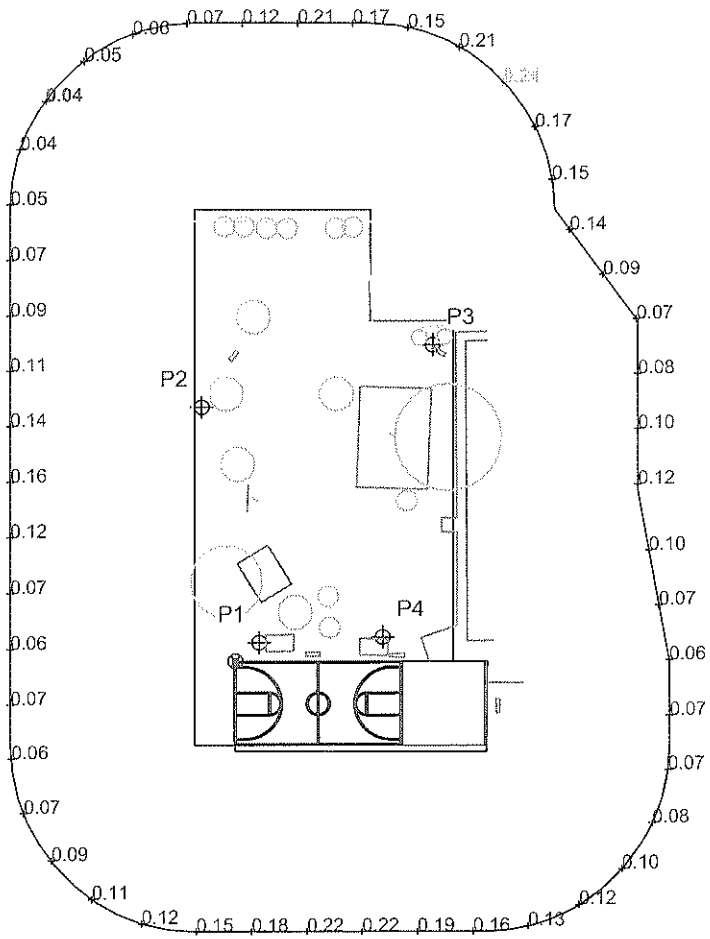
By: Joel Stout

File #: 150167R1 Date: 04-Jan-11

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	P1	50'	-	50'	1000W MZ	2/2*	4	0
1	P2	50'	-	50'	1000W MZ	2/1*	3	0
1	P3	50'	-	50'	1000W MZ	2	2	0
1	P4	50'	-	50'	1000W MZ	3/2*	5	0
4	← TOTALS →					14	14	0

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) + dimensions are relative to 0,0 reference point(s)

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

100' Spill

Nelson English Park EECBG Key West Retro Fit
Key West,FL

100' Spill
- Grid Spacing = 30.0'
- Values given at 3.0' above grade

· Luminaire Type:	Green Generation
· Rated Lamp Life:	12,000 hours
· Avg Lumens/Lamp:	88,000

CONSTANT ILLUMINATION HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	49
Average:	0.114
Maximum:	0.24
Minimum:	0.04

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	14
Avg KW over 12,000:	15.68
Max KW:	18.2

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Joel Stout

File #: 146480R1 Date: 04-Jan-11

Tab D

10-Year Life Cycle Cost

Clayton Sterling Complex - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	908.82	633.42	275.40
Metric Tons of CO_2	652.53	454.80	197.74
Million Source Btu Saved	3101.0	2161.3	939.70
Energy	**$165,240**	**$126,684**	**$38,556**
Group Relamp	$23,750	$0	$23,750
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$16,524	$0	$16,524
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$207,014**	**$126,684**	**$80,330**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	81
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	102
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$5,508**
Average Annual Savings =	$8,033.00

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

10-Year Life Cycle Cost

DeWitt Roberts Softball - Key West Retrofit

Softball

Prepared for: City of Key West, FL

5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	231.66	218.96	12.70
Metric Tons of CO_2	166.33	157.21	9.12
Million Source Btu Saved	790.5	747.1	43.33
Energy	**$42,120**	**$43,792**	**-$1,672**
Group Relamp	$13,542	$0	$13,542
Lamp Maintenance	$10,000	$0	$10,000
Controls - Energy	$4,212	$0	$4,212
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$69,874**	**$43,792**	**$26,082**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500
Technology Specific Data:	
Green Generation Lighting® Fixture Qty.	28
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	26
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$254**
Average Annual Savings =	$2,608.20

NOTE:

Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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10-Year Life Cycle Cost

George Mira Football - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	267.30	179.86	87.44
Metric Tons of CO_2	191.92	129.14	62.78
Million Source Btu Saved	912.1	613.7	298.36
Energy	**$48,600**	**$35,972**	**$12,628**
Group Relamp	$23,750	$0	$23,750
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$4,860	$0	$4,860
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$78,710**	**$35,972**	**$42,738**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	23
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	30
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$1,749**
Average Annual Savings =	$4,273.80

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

musco Lighting
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10-Year Life Cycle Cost

Rosa Hernandez Softball - Key West Retrofit

Softball

Prepared for: City of Key West, FL

5/26/2011

	Existing	Light-Structure Green	Your Savings
Total MWh	178.20	125.12	53.08
Metric Tons of CO_2	127.95	89.84	38.11
Million Source Btu Saved	608.0	426.9	181.12
Energy	**$32,400**	**$25,024**	**$7,376**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$3,240	$0	$3,240
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$42,557**	**$25,024**	**$17,533**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	16
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	20
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$1,062**
Average Annual Savings =	$1,753.30

NOTE:

Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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10-Year Life Cycle Cost

Pepe Hernandez Park - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light-Structure Green	Your Savings
Total MWh	160.38	148.58	11.80
Metric Tons of CO_2	115.15	106.68	8.47
Million Source Btu Saved	547.2	507.0	40.26
Energy	**$29,160**	**$29,716**	**-$556**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$2,916	$0	$2,916
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$38,993**	**$29,716**	**$9,277**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	19
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	18
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$236**
Average Annual Savings =	$927.70

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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10-Year Life Cycle Cost

Nelson English Park - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	105.93	78.40	27.53
Metric Tons of CO_2	76.06	56.29	19.77
Million Source Btu Saved	361.4	267.5	93.94
Energy	**$19,260**	**$15,680**	**$3,580**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$1,926	$0	$1,926
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$28,103**	**$15,680**	**$12,423**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	14
Average kW demand per fixture	1.12
Useful lamp life (Hours)	**12,000**
Typical Floodlighting Fixture Qty.	18
Average kW demand per fixture	1.07
Rated Life (Hours)	10,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$551**
Average Annual Savings =	$1,242.30

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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Tab E

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
A1	Field A	-37.00	30.00	60.00	5	7.13	-22.33	0.00	R 58.3	42.50	A
					5	8.90	140.46	0.00	L 56.4	27.04	A
					5	81.75	-22.86	0.00	R 33.3	24.69	A
					4	80.32	118.08	0.00	L 26.2	22.11	A
					4	104.13	56.66	0.00	L 0.7	22.40	A
A2	Field A	29.00	-38.00	60.00	5	124.60	1.43	0.00	R 56.4	30.70	A
					5	-25.86	12.38	0.00	L 55.8	39.94	A
					4	109.36	81.42	0.00	R 23.2	22.48	A
					5	-15.39	94.28	0.00	L 27.8	23.14	A
					4	35.56	113.32	0.00	L 7.5	21.35	A
A3	Field B	-24.00	19.00	60.00	6	6.81	-24.82	0.00	R 53.9	48.91	B
					5	12.80	87.95	0.00	L 61.4	37.85	B
					5	69.12	59.58	0.00	L 23.7	30.26	B
A4	Field B	21.00	-28.00	60.00	5	88.14	18.34	0.00	R 54.8	36.60	B
					6	-24.13	6.86	0.00	L 51.3	47.04	B
					5	53.81	72.17	0.00	R 18.2	29.35	B
A5	Field C	-31.00	15.00	60.00	6	19.34	-16.47	0.00	R 30.4	45.60	C
					5	14.92	85.08	0.00	L 56.2	35.86	C
					5	76.44	52.70	0.00	L 19.4	27.49	C
A6	Field C	16.00	-36.00	60.00	5	87.92	17.38	0.00	R 47.7	33.97	C
					5	-12.45	28.86	0.00	L 27.3	40.40	C
					5	53.77	68.89	0.00	R 14.9	27.99	C
A7	Field D	-46.00	35.00	60.00	5	11.39	-16.77	0.00	R 41.0	38.03	D
					5	47.42	71.98	0.00	L 20.5	30.74	D
					5	56.80	37.86	0.00	L 1.6	29.96	D
A8	Field D	21.00	-46.00	60.00	5	78.55	40.84	0.00	R 32.6	29.92	D
					5	-12.74	15.41	0.00	L 27.3	40.71	D
					5	46.14	56.20	0.00	R 13.9	29.39	D
B1	Field A	-23.00	167.00	65.00	4	73.98	76.15	0.00	R 32.0	25.39	A
					4	50.32	266.64	0.00	L 63.2	27.23	A
					4	103.17	116.65	0.00	R 11.3	24.65	A
					4	93.51	241.08	0.00	L 42.2	24.36	A
					5	20.32	69.04	0.00	R 55.7	29.56	A
					5	-2.09	258.98	0.00	L 87.4	32.89	A
					4	114.60	176.65	0.00	L 14.1	23.42	A
B2	Field A	154.00	-28.00	65.00	4	262.68	53.80	0.00	R 57.4	25.36	A
					4	67.90	82.22	0.00	L 31.9	24.60	A
					4	225.89	101.32	0.00	R 33.8	23.21	A
					4	106.03	118.56	0.00	L 12.8	22.32	A
					5	266.25	5.40	0.00	R 78.4	27.80	A
					5	50.80	29.04	0.00	L 55.7	27.61	A
					4	161.26	130.94	0.00	R 7.6	20.89	A
B3	Field B	8.00	154.00	60.00	5	-6.01	47.53	0.00	R 21.5	27.91	B
					5	106.85	90.94	0.00	L 41.8	25.97	B

musco GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Zone Description	Groups
Zone1	A
Zone2	D
Zone3	B
Zone4	C
Zone5	ABCD
Zone6	E
Zone7	F
Zone8	G

By: Joel Stout

File #: 141839R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
					5	58.95	60.00	0.00	L 13.5	27.84	B
B4	Field B	151.00	-13.00	60.00	5	109.10	90.94	0.00	R 42.4	27.35	B
					5	42.98	0.13	0.00	L 17.0	27.90	B
					5	60.45	57.26	0.00	R 12.9	26.54	B
B5	Field C	-19.00	178.00	60.00	4	11.68	62.71	0.00	R 39.0	26.06	C
					4	114.53	132.62	0.00	L 15.0	22.24	C
					4	55.83	71.54	0.00	R 19.5	23.83	C
					4	89.68	99.21	0.00	R 1.4	23.12	C
B6	Field C	182.00	-20.00	60.00	4	130.59	115.69	0.00	R 23.1	21.83	C
					4	58.19	2.96	0.00	L 33.3	24.91	C
					4	95.86	94.20	0.00	R 7.6	21.95	C
					4	74.08	46.81	0.00	L 12.8	24.46	C
B7	Field D	-15.00	196.00	60.00	4	-8.88	63.02	0.00	R 30.4	23.57	D
					3	128.46	155.15	0.00	L 37.5	21.28	D
					4	21.40	66.86	0.00	R 18.0	23.11	D
					4	114.38	138.52	0.00	L 30.0	22.09	D
					4	64.48	77.52	0.00	R 0.7	21.71	D
					4	100.73	98.85	0.00	L 14.6	20.63	D
B8	Field D	208.00	-11.00	60.00	3	155.75	121.46	0.00	R 27.4	21.96	D
					4	73.01	-12.47	0.00	L 39.7	23.14	D
					4	121.63	80.94	0.00	R 6.3	24.27	D
					4	82.39	14.83	0.00	L 28.0	23.98	D
					4	141.68	106.95	0.00	R 19.8	21.99	D
					5	152.34	-49.15	0.00	L 74.3	39.72	D
					4	94.76	51.93	0.00	L 11.0	22.76	D
BC1	Batting Cage 1	15.83	-13.65	25.00	6	41.99	48.44	2.76	R 12.0	19.80	E
					6	16.13	55.38	2.76	L 8.9	19.34	E
BC2	Batting Cage 2	8.69	19.46	25.00	5	38.71	-40.77	2.03	R 17.7	19.85	F
					6	61.12	-22.61	2.03	L 5.3	19.81	F
BC3	Batting Cage 3	21.07	6.32	25.00	6	14.27	-45.88	1.77	R 16.4	24.84	G
					6	89.52	-23.66	1.77	L 56.2	18.08	G
C1	Field A	127.00	259.00	63.00	4	-6.32	227.19	0.00	R 56.2	23.98	A
					4	192.47	146.46	0.00	L 49.7	25.09	A
					4	82.22	130.46	0.00	L 0.8	23.87	A
C2	Field A	258.00	125.00	63.00	4	150.36	198.54	0.00	R 53.9	24.70	A
					5	246.29	10.61	0.00	L 63.9	27.62	A
					4	131.27	98.72	0.00	R 8.3	24.59	A

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Clayton Sterling Complex-Key West Retrofit
Key West,FL

Zone Description	Groups
Zone1	A
Zone2	D
Zone3	B
Zone4	C
Zone5	ABCD
Zone6	E
Zone7	F
Zone8	G

By: Joel Stout

File #: 141839R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
A1	Softball	-20.00	21.00	50.00	5	24.12	81.81	0.00	L 42.5	33.53	A
					6	5.74	-12.95	0.00	R 60.8	50.18	A
					4	71.09	58.67	0.00	L 12.4	26.32	A
A2	Softball	29.00	-41.00	50.00	6	-17.87	-1.05	0.00	L 52.9	39.20	A
					5	90.15	31.04	0.00	R 34.0	27.62	A
					4	51.99	70.66	0.00	R 6.6	23.17	A
B1	Softball	-14.00	171.00	50.00	4	58.93	82.78	0.00	R 49.5	23.71	A
					4	58.08	267.22	0.00	L 52.4	22.68	A
					3	94.22	114.21	0.00	R 27.3	22.00	A
					4	101.47	222.03	0.00	L 23.5	21.35	A
					4	0.68	65.04	0.00	R 82.2	23.97	A
					4	7.68	276.66	0.00	L 78.4	23.79	A
					3	111.16	158.66	0.00	R 5.7	20.38	A
B2	Softball	176.00	-18.00	50.00	4	269.58	60.92	0.00	R 49.0	22.29	A
					4	72.46	49.90	0.00	L 56.1	22.09	A
					4	229.50	100.24	0.00	R 24.0	20.82	A
					3	111.54	89.76	0.00	L 30.6	21.47	A
					5	268.83	8.86	0.00	R 73.8	26.26	A
					4	66.58	7.68	0.00	L 76.8	22.92	A
					3	164.34	111.10	0.00	L 5.2	19.82	A
C1	Softball	112.00	296.00	50.00	4	195.75	183.83	0.00	L 40.6	19.53	A
					5	20.73	280.53	0.00	R 74.5	28.72	A
					3	126.62	171.26	0.00	L 11.1	21.27	A
					5	36.69	206.07	0.00	R 34.4	22.71	A
C2	Softball	268.00	150.00	50.00	5	268.83	35.83	0.00	L 59.3	22.85	A
					4	167.34	211.47	0.00	R 60.4	22.19	A
					5	191.68	81.89	0.00	L 11.1	24.62	A
					3	148.61	147.06	0.00	R 28.0	21.50	A

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Dewitt Roberts Softball-Key West Retrofit

Key West,FL

Zone Description	Groups
Zone1	A

By: Joel Stout

File #: 141846R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
F1	Football	-60.00	86.00	50.00	5	-170.59	74.75	0.00	R 79.0	24.68	A
					5	35.88	33.09	0.00	L 65.4	24.97	A
					4	-162.08	47.74	0.00	R 64.2	24.65	A
					4	-31.38	-17.66	0.00	L 19.4	24.75	A
					4	-136.07	-4.28	0.00	R 35.3	22.61	A
F2	Football	46.00	87.00	50.00	5	-60.20	29.90	0.00	R 66.1	22.85	A
					3	173.64	67.22	0.00	L 75.9	21.45	A
					4	33.49	-13.95	0.00	R 10.9	25.93	A
					4	151.00	37.75	0.00	L 59.5	23.30	A
					4	126.78	1.20	0.00	L 38.4	22.64	A
F3	Football	166.00	-93.00	50.00	3	176.03	46.60	0.00	L 2.3	19.35	A
					4	52.23	-59.40	0.00	L 78.5	23.04	A
					4	139.57	31.06	0.00	L 17.6	21.14	A
					4	82.79	-0.32	0.00	L 46.7	21.66	A
F4	Football	0.00	-101.00	50.00	4	121.20	-43.85	0.00	R 59.2	21.03	A
					5	-89.70	-28.31	0.00	L 55.2	24.11	A
					4	71.76	2.79	0.00	R 29.3	21.89	A
					4	-11.56	12.36	0.00	L 10.3	23.95	A
F5	Football	-117.00	-102.00	50.00	5	-8.07	-49.04	0.00	R 68.5	22.77	A
					5	-182.61	-46.94	0.00	L 43.0	30.81	A
					4	-55.29	10.44	0.00	R 33.0	21.16	A
					4	-168.09	5.22	0.00	L 19.5	22.63	A
					4	-123.57	17.23	0.00	R 1.9	22.39	A

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

George Mira Football-Key West Retrofit
Key West,FL

Zone Description	Groups
Zone1	A

By: Joel Stout

File #: 141847R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
A1	Girls Softball	-33.00	10.00	45.00	6	24.60	-27.42	0.00	R 83.2	33.53	A
					5	2.03	84.03	0.00	L 13.2	28.55	A
					5	53.10	66.26	0.00	R 16.9	23.26	A
A2	Girls Softball	1.00	-37.00	45.00	5	83.85	7.57	0.00	R 10.4	25.28	A
					5	-4.18	62.59	0.00	L 52.4	24.26	A
					5	67.20	45.10	0.00	L 11.2	22.74	A
B1	Girls Softball	-3.00	87.00	45.00	5	80.75	58.08	0.00	R 22.8	26.76	A
					5	7.10	177.99	0.00	L 78.7	26.24	A
					5	78.64	149.44	0.00	L 32.6	23.26	A
B2	Girls Softball	94.00	-22.00	45.00	5	176.96	10.67	0.00	R 78.5	26.86	A
					5	47.45	56.95	0.00	L 19.3	25.95	A
					5	134.92	64.28	0.00	R 35.5	24.83	A
C1	Girls Softball	83.00	182.00	45.00	5	7.10	178.51	0.00	R 57.2	30.48	A
					5	102.91	100.26	0.00	L 43.4	27.93	A
C2	Girls Softball	152.00	128.00	45.00	5	79.92	76.62	0.00	R 1.8	26.57	A
					4	170.76	27.04	0.00	L 62.5	23.44	A

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Rosa Hernandez Softball-Key West Retrofit
Key West,FL

Zone Description	Groups
Zone1	A

By: Joel Stout

File #: 141845R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location		Light Bank Mounting Height	Reflector NEMA Type	Aiming Point			Aiming Angle		Group
		X	Y			X	Y	Z	HOR	VER	
A1	Multi Purpose	-23.00	5.00	60.00	6	18.03	-23.53	0.00	R 33.0	50.69	A
					5	6.98	78.76	0.00	L 67.6	37.34	A
					5	62.24	62.29	0.00	L 34.1	29.97	A
A2	Multi Purpose	15.00	-25.00	60.00	5	80.34	4.87	0.00	R 65.0	40.29	A
					6	-26.15	5.13	0.00	L 52.7	50.35	A
					5	54.65	65.88	0.00	R 23.7	30.87	A
B1	Multi Purpose	-18.00	140.00	60.00	5	20.92	52.99	0.00	R 65.3	32.66	A
					5	35.91	193.93	0.00	L 43.4	38.74	A
					4	84.29	85.07	0.00	R 27.9	27.13	A
					4	102.43	183.41	0.00	L 19.4	24.89	A
B2	Multi Purpose	130.00	-15.00	60.00	5	194.46	62.72	0.00	R 38.9	30.75	A
					5	48.00	42.21	0.00	L 54.6	31.09	A
					4	84.81	97.69	0.00	L 21.9	26.00	A
C1	Multi Purpose	208.00	140.00	60.00	5	157.91	203.13	0.00	R 50.8	36.92	A
					5	98.22	114.26	0.00	L 12.1	27.83	A
					4	86.39	184.99	0.00	R 20.4	24.54	A
C2	Multi Purpose	210.00	45.00	60.00	5	153.44	135.55	0.00	R 57.6	29.43	A
					5	147.13	-7.49	0.00	L 38.9	36.38	A
					4	89.02	87.17	0.00	R 19.3	24.81	A

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Pepe Hernandez Park EECBG Key West

Key West,FL

Zone Description	Groups
Zone1	A

By: Joel Stout

File #: 150167R1 Date: 25-May-11

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
P1	Basketball	-31.83	33.01	50.00	5	20.89	122.18	0.00	R 30.2	25.53	A
					5	-61.31	120.45	0.00	L 18.1	28.18	A
					6	-45.60	-20.38	0.00	R 13.5	42.02	A
					5	32.95	-20.17	0.00	L 50.4	30.67	A
P2	Playground Area	-18.17	136.99	50.00	5	21.47	50.02	0.00	L 24.6	27.25	A
					4	62.41	230.71	0.00	R 40.4	21.80	A
					4	10.17	236.39	0.00	R 16.6	25.40	A
P3	Playground Area	107.00	171.00	50.00	4	9.11	133.33	0.00	R 69.0	25.30	A
					4	81.96	76.12	0.00	R 15.5	26.58	A
P4	Basketball	35.00	36.01	50.00	5	-31.92	-20.02	0.00	R 49.3	29.89	A
					5	81.91	-15.30	0.00	L 41.3	35.92	A
					6	45.43	-18.98	0.00	L 10.8	41.45	A
					5	73.11	102.45	0.00	R 29.3	32.95	A
					5	-8.21	121.59	0.00	L 26.3	27.30	A

GUARANTEED PERFORMANCE

AIMING SUMMARY

Pole-Mounted Luminaires

Nelson English Park EECBG Key West Retro Fit
Key West,FL

Zone Description	Groups
Zone1	A

By: Joel Stout

File #: 146480R1 Date: 25-May-11

Tab F

Jobs Created or Retained

Key West Retrofit

Clayton Sterling Complex

City of Key West

5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	1.7

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	81	**Number of fields:**	4
Number of poles:	21	**Type of installation:**	Retrofit

Calculation Assumptions

Lighting specifier design hours 80

First field	20
Additional fields (per field)	20

Lighting contractor installation hours 840

Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours 2673

Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours 0

Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

We Make It Happen.

Jobs Created or Retained

Key West Retrofit

Dewitt Roberts Softball

City of Key West

5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	0.6

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	28	**Number of fields:**	1
Number of poles:	6	**Type of installation:**	Retrofit

Calculation Assumptions

Lighting specifier design hours — **20**

First field	20
Additional fields (per field)	20

Lighting contractor installation hours — **240**

Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours — **924**

Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours — **0**

Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

We Make It Happen.

Jobs Created or Retained

Key West Retrofit
George Mira Football
City of Key West
5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	0.5

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	23	**Number of fields:**	1
Number of poles:	5	**Type of installation:**	Retrofit

Calculation Assumptions

Lighting specifier design hours — **20**

First field	20
Additional fields (per field)	20

Lighting contractor installation hours — **200**
Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours — **759**
Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours — **0**
Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

We Make It Happen.

Jobs Created or Retained

Key West Retrofit

Rosa Hernandez Softball

City of Key West

5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	0.4

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	16	**Number of fields:**	1
Number of poles:	6	**Type of installation:**	Retrofit

Calculation Assumptions

Lighting specifier design hours — **20**

First field	20
Additional fields (per field)	20

Lighting contractor installation hours — **240**

Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours — **528**

Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours — **0**

Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

We Make It Happen.

Jobs Created or Retained

Key West Retrofit
Pepe Hernandez Park
City of Key West
5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	0.6

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	19	**Number of fields:**	1
Number of poles:	6	**Type of installation:**	New

Calculation Assumptions

Lighting specifier design hours 48

First field	48
Additional fields (per field)	24

Lighting contractor installation hours 480
Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours 627
Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours 0
Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

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Jobs Created or Retained

Key West Retrofit

Nelson English Park
City of Key West
5/26/2011

Lighting Design, Manufacturing, and Installation Jobs

Temporary Full-time Equivalent Jobs	0.4

Select job period: For one year

Owner Facility Operation/Management Jobs

Annual Full-time Equivalent Jobs	0.0

Project Specifics

Number of fixtures:	14	**Number of fields:**	2
Number of poles:	4	**Type of installation:**	New

Calculation Assumptions

Lighting specifier design hours 72

First field	48
Additional fields (per field)	24

Lighting contractor installation hours 320

Includes truck unloading, electrical design and installation, lighting system assembly and installation

Lighting manufacturer hours 462

Includes system aiming design, component fabrication, manufacturing, transportation, administration, warranty, and Control-Link Central.

Owner facility operation/mgmt hours 0

Owner annual hours to operate facility and/or manage programs

Default design and installation hours were provided by specifiers and contractors for prior Musco lighting projects. Defaults may be overridden with project-specific hours in the assumptions section. Owner facility operation/management hours are optional and include all non-Musco hours used to operate and manage the facility on an annual basis.

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10-Year Life Cycle Cost

Clayton Sterling Complex - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	908.82	633.42	275.40
Metric Tons of CO_2	652.53	454.80	197.74
Million Source Btu Saved	3101.0	2161.3	939.70
Energy	**$165,240**	**$126,684**	**$38,556**
Group Relamp	$23,750	$0	$23,750
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$16,524	$0	$16,524
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$207,014**	**$126,684**	**$80,330**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	81
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	102
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$5,508**
Average Annual Savings =	$8,033.00

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

10-Year Life Cycle Cost

DeWitt Roberts Softball - Key West Retrofit

Softball

Prepared for: City of Key West, FL

5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	231.66	218.96	12.70
Metric Tons of CO_2	166.33	157.21	9.12
Million Source Btu Saved	790.5	747.1	43.33
Energy	**$42,120**	**$43,792**	**-$1,672**
Group Relamp	$13,542	$0	$13,542
Lamp Maintenance	$10,000	$0	$10,000
Controls - Energy	$4,212	$0	$4,212
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$69,874**	**$43,792**	**$26,082**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500
Technology Specific Data:	
Green Generation Lighting® Fixture Qty.	28
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	26
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$254**
Average Annual Savings =	$2,608.20

NOTE:

Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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10-Year Life Cycle Cost

George Mira Football - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	267.30	179.86	87.44
Metric Tons of CO_2	191.92	129.14	62.78
Million Source Btu Saved	912.1	613.7	298.36
Energy	**$48,600**	**$35,972**	**$12,628**
Group Relamp	$23,750	$0	$23,750
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$4,860	$0	$4,860
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$78,710**	**$35,972**	**$42,738**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	23
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	30
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$1,749**
Average Annual Savings =	$4,273.80

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

10-Year Life Cycle Cost

Rosa Hernandez Softball - Key West Retrofit

Softball

Prepared for: City of Key West, FL

5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	178.20	125.12	53.08
Metric Tons of CO_2	127.95	89.84	38.11
Million Source Btu Saved	608.0	426.9	181.12
Energy	**$32,400**	**$25,024**	**$7,376**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$3,240	$0	$3,240
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$42,557**	**$25,024**	**$17,533**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	16
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	20
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$1,062**
Average Annual Savings =	$1,753.30

NOTE:

Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

10-Year Life Cycle Cost

Pepe Hernandez Park - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	160.38	148.58	11.80
Metric Tons of CO_2	115.15	106.68	8.47
Million Source Btu Saved	547.2	507.0	40.26
Energy	**$29,160**	**$29,716**	**-$556**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$2,916	$0	$2,916
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$38,993**	**$29,716**	**$9,277**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500

Technology Specific Data:

Green Generation Lighting® Fixture Qty.	19
Average kW demand per fixture	1.564
Useful lamp life (Hours)	**5,000**
Typical Floodlighting Fixture Qty.	18
Average kW demand per fixture	1.62
Rated Life (Hours)	3,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0

Lamp Maintenance Data:

Lamp replacement cost including parts, equipment & labor	$125

Annual Energy Savings =	**$236**
Average Annual Savings =	$927.70

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

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10-Year Life Cycle Cost

Nelson English Park - Key West Retrofit

Prepared for: City of Key West, FL
5/26/2011

	Existing	Light·Structure GREEN	Your Savings
Total MWh	105.93	78.40	27.53
Metric Tons of CO_2	76.06	56.29	19.77
Million Source Btu Saved	361.4	267.5	93.94
Energy	**$19,260**	**$15,680**	**$3,580**
Group Relamp	$5,417	$0	$5,417
Lamp Maintenance	$1,500	$0	$1,500
Controls - Energy	$1,926	$0	$1,926
Controls - Labor	$0	$0	$0
10-Year Life Cycle Cost	**$28,103**	**$15,680**	**$12,423**

Assumptions

Customer Provided Energy Data:

*Energy Cost per kWh	$0.200
Annual Operating Hours	500
Technology Specific Data:	
Green Generation Lighting® Fixture Qty.	14
Average kW demand per fixture	1.12
Useful lamp life (Hours)	**12,000**
Typical Floodlighting Fixture Qty.	18
Average kW demand per fixture	1.07
Rated Life (Hours)	10,000
Useful lamp life (Hours)	**1,200**

Controls Information:

Controls Energy Savings	10%
Labor Rate per Hour	$0.00
# On/Off Cycles per Year	0
Labor Hours per Cycle	0
Lamp Maintenance Data:	
Lamp replacement cost	$125
including parts, equipment & labor	

Annual Energy Savings =	**$551**
Average Annual Savings =	$1,242.30

NOTE:
Life cycle costs are based upon the assumptions given above. Any variation in this data will change the life cycle cost proportionately.

Carbon dioxide (CO_2) is emitted by the power plant when generating the total kWh used by the lighting system. Generating one kWh of electricity in the United States emits an average of 1.583 lbs of CO_2. One metric ton equals 2,204.6 lbs.

Source for CO_2 calculations: http://www.epa.gov/cleanenergy/energy-resources/refs.html (4-15-09)

Musco Lighting
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100 1st Ave West · PO Box 808 · Oskaloosa, IA 52577 · 641/673-0411 · 800/825-6020 · Fax: 641/673-4740 · Web: www.musco.com · Email: lighting@musco.com

MUSCO Lighting

June 4, 2009

To whom it may concern:

Musco Sports Lighting's products sold in the United States are manufactured in the United States and meet the requirements of the "Buy American" provisions of the ARRA.

Sincerely,

Doug Yates
Vice President, Operations

Tab G

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Control-Link Central™ has trained staff available 24/7

Contact Information:

Internet - www.control-link.com

Fax - 800-853-8847

Phone - 877-347-3319

Email - schedule@musco.com

Control System Summary

Project Specific Notes:

Project Information

Project #:	141839
Project Name:	Clayton Sterling Complex-Key West Retrof
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	141839R1
Distribution Panel Location or ID:	Clayton Sterling
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 72

	QTY	SIZE
Total Contactors	9	30 AMP
Total Contactors	2	60 AMP
Total Off/On/Auto Switches:	7	

Preliminary Plans
Confirm all Details - voltage,
# of distribution panels, etc.

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - —If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - —Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - —Dedicated control power circuit
  - —Power circuit to and from lighting contactors
  - —Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - —Harnesses for cabinets at remote locations
  - —Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - —Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

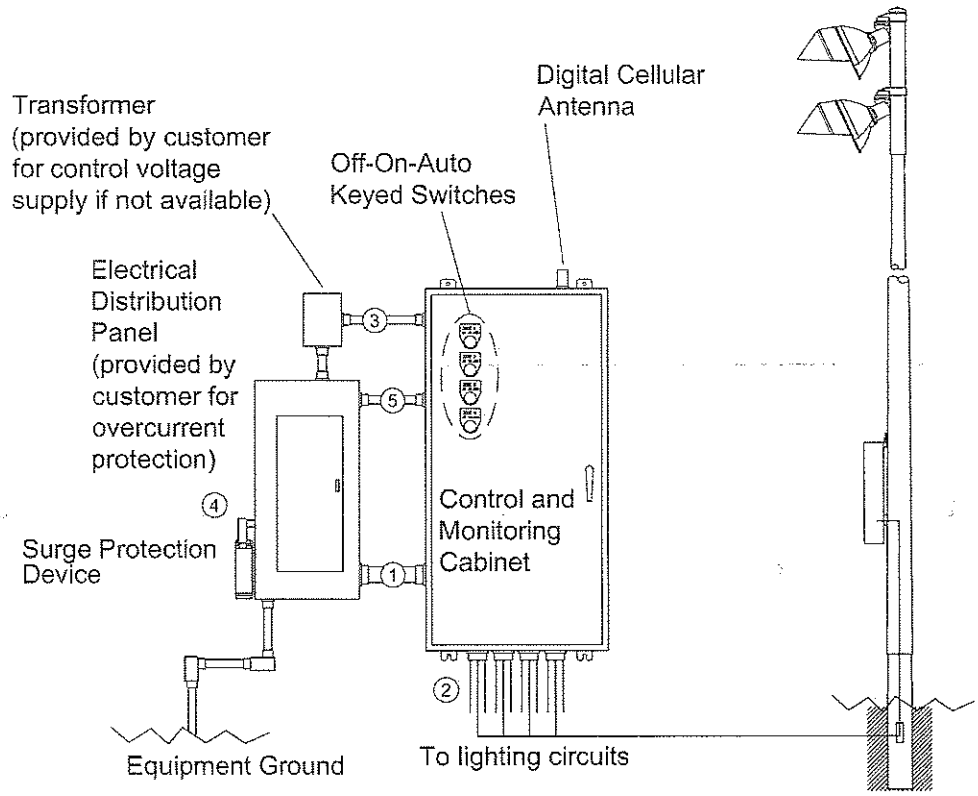
NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-1

Control System Summary

Control-Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60-25-00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Control System Summary

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Baseball-Softball	1	Field A
Baseball-Softball	2	Field B
Baseball-Softball	3	Field C
Baseball-Softball	4	Field D
Other	5	Batting Cage 1-2
Other	6	Batting Cage 3
Other	7	Parking Lot

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 5230.0
	SEALED: 631.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1,B1,C1	Field A	15	37	60	C1	1
A2,B2,C2	Field A	15	37	60	C2	1
A3,B3	Field B	6	14.8	30	C3	2
A4,B4	Field B	6	14.8	30	C4	2
A5,B5	Field C	7	18.5	30	C5	3
A6,B6	Field C	7	18.5	30	C6	3
A7,B7	Field D	9	22.2	30	C7	4
A8,B8	Field D	10	25.9	30	C8	4
NA	Batting Cage 1-2	4	8.7	30	C9	5
NA	Batting Cage 3	2	7.4	30	C10	6
P1	Parking Lot	0	0	30	C11	7

Form: T-5030-1

Control System Summary

Clayton Sterling Complex-Key West Retrof / 141839 - 141839R1

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1,B1,C1	37.0		
1	1	C2	Pole A2,B2,C2	37.0		
1	1	C3	Pole A3,B3	14.8		
1	1	C4	Pole A4,B4	14.8		
1	1	C5	Pole A5,B5	18.5		
1	1	C6	Pole A6,B6	18.5		
1	1	C7	Pole A7,B7	22.2		
1	1	C8	Pole A8,B8	25.9		
1	1	C9	Pole NA	8.7		
1	1	C10	Pole NA	7.4		
1	1	C11	Pole P1	0.0		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Field A	A1	C1
			B1	C1
			C1	C1
			A2	C2
			B2	C2
			C2	C2
Zone 2	2	Field B	A3	C3
			B3	C3
			A4	C4
			B4	C4
Zone 3	3	Field C	A5	C5
			B5	C5
			A6	C6
			B6	C6
Zone 4	4	Field D	A7	C7
			B7	C7
			A8	C8
			B8	C8
Zone 5	5	Batting Cage 1-2	NA	C9
Zone 6	6	Batting Cage 3	NA	C10
Zone 7	7	Parking Lot	P1	C11

Control System Summary

Project Specific Notes:

Project Information

Project #:	141846
Project Name:	Dewitt Roberts Softball-Key West Retrofi
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	141846R1
Distribution Panel Location or ID:	Dewitt Roberts Softball
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	3	30 AMP
Total Off/On/Auto Switches:	1	

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - —If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - —Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - —Dedicated control power circuit
  - —Power circuit to and from lighting contactors
  - —Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - —Harnesses for cabinets at remote locations
  - —Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - —Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

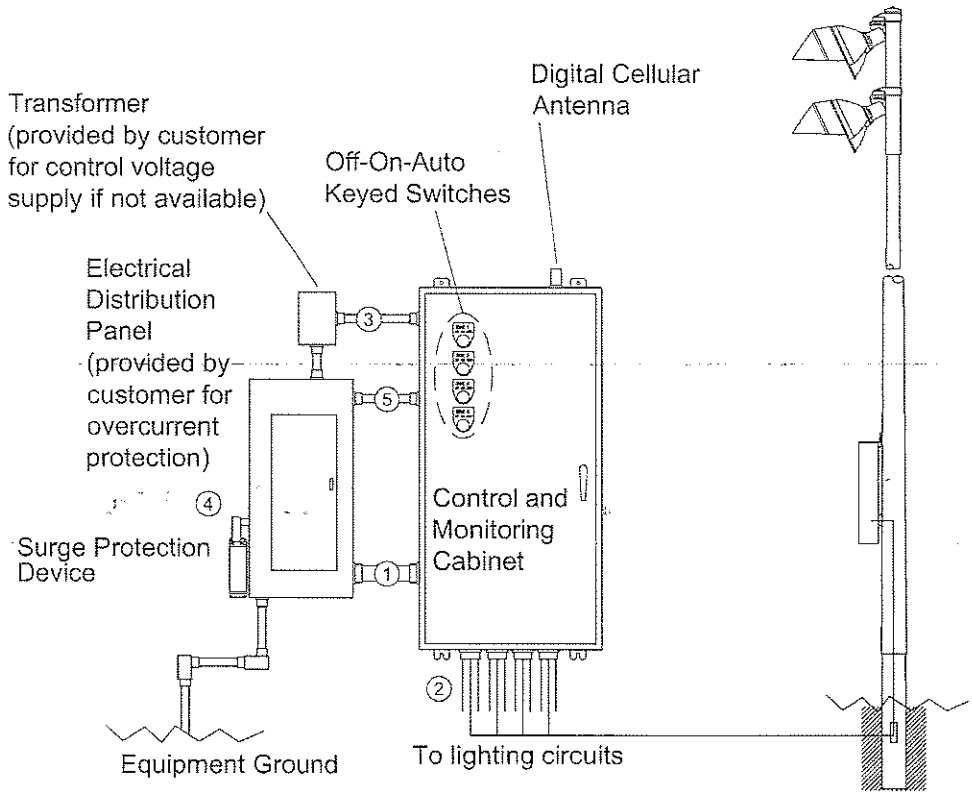
NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-f

Control System Summary

Control•Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60–25–00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Control System Summary

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Baseball-Softball	1	Softball

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1555.0
	SEALED: 241.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1,B1	Softball	10	25.9	30	C1	1
A2,B2	Softball	10	25.9	30	C2	1
C1,C2	Softball	8	22.2	30	C3	1

Control System Summary

Form: T-5030-1

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1,B1	25.9		
1	1	C2	Pole A2,B2	25.9		
1	1	C3	Pole C1,C2	22.2		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Softball	A1	C1
			B1	C1
			A2	C2
			B2	C2
			C1	C3
			C2	C3

Control System Summary

Project Specific Notes:

Project Information

Project #:	141847
Project Name:	George Mira Football-Key West Retrofit
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	141847R1
Distribution Panel Location or ID:	George Mira Football
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	3	30 AMP
Total Off/On/Auto Switches:	1	

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - — If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - — Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - — Dedicated control power circuit
  - — Power circuit to and from lighting contactors
  - — Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - — Harnesses for cabinets at remote locations
  - — Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - — Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

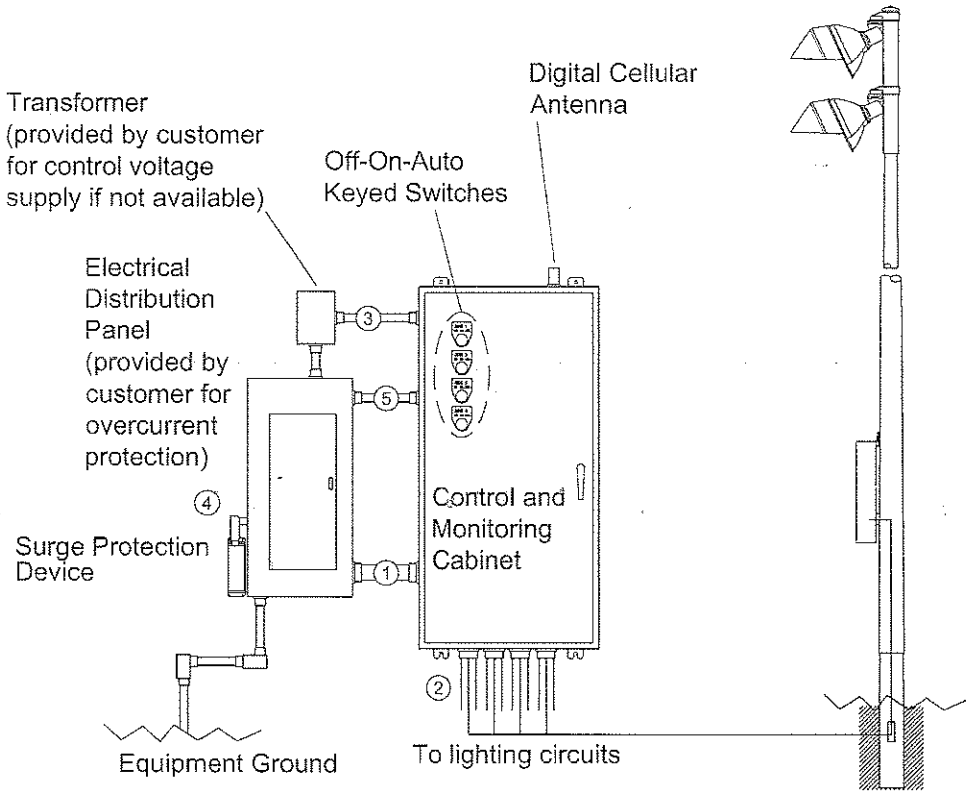
NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-1

Control System Summary

Control-Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60–25–00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Form: T-5030-1

Control System Summary

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Football	1	Football

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1310.0
	SEALED: 215.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
F1	Football	5	14.8	30	C1	1
F2,F3	Football	9	22.2	30	C2	1
F4,F5	Football	9	22.2	30	C3	1

Control System Summary

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole F1	14.8		
1	1	C2	Pole F2,F3	22.2		
1	1	C3	Pole F4,F5	22.2		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Football	F1	C1
			F2	C2
			F3	C2
			F4	C3
			F5	C3

Control System Summary

Project Specific Notes:

Project Information

Project #:	141845
Project Name:	Rosa Hernandez Softball-Key West Retrofi
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	141845R1
Distribution Panel Location or ID:	Rosa Hernandez
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	3	30 AMP
Total Off/On/Auto Switches:	1	

Preliminary Plans
Confirm all Details - voltage,
# of distribution panels, etc.

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - —If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - —Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - —Dedicated control power circuit
  - —Power circuit to and from lighting contactors
  - —Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - —Harnesses for cabinets at remote locations
  - —Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - —Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

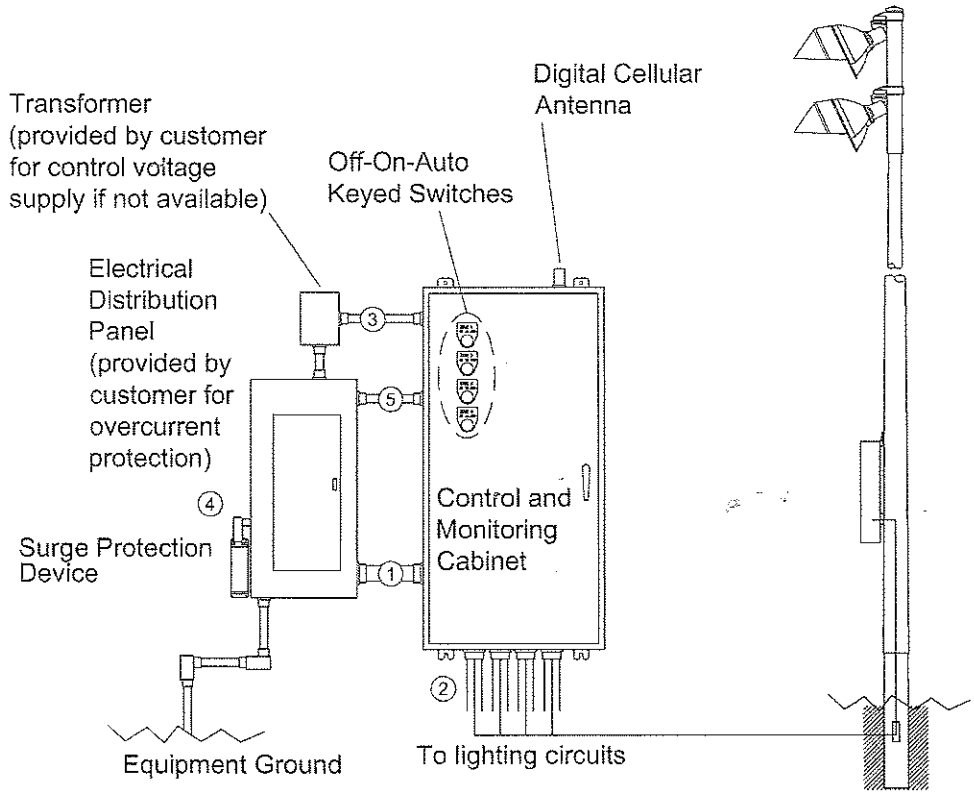
1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-1

Control-Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60–25–00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Form: T-5030-1

Control System Summary

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Baseball-Softball	1	Softball

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1555.0
	SEALED: 241.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1,B1	Softball	6	14.8	30	C1	1
A2,B2	Softball	6	14.8	30	C2	1
C1,C2	Softball	4	11.1	30	C3	1

Control System Summary

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1,B1	14.8		
1	1	C2	Pole A2,B2	14.8		
1	1	C3	Pole C1,C2	11.1		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Softball	A1	C1
			B1	C1
			A2	C2
			B2	C2
			C1	C3
			C2	C3

Control System Summary

Project Specific Notes:

Project Information

Project #:	150167
Project Name:	Pepe Hernandez Park EECBG Key West Retro
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	150167R1
Distribution Panel Location or ID:	Pepe Hernandez
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors:	6	30 AMP
Total Off/On/Auto Switches:	1	

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - — If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - — Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - — Dedicated control power circuit
  - — Power circuit to and from lighting contactors
  - — Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - — Harnesses for cabinets at remote locations
  - — Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - — Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

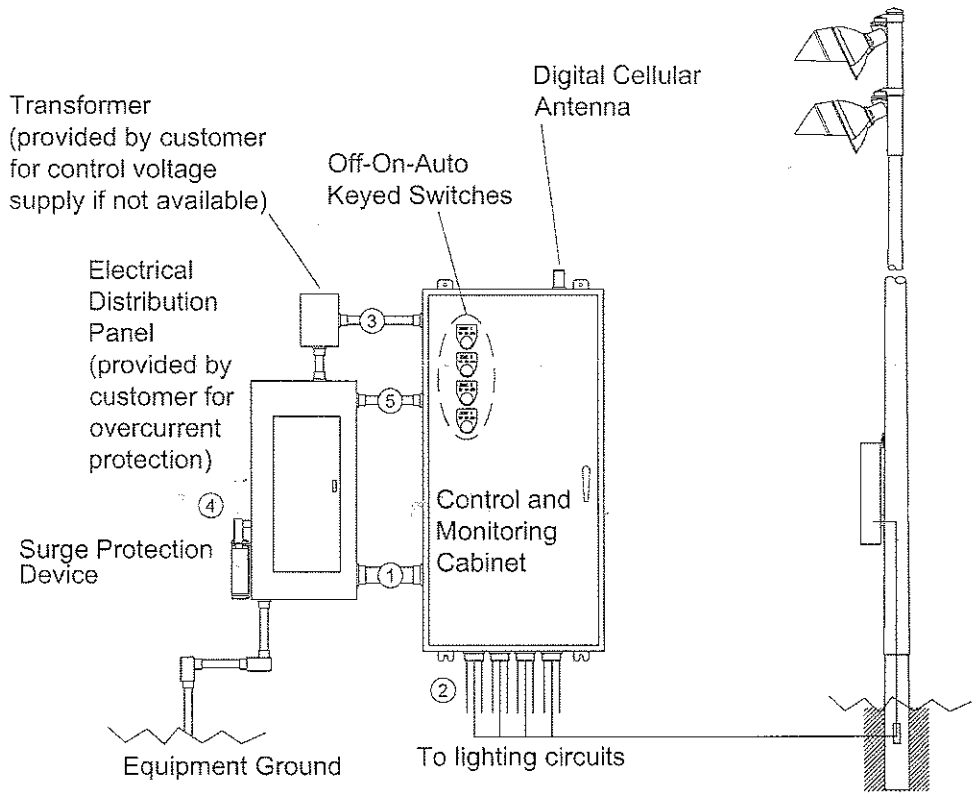
1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-1

Control-Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60-25-00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Form: T-5030-1

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Baseball-Softball	1	Baseball

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1555.0
	SEALED: 241.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1	Baseball	3	7.4	30	C1	1
A2	Baseball	3	7.4	30	C2	1
B1	Baseball	4	11.1	30	C3	1
B2	Baseball	3	7.4	30	C4	1
C1	Baseball	3	7.4	30	C5	1
C2	Baseball	3	7.4	30	C6	1

Control System Summary

Pepe Hernandez Park EECBG Key West Retro / 150167 - 150167R1

Form: T-5030-1

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1	7.4		
1	1	C2	Pole A2	7.4		
1	1	C3	Pole B1	11.1		
1	1	C4	Pole B2	7.4		
1	1	C5	Pole C1	7.4		
1	1	C6	Pole C2	7.4		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Baseball	A1	C1
			A2	C2
			B1	C3
			B2	C4
			C1	C5
			C2	C6

Control System Summary

Project Specific Notes:

Project Information

Project #:	146480
Project Name:	Nelson English Park EECBG Key West Retro
Date:	01/14/11
Project Engineer:	Joel Stout
Sales Representative:	Lewis Gilbert Jr.
Control System Type:	Control and Monitoring
Communication Type:	Digital Cellular
Scan:	146480R1
Distribution Panel Location or ID:	Nelson English Park
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/3
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	6	30 AMP
Total Off/On/Auto Switches:	2	

Materials Checklist

Contractor/Customer Supplied:

- ❑ A single control circuit must be supplied per distribution panel location.
  - —If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for lighting circuits
  - —Thermal/Magnetic circuit breaker sized per full load amps on Circuit Summary by Zone chart
- ❑ Wiring:
  - —Dedicated control power circuit
  - —Power circuit to and from lighting contactors
  - —Monitoring circuit from surge protection device to Control and Monitoring cabinet 1
  - —Harnesses for cabinets at remote locations
  - —Means of grounding, including lightning ground protection
- ❑ Electrical conduit wireway system
  - —Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Control circuit lock-on device to prevent unauthorized power interruption to control power
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ *operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

IMPORTANT NOTES

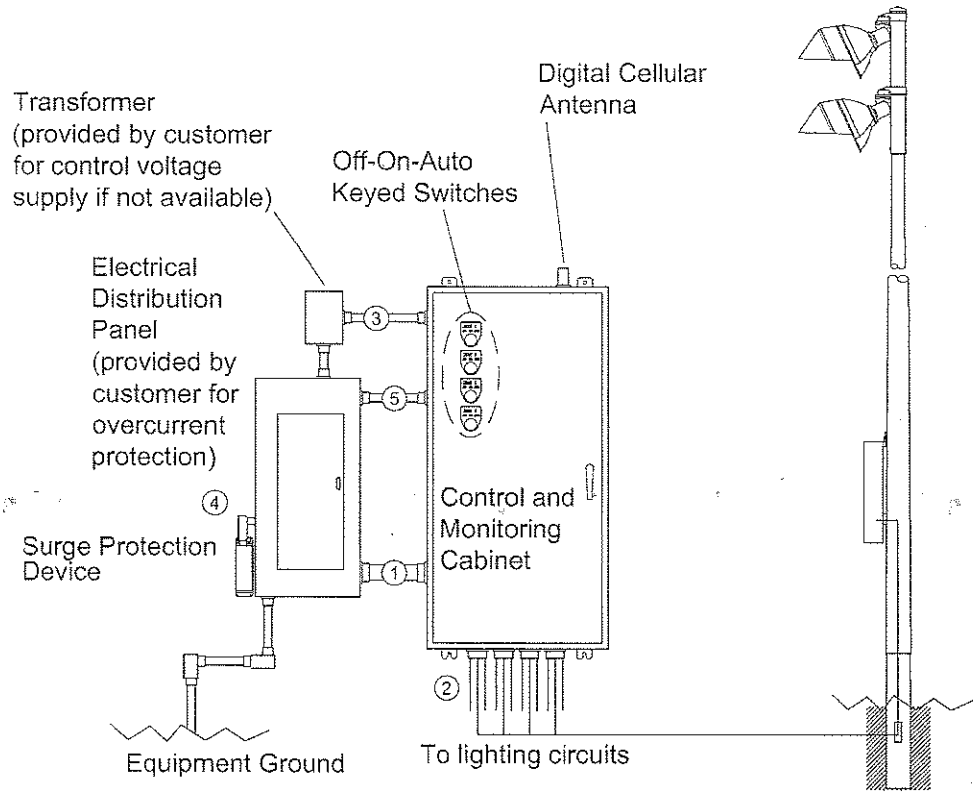
1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's ballast enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaries come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor of 0.9.

NOTE: *Refer to Installation Instructions for more details on equipment information and the installation requirements*

Form: T-5030-1

Control-Link.
Control and Monitoring System - Digital Cellular

(Quantity of equipment may differ from what is shown below)



WIRE	DESCRIPTION	# OF WIRES	TYP. WIRE SIZE (AWG)	MAX. WIRE LENGTH (FT)	WIRE FROM MUSCO	NOTES
1	LINE POWER & GROUND TO CONTACTORS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
2	LOAD POWER TO LIGHTING CIRCUITS (AS REQUIRED)	NOTE A	NOTE B	N/A	NO	A–D
3	CONTROL POWER (DEDICATED, 20A)	3	12	N/A	NO	C, D
4	SURGE PROTECTION DEVICE TO DISTRIBUTION PANEL	--	--	N/A	YES	D
5	SURGE PROTECTION DEVICE MONITORING	2	14	N/A	NO	D

R60-25-00

Notes:
A. Voltage and phasing per the notes on cover page
B. Calculate per load and voltage drop
C. All conduit diameters per code.
D. Refer to Control and Monitoring System Installation Instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control (wire # 3) and monitoring (wire #5) wiring must each be in separate conduits from any AC power wiring.

Form: T-5030-1

SWITCHING SCHEDULE

Field Type	Zones	Zone Description
Other	1	Playground Area
Basketball	2	Basketball

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1555.0
	SEALED: 241.0

BALLAST SPECIFICATIONS .90 Minimum Power Factor	VOLTAGE: 480v			THREE PHASE			
Single Phase Voltage (Also applicable to each single phase of a 3 phase system)	208	240	277	347	380	415	480
1500 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	8.6	7.5	6.5	5.1	4.7	4.2	3.7
1000 Watt Metal Halide Lamp Operating line amperage per fixture, max draw	6.5	5.8	4.9	4.0	3.6	3.2	2.9

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
P1	Playground Area	2	5.8	30	C1	1
P2	Playground Area	3	5.8	30	C2	1
P3	Playground Area	2	5.8	30	C3	1
P4	Playground Area	2	5.8	30	C4	1
P1	Basketball	2	5.8	30	C5	2
P4	Basketball	3	5.8	30	C6	2

Control System Summary

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole P1	5.8		
1	1	C2	Pole P2	5.8		
1	1	C3	Pole P3	5.8		
1	1	C4	Pole P4	5.8		
1	1	C5	Pole P1	5.8		
1	1	C6	Pole P4	5.8		

ZONE SCHEDULE

			CIRCUIT DESCRIPTION	
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Playground Area	P1 P2 P3 P4	C1 C2 C3 C4
Zone 2	2	Basketball	P1 P4	C5 C6

Tab H

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Clayton Sterling Complex

Field	Constant Average Illumination		Uniformity		Lamp Tilt Factor
	Infield	Outfield	Infield	Outfield	
Field A	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0
Field B	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0
Field C	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0
Field D	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 125kWh.

This guarantee is dependent upon the following:

- All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
- Pole placement must be within 3 feet of Musco recommendation.
- Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Dewitt Roberts Softball

Field	Constant Average Illumination		Uniformity		Lamp Tilt Factor
	Infield	Outfield	Infield	Outfield	
Softball	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 44kWh.

This guarantee is dependent upon the following:

* All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
* Pole placement must be within 3 feet of Musco recommendation.
* Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

George Mira Football

Field	Constant Average Illumination	Uniformity	Lamp Tilt Factor
Football	30 FC	2.5:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 36kWh.

This guarantee is dependent upon the following:

* All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
* Pole placement must be within 3 feet of Musco recommendation.
* Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Rosa Hernandez Softball

Field	Constant Average Illumination		Uniformity		Lamp Tilt Factor
	Infield	Outfield	Infield	Outfield	
Girls Softball	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 26kWh.

This guarantee is dependent upon the following:

* All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
* Pole placement must be within 3 feet of Musco recommendation.
* Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Pepe Hernandez Park

Field	Constant Average Illumination		Uniformity		Lamp Tilt Factor
	Infield	Outfield	Infield	Outfield	
Multipurpose	50 FC	30 FC	2.0:1.0	2.5:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 30kWh.

This guarantee is dependent upon the following:

* All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
* Pole placement must be within 3 feet of Musco recommendation.
* Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Performance Guarantee

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 10 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Nelson English Park

Field	Constant Average Illumination	Uniformity	Lamp Tilt Factor
Basketball	30 FC	3.0:1.0	1.0
Playground Area	15 FC	10.0:1.0	1.0

Energy Consumption: The average kWh consumption for the field lighting system shall be less than or equal 16kWh.

This guarantee is dependent upon the following:

* All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
* Pole placement must be within 3 feet of Musco recommendation.
* Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

In the unlikely event that these performance specifications are not met, Musco shall provide necessary corrective action at no expense to the owner.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira

Luann Ferreira
Vice-President Sales

Tab I

Musco Constant 10™

10-Year Product Assurance & Warranty Program

Musco Sports Lighting, LLC will provide all materials and labor to maintain operation of your lighting system to original design criteria for 10 years, or until maximum hours of coverage have accumulated, whichever comes first. Musco products and services are guaranteed to perform on your project as detailed in this document.

Light

Average Constant Light™ levels are guaranteed through Musco's Smart Lamp® and service technology, within the Illumination Engineering Society of North America RP-6-01 standards of +/- 10% of the design criteria.

Musco will electronically monitor lamp operation and operating hours, and will group re-lamp as needed based on usage hours.

Individual lamp outages that occur during the lamp warranty and maintenance period are repaired when the usage of any field is materially impacted. If actual usage exceeds the maximum hours of coverage, the customer will be required to purchase lamp replacements in order to maintain the warranty to the end of ten years.

Energy Consumption

Average and maximum energy consumptions for your lighting system are guaranteed. Exhibit A provides a 10-year energy cost model based upon the customer provided utility rate and anticipated hours of usage. Changes in rates or usage will proportionately change the costs.

Monitoring, Maintenance, and Control Services

Musco shall monitor the performance of your lighting system, including on/off status, hours of usage, and lamp outages. If fixture outages that affect playability are detected, Musco will contact you and proactively dispatch technicians.

On-off control of your lighting system is provided via an easy-to-use web site scheduling system, phone, fax, or email. Our trained Control-Link Central™ staff is available toll-free 24/7. Regular usage reports are always available on Control-Link Central's web site.

Spill Light Control

Spill light readings at identified locations are guaranteed to be controlled to the values provided in Musco's design documents for your project, shown in Exhibit B. Readings shall be within the Illumination Engineering Society of North America RP-6-01 standards of +/- 10% of the design criteria.

Structural Integrity

Your project has been designed to _____ .
Structural integrity of equipment manufactured by Musco is guaranteed.

Musco has a team of people to ensure fulfillment of our product and services warranty (Exhibit C) and maintains financial reserves dedicated to support our fulfillment of this warranty. Please keep this document as your signed contract guaranteeing comprehensive service for the 10-year period.

Musco Constant 10™

10-Year Product Assurance & Warranty Program

Project Details

Project Name: _____ Project Number: _____

Owner: _____ City: _____ State: _____

Covered Product(s): _____

Date Issued: _____

Expiration: _____ or maximum hours of coverage noted below, whichever occurs first

Total Average kW per hour: _____ Total Maximum kW per hour: _____

Musco products and services are guaranteed to perform on your project as follows:

Field/Zone	Fixture Quantity	Lamp Type/ Lamp Hours	Target Constant Light Level	Uniformity Max/Min	Total Relamps Included	Estimated Annual/10-Year Estimated Usage Hours	Maximum Hours of Coverage

Musco Constant 10™

10-Year Product Assurance & Warranty Program

Terms and Conditions

Service under this Contract is provided by Musco Sports Lighting, LLC ("Musco") or an authorized servicer approved by Musco. Services performed under this Contract shall consist of furnishing labor and parts necessary to restore the operation of the Covered Product(s) to original design criteria provided such service is necessitated by failure of the Covered Product(s) during normal usage. This Contract covers Product(s) consisting of Musco's Green Generation Lighting® with Control-Link® and any additional Musco manufactured product as listed on page 2.

"We", "us," and "our" mean Musco. "You" and "your" mean the purchaser of the Covered Product(s). No one has the authority to change this Contract without the prior written approval of Musco. Musco shall not assume responsibility for their agents or assignees other than as described below. If there is a conflict between the terms of this Contract and information communicated either orally or in writing by one or more of our employees or agents, this Contract shall control.

Additional Provisions

1. **Availability of Service:** Control-Link Central™ operators shall be available 24/7 via web site, phone, fax, or email. Maintenance service specialists shall be available 8AM to 5PM Central Time, and services shall be rendered during these same hours in your local time zone, Monday through Friday (with the exception of national holidays). Hours of operation are subject to change without notice to you. Musco will exercise all reasonable efforts to perform service under this Contract, but will not be responsible for delays or failure in performing such services caused by adverse weather conditions, acts of any government, failure of transportation, accidents, riots, war, labor actions or strikes or other causes beyond its control.

2. **Determination of Repairs:** Musco will utilize the field monitoring system and any information provided by the customer to determine when the usage of the field is materially impacted. From this information, Musco will determine needed repair and/or replacement of Covered Product(s) and parts. Repair will be with Product(s) of like kind and quality.

3. **Your Requirements Under this Contract:** You must meet all electrical and installation requirements as specified by the manufacturer. In addition, you promise and assure: full cooperation with Musco, Musco's technicians and authorized servicers during telephone diagnosis and repair of the Covered Product(s); reasonable accessibility of the Covered Product(s); a non-threatening and safe environment for service.

   You agree to check fuses and to replace fuses as needed. Musco provides spare fuses and a fuse puller in the lowest alpha-numeric numbered enclosure. Musco will replenish spare fuses used.

   You agree to keep your Green Generation Lighting system online. This means keeping the required control voltage to the control system at all times. Any deviation from this practice must be discussed with Musco's Warranty Department.

4. **Service Limitations — This Contract does not cover:** Maintenance, repair, or replacement necessitated by loss or damage resulting from any external causes such as, but not limited to, theft, environmental conditions, negligence, misuse, abuse, improper electrical/power supply, unauthorized repairs by third parties, attachments, damage to cabinetry, equipment modifications, vandalism, animal or insect infestation, physical damage to Covered Product(s) parts or components, failure of existing structures, supporting electrical systems or any non-Musco equipment, or acts of God/ nature (including, but not limited to: earthquake, flood, tornadoes, typhoons, hurricanes, or lightning).

5. **Contract Limitations:**

   a. EXCLUSIONS FROM COVERAGE: IN NO EVENT WILL MUSCO BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH INCLUDE, BUT ARE NOT LIMITED TO, ANY DELAY IN RENDERING SERVICE OR LOSS OF USE DURING THE REPAIR PERIOD OF THE COVERED PRODUCT(S) OR WHILE OTHERWISE AWAITING PARTS.

   b. LIMITATION OF LIABILITY: To the extent permitted by applicable law, the liability of Musco, if any, for any allegedly defective Covered Product(s) or components shall be limited to repair or replacement of the Covered Product(s) or components at Musco's option. THIS CONTRACT IS YOUR SOLE EXPRESS WARRANTY WITH RESPECT TO THE COVERED PRODUCT(S). ALL IMPLIED WARRANTIES WITH RESPECT TO THE COVERED PRODUCT(S) INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY EXCLUDED.

   c. For the purposes of and by your acceptance of this Contract you acknowledge and agree that if a surety bond ("Bond") is provided the warranty and/or maintenance guarantee provided for in this Contract and any corresponding liability on behalf of the issuing surety under the Bond is limited to the first **twelve (12) months** of said warranty and/or maintenance guarantee coverage period. Any warranty and/or guarantee coverage period in excess of said initial 12 month period does not fall within the scope of the Bond and shall be the sole responsibility of Musco.

   d. Musco requires reasonable access for a crane or man lift equipment to service the lighting system. Musco will not be responsible for damage from operating the vehicle on the property when the equipment is operated in the prescribed manner over the designated access route.

6. **Transfer and Assignment:** Except to owners, you shall not have the right to assign or otherwise transfer your rights and obligations under this Contract except with the prior written consent of Musco; however, a successor in interest by merger, operation of law, assignment or purchase or otherwise of your entire business shall acquire all of your interests under this Contract.

7. **Governing Law:** Unless otherwise governed by applicable state law, the Contract shall be interpreted and enforced according to the laws of the State of Iowa.

8. **Subrogation:** In the event Musco repairs or replaces any Covered Product(s), parts or components due to any defect for which the manufacturer or its agents or suppliers may be legally responsible, you agree to assign your rights of recovery to Musco. You will be reimbursed for any reasonable costs and expenses you may incur in connection with the assignment of your rights. You will be made whole before Musco retains any amounts it may recover.

Signature: _____

Vice President of Sales

Tab J

Project References*

Florida Projects

Baseball

Alfred A. McKethan Stadium
Gainesville, FL

Davis Park
Ponte Vedra Beach, FL

Deerfield Beach High School
Deerfield Beach, FL

Disney's Wide World of Sports™ Complex
Spring training home of the MLB Atlanta Braves
Osceola County, FL

Forest High School
Ocala, FL

Hammond Stadium
Spring training home of the MLB Minnesota Twins
Fort Myers, FL

L.A. Dodgers Spring Training Facility
Dodgertown, FL

Marchant Stadium
Spring training home of the MLB Detroit Tigers
Lakeland, FL

McKechnie Field
Spring training home of the MLB Pittsburgh Pirates
Bradenton, FL

Osceola County Stadium Complex
Spring training home of the MLB Houston Astros
Kissimmee, FL

Pat Thomas Baseball Field
Leesburg, FL

Roger Dean Stadium
Spring training home of the MLB St. Louis Cardinals & Florida Marlins
Jupiter, FL

University of Central Florida
Orlando, FL

University of South Florida
Tampa, FL

Basketball

Amway Arena
Home of the NBA Orlando Magic
Orlando, FL

University of Florida
O'Connell Center
Gainesville, FL

Football

Florida State University
Doak Campbell Stadium and Practice football field
Tallahassee, FL

Raymond James Stadium
Home of the NFL Tampa Bay Buccaneers
Tampa Bay, FL

University of Florida
Ben Hill Griffin Stadium
Gainesville, FL

Multi-Field

Brian Piccolo Park
Broward County, FL

Cape Coral Multi-Field Complex
Cape Coral, FL

Carter Road Park
14-Field Sports Complex
Polk County, FL

Jupiter Community Park
Jupiter, FL

North Naples Regional Park
Naples, FL

Pasco Parks
Regional Parks/Sports Complex
Pasco County, FL

Patch Reef Park
Boca Raton, FL

Soccer

Austin/Tindell Park
Soccer Complex
Osceola County, FL

Florida State University
Women's Soccer Complex
Tallahassee, FL

Kelly Road Community Park
Soccer Complex
Lee County, FL

University of Florida
Percy Beard Stadium
Gainesville, FL

Other

Brevard County
Brevard County, FL

Broward County Public Schools
Broward County, FL

City of Pembroke Pines
Pembroke Pines, FL

City of Wellington
Wellington, FL

Daytona International Speedway
2.5-mile Superspeedway
Daytona Beach, FL

Florida State University
Intramural fields
Tallahassee, FL

Gadsden Park
Tampa, FL

Homestead Miami Speedway
Miami, FL

University of Florida
Recreation Complex
Gainesville, FL

University of Central Florida
Student Recreational Facility
Orlando, FL

Softball

City of Maitland Softball Complex
Maitland, FL

Florida State University
Women's Softball Complex
Tallahassee, FL

Forest High School
Ocala, FL

Fort Meade Sports Complex
Fort Meade, FL

Seminole County
5-Field Softball Complex
Altamonte Springs, FL

University of Central Florida
Orlando, FL

University of Florida
Softball Complex
Gainesville, FL

Youngtown Sports Complex
Panama City, FL

Little League

Whispering Pines Park
Port St. Lucie, FL

*Partial listing

Tab K

UL Listing

UL Listed Under

Musco Sports-Lighting LLC
100 1st Ave W
PO Box 808
Oskaloosa, IA 52577

Underwriters Laboratories Inc.®
LISTED

UL Category	Covers	UL Number
High-Intensity Discharge Surface-Mounted Luminaires	• SportsCluster Green™ and Light-Structure Green™ luminaires and remote ballast assemblies • Sports Cluster® and SportsCluster-2® luminaires and remote ballast assemblies • Light-Structure 2™ and Light-Structure System™ luminaires and remote ballast assemblies • 1000 W Light-Pak™ and Light-Pak with Multi-Watt™ indoor luminaires • 1000 W ShowLight™ and ShowLight Green™ with hooded light actuator system and remote ballast assemblies • 2000 W Mirtran™ luminaire • Stadium 2K Fixture™ 2000 W luminaire and Hot Restrike Green™ 2000 W hot restrike luminaire	E33316
Management Equipment, Energy	Lighting control systems for • Control-Link® Control and Monitoring System • Control-Link Retrofit Control System	E139944

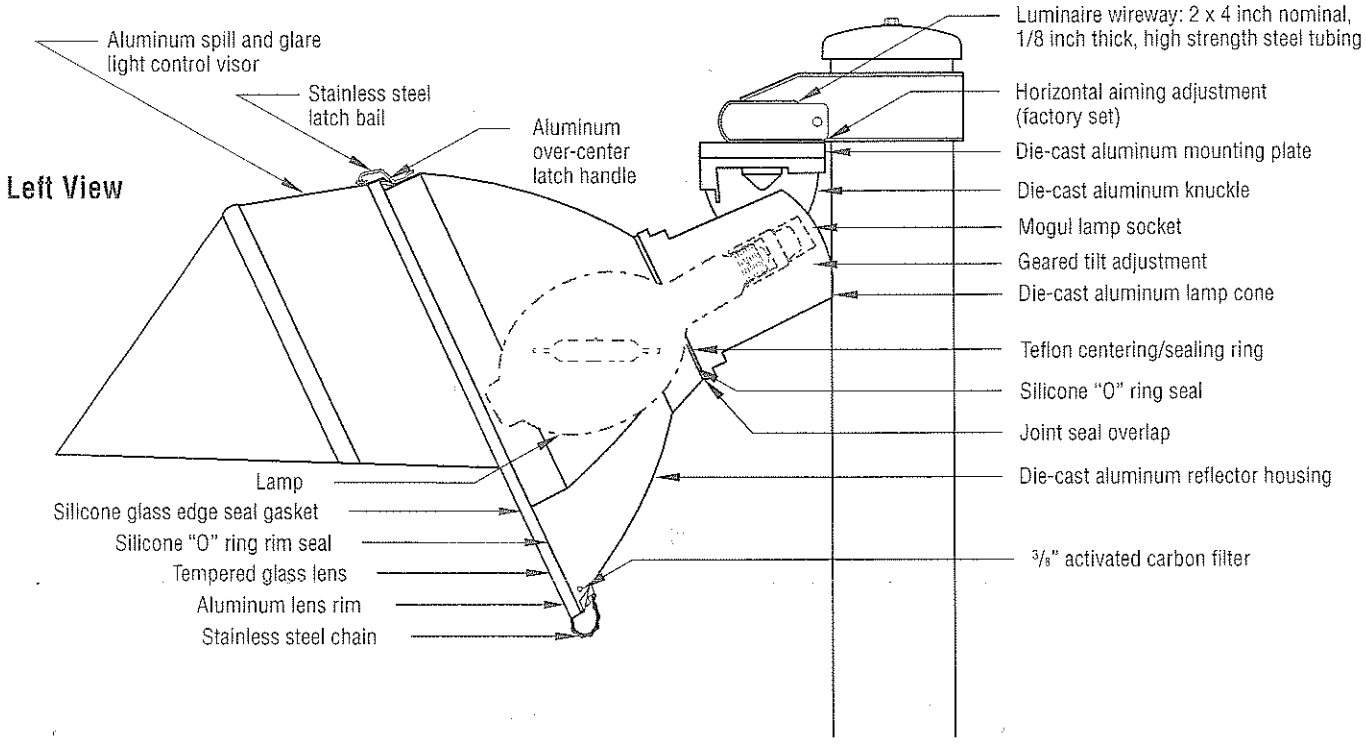
UL Listing

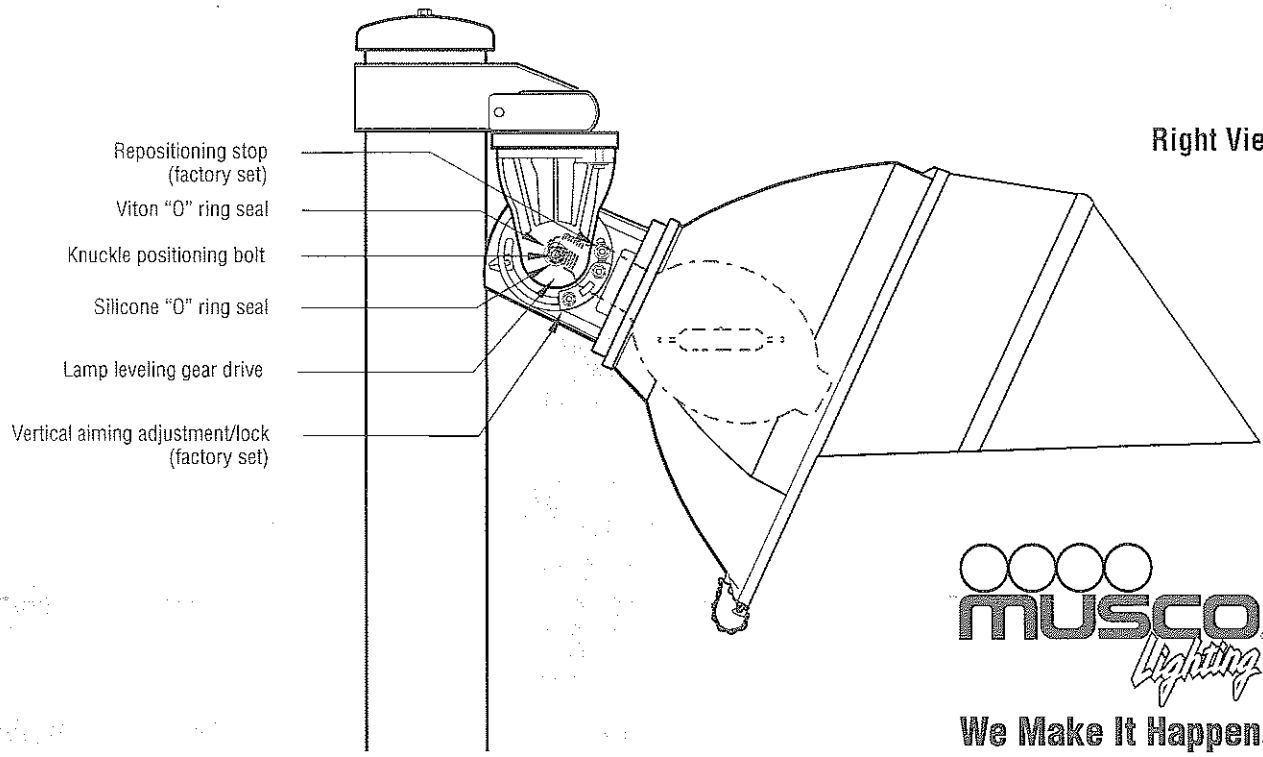
UL Category	Covers	UL Number
Industrial Control Panels	Control panels and enclosures for • Control-Link Control and Monitoring System • Control-Link Retrofit Control System • Lighting Contactor Cabinets • Multi-Watt systems	E204954
Emergency Lighting and Power Equipment	• Control-Link Automatic Transfer Switch (ATS CL)	R311491
Luminaire Fittings	Galvanized steel poles 12 feet or less for • Mirtran poles • Rooftop poles • Special applications	E132445
Luminaire Pole in excess of 12 feet	Galvanized steel poles greater than 12 feet for • Light-Structure Green System • Light-Structure System • Sportspole™ and special applications	E325078
Devices, Scaffolding	Service platforms for • Light-Structure Green System • Light-Structure System • SportsCluster Green System • Sports Cluster System	SA7004

A copy of the UL Certificate of Compliance is available upon your request.

Light·Structure GREEN™

Luminaire Assembly



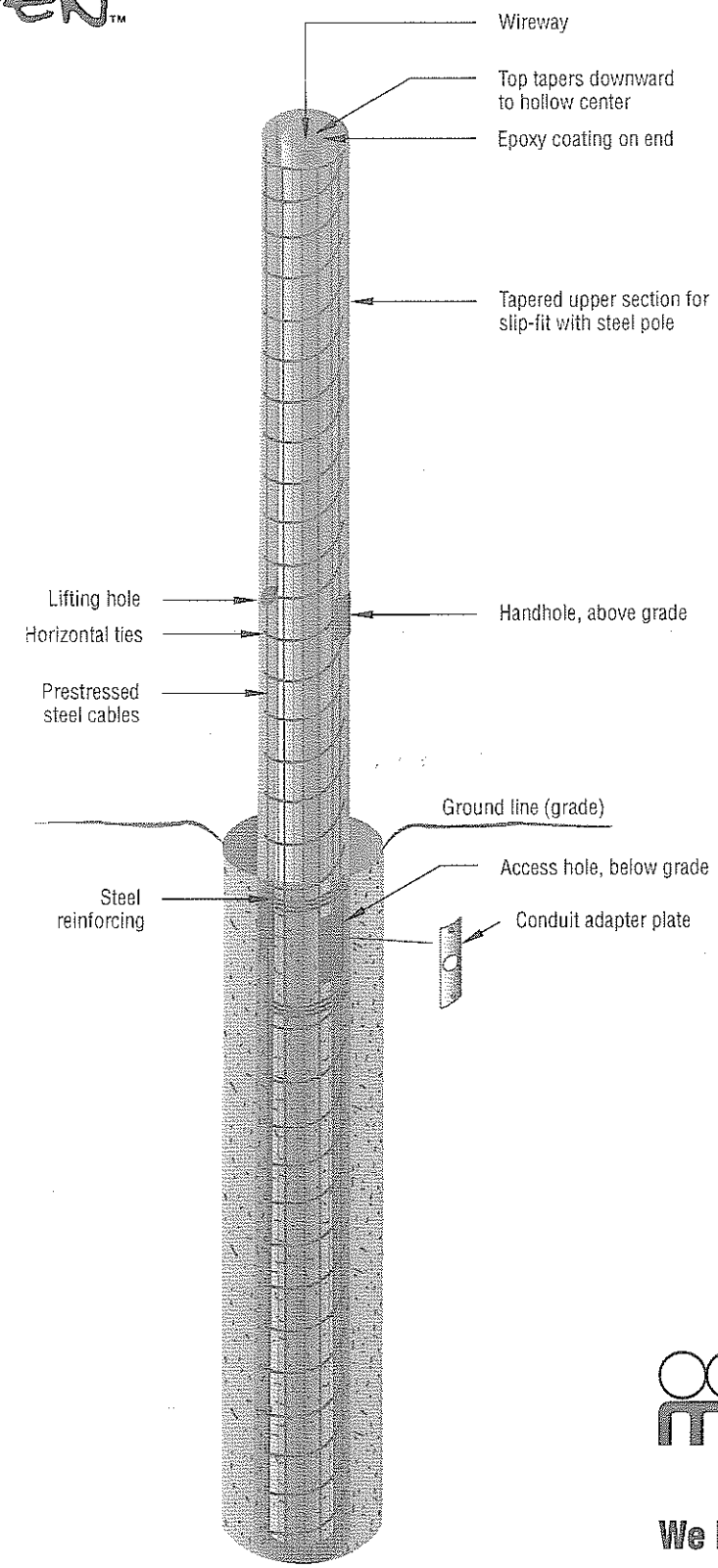


We Make It Happen.

800/825-6030
www.musco.com
lighting@musco.com

Light·Structure GREEN™

Pre-cast Concrete Base



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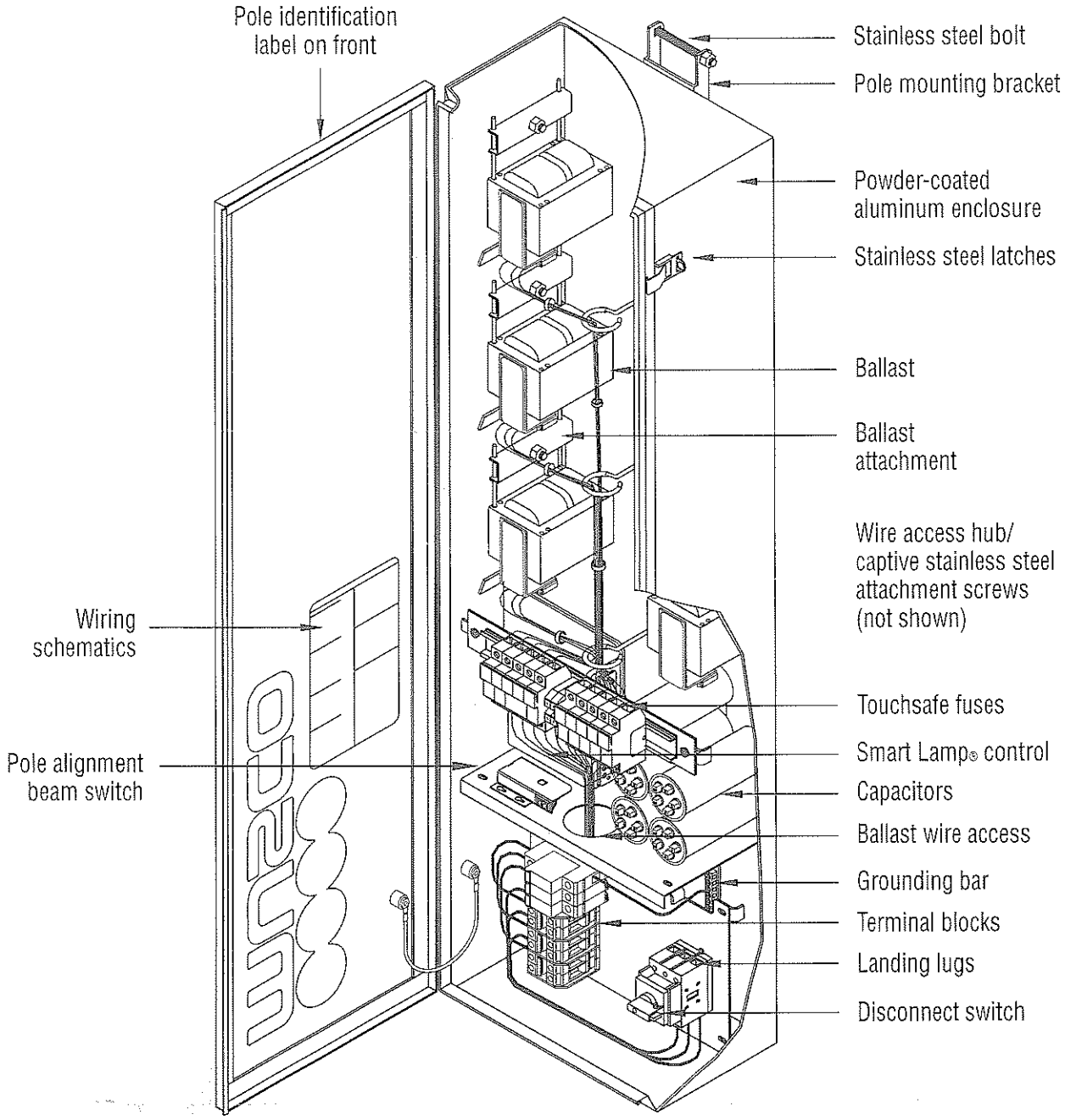
www.musco.com
lighting@musco.com

Light·Structure GREEN™

Electrical Components Enclosure



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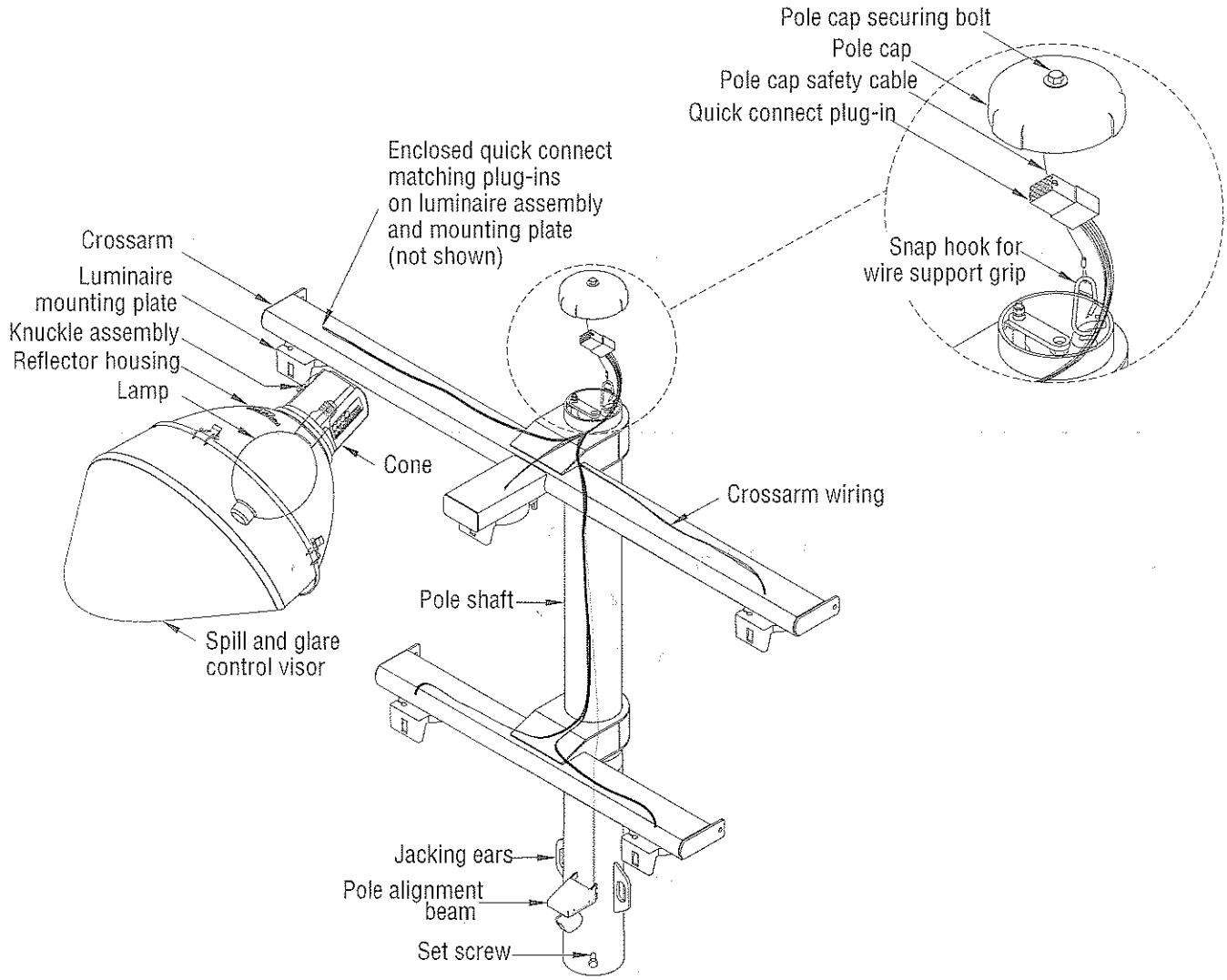
lighting@musco.com

Light·Structure GREEN™

Poletop Luminaire Assembly



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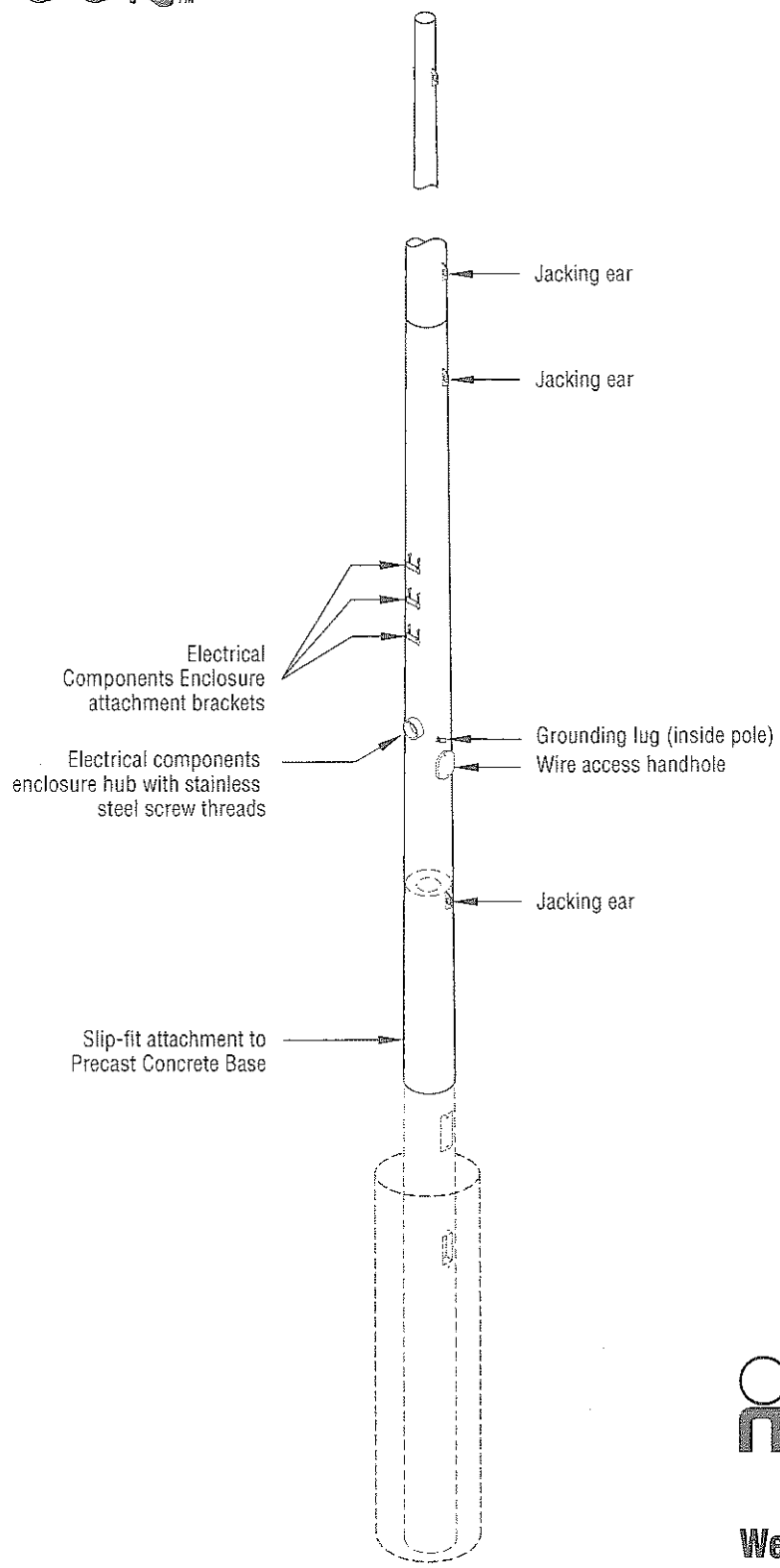
lighting@musco.com

Light·Structure GREEN™

Galvanized Steel Pole



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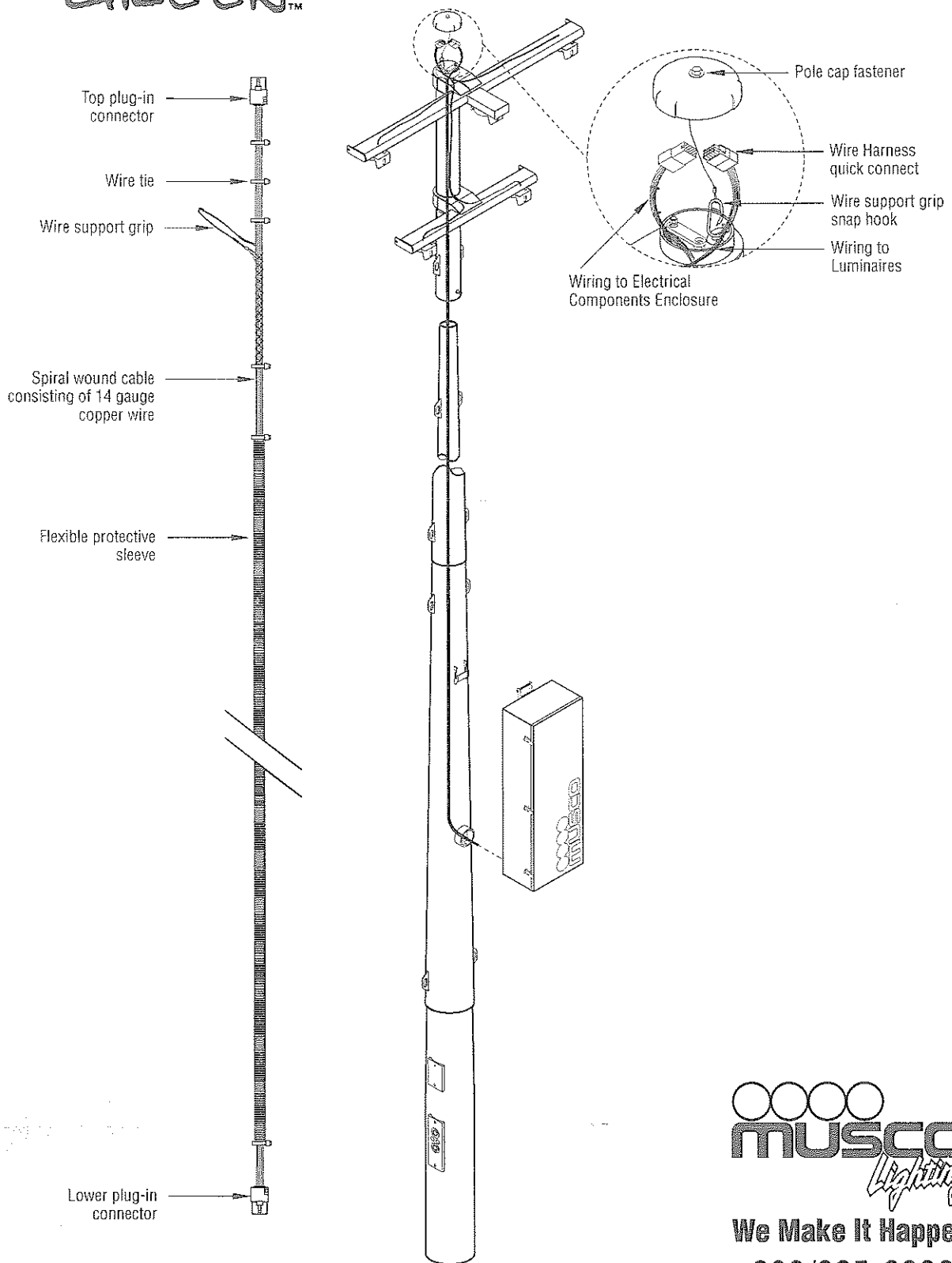
www.musco.com
lighting@musco.com

Light·Structure GREEN™

Wire Harness



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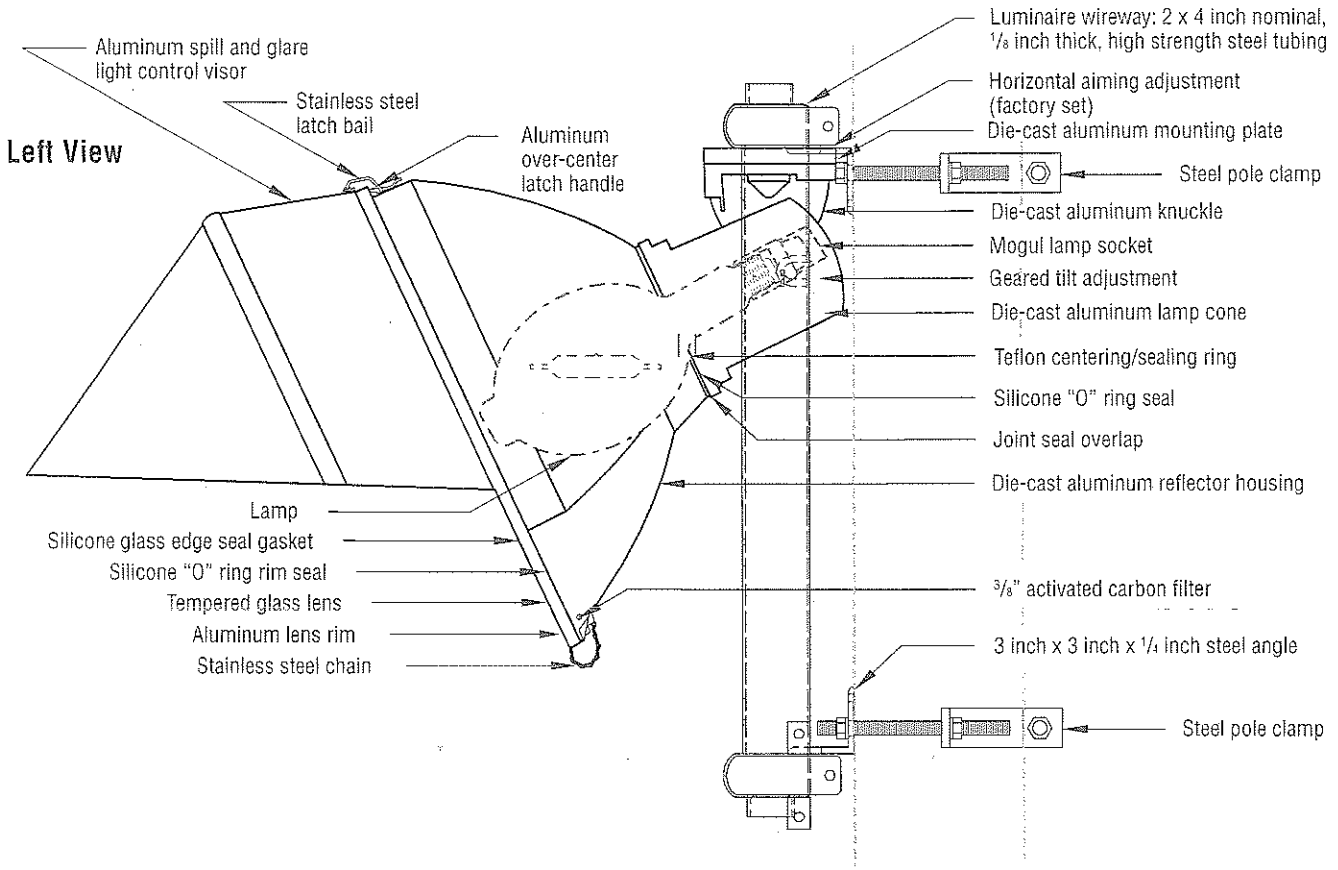
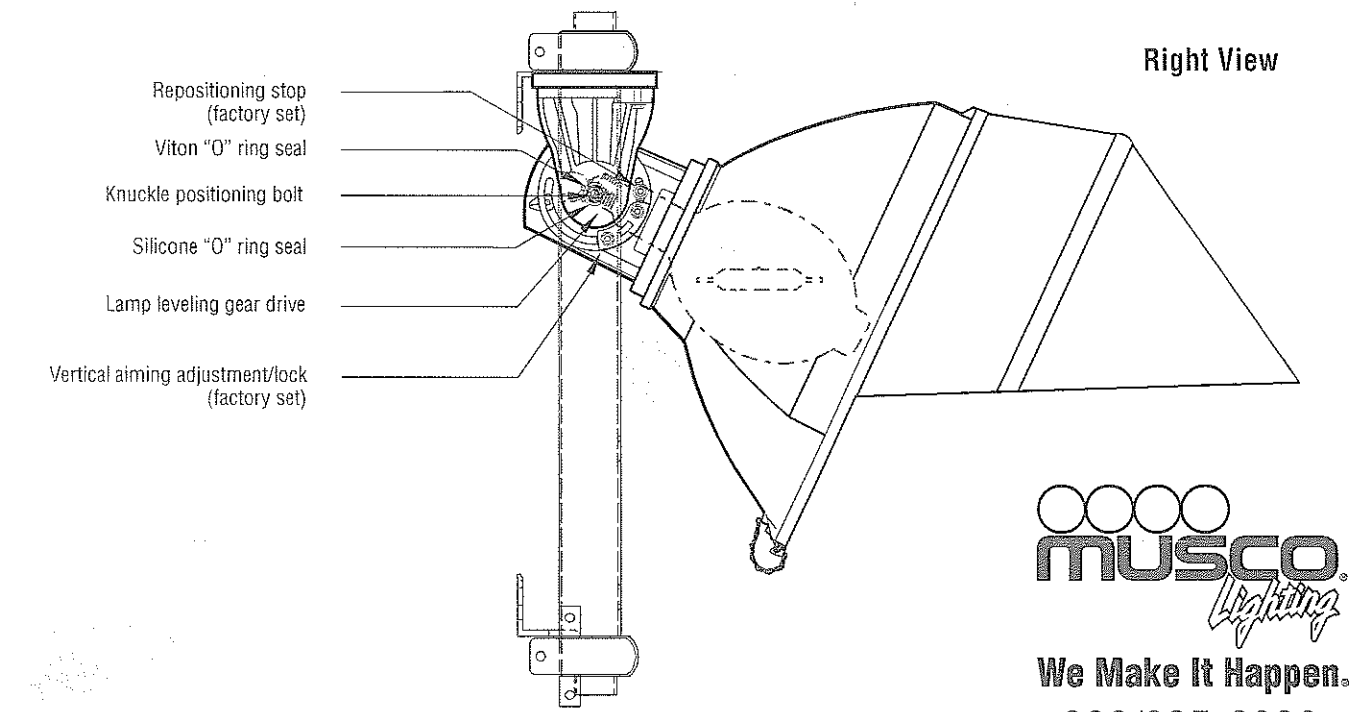
www.musco.com
lighting@musco.com

SportsCluster GREEN™

Luminaire Assembly





MUSCO Lighting

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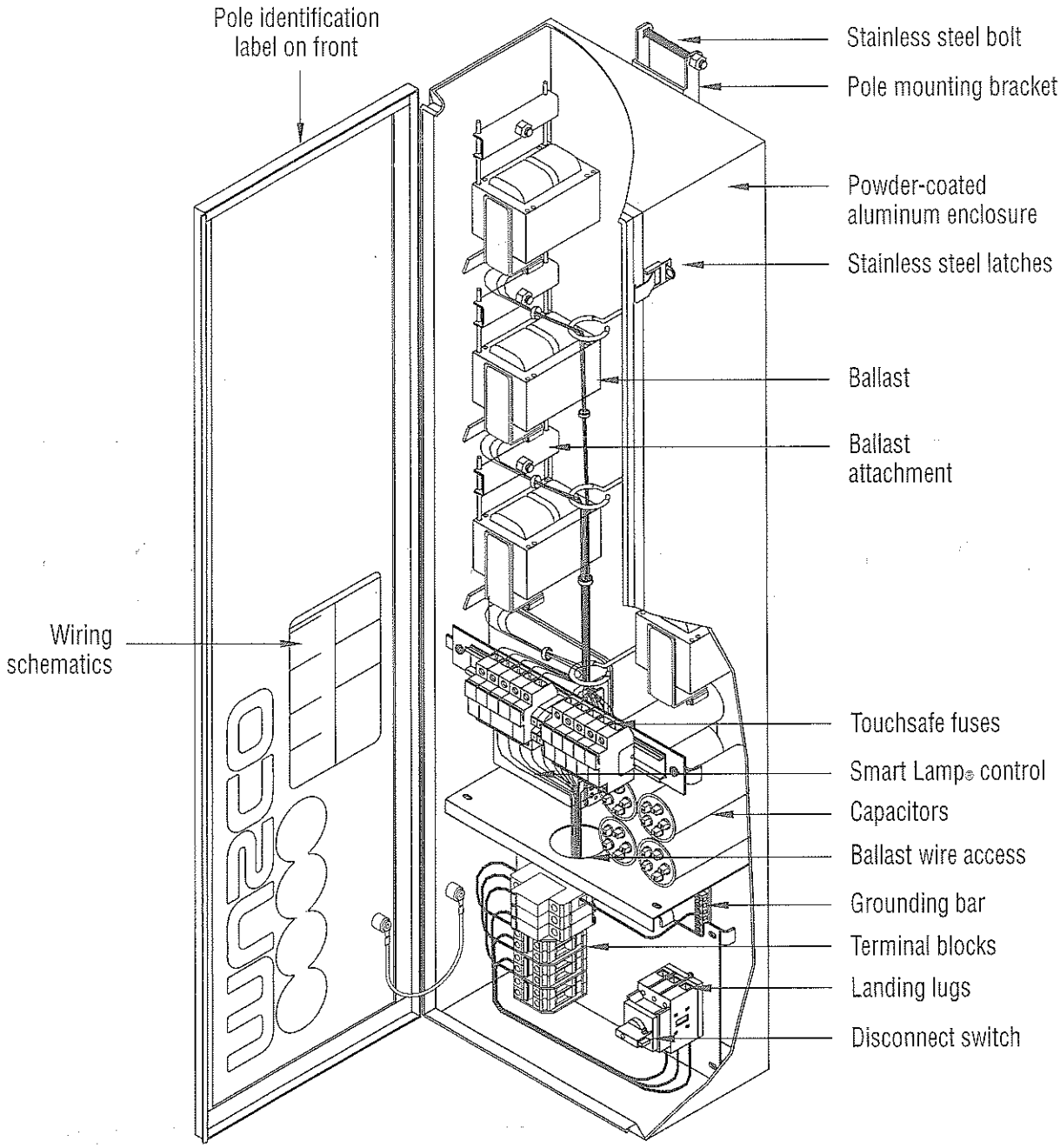
www.musco.com
lighting@musco.com

SportsCluster GREEN™

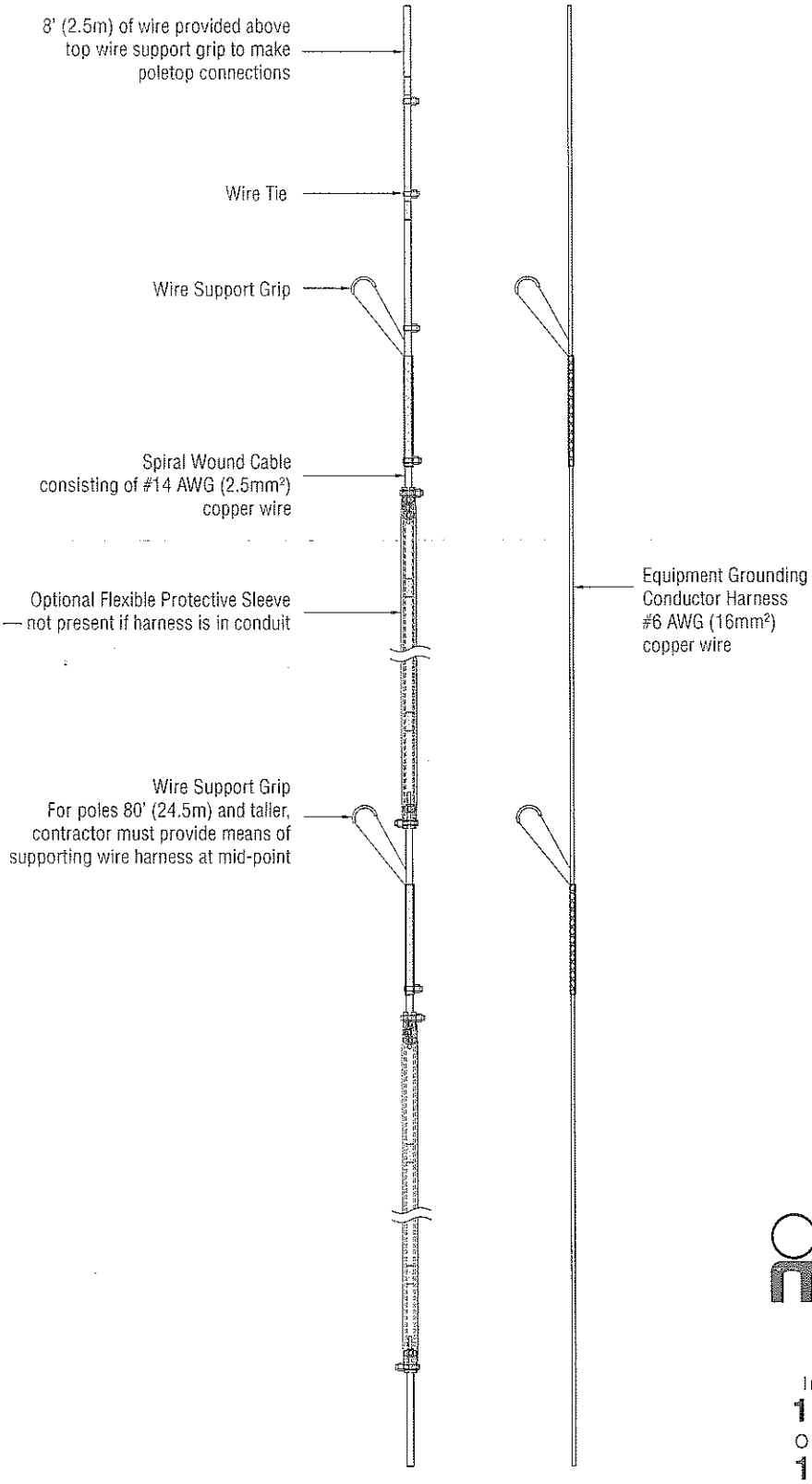
Electrical Components Enclosure



musco lighting

www.musco.com
lighting@musco.com

Wire Harness



Inside United States
1 800 825 6030
Outside United States
1 641 673 0411
www.musco.com
e-mail: lighting@musco.com

Manufacturer's Certification of Corrosion Protection for Light-Structure Green™ and SportsCluster Green™

All exposed components are constructed of corrosion-resistant material and/or coated to protect against corrosion.

All exposed carbon steel is hot-dip galvanized, meeting ASTM A123 and ISO/EN 1461.

All exposed aluminum is powder coated with high-performance polyester or anodized. All exterior reflective inserts are anodized, coated with a clear, high-gloss, durable fluorocarbon, and protected from direct environmental exposure to prevent reflective degradation or corrosion.

All exposed hardware and fasteners are stainless steel of 18-8 grade or better, passivated, and coated with an aluminum based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Alternately, for hardware in non-stressed applications, an electroless nickel coating meeting ASTM B733 may be used. Pole strapping used to mount certain equipment to light poles is annealed stainless steel (grade 304) and passivated.

Certain structural fasteners are carbon steel, galvanized meeting ASTM A153 and ISO/EN 1461 (for hot-dip galvanizing), or ASTM B695 (for mechanical galvanizing).

Exposed custom designed or auxiliary equipment and hardware may not fully comply with the above statements.

Musco Sports Lighting, LLC

Greg Kubbe
Product Development Manager

Enhanced Corrosion Protection for Light-Structure Green™ and SportsCluster Green™

Certain environmental conditions, such as those common in coastal regions, may accelerate the corrosion rate of equipment. Through careful selection of materials and specialized coatings, protection in these corrosive environments can be achieved.

Musco conducted over 150,000 hours of corrosion testing to study the effects of highly corrosive environments on the lighting system. Salt spray testing of aluminum components was conducted per ASTM B117 at an independent laboratory and Musco's in-house test chamber to evaluate various selections of alloys and coatings. All salt spray testing was conducted to minimum 3000 hours duration.

Evaluation of various installation sites was conducted to study actual field conditions.

The results of Musco's research and development provided for selection of materials and coating solutions that significantly outperform the control sample, which is representative of typical materials used in the lighting industry.

The following additional corrosion protection is provided on your equipment to protect against harsh environmental conditions in your area. The corrosion package includes Musco's standard protection as outlined in (SD-1045-2) Manufacturer's Certification of Corrosion Protection for Light-Structure Green and SportsCluster Green, plus the protection outlined below.

Poletop Luminaire Crossarm Assembly
Musco's poletop luminaire crossarm assembly is constructed of carbon steel and hot dip galvanized per ASTM A123. A proprietary galvanization process ensures minimum 5 mil average thickness.

Exposed Die Cast Aluminum
Exposed die cast aluminum components are constructed using low copper aluminum alloy that is Type II anodized per MIL-STD-8625 and sealed with proprietary coating prior to application of protective high performance polyester powder coating.

Exposed Extruded Aluminum
Exposed extruded aluminum components are constructed using low copper aluminum alloy that is Type II anodized per MIL-STD-8625 and coated with high performance polyester powder coating.

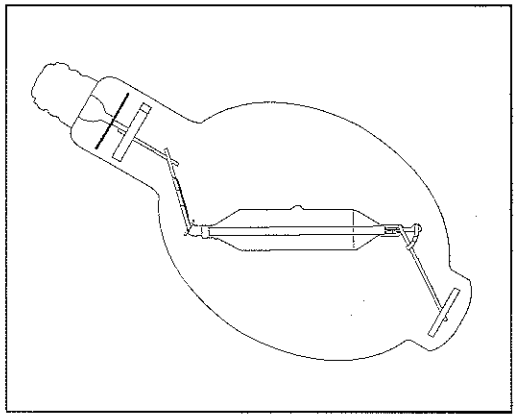
Musco Sports Lighting, LLC

Tim Boyle
Research and Development Manager

Smart Lamp® Operating System

1500 Watt Metal Halide Lamp (Clear)
Technical Data Sheet

Proprietary to Musco Lighting



Ordering Information

Ordering Code	LA-30Z-1
ANSI Designation	M48
Description	MH1500 MZ
Lamp Type	HID: Metal Halide

Physical Characteristics

Bulb Size	BT-56
Bulb Finish	Clear
Base	Mogul Screw Position Oriented
Maximum Overall Length (MOL)	15⅜" (391mm)
Light Center Length (LCL)	9⅛" (232mm)
Arc Tube Lighted Length	3⁵⁄₁₆" (84mm)
Arc Tube Material	Fused Silica
Maximum Permissible Bulb Temperature	400°C (752°F)
Maximum Permissible Base Temperature	210°C (410°F)

Photometric Operating Characteristics[1]

System Rated Constant Lumens Over Life [2]	134,000
Operating Position	Arc Tube Horizontal
Lamp Replacement Interval, Hours [3]	5000
Correlated Color Temperature (Approximate)	4200K
CIE Chromaticity Coordinates (Approximate)	x-.370, y-.390
Color Rendering Index (R_a)	65-70

Electrical Data

Average Lamp Wattage Over Operating Life [2]	1450
Warm-up Time to 80% of Output	3-5 Minutes
Re-strike Time for Hot Lamp	10-15 Minutes
Lamp Operating Current (Max. rms Amps)	6.0
Ballast Type	ANSI M48
Minimum Starting Temperature	-30°C

Footnotes:

(1) Operating Characteristics are per the Musco Smart Lamp(TM) Operating System on a commercial ballast with arc tube horizontal. Lamp lumen measurements in accordance with IESNA LM-51-00. Lamp color data in accordance with IESNA LM-58-94. Lamp operating cycle of five hours per start to reflect expected field use in the sports lighting industry.

(2) Lamp starts out at a reduced wattage and increases over life to offset lumen loss as lamp ages. Average wattage over life is 1450 watts.

(3) Beyond 5,000 hours is the time when constant lumens are no longer maintained by the Smart Lamp™ Operating System. Average lamp life before failure is substantially greater than 5,000 hours as tested and defined per IESNA LM-47-01 with five hours per start.

www.musco.com

Recommended Warnings, Cautions and Operating Instructions

⚠ **WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This lamp complies with FDA radiation performance standard USA:21CFR 1040.30 Canada:SOR/DORS/80-381

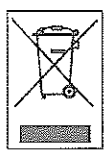
If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb could cause glass to fly if the envelope is struck.

⚠ **WARNING:** The arc tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000°C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC TUBE RUPTURE, THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See www.lamprecycle.org or call 1-800-825-6020

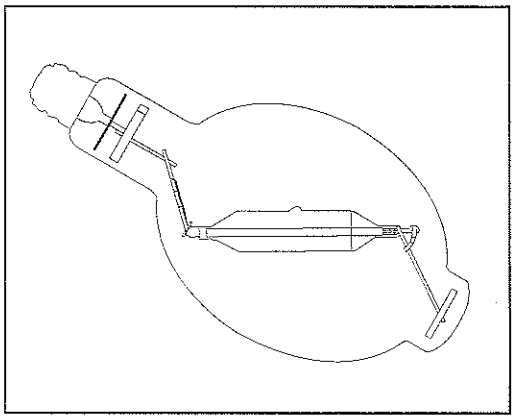


Lamp Operating Instructions:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
4. To meet lamp performance, use only with Musco supplied equipment.
   A. Operate lamp with proper circuits and auxiliary equipment.
   B. Operate lamp only within specified limits of operation.
   C. For total supply load, refer to manufacturers electrical data.
5. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
6. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
7. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
8. Lamp is designed to operate per the Musco Smart Lamp® operating system. Performance when operated by a different lighting system is not guaranteed. Also note the following:
   - Do not use this lamp in a fixture that contains a pulse start metal halide ballast and is specifically designed for use with pulse start metal halide lamps.
   - Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C.
   - If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
   - Protect lamp base, socket, and wiring against moisture, corrosive atmospheres, and excessive heat.

Smart Lamp® Operating System

1000 Watt Metal Halide Lamp (Clear)
Technical Data Sheet



Ordering Information

Ordering Code	LA-10Z
ANSI Designation	M47
Description	MH1000 MZ
Lamp Type	HID: Metal Halide

Physical Characteristics

Bulb Size	BT-56
Bulb Finish	Clear
Base	Mogul Screw Position Oriented
Maximum Overall Length (MOL)	15⅜" (391mm)
Light Center Length (LCL)	9⅛" (232mm)
Arc Tube Lighted Length	3 5/16" (84mm)
Arc Tube Material	Fused Silica
Maximum Permissible Bulb Temperature	400°C (752°F)
Maximum Permissible Base Temperature	210°C (410°F)

Photometric Operating Characteristics[1]

System Rated Constant Lumens Over Life [2]	88,000
Operating Position	Arc Tube Horizontal
Lamp Replacement Interval, Hours [3]	12,000
Correlated Color Temperature (Approximate)	4200K
CIE Chromaticity Coordinates (Approximate)	x-.370, y-.390
Color Rendering Index (R_a)	65-70

Electrical Data

Average Lamp Wattage Over Operating Life [2]	1040
Warm-up Time to 80% of Output	3–5 Minutes
Re-strike Time for Hot Lamp	10–15 Minutes
Lamp Operating Current (Max. rms Amps)	4.0
Ballast Type	ANSI M47
Minimum Starting Temperature	-30°C

Footnotes:

(1) Operating characteristics are per the Musco Smart Lamp® Operating System on a commercial ballast with arc tube horizontal. Lamp lumen measurements in accordance with IESNA LM-51-00. Lamp color data in accordance with IESNA LM-58-94. Lamp operating cycle of five to ten hours per start.

(2) Lamp starts out at a reduced wattage and increases over life to offset lumen loss as lamp ages. Average wattage over life is 1040 watts.

(3) Beyond 12,000 hours is the time when constant lumens are no longer maintained by the Smart Lamp® Operating System. Average lamp life before failure is greater than 12,000 hours as tested and defined per IESNA LM-47-01 with five to ten hours per start.

www.musco.com

Recommended Warnings, Cautions and Operating Instructions

⚠ **WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This lamp complies with FDA radiation performance standard USA:21CFR 1040.30 Canada:SOR/DORS/80-381

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb could cause glass to fly if the envelope is struck.

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RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC TUBE RUPTURE, THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See www.lamprecycle.org or call 1-800-825-6020

Lamp Operating Instructions:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
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   B. Operate lamp only within specified limits of operation.
   C. For total supply load, refer to manufacturers electrical data.
5. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
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8. Lamp is designed to operate per the Musco Smart Lamp® operating system. Performance when operated by a different lighting system is not guaranteed. Also note the following:
   - Do not use this lamp in a fixture that contains a pulse start metal halide ballast and is specifically designed for use with pulse start metal halide lamps.
   - Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C.
   - If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
   - Protect lamp base, socket, and wiring against moisture, corrosive atmospheres, and excessive heat.

Tab L

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco Lighting complies with specifications

Tab M

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco Lighting complies with specifications

Tab N

City of Key West Retrofit
Ball Field Lighting Project
Key West, FL

Musco Lighting shall deliver equipment to the job site
4-6 weeks after submittal approval
or release of order

Exhibit I.A

Granting Agency Requirements

Funded by the US Department of Energy
Energy Efficiency and Conservation Block Grant Program

It is the intent of the City, whenever feasible, to use this agreement for the design, planning and/or execution of projects funded by City, and/or public and/or private granting agencies. The purchase of all goods and services that are funded through Federal and/or State Grant Appropriations shall be subject to the compliance and reporting requirements of the Federal/State Granting Agency.

1. *Debarment and Suspension (E.O.s 12549 and 12689)*— Contract awards that exceed the small purchase threshold and certain other contract awards shall not be made to parties listed on the nonprocurement portion of the General Services Administration's List of parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principals. Vendors submitting proposals for this purchase must attest that they, and their subcontractors and partners, are not excluded from receiving Federal contracts, certain subcontracts, and certain Federal financial and nonfinancial assistance and benefits, pursuant to the provisions of 31 U.S.C. 6101, note, E.O. 12549, E.O. 12689, 48 CFR 9.404, and each agency's codification of the Common Rule for Nonprocurement suspension and debarment. Contractors debarment and suspension status will be validated at the Federal Excluded Parties List System at: https://www.epls.gov/ and the State of Florida at http://dms.myflorida.com/ business_operations/state_purchasing/vendor_ information.

2. American Recovery and Reinvestment Act of 2009 (ARRA) Special Terms and Conditions: The American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act) was enacted to preserve and create jobs and promote economic recovery, assist those most impacted by the recession, provide investments needed to increase economic efficiency by spurring technological advances in science and health, invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive State and local tax increases (http://www.recovery.gov/?q=content/act)

A. Registration: Section 1512 provides that first tier Contractors of ARRA funds must register with Central Contractor Registration database (CCR). CCR registration can be completed at http://www.ccr.gov. CCR registration must be completed before to issuance of a Notice to Proceed. Registration must be obtained during the life of the grant funded contract.

B. Reporting: Federal reporting on projects funded by the American Recovery and Reinvestment Act of 2009 (ARRA), requires vendors to report their Dun and Bradstreet number (DUNS). Vendors who do not know their DUNS number may receive more information through www.dnb.com and select "D & B D-U-N-S Number." A DUNS number request takes approximately 30 days to receive and there is no cost. Vendors will need this number if they are awarded a project with ARRA funds by the City prior to issuance of a Notice to Proceed. This number must be maintained through the life of the grant funded contract. Depending on the contract amount and annual gross revenues in Federal awards, vendors may also need to report the names and compensation of the five most highly compensated officers of the company. A DUNS number is one of the requirements for registration in the Central Contractor Registration. In addition, the vendor shall provide any

required data such as but not limited to number of jobs created to adhere to the reporting requirements of ARRA funding by the deadlines the City establishes.

3. Buy American: Section 1605(a) of the Recovery Act directs that, subject to certain exceptions, no funds appropriated or otherwise made available for a project may be used for the purchase of equipment and products, construction, alteration or repair of a public building or public work unless all the iron, steel and manufactured goods used are produced in the United States. The law covers Recovery Act-funded federal contracts as well as Recovery Act-funded state and local public works projects.
4. *Contracting with small and minority firms, women's business enterprise and labor surplus area firms.* (1) The vendor will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible. (2) Affirmative steps shall include: (i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists; (ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; (iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises; (iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises; (v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and
5. *Equal Employment Opportunity* —All contracts shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
6. *Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 276c)* —All contracts and subgrants in excess of $2000 for construction or repair awarded by recipients and subrecipients shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the Federal awarding agency.
7. *Davis-Bacon Act, as amended (40 U.S.C. 276a to a-7)* — Section 1606 of the Recovery Act requires that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the Recovery Act shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. When required by Federal program legislation, all construction contracts awarded by the recipients and subrecipients of more than $2000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. The recipient shall report all suspected or reported violations to the Federal awarding agency. Prevailing wages are available at the US Department of Labor's site http://www.gpo.gov/davisbacon/ fl/html.

General Decision Number: FL100162 10/29/2010 FL162

Superseded General Decision Number: FL20080162

State: Florida

Construction Type: Building

County: Monroe County in Florida.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	03/26/2010
3	10/29/2010

ELEC0349-003 08/31/2009

	Rates	Fringes
ELECTRICIAN		
Electrical contracts including mateials that are over $2,000,000	$ 29.61	8.71
Electrical contracts including materials that are under $2,000,000	$ 27.15	8.44

ENGI0487-004 01/01/2010

	Rates	Fringes
OPERATOR: Crane		
All Cranes Over 15 Ton Capacity	$ 28.05	8.75
Yard Crane, Hydraulic Crane, Cpacity 15 Ton and Under	$ 21.00	8.75

IRON0272-004 10/01/2006

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL	$ 26.70	6.43

* PAIN0365-004 08/01/2010

	Rates	Fringes
PAINTER: Brush Only	$ 16.00	6.20

SFFL0821-001 01/01/2010

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	$ 26.80	14.30

SHEE0032-003 01/01/2009

	Rates	Fringes
SHEETMETAL WORKER (HVAC Duct Installation Only)	$ 24.42	11.36

SUFL2009-059 05/22/2009

	Rates	Fringes
CARPENTER	$ 15.08	5.07
CEMENT MASON/CONCRETE FINISHER	$ 12.45	0.00
FENCE ERECTOR	$ 9.94	0.00
LABORER: Common or General	$ 8.62	0.00
LABORER: Pipelayer	$ 10.45	0.00
OPERATOR: Backhoe/Excavator	$ 16.98	0.00
OPERATOR: Paver	$ 9.58	0.00
OPERATOR: Pump	$ 11.00	0.00
PAINTER: Roller and Spray Only	$ 11.21	0.00
PLUMBER	$ 12.27	3.33
ROOFER: Built Up, Composition, Hot Tar and Single Ply	$ 14.33	0.00
SHEETMETAL WORKER (Excluding HVAC Duct Installation)	$ 14.41	3.61
TRUCK DRIVER: Dump and 10 Yard Haul Away	$ 8.00	0.15

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).
Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

8. *Contract Work Hours and Safety Standards Act (40 U.S.C. 327–333)* —Where applicable, all contracts awarded by recipients in excess of $2000 for construction contracts and in excess of $2500 for other contracts that involve the employment of mechanics or laborers shall include a provision for compliance with sections 102 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327–333), as supplemented by Department of Labor regulations (29 CFR part 5). Under section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 11/2times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

9. *Rights to Inventions Made Under a Contract or Agreement* —Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

10. *Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended* —Contracts and subgrants of amounts in excess of $100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

11. *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)*— Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

12. *Access to Records* - With respect to each financial assistance agreement awarded utilizing at least some of the funds appropriated or otherwise made available by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1988 (5 U.S.C. App.) or of the Comptroller General is authorized -- (1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract that pertain to, and involve transactions that relate to, the subcontract, subcontract, grant, or subgrant;

and (2) to interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.

13. *Protecting State and Local Government and Contractor Whistleblowers.* - The requirements of Section 1553 of the Act are summarized below. They include, but are not limited to: Prohibition on Reprisals: An employee of any non-Federal employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee's duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the employer who has the authority to investigate, discover or terminate misconduct), a court or grant jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of: - gross management of an agency contract or grant relating to covered funds; - a gross waste of covered funds; - a substantial and specific danger to public health or safety related to the implementation or use of covered funds; - an abuse of authority related to the implementation or use of covered funds; or - as violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds. Agency Action: Not later than 30 days after receiving an inspector general report of an alleged reprisal, the head of the agency shall determine whether there is sufficient basis to conclude that the non-Federal employer has subjected the employee to a prohibited reprisal. The agency shall either issue an order denying relief in whole or in part or shall take one or more of the following actions: - Order the employer to take affirmative action to abate the reprisal. - Order the employer to reinstate the person to the position that the person held before the reprisal, together with compensation including back pay, compensatory damages, employment benefits, and other terms and conditions of employment that would apply to the person in that position if the reprisal had not been taken. - Order the employer to pay the employee an amount equal to the aggregate amount of all costs and expenses (including attorneys' fees and expert witnesses' fees) that were reasonably incurred by the employee for or in connection with, bringing the complaint regarding the reprisal, as determined by the head of a court of competent jurisdiction. Nonenforceability of Certain Provisions Waiving Rights and remedies or Requiring Arbitration: Except as provided in a collective bargaining agreement, the rights and remedies provided to aggrieved employees by this section may not be waived by any agreement, policy, form, or condition of employment, including any predispute arbitration agreement. No predispute arbitration agreement shall be valid or enforceable if it requires arbitration of a dispute arising out of this section. Requirement to Post Notice of Rights and Remedies: Any employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, shall post notice of the rights and remedies as required therein. (Refer to section 1553 of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, www.Recovery.gov, for specific requirements of this section and prescribed language for the notices.).

Exhibit I.B Granting Agency

Forms GRANTING AGENCY

FORMS
DISCLOSURE OF DUNS AND CCR NUMBERS

The American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act) was enacted to preserve and create jobs and promote economic recovery, assist those most impacted by the recession, provide investments needed to increase economic efficiency by spurring technological advances in science and health, invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive State and local tax increases.

The Contractor shall comply with all terms and conditions in the Recovery Act relating generally to governance, accountability, transparency, data collection such as the number of jobs created, and resources as specified in Act itself and as discussed below.

Registration Section 1512 provides that first tier Contractors of ARRA funds must register with Central Contractor Registration database (CCR). CCR registration can be completed at http://www.ccr.gov. CCR registration must be completed before the first quarterly Section 1512 report is due.

Federal reporting on projects funded by the Recovery Act, will require contractors and subcontractors to report their DUNS number. The DUNS number is issued by Dun and Bradstreet. If you do not know your DUNS number, visit www.dnb.com and click on "D & B D-U-N-S Number" to obtain a number.

Compliance with American Recovery and Reinvestment Act of 2009: This project is subject to the criteria and conditions of the Recovery Act of 2009 and shall satisfy the federal reporting requirements for the project(s), through monthly reports, for both the contractor and subcontractors. The Contractor shall provide the required information on form(s) provided by the City in the timeframe indicated in the instructions and shall further include these reporting requirements in all subcontracts.

Authority of the Comptroller General: Section 902 of the ARRA of 2009 provides the U.S. Comptroller General and his representatives the authority:
(1) to examine any records of the Contractor or any of its subcontractors, or any State or Local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and (2) to interview any officer or employee of the Contractor or any of its subcontractors, or of any State or Local government agency administering the Contract, regarding such transactions.

Accordingly, the Comptroller General and his representatives shall have the authority and rights as provided under Section 902 of the ARRA with respect to this Contract, which is funded with funds made available under the ARRA. Section 902 further states that nothing in this Section shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

PROVIDE THE FOLLOWING FOR ARRA 1512 REPORTING:

	NAME	DUNS #	CCR #
Prime	*Canseco Electrical Contractors, Inc.*	*1673-26144*	
Sub #1			
Sub #2			
Sub #3			
Sub #4			
Sub #5			

Granting Agency Forms: Declaration of Debarment

The bidder, in accordance with City of Key West Purchasing Policy, (known as "Debarment and Suspension") shall sign the appropriate declaration under this exhibit. In doing so, the undersigned hereby declares that:

Canseco Electrical Contractors, Inc.
Name of Business

1 They are a prospective contractor, vendor, affiliate, or otherwise interested or affected party as defined under City of Key West Purchasing Policy.
2 They are not nor have not been debarred or suspended by any public entity within the last five (5) years of the date of this submission.
3 Signature of this declaration constitutes a material representation of fact upon which reliance was placed when this submission was entered and evaluated. Further, should it subsequently be determined that the signatory knowingly or unknowingly rendered an erroneous declaration; the City shall reserve the right to reject the bid offer associated with this declaration and/or suspend/debar the bidder/signatory.
4 They shall provide immediate written notice to the person to whom this proposal is submitted if at any time they learn that its declaration was erroneous when submitted or has become erroneous by reason of changed circumstances.
5 Should the proposed agreement be entered into, they shall not knowingly enter into any subcontract or supplier agreement with a person or entity who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this agreement, unless otherwise authorized by the City of Key West Finance Director.

The bidder shall sign the appropriate declaration below and comply with any accompanying requirements set forth therein:

(A) I hereby declare that my firm nor its principals is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any public agency.

Barbara Canseco / President
Name(s) and Title(s) of Authorized Representative(s)
Canseco Electrical Contractors, Inc.
a) Name of Business
May 31st, 2011
Authorized Signature(s) Date

(B) I am unable to declare that my firm is in compliance with one or more statements contained within this declaration and I shall attach an explanation for determination by the City of Key West Finance Director.

Name(s) and Title(s) of Authorized Representative(s)
N/A
b) Name of Business

N/A
Authorized Signature(s) Date

Buy American Certification

REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

(a) *Definitions.*

(1) *Manufactured good* means a good brought to the construction site for incorporation into the building or work that has been—

(i) Processed into a specific form and shape; or

(ii) Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.

(2) *Public building and public work* means a public building of, and a public work of, a governmental entity (the United States; the District of Columbia; commonwealths, territories, and minor outlying islands of the United States; State and local governments; and multi-State, regional, or interstate entities which have governmental functions). These buildings and works may include, without limitation, bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals, and the construction, alteration, maintenance, or repair of such buildings and works.

(3) *Steel* means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

(b) *Domestic preference.* (1) This award term and condition implements Section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act) (Pub. L. 111–5), by requiring that all iron, steel, and manufactured goods used in the project are produced in the United States except as provided in paragraph (b)(3) and (b)(4) of this section and condition.

(2) This requirement does not apply to the material listed by the Federal Government as follows: As Determined by waivers

(3) The award official may add other iron, steel, and/or manufactured goods to the list in paragraph (b)(2) of this section and condition if the Federal Government determines that—

(i) The cost of the domestic iron, steel, and/or manufactured goods would be unreasonable. The cost of domestic iron, steel, or manufactured goods used in the project is unreasonable when the cumulative cost of such material will increase the cost of the overall project by more than 25 percent;

(ii) The iron, steel, and/or manufactured good is not produced, or manufactured in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(iii) The application of the restriction of section 1605 of the Recovery Act would be inconsistent with the public interest.

(c) *Request for determination of inapplicability of Section 1605 of the Recovery Act* . (1)(i) Any recipient request to use foreign iron, steel, and/or manufactured goods in accordance with paragraph (b)(3) of this section shall include adequate information for Federal Government evaluation of the request, including—

(A) A description of the foreign and domestic iron, steel, and/or manufactured goods;

(B) Unit of measure;

(C) Quantity;

(D) Cost;

(E) Time of delivery or availability;

(F) Location of the project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign iron, steel, and/or manufactured goods cited in accordance with paragraph (b)(3) of this section.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed cost comparison table in the format in paragraph (d) of this section.

(iii) The cost of iron, steel, and/or manufactured goods material shall include all delivery costs to the construction site and any applicable duty.

(iv) Any recipient request for a determination submitted after Recovery Act funds have been obligated for a project for construction, alteration, maintenance, or repair shall explain why the recipient could not reasonably foresee the need for such determination and could not have requested the determination before the funds were obligated. If the recipient does not submit a satisfactory explanation, the award official need not make a determination.

(2) If the Federal Government determines after funds have been obligated for a project for construction, alteration, maintenance, or repair that an exception to section 1605 of the Recovery Act applies, the award official will amend the award to allow use of the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is nonavailability or public interest, the amended award shall reflect adjustment of the award amount, redistribution of budgeted funds, and/or other actions taken to cover costs associated with acquiring or using the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is the unreasonable cost of the domestic iron, steel, or manufactured goods, the award official shall adjust the award amount or redistribute budgeted funds by at least the differential established in 2 CFR 176.110(a).

(3) Unless the Federal Government determines that an exception to section 1605 of the Recovery Act applies, use of foreign iron, steel, and/or manufactured goods is noncompliant with section 1605 of the American Recovery and Reinvestment Act.

(d) *Data.* To permit evaluation of requests under paragraph (b) of this section based on unreasonable cost, the Recipient shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Items Cost Comparison

FOREIGN AND DOMESTIC ITEMS COST COMPARISON			
Description	Unit of Measure	Quantity	Cost (Dollars)*
Item 1:			
Foreign steel, iron, or manufactured good	_____	_____	_____
Domestic steel, iron, or manufactured good			
Item 2:			
Foreign steel, iron, or manufactured good			
Domestic steel, iron or			

manufactured good			

List name, address, telephone number, email address, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

**Include all delivery costs to the construction site.*

Section 1605 of the American Recovery and Reinvestment Act states that:

"None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States."

To meet this requirement, the undersigned hereby certifies that all of the material, equipment and accessories which are to be incorporated into the 10-5561 ARRA Green Lighting for Eagle Lakes to be funded by monies from the American Recovery and Reinvestment Act, has been manufactured from domestic construction material as defined by 40 CFR 35.936-13(D) and that information will be provided as requested throughout the life of the contract.

Cassco Electrical Contractors Inc May 31st, 2011

Name of Contractor Date

Signature of Authorized Official

President

Title

ANTI-KICKBACK AFFIDAVIT

PROJECT ITB# 11-015 RETROFIT LOCAL PARK BALL FIELD LIGHTING

STATE OF FLORIDA)

: SS

COUNTY OF MONROE)

I, the undersigned hereby duly sworn, depose and say that no portion of the sum herein Proposal will be paid to any employees of the City of Key West as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Sworn and subscribed before me this

31st day of May, 2011.

_____

NOTARY PUBLIC, State of Florida at Large

SANDRA CLUA
MY COMMISSION # DD920685
EXPIRES August 27, 2013
(407) 398-0153 FloridaNotaryService.com

My Commission Expires: 08/27/2013

ATTACHMENT: D

SWORN STATEMENT UNDER SECTION 287.133(3)(a)

FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

PROJECT ITB# 11-015 RETROFIT LOCAL PARK BALL FIELD LIGHTING

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICE AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Proposal, Proposal or Contract No. *ITB - 11-015* for *Retrofit Local Park Ball Field Lighting*

2. This sworn statement is submitted by *Barbara Canseco*

(Name of entity submitting sworn statement)

whose business address is *7175 SW 43rd St, Miami, Fl 33155*

75-3049378 and (if applicable) its Federal Employer Identification Number (FEIN) is *Barbara Canseco* (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement.)

3. My name is and my relationship to (Please print name of individual signing)

Barbara Canseco

the entity named above is *Canseco Electrical Contractors, Inc*.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any Proposal or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(l)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means

1. A predecessor or successor of a person convicted of a public entity crime: or

2. An entity under the control of any natural person who is active in the management of t entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which Proposals or applies to Proposal on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with no convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the Sate of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(l)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means

1. A predecessor or successor of a person convicted of a public entity crime: or

2. An entity under the control of any natural person who is active in the management of t entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which Proposals or applies to Proposal on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with no convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the Sate of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

(Signature)

(Date) May 31st 2011

STATE OF FLORIDA

COUNTY OF DADE

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

Barbara Cuneo who, after first being sworn by me, affixed his/her signature in the

(Name of individual signing)

space provided above on this day of May 31st, 2011.

My commission expires: 08/27/2013

NOTARY PUBLIC

SANDRA CLUA
MY COMMISSION # DD920685
EXPIRES August 27, 2013
(407) 398-0153 FloridaNotaryService.com

ATTACHMENT: E

FORM 575-060-13 RIGHT OF WAY -05/01

NON-COLLUSION DECLARATION AND COMPLIANCE WITH 49 CFR §29.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ITEM/SEGMENT NO.:_____
F.A.P. NO.:
PARCEL NO.:
COUNTY OF:
BID LETTING OF:_____ ,_____

I, *Barbara Canseco* (NAME), hereby declare that I am *President* (TITLE) of *Canseco Electrical Contractors, Inc.* (FIRM) Of_____ (CITY AND STATE) and that I am the person responsible within my firm for the final decision as to the price(s) and amount of this Bid on this State Project.

I further declare that:

1. The prices(s) and amount of this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition with any other contractor, proposer or potential proposer.

2. Neither the price(s) nor the amount of this bid have been disclosed to any other firm or person who is a proposer or potential proposer on this project, and will not be so disclosed prior to the bid opening.

3. No attempt has been made or will be made to solicit, cause or induce any other firm or person to refrain from bidding on this project, or to submit a bid higher than the bid of this firm, or any intentionally high or non-competitive bid or other form of complementary bid.

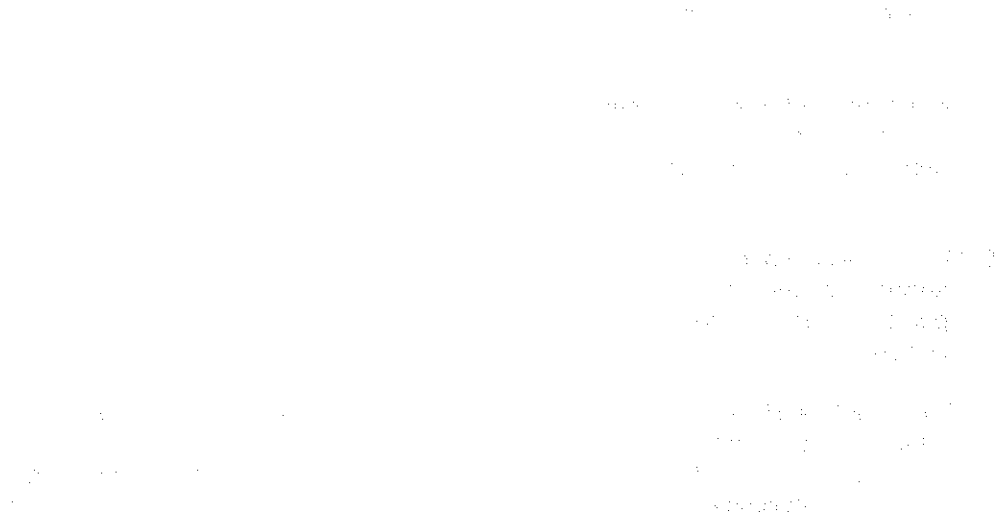
4. The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary bid.

5. My firm has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by any firm or person to refrain from bidding or to submit a complementary bid on this project.

6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any other project, in consideration for my firm's submitting a complementary bid, or agreeing to do so, on this project.

7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's bid on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in this Declaration.

8. As required by Section 337.165, Florida Statutes, the firm has fully informed the Department of Transportation in writing of all convictions of the firm, its affiliates (as defined in Section 337.165(l)(a), Florida Statutes), and all directors, officers, and employees of the firm and its affiliates for violation of state or federal antitrust laws with respect to a public contract or for violation of any state or federal law involving fraud, bribery, collusion, conspiracy or material misrepresentation with respect to a public contract. This includes disclosure of the names of current employees of the firm or affiliates who were convicted of contract crimes while in the employ of another company.



9. I certify that, except as noted below, neither my firm nor any person associated therewith in the capacity of owner, partner, director, officer, principal, investigator, project director, manager, auditor, and/or position involving the administration of Federal funds:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions, as defined in 49 CFR §29.110(a), by any Federal department or agency;

(b) has within a three-year period preceding this certification been convicted of or had a civil judgment rendered against him or her for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, State or local government transaction or public contract; violation of Federal or State antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

(c) is presently indicted for or otherwise criminally or civilly charged by a Federal, State or local governmental entity with commission of any of the offenses enumerated in paragraph 9(b) of this certification; and

(d) has within a three-year period preceding this certification had one or more Federal, State or local government public transactions terminated for cause or default..

10. I(We), certify that I(We), shall not knowingly enter into any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this contract by any Federal Agency unless authorized by the Department.

Where I am unable to declare or certify as to any of the statements contained in the above stated paragraphs numbered (1) through (10), I have provided an explanation in the "Exceptions" portion below or by attached separate sheet.

EXCEPTIONS: (Any exception listed above will not necessarily result in denial of award, but will be considered in determining proposer responsibility. For any exception noted, indicate to whom it applies, initiating agency and dates of agency action.

Providing false information may result in criminal prosecution and/or administrative sanctions.)

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

CONTRACTOR: (Seal)

BY: *Barbara Canseco / President* WITNESS: *Relvis Diaz*
NAME AND TITLE PRINTED

BY: _____ WITNESS: *Jose Costa*
SIGNATURE

Executed on this *31* day of *May*, *2011*

FAILURE TO FULLY COMPLETE AND EXECUTE THIS DOCUMENT MAY RESULT IN THE BID BEING DECLARED NONRESPONSIVE

LOCAL VENDOR CERTIFICATION PURSUANT TO CKW ORDINANCE 09-22 SECTION 2-798

The undersigned, as a duly authorized representative of the vendor listed herein, certifies to the best of his/her knowledge and belief, that the vendor meets the definition of a "Local Business." For purposes of this section, "local business" shall mean a business which:

1 ***a. Principle address as registered with the FL Department of State located within 30 miles of the boundaries of the city, listed with the chief licensing official as having a business tax receipt with its principle address within 30 miles of the boundaries of the city for at least one year immediately prior to the issuance of the solicitation.***

2 ***b. Maintains a workforce of at least 50 percent of its employees from the city or within 30 miles of its boundaries.***

c. Having paid all current license taxes and any other fees due the city at least 24 hours prior to the publication of the call for bids or request for proposals.

- Not a local vendor pursuant to Ordinance 09-22 Section 2-798
- Qualifies as a local vendor pursuant to Ordinance 09-22 Section 2-798

If you qualify, please complete the following in support of the self certification & submit copies of your County and City business licenses. Failure to provide the information requested will result in denial of certification as a local business.

Business Name Phone:

Current Local Address: Fax:
(P.O Box numbers may not be used to establish status)

N/A

Length of time at this address

Signature of Authorized Representative Date

STATE OF Florida
COUNTY OF Dade

The foregoing instrument was acknowledged before me this 31st day of May, 2011. By Barbara Carrero, of Carrero Electrical Contractor. (Name of officer or agent, title of officer or agent) Name of corporation acknowledging) or has Personally known produced N/A as identification

(type of identification)

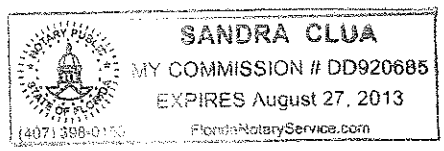
Signature of Notary

Sandra Clua

Print, Type or Stamp Name of Notary

Return Completed form with
Supporting documents to:
City of Key West Purchasing

Title or Rank



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that **Canseco Electrical Contractors, Inc.**

as Principal, hereinafter called the Principal, and **Berkley Regional Insurance Company**

a corporation duly organized under the laws of the State of **Delaware**

as Surety, hereinafter called the Surety, are held and firmly bound unto **City of Key West**

as Obligee, hereinafter called the Obligee, in the sum of **Five Percent of Amount Bid** Dollars (**5%**),

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for **Retrofit Local Park Ball Field Lighting, ITB #11-015**

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 1st day of June , 2011

(Witness)

Canseco Electrical Contractors, Inc.
(Principal) (Seal)

President
(Title)

(Witness)

Berkley Regional Insurance Company
(Surety)

(Title)

Warren M. Alter, Attorney-in-Fact

No. 7959

POWER OF ATTORNEY
BERKLEY REGIONAL INSURANCE COMPANY
WILMINGTON, DELAWARE

NOTICE: The warning found elsewhere in this Power of Attorney affects the validity thereof. Please review carefully.

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY REGIONAL INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Urbandale, Iowa, has made, constituted and appointed, and does by these presents make, constitute and appoint: ***Warren M. Alter, David T. Satine or Dawn Auspitz of Alter Surety Group, Inc. of Miami Lakes, FL***its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed **Fifty Million and 00/100 Dollars ($50,000,000.00),** to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on August 21, 2000:

"**RESOLVED**, that the proper officers of the Company are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and further

RESOLVED, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

RESOLVED, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

RESOLVED, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued."

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 28 day of December, 2009.

Attest: Berkley Regional Insurance Company

(Seal)

By _____ By _____

Ira S. Lederman
Senior Vice President & Secretary

Robert P. Cole
Senior Vice President

WARNING: THIS POWER INVALID IF NOT PRINTED ON BLUE "BERKLEY" SECURITY PAPER.

STATE OF CONNECTICUT)
) ss:
COUNTY OF FAIRFIELD)

Sworn to before me, a Notary Public in the State of Connecticut, this 28 day of December, 2009, by Robert P. Cole and Ira S. Lederman who are sworn to me to be the Senior Vice President, and the Senior Vice President and Secretary, respectively, of Berkley Regional Insurance Company.

_____
Notary Public, State of Connecticut

SANDRA C. MILANO
NOTARY PUBLIC
MY COMMISSION EXPIRES MAY 31, 2012

CERTIFICATE

I, the undersigned, Assistant Secretary of BERKLEY REGIONAL INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 1st day of June, 2011.

(Seal)

_____
Steven Coward

Instructions for Inquiries and Notices Under the Bond Attached to This Power

Berkley Surety Group, LLC is the affiliated underwriting manager for the surety business of: Acadia Insurance Company, Berkley Insurance Company, Berkley Regional Insurance Company, Carolina Casualty Insurance Company, Union Standard Insurance Company, Continental Western Insurance Company, and Union Insurance Company.

To verify the authenticity of the bond, please call (866) 768-3534 or email BSGInquiry@berkleysurety.com

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Any written notices, inquiries, claims or demands to the surety on the bond to which this Rider is attached should be directed to:

Berkley Surety Group, LLC
412 Mount Kemble Avenue
Suite 310N
Morristown, NJ 07960
Attention: Surety Claims Department

Or

email BSGClaim@berkleysurety.com

Please include with all notices the bond number and the name of the principal on the bond. Where a claim is being asserted, please set forth generally the basis of the claim. In the case of a payment or performance bond, please identify the project to which the bond pertains.

ADDENDUM 1:
ITB #11-015 RETROFIT LOCAL PARK BALL FIELD LIGHTING

To all general contract bidders of record on the Work titled:

RETROFIT LOCAL PARK BALL FIELD LIGHTING
KEY WEST, FLORIDA

This addendum is issued as supplemental information to the ITB # 11-015 package for clarification of certain matters of both a general and a technical nature. The referenced ITB package is hereby addended in accordance with the following items as fully as completely as if the same were fully set forth therein:

Q. Contractor: Are the start dates realistic because most of the fixtures come from overseas?

A. City: The start dates provided to the vendors are the desired dates. The City will consider adjusting dates on a case by case basis for supply lead times.

Q. Contractor: Is the City taking the lights down? How many lights are they keeping and what does the contractor do with the rest of them.

A. City: Correct, the City along with Keys Energy will handle the demolition. The city as per the bid specifications will retain 50 lights and 20 crossarms. The remainder of the equipment would require disposal by the contractor. Please prepare a separate line item cost for the disposal of the old lighting and crossarms as an option to the city. The city will be responsible for the disposal of all removed wooden poles. More demolition detail includes: Keys Energy will get the lights and take down to the ground and on other sites wood poles we will demo and remove. Locations that Concrete poles to stay --- KEYS Energy(utility) will remove light fixtures and associated crossarms. Locations that entire wood poles are to be removed, --- KEYS will remove all lights, wire, poles, contactors, switches and the entire pole

Q. Contractor: Will the utilities company put concrete poles back?

A. City: No. Poles are part of the bid. Please include new **concrete poles** and their installation for the two locations (Pepe Hernandez Softball field and Nelson English Park) where the old wooden poles will be removed by the utility company. The remainder of the concrete poles will be reused.

Q. Contractor: How about replacing conduits? I see repairs that need to be made.

A. City: We will be doing infrastructure to the J box on the poles. (Everything from the contactor to the J box will be done in house) contractors will take it from the J box on to the pole fixture.

Q. Contractor: Are all of the cabinets staying?

A. City: No. We require new cabinets.

Q. Contractors: When swapping out light fixtures,will the fields be able to go with out lights for a couple of days?

A. City: Yes, we will be working around seasons so it should not be a problem and as a precaution to work we will be marking all sprinklers heads.

Q. Contractor: What about permitting?
A. City: Permitting will be included in your bids.

Q. Contractor: Can we get and exact number of lights at all the fields, Keys Energy consumption specification?

A. City: The exact number of lights and locations at all fields starts on page 42 of the original bid specifications. It is a part of the control system and illumination summary.

Q. Contractor: Is it the contractor responsibility from the pole up?

A. City and Keys Energy: Regarding Pepe Hernandez.: Contractor was referring to each pole to the lightening circuit. I'm thinking from a utility standpoint on the high voltage to get power to your main distribution center. At that point we will work with you to give you the service point location. Contactors in place will stay. On service point location KES will work with you and provide a service point. To get there with a new pad mount or a new aerial transformer that will be utility responsibility.

Q. Contractor: Are the already existing poles working?

A. City and Keys Energy: Pepe Hernandez field is an old system its transformer is up on a pole. The service point is really to provide power. Were going to put another distribution electrical pole underground on a pad mouth or with an aerial transformer on a new pole. The old wooden poles will be coming down.

Q. Contractor: Where is the pad mount transformer location at Pepe Hernandez?

A. City and Keys Energy: 483 Phase location and voltage and where utilities will stop and establish a service point. KE will be demo'ing all facilities taking down and establishing a service point.

Q. Contractor: Do you mind losing 4-5 ft of field, and who will replace padding?

A. City: We have no choice about losing a part of the field in order to accomplish the lighting standard. The City will take care of the padding as necessary. Utility might work with City to move conductors so they will not have to lose footage on the field

Q. Contractor: Concrete post or kendoor 314 stainless?

A. City and Keys Energy: Concrete post with 350,or 375 voltage, underground to main pole and keep equipment in a general area and use a controlled circuit to cut the lights off and on in BVP such as the clubhouse.

Q. Contractor: At Nelson English, does the court require lights?
A. City and Keys Energy: Basketball courts need to be lit.

Q. Contractor: Are we replacing the batting cage lightening on the high tension poles
A. City and Keys Energy: A lighting solution is necessary.

END OF ADDENDUM No. 1

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 1 by acknowledging Addendum in their proposal or by submitting the addendum with the bid package. Bids submitted without acknowledgement or without this Addendum may be considered non-responsive.

Caussee Electrical Constructors, Inc

Signature Name of Business

ADDENDUM 2:
ITB #11-015 RETROFIT LOCAL PARK BALL FIELD LIGHTING

To all general contract bidders of record on the Work titled:

RETROFIT LOCAL PARK BALL FIELD LIGHTING
KEY WEST, FLORIDA

This addendum is issued as supplemental information to the ITB # 11-015 package for clarification of certain matters of both a general and a technical nature. The referenced ITB package is hereby addended in accordance with the following items as fully as completely as if the same were fully set forth therein:

Figure 1 Pepe Hernandez Softball Field, Virginia Street

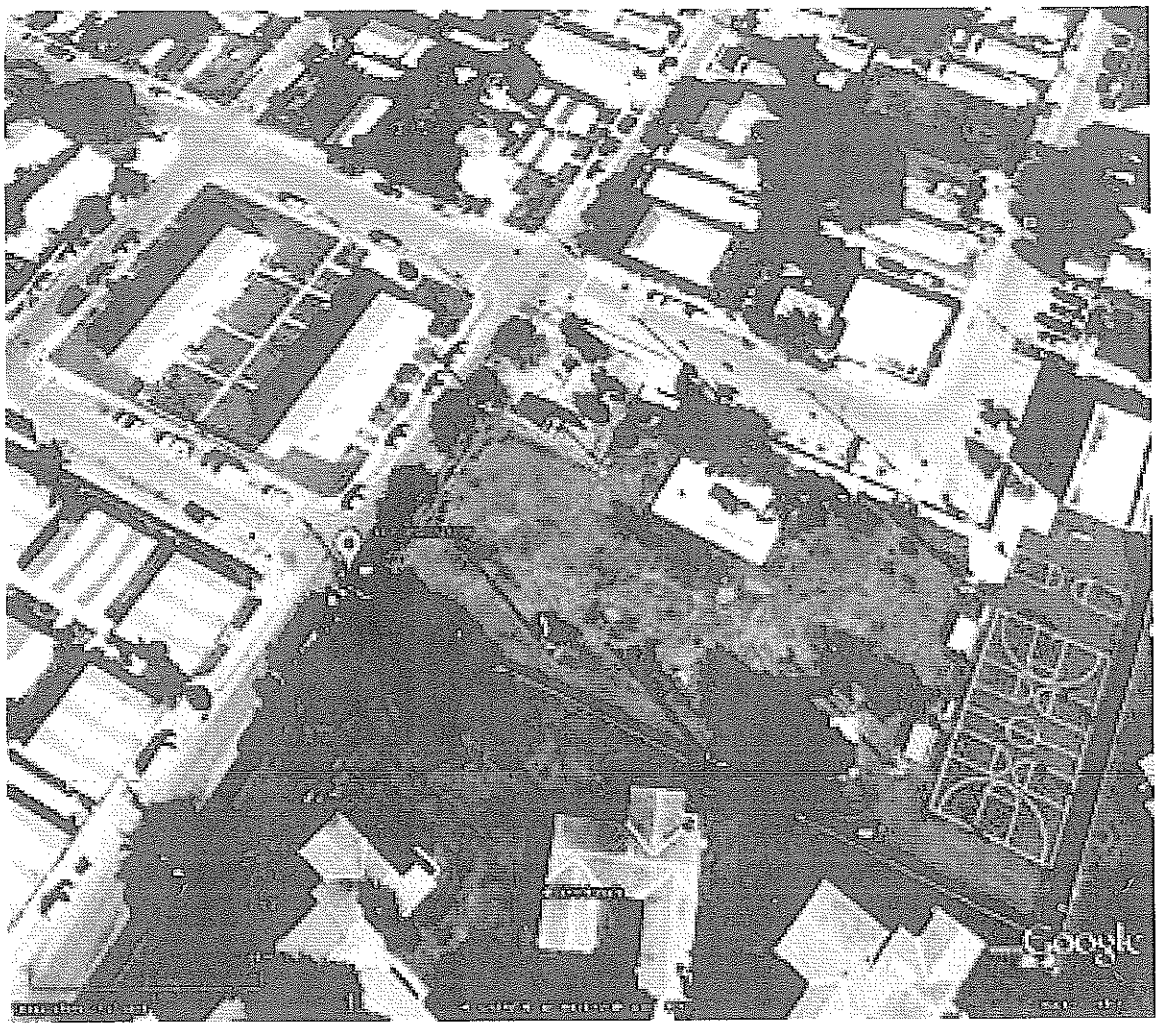

Figure 2 Nelson English Park, Catherine Street

- **Electrical service points on the 2 locations**
  - **The voltage will be 3 phase 277/480 Y**
  - **Contractor to install riser up pole to KEYS Transformers. Approx height is 25' to be determined at a later date with utility**

END OF ADDENDUM No. 2

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 2 by acknowledging Addendum in their proposal or by submitting the addendum with the bid package. Bids submitted without acknowledgement or without this Addendum may be considered non-responsive.

CANSEED ELECTRICAL CONTRACTORS INC

Signature Name of Business

ADDENDUM 3:
ITB #11-015 RETROFIT LOCAL PARK BALL FIELD LIGHTING

To all general contract bidders of record on the Work titled:

RETROFIT LOCAL PARK BALL FIELD LIGHTING
KEY WEST, FLORIDA

This addendum is issued as supplemental information to the ITB # 11-015 package for clarification of certain matters of both a general and a technical nature. The referenced ITB package is hereby addended in accordance with the following items as fully as completely as if the same were fully set forth therein:

Q1.: Is a bid bond required?
A.1.: **Yes, Bid Bond in the amount of 5% of the maximum bid, payable to the City of Key West, as evidence of good faith and guaranteeing that the successful bidder will execute and furnish to the City of Key West a good and sufficient performance bond as required by Florida Statute Section 1013.47 in the penal sum of 100% of the escalated amount of the contact guaranteeing the performance of said contract. (Page 8 of Bid Package)**

Q2.: Will a payment and performance bond be required?
A2.: **Yes for the grant amount of $744,790.**

Q3.: Who will be installing the new Museo contactor cabinets?
A3.: **The contractor will be installing any equipment on the poles or in the electrical rooms, the city will be responsible for conduit and wiring to the poles.**

Q4.: It is my understanding that all underground conduit and wiring will be done by the City at all parks? (Contractors are to work on poles only)
A4.: **Correct.**

Q5.: Who will be building the 2 new electrical services at Nelson English and Pepe Hernandez. (Panels, meter can, etc.)
A5.: **Keys energy and the city.**

Q6.: Addendum 2 says to install a riser at the 2 new service points located. Are we to install empty conduit and from the base of the pole up or to a hand hole in the ground? (conduit size, wire size)
A6. **The city will be bringing power to the bottom of the cabinet and making final terminations.**

Q7.: Will the City be making the final connections at the base of each pole?
A7.: **On the new services there will be no j-boxes at the base of the poles. On existing services the city will be installing new boxes and pig tails to the base of the cabinet.**
8. Are the existing j boxs at the base of the poles to be reused and install new from there up?
The j-boxes will be upgraded.

Q8. Can you email the prebid attendance list?
A8.: **Yes. See below.**

THE CITY OF KEY WEST

[illegible]

Ballfield Lightening Pre-bid Conference May 11, 2011

Name	Phone	Email address
Jose E Casseco		
1. Casseco Electrical, Inc.	305 265-9967	RAMONJE@ [illegible]
Vaughn Collins		
2. Davco Electric	561-732-5434	VCollins@Davcoelectric.com
Ken Hang		
3. Imperial Elec	954-315-2133	M.Terrace@AOL.com
Chuck Floyd		
4. Electrical Contracting Svc.	3055560041	ECSINC25@aol.com
Bob Allsbrook		
5. Singer Electric Elect Cont	305 872 2200	bobollsbrook@bellsouth.net
6. Matthew [illegible]	305-[illegible]-1855	[illegible]
7. Dale Finyan	3052951042	Dale.Finyan@[illegible]
8.		
9.		
10.		
11.		
12.		

[illegible]

Q9.: The City of Key West Building Department informed us the permit fee is 2.5% of the contract price. Please confirm the contractor is to include this cost in our bid. Should the permitting fees and disposal fees be incorporated into the cost of materials?

A9.: **The Cost must be listed by the contractor in the bid. Please list the permitting fees and disposal fees as separate line items exclusive of the parks line items. This breakdown can further be listed in the schedule of values (SOV).**

Q10.: A bid bond of 5% is required, could you please advise us what would be the liquidated damages per day for this bid?
A10.: **$250 per day**

Q11.: What would be the Estimated Budget Price?
A11.: **Grant amount is $744,790.**

Q12.: What is the estimated Calendar days for Project Completion?
A12.: **150 days from Notice to Proceed issuance.**

Q13.: In order to achieve the remote switching and monitoring of the lights asked for in the specifications an updated contactor cabinet will have to be installed. Please confirm the selected contractor will be performing this work.
A13.: **Yes, the contractor will be installing any equipment on the poles or in the electrical rooms such as updated contactor cabinets, the city will be responsible for conduit and wiring to the poles.**

Q14.: Contractor: How about replacing conduits? I see repairs that need to be made.
A14.: **City: We will be doing infrastructure to the j-box on poles. (Everything from the contactor to the J-box will be done in house) contractors will take it from the J-box on to the pole.**

Q15.: Please confirm the contractor has no work in any existing electrical rooms or conduit/wire runs to pole location except Pepe Hernandez and Nelson English fields.
A15.: **The contractor will have work in the electrical rooms. The grant calls for energy monitoring equipment at every location. This will be installed at existing electrical rooms and installed in new cabinets at the facilities that do not have services.**

Q16.: Contractor: Is it the contractor responsibility from the pole up?
City and Keys Energy: Regarding Pepe Hernandez: Contractor was referring to each pole to the lighting circuit. I'm thinking from a utility standpoint on the high voltage to get power to your main distribution center. At that point we will work with you to give you the service point location. Contactors in place will stay. On service point location KES will work with you and provide service point. To get there with a new pad mount or a new aerial transformer that will be utility responsibility.
I do not fully understand this answer. For Pepe Hernandez field I do understand KES will furnish transformer whether pad mount or aerial. The location needs to be determined for bid purpose. Copper is at an all-time high.It states contactors will stay. This means contractor comes from new transformer location and sets a distribution panel large enough to carry the new lighting load. From the new distribution panel the contractor will have to get pipe / wire lighting circuits to contactor location and from contactor location out to new pole locations. Please confirm this scope of work for Pepe Hernandez field in addition to installing new poles and lights. (It may be easier to relocate contactors than pipe to existing location)
A16.: **The problem with Pepe is that all wiring is run overhead. If we want to upgrade to new underground wire and conduit it will be the city's responsibility.**

Q17. Contractor: Where is the pad mount transformer?
City and Keys Energy: 483 Phase location and voltage and where utilities will stop and establish a service point. KE will be demo'ing all facilities taking down and establishing a service point.
I do not understand this answer. I believe all contractors agreed 277/480 volt secondary transformer was best. Please confirm. The service point (transformer) location needs to be provided for bid purpose. Please provide location and pad mount or aerial.
For Nelson English field, the service point location (transformer) needs to be provided. This was spotted at walk through. Please provide location on site plan. For the scope of work, the contractor will come from service point location (transformer secondary) to new distribution panel large enough to carry new light load. It is not practical to pipe to existing contactors in bldg. and new contactor(s) should be furnished. Pipe / wire lighting circuits from new distribution panel to contactors and from contactors to new light pole locations. Install poles and lights.
Please confirm.
A17.: See Addendum 2. It denotes locations on a map.

END OF ADDENDUM No. 3

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 3 by acknowledging Addendum in their proposal or by submitting the addendum with the bid package. Bids submitted without acknowledgement or without this Addendum may be considered non-responsive.

Caldwell Electrical Contractors Inc

Signature Name of Business