

PLEASE DO NOT REMOVE ANY SHEETS FROM THIS DOCUMENT

TOWN OF VERNON

CONTRACT #1043-10/31/13

FOR

**INSTALLATION OF SOFTBALL LIGHTS AT
HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUT**

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CONTRACT #1043-10/31/13

**INSTALLATION OF SOFTBALL LIGHTS AT
HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUT**

INVITATION TO BID

The Town of Vernon, Connecticut is seeking the installation of Softball Lights, Henry Park, 120 South Street, Vernon, CT 06066. A firm must have a demonstrated experience in providing such service and adhere to standards and requirements typical for such service.

Copies of the Bid are available from the office of the Town Administrator from 9:00 AM until 4:30 PM, Monday through Wednesday, 9:00 AM until 7:00 PM on Thursday, and 9:00 AM until 1:00 PM on Friday; or anytime online at <http://www.vernon-ct.gov/legal-notices> with reference to Contract #1043-10/31/13.

All questions about the proposals should be directed to Bruce Dinnie, Director of Parks and Recreation Department, by e-mail at bdinnie@vernon-ct.gov copies to John with D. Ward, Town Administrator, by e-mail at jward@vernon-ct.gov, no later than 3:30 PM on October 17, 2013. Answers to all so received questions shall be posted by October 22, 2013 on the Town's website under the bid section at <http://www.vernon-ct.gov/legal-notices> with Contract #1043-10/31/13.

Two (2) copies of all proposals should be submitted in a sealed envelope, with "**BID DOCUMENT – DO NOT OPEN - CONTRACT #1043-10/31/13**" clearly marked on the outside of the envelope, to: John D. Ward, Town Administrator, Town of Vernon, Memorial Building, 14 Park Place, 3rd Floor, Vernon, Connecticut 06066 by 11:00 AM on October 31, 2013; at which time proposals shall be opened and read aloud publicly. E-mailed bids will not be accepted.

The selected firm must meet all municipal, state and federal AA and EEO practices and requirements. MBEs/WBEs/SBEs are encouraged to apply. The Town reserves the right to reject any or all proposals in whole or part, to award any one service or group of services or all services, to negotiate with any or all companies submitting proposals, and to enter into an agreement with any company for any services mentioned in this Bid; if it is deemed to be in the best interest of the Town.

John D. Ward
Town Administrator

TOWN OF VERNON

OFFICE OF THE TOWN ADMINISTRATOR

VERNON, CONNECTICUT

STANDARD INSTRUCTIONS TO BIDDERS

These instructions are standard for all proposals issued by the Town of Vernon, Connecticut for the purchase of all supplies, materials, equipment and the furnishing of certain services. The Town may delete, supersede or modify any of these standard instructions for a particular proposal by indicating such change in a section entitled "Special Instructions To Bidders".

1. The attached proposal is signed by the bidder with full knowledge of, and agreement with, the general specifications, conditions and requirements of this bid.
2. Proposals must be submitted on the enclosed form with any required bid security.
3. Bids shall be submitted in sealed envelopes, which shall be addressed to the Town Administrator, 14 Park Place, Vernon, Connecticut 06066 and shall be clearly marked "**BID DOCUMENT - DO NOT OPEN**". The bid envelope shall indicate the contract number as shown on the "Invitation To Bid".
4. Bids received later than the time and date specified in the "Invitation To Bid" will not be considered. Withdrawals of bids, received later than the time and date set for the bid opening, will not be considered.
5. All deliveries of commodities hereunder shall comply in every respect with all applicable laws of the Federal Government and the State of Connecticut.
6. The bidder shall insert the price per stated unit and extend a total price for each item. **IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE UNIT PRICE AND THE TOTAL PRICE EXTENSION, THE UNIT PRICE WILL GOVERN.**

7. In accordance with the provisions of Section 12-412(a) of the Connecticut General Statutes, the Town of Vernon is exempt from the payment of Federal or State tax and such tax or taxes shall not be included in bid prices.
8. Unless otherwise stated herein, all deliveries made under this contract must consist of new merchandise.
9. The Town reserves the right to reject any and all bids, wholly or in part; to waive technical defects, and to make awards in the manner deemed to be in the best interests of the Town.
10. The Town will not accept any additional charges for freight or shipping.
11. The successful bidder must carry Workers' Compensation Insurance, a minimum of \$1,000,000/\$1,000,000/\$1,000,000 Bodily Injury Liability Insurance, a minimum of \$1,000,000 Property Liability Insurance and a minimum motor vehicle liability insurance in the amount of \$1,000,000 Single Limit, or comparable coverages.
12. All bids must be accompanied by bid security in the sum of not less than five percent (5%) of the total bid and shall be in the form of a bid bond, a certified check, a treasurer's or cashier's check drawn on a National or State bank or trust company and shall be made payable to the "Town of Vernon".

The bid security shall secure the execution of the contract by the successful bidder.

Should any bidder to whom an award is made fail to enter into a contract within ten (10) days, exclusive of Saturdays, Sundays and legal holidays, after notice of the award has been mailed to the bidder, the amount so received from the bidder through his/her bond shall become the property of the Town of Vernon, Connecticut as liquidated damages for failure.

The bid security, exclusive of the successful bidder, will be returned upon execution of the contract, but in no case later than forty-five (45) days after the opening of the bids.

The bid security of the successful bidder shall be held until such time as all conditions of the proposal have been met.

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HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUT**

SPECIAL INSTRUCTIONS TO BIDDERS

- 1) Read all specifications carefully.
- 2) Information or questions concerning this contract should be directed by e-mail to bdinnie@vernon-ct.gov with a cc to jward@vernon-ct.gov
- 3) All insurance documents must be submitted with the executed contract. Town of Vernon must be listed as Certificate Holder.

TOWN OF VERNON

CONTRACT #1043-10/31/13

**INSTALLATION OF SOFTBALL LIGHTS AT
HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUTS**

SPECIFICATIONS

TOWN OF VERNON

16100 - ELECTRICAL

Lighting at Henry Park Softball Field

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. The Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 1, General Requirements, apply to work specified in this Section.
- B. The requirements specified in Section 16010, "Basic Electrical Requirements", apply to this Section.

1.2 INCLUDED IN THIS SECTION:

- A. Circuit Breakers
- B. Feeders and Branch Circuits
- C. Lighting Fixtures and Lamps
- D. Wiring of equipment being furnished by others.
- E. Testing and Load Balancing.
- F. Removal of Existing Electrical Equipment.

1.3 DESCRIPTION OF WORK:

- A. This Section includes furnishing all labor and material to complete and make ready for operation by the Owner all electrical work as shown on the Drawings and as described in these specifications. It is the intent of these documents to terminate with complete, operational electrical systems within the building and on the project site.
- B. Circuit breakers thermal-magnetic molded case designed for operation on 120/240 volt system as manufactured by Square D.
- C. Wiring devices shall be of the type as indicated on the Drawings, and shall be manufactured by P&S, Hubbell, or Leviton.
- D. Lighting fixtures shall be in strict compliance with the latest National Electric Code and Northeast Utilities' Energy Conscious Construction Program.

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1.4 CODES, REGULATIONS AND STANDARDS

- A. The electrical installation shall be in accordance with the current rules, regulations and recommendations of the local electrical inspection authority, the National Board of Fire Underwriters, the Electric Utility Company furnishing service, Local and State Ordinances. In the event of a conflict in code requirements, the local code shall apply. All permits and certificates as required shall be obtained and paid for by this Contractor. Approved Inspection Certificates by the authorities having jurisdiction shall be furnished with request for final payment.
- B. All material and equipment shall conform to the applicable standards (current edition) of the following organizations.
1. National Electrical Manufacturers Assoc. (NEMA)
 2. Underwriters Laboratories (UL)
 3. Insulated Power Cable Engineers Assoc. (IPCEA)
 4. Institute of Electrical & Electronics Engineers (IEEE)
 5. American Society for Testing Materials (ASTM)
 6. Federal Specifications (U.S. Department of Commerce)
 7. Illuminating Engineers Society (IES)

1.5 SCOPE OF WORK:

- A. This Section includes the providing of all labor, materials, fixtures, equipment, accessories, services and tests necessary to complete and make ready for operation by the Owner all electrical work as shown on the Drawings and described in these Specifications. It is the intent of these Documents to terminate with complete, operational electrical systems within the building.
- B. The work shall include but not be limited to the following:
1. Circuit Breakers.
 2. Feeder and Branch Circuits.
 3. Removal of Existing Electrical Equipment.
 4. All lighting fixtures and lamps.
 5. Testing and load balancing.
 6. Shop drawings and Record Drawings.
- C. Furnish all labor, materials, tools, transportation, equipment, services and facilities required for the complete and proper installation of all electrical work. All fixtures, devices and equipment shown, noted or required on the drawings and/or contained herein shall be connected from the source of electric power to the final connection, tested and made ready for satisfactory operation.

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- D. This Section shall be responsible for knowledge of the areas that may affect his work for coordinating with the local inspection authorities and with all other trades on this project. This Section shall thoroughly coordinate all work with other Divisions and shall ensure that all equipment requiring electrical work be wired and incorporated as required in the basic work of the project.
- E. Make all field measurements and shall be responsible for their accuracy.
- F. The Specifications and Drawings are complimentary each to the other and that which is called for on one shall be as binding as if called for on both. In the event of a conflict, it shall be resolved by the Engineer.
- G. Any violation of the applicable electrical code standards or conflict between Drawings and Specifications not called to the attention of the Engineer before the contract is executed shall be corrected at this Contractor's expense.
- H. This Section hereby waives all claim to extra compensation for work performed and materials furnished beyond the scope of the contract without written authorization by the Owner.

1.6 WORK BY OTHERS:

- A. Excavation, backfilling and concrete basis shall be furnished by other Divisions.

1.7 INSPECTIONS:

- A. This Section shall be responsible for the proper inspection of his work during its installation by all lawful authorities, shall take out and pay for all necessary permits, inspection fees and comply with all laws relating to persons employed on this work.

1.8 SHOP DRAWINGS:

- A. Submit five (5) copies of Product Data to the Engineer in accordance with Section 16010 Basic Electrical Requirements.
- B. Submittals shall be given to the Engineer for the following materials.
 - 1. Circuit Breaker.
 - 2. Lighting Fixtures and Ballasts.
 - 3. Wiring and Conduit.
 - 4. Devices.

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PART 2 PRODUCTS

2.1 CONDUIT - RACEWAY AND FITTINGS:

- A. All raceways in soil shall be Schedule 40 PVC with PVC coated rigid steel elbows.
- B. All raceways in masonry, not noted otherwise, shall be run in Electrical Metallic Tubing (EMT) or rigid steel conduit.
- C. All exposed conduit shall be run in intermediate rigid steel conduit with threaded joints.
- D. Minimum size shall be 3/4" trade size unless otherwise noted.
- E. Exterior exposed raceways shall not be permitted unless specifically indicated otherwise.

2.2 GROUNDING AND BONDING:

- A. Furnish and install an electrical grounding and bonding systems with assembly of materials, including, but not limited to, cables/wires, connectors, solderless lug terminals, grounding electrodes and plate electrodes, bonding jumper braid, surge arresters, and additional accessories needed for a complete installation. Where materials or components are not indicated, provide products which comply with NEC, UL, AND IEEE requirements.

2.3 WIRING:

- A. Single conductor cables shall be used for feeders and branch circuit wiring. Minimum wire size shall be No. 12 A.W.G. unless indicated otherwise. Wire sizes No. 8 A.W.G. and smaller shall be solid. No. 6 A.W.G. and larger shall be stranded. All conductors shall be of 98 percent conductivity copper only.
- B. All wiring shall be 600 volt code type "THHN/THWN"

2.4 LIGHTING FIXTURES:

- A. Furnish and install lighting fixtures, lighting equipment and lamps for all lighting outlets as shown on the plans and listed in the "Fixture Schedule"
- B. Furnish and install all mounting accessories, brackets, stems, etc., required for the complete installation of the lighting fixtures.
- C. SPORTS FIELD LIGHTING:

- 1. Furnish and install the Sport Field Lighting as indicated on the plans and as manufactured by Musco Sports Lighting with no substitutions.

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Lighting at Henry Park Softball Field

2. The purpose of these specifications is to define the performance and design standards for Henry Park Vernon, CT. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth by the criteria set forth in these specifications.
3. The sports lighting will be for the Softball Field.
4. The primary goals of this sports lighting project are:
 - a. **Guaranteed Light Levels:** Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed for a period of 25 years.
 - b. The preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated, and the field should be proactively monitored to detect fixture outages over a 25 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.
 - c. **Control and Monitoring:** To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Field should be proactively monitored to detect fixture outages over a 25 year life-cycle.
5. **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 25 years. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Average illumination level shall be measured in accordance with the IESNA LM-5-04. Light levels shall be guaranteed from the first 100 hours of operation for the maximum warranty period.

Area of Lighting	Average Constant Light Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Infield	30 footcandles	2.5:1.0	25	20' x 20'
Outfield	20 footcandles	3.0:1.0	156	20' x 20'

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- a. Lumen maintenance control strategy: A constant light system shall use automatic adjustments to achieve a lumen maintenance control strategy as described in the IESNA Lighting Handbook 10th Edition, Lighting Controls Section, page 16-8: "Lumen maintenance involves adjusting lamp output over time to maintain constant light output as lamps age, and dirt accumulation reduces luminaire output. With lumen maintenance control, either lamps are dimmed when new, or the lamps current is increased as the system ages.
 - b. Independent Test Report: Manufacturers bidding any form of constant light system must provide an independent test report certifying the system meets the lumen maintenance control strategy above and verifying the field performance of the system for the duration of the useful life of the lamp based on lamp replacement hours. Report shall be 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 under Alternate Manufacturers, section 2.4 C 15.
 - c. Project References: Manufacturers bidding any form of a constant light system must provide a minimum of (5) project references within the state of CT that have been completed within the last calendar year utilizing this exact technology. Manufacturer will include project name, project city, and if requested, contact name and contact phone number for each reference.
 - d. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, the pole mounting heights from the field surface shall be 60'.
6. Environmental Light Control:
- a. Spill Light Control: Average horizontal foot candles at a distance of 40' from the perimeter of the field shall not exceed 4.84. Footcandle readings shall be taken at 30' intervals along the specified line. Average illumination level shall be measured in accordance with the IESNA LM-5-04 at the first 100 hours of operation.
7. Life-Cycle Costs:
- a. Energy Consumption: The average kWh consumption for the field lighting system shall be 28.15 or less.

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- b. Complete Lamp Replacement: Manufacturer shall include all group lamp replacements required to provide 25 years of operation based upon 400 usage hours per year.
 - c. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 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.
8. Management Tools: Manufacturer shall provide a web-based database of actual field usage and provide reports by facility and user group.
- a. Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.
 - (1) Cumulative hours: shall be tracked to show the total hours used by the facility.
 - (2) Current lamp hours: shall be tracked separately to reflect the amount of hours on the current set of lamps being used, so re-lamping can be scheduled accurately.

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- 9. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.
- 10. 25-Year Life Cycle Cost: Manufacturer shall submit 25-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 .12 kW rate x 200 annual usage hours x 25 years		
b.	Cost for spot relamping and maintenance over 25 years Assume 7.5 repairs at \$500 each if not included	+	
c.	Cost to relamp all luminaires during 25 years 200 annual usage hours x 25 years / lamp replacement hours x \$125 lamp & labor x # fixtures	+	
d.	Extra energy used without base bid automated control system \$ Energy consumption in item a. x 10%	+	
	TOTAL 25-Year Life Cycle Operating Cost	=	

- 11. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 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. Group lamp replacements for constant light systems must occur in accordance with the independent test report provided by the manufacturer; alternate systems must re-lamp every 2100 hours.
- 12. Equipment On-Site: The equipment must be on-site 4 to 6 weeks from receipt of approved submittals and receipt of complete order information.

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- 13. Approved Product: Musco's Green Generation Lighting® sports lighting is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section 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.

- 14. Design Approval: The owner / engineer will review pre-bid shop drawings from the manufacturer's 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.

- 15. 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 25 years. If a constant light level cannot be provided, the specified maximum Recoverable Light Loss Factor and maintenance/group re-lamping schedule shall be provided in accordance with recommendations in the Pennsylvania State University report "Empirical Light Loss Factors for Sports Lighting", presented at the 2009 IESNA Annual Conference.. For alternate systems, scans for both initial and maintained light levels shall be submitted.

Lamp Replacement Interval (hours)	Recoverable Light Loss Factor (RLLF)
2100	0.69

For alternate systems, scans for both initial and maintained light levels are required.

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Area of Lighting	Average Initial Light Levels	Average Target/Maintained Light Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Infield	43.47 footcandles	30 footcandles	2.5:1.0	25	20'x20'
Outfield	28.98 footcandles	20 footcandles	3.0:1.0	156	20'x20'

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

D. PRODUCT

1. System Description: Lighting system shall consist of the following:
 - a. Galvanized steel poles and cross-arm assembly.
 - b. Pre-stressed concrete base embedded in concrete backfill allowed to cure to 12-24 hours before pole stress is applied. Alternate may be an anchor bolt foundation designed such that the steel pole and any exposed steel portion of the foundation is located a minimum of 18 inches above final grade. The concrete for anchor bolt foundations shall be allowed to cure for a minimum of 28 days before the pole stress is applied.
 - c. All luminaires shall be constructed with a die-cast aluminum housing to protect the luminaire reflector system.
 - d. Manufacturer will remote all ballasts and supporting electrical equipment in aluminum enclosures mounted approximately 10' above grade. The enclosures shall include ballast, capacitor and touch-safe fusing to indicate when a fuse is to be replaced for each luminaire. Safety disconnect per circuit for each pole structure will be located in the enclosure.
 - f. Wire Harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.

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7. Support Structure Wind Load Strength: Poles and other support structures, brackets, arms, bases, anchorages and foundations shall be determined based on the 2009 IBC Building Code, wind speed of 110 mph exposure category C. Luminaire, visor, and crossarm shall withstand 150 mph winds and maintain luminaire aiming alignment.
8. Structural Design: The stress analysis and safety factor of the poles shall conform to AASHTO 2009 (LTS-5) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.
9. Soil Conditions: The design criteria for these specifications are based on soil design parameters as outlined in the geotechnical report. If a geotechnical report is not provided by the owner, the foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2009 IBC.

2.5 MISCELLANEOUS STEEL AND HARDWARE:

- A. Furnish and install all the necessary steel for supporting lighting fixtures, panels, starters, disconnects, conduit etc. "Kindorf" framing systems, rods, channels, and fittings with galvanized or cadmium finish shall be used. Unprotected ferrous metals shall not be permitted.

2.6 CIRCUIT BREAKER PANELBOARDS:

- A. Furnish and install circuit breakers within existing panelboard as indicated on the plans. Circuit breakers shall be thermal-magnetic molded case circuit breakers with trip ratings as shown on the plans.
- B. Circuit Breakers: Circuit breakers shall be manufactured by Square D, AIC rating of new circuit breakers shall be greater than or equal to the AIC rating of the existing panel board (coordinate).

2.7 WIRING DEVICES:

- C. Where shown on the plans, furnish and install wiring devices indicated by the symbols and symbol list.
- D. Wiring devices shall be of the type as specified herein and shall be as manufactured by Pass & Seymour, Hubbell, or Arrow-Hart. Numbers specified refer to Pass & Seymour. Color ivory, confirm color with Owner.

Ground Fault: 20 AMP, 120V 2091-S-1

Plates shall be stainless steel, satin finish, Pass & Seymour S-IN Series For interior use, Intermatic #WP1010MC with locks (all locks shall be keyed alike) for exterior use.

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PART 3 EXECUTION

3.1 CONDUIT - RACEWAY AND FITTINGS:

- A. All wiring shall be installed in a conduit or raceway.
- B. All metal conduit, enclosures and raceways for conductors shall be mechanically joined together to form a continuous electrical continuity and bond and shall be grounded as required by National Electrical Code.
- C. All conduit shall be concealed where possible and so installed so as not to damage or run through structural members. Exposed conduit shall be run parallel with or at right angles to the enclosure. Check the structural details and plans so that all conduits can be concealed, except conduits on surface-mounted panels and boxes and other locations as outlined in these specifications.
- D. All conduit shall be supported by approved hangers, racks, clamps or clips fastened to expansion inserts or lead anchors. Spacing of supports for conduits and raceways shall be in accordance with the National Electrical Code.
- E. Conduits shall be in full lengths wherever possible. All conduits shall be plugged with approved discs during construction and be dry and clean before pulling wires.
- F. All conduits that are laid underground, shall be approved by authorized inspectors before they are covered up in any way. Check the Structural and Architectural drawings and specifications before time of bidding, to verify all conditions.
- G. The inside and outside of all steel and flexible conduit, including factory-make elbows, and of all boxes and fittings, including bolts and screws, shall be protected against corrosion by an even coating of zinc.
- H. Where raceways are cut in the field, they shall be square cut using approved cutter. The cut ends shall be reamed to remove burrs and sharp edges. Threads cut on conduit in the field shall have the same effective length and the same thread dimensions and taper as the factory-cut conduit threads.
- I. Raceways shall be joined by means of threaded couplings or unions. Joints shall be set up tight. Runs shall be straight and true. Elbows, offsets and bends shall be uniform and symmetrical.

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- J. All raceways shall be cleaned, prior to pulling in wire and cable. This cleaning shall remove all foreign matter, including water, from the raceways. All boxes in which the raceway terminates shall be cleaned of all concrete, mortar or other foreign matter and all threads in boxes shall be left clean and true upon completion of the work.
- K. Joints shall be set up tight. Couplings, connectors and fittings shall be approved types designed for the purpose.
- L. Furnish and install separate ground wire to ground all equipment.

3.2 LIGHTING FIXTURES:

- A. All joints in fixture wiring shall be made with solderless connections.
- B. Fixture wire shall be in strict compliance with the latest National Electrical Code. No fixture wiring shall be smaller than #16 AWG. Wiring shall be protected with tape or tubing at all points where abrasions are likely to occur. All wiring shall be concealed within fixture construction.
- C. All fixture units, when installed, shall be free from warps, dents, etc. They shall be clean of dirt, smudges and all foreign matter, and shall be left highly polished.
- D. Upon completion of the installation of the lighting fixtures and lighting equipment, they must be in first-class operating condition and in perfect condition as to finish, etc. At time of final inspection, all fixtures and equipment must be complete with lamps, starters and required glassware or reflectors, which must be clean and free from defects. Any fixtures, reflectors or glassware broken prior to the time of final inspection must be restored without cost to the Owner.
- E. INSTALLATION (MUSCO Sports Lighting)

1. INSTALLATION

- a. Manufacturer's Instructions: Written instructions for the installation of the sports lighting equipment have been provided with these specifications. The contractor shall review the instructions prior to beginning installation and review any areas of concern with the manufacturer at 800/825-6020.
- b. Manufacturer Representative: A qualified representative from Musco Lighting shall be available to provide installation guidance if required by the contractor.

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- c. Handling of Equipment: The lighting equipment shall be handled in an appropriate manner to ensure safe installation and prevent damage to the equipment. Repair or replacement of damaged component shall be the responsibility of the installing contractor.
 - d. Rigging: Use the appropriated rated web fabric slings to lift components into position. Chains or cables shall not be allowed due to potential failure and damage to components.
 - e. Clean-up: Upon completion of the work and before acceptance and final payment is made, the contractor shall clean and remove from the site of the work, surplus and discarded materials, temporary structures and debris of every kind. The contractor shall leave the site of work in a neat and orderly condition equal to that which originally existed. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to the owner.
2. 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 LM-5-04.
 - 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:
 - i. 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.

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- ii. Manufacturer shall minimize the Owner's additional long term fixture maintenance and energy consumption costs created by the additional fixtures by reimbursing the Owner the amount of \$1,000.00 (one thousand dollars) for each additional fixture required.

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

SUBMITTAL INFORMATION

Design Submittal Data Checklist and Certification

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements

Tab	Item	Description
A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
B	Equipment Layout	Drawing(s) showing field layouts with pole locations.
C	On Field Lighting Design	Lighting design drawing(s) showing: <ul style="list-style-type: none"> a. Field Name, date, file number, prepared by, and other pertinent data. b. Outline of field being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified. c. Pole height, number of fixtures per pole, as well as luminaire information including wattage, lumens and optics. d. Height of test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance and uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor. f. Alternate manufacturers shall provide both initial and maintained light scans using a maximum Recoverable Light Loss Factor (RLLF) as specified in section 2.4 C 15

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D	Off Field Lighting Design	Lighting design drawing showing initial horizontal spill light levels along the boundary line (defined on bid drawings) in footcandles. Horizontal levels shall be at 30' intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank lights.
E	Life-Cycle Cost Calculation	Document life-cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaries, maintenance cost for the system including spot lamp replacement, and group re-lamping costs. All costs should be based on 25 Years
F	Luminaire Aiming Summary	Document showing each luminaire's aiming angle and the poles on which the luminaire are mounted. Each aiming point shall identify the type of luminaire.
G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Connecticut.
H	Control & Monitoring System	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.
I	Electrical Distribution Plans	If bidding an alternate system, manufacturer must include a revised electrical distribution plan including changes to service entrance, panels and wiring sizes, signed by a licensed Electrical Engineer in the state of Connecticut.
J	Performance Guidelines	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 25 years.
K	Warranty	Provide written warranty information including all terms and conditions.

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L	Independent Testing Report	Manufacturer bidding any form of a constant light system is to provide an independent test report certifying the system meets the lumen maintenance control strategy defined in section 2.4 C 5a, verifying the field performance of the system for the duration of the useful life of the lamp based on lamp replacement hours. Report shall be signed by a licensed professional engineer with outdoor lighting experience.
M	Project References	Manufacturer to provide a list of projects where the technology proposed for this project has been installed in the state of Connecticut. If any form of a constant light system is bid, a minimum of 5 project references completed within the last calendar year is required. For a depreciating light system a full list of projects completed within the past 3 years is required. Reference list will include project name, project city, and if requested, contact name and contact phone number.
N	Product Information	Complete set of project brochures for all components, including a complete parts list and UL Listings.
O	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of all approved submittals and complete order information.
P	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.

The information supplied herein shall be used for the purpose of complying with the specifications for Henry Park. By signing below I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

Manufacturer: _____

Signature:

Contact Name:

Date:

_____/_____/_____

3.3 BRANCH CIRCUITS:

- A. Furnish and install all conduits, outlets and wiring for lighting and equipment as shown on plans and/or as herein specified. Final connections to all equipment shall be made under this Division unless otherwise specifically noted elsewhere.

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- B. All wire shall be factory color-coded with a separate color for phase, switch and neutral used consistently throughout. The neutral wire of all branch circuits shall be white. Green shall be used for equipment grounding conductors. Feeders shall be phase color coded at all access points.
- C. The installation of wires and cables includes all splicing of the wiring and cables to each other and connecting them to panelboards, receptacles, switches, controls, lighting fixtures, motors and all other electrical apparatus.
- D. Branch circuits shall be arranged to balance the loads on the phases of the panelboard feeders. Where 120 or 277 volt, three or four wire circuits are indicated, the circuit shall consist of separate phases and/or neutral. (Circuit numbers shown on drawings are for identification only.) Maximum unbalance shall not exceed 10 percent.
- E. All wires and cables shall be continuous from origin to destination without running splices. At the end of these wires and cables a sufficient slack shall be left as may be required for making proper connections.
- F. Conduits must be swabbed out and made thoroughly dry before pulling wire and cable.
- G. No grease or other compound which contains acids shall be used in pulling wires and cables.

3.4 GROUNDING AND BONDING:

- A. All non-current carrying metallic parts of electrical equipment, and conduits shall be securely grounded to a common ground bus and ground shall be connected to the water main, with a copper or brass pipe clamp, on the street side of the water service; jumpers shall be installed by-passing all valves.
- B. All grounding conductors shall be made with as few connections as possible. All connections shall be made with an approved type of solderless connector and shall be protected from mechanical injury.
- C. All contact surfaces shall be thoroughly cleaned before connection is made so as to insure a good metal-to-metal contact. Connections shall be readily accessible for inspection.
- D. The ground and bonding systems shall be in strict accordance with the latest edition of the National Electrical Code.

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3.5 OUTLET BOXES:

- A. Outlet boxes and fittings shall be installed at each junction point of conduit.
- B. Boxes shall set plumb and true in building surface.

3.6 WIRING FOR EQUIPMENT:

- A. Prior to commencing any work Contractor to coordinate all equipment requiring electrical connection (equipment, motors, controls, etc.) with respect to voltage and full load amps (FLA) and submit such coordination items to Engineer as equipment requiring electrical connection shop drawing. Failure of the Contractor to provide such shall mean the Contractor shall modify all wires, breakers, panels, switchboards, etc. as required by Engineer.
- B. All roughing work shall be installed in accordance with final dimensioned equipment shop drawings.

END OF SECTION 16100

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. The Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 1, General Requirements, apply to work specified in this Section.

1.2 INCLUDED IN THIS SECTION:

- A. General Requirements for Electrical Work
- B. Nameplates
- C. Tags and Charts
- D. Sleeves, Inserts and Anchor Bolts
- E. Fire stopping

1.3 DESCRIPTION OF WORK:

- A. This Section specifies general requirements for mechanical work. Definitions, intent, drawings, interpretation, approvals, submittals, substitutions, code requirements, permits, fees, royalties, patents, record drawings, instruction of Owner's personnel, and warranty are described.
- B. Operation and maintenance manuals shall be submitted to the Owner prior to the scheduled instruction of Owner's representatives. These manuals shall contain equipment lists, manufacturer's literature, and time schedule for recommended maintenance.

1.4 DEFINITIONS:

- A. "Provide" means to supply, erect, install, and connect up in complete readiness for regular operation, the particular work referred.
- B. "Furnish" means to supply and deliver to the job.
- C. "Install" means to erect, install and connect up in complete readiness for regular operation.
- D. "Conduit" includes, in addition to conduit, all fittings, sleeves, connections, hangers, and other accessories related to such conduit.
- E. "Wiring" means, in addition to wire, all needed connectors, circuit breakers, switches and devices, junction boxes and other items necessary for normal operation of the item being referred to.

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- F. "Concealed" means hidden from sight, as in chases, furred spaces, shafts, hung ceilings, or embedded in construction.
- G. "Exposed" means not concealed as defined above. Trenches, crawl spaces, and tunnels shall be considered exposed.
- H. "Governmental" means all Municipal, State, and Federal governmental agencies.
- I. "Owner" means the tenant who shall occupy the space after final acceptance.

1.5 INTENT:

- A. It is the intention of the Drawings and Specifications to call for finished work, tested and ready for operation. All materials, equipment and apparatus shall be new and of first class quality.
- B. Any apparatus, appliance, material, or work not shown on the Drawings, but mentioned in the Specifications, or vice versa, or any incidental accessories, or minor details not shown, but necessary to make the work complete and perfect in all respects, and ready for operation, even if not particularly specified, shall be provided by the Contractor without additional expense to the Owner.
- C. With the submission of bid, the Contractor shall give written notice to the Owner of any materials, apparatus or omissions believed to be in violation of laws, ordinances, rules or regulations or authorities having jurisdiction. In the absence of such written notice it is mutually agreed that the Contractor shall include the cost of providing all systems in accordance with applicable regulations without extra compensation.

1.6 DRAWINGS:

- A. The Drawings are generally diagrammatic and are intended to convey the scope of work and indicate general arrangement of equipment, ducts, conduits, piping, fixtures and connections.
- B. The Drawings do not indicate all offsets, fittings, and accessories which may be required. Investigate finish conditions affecting this work, and arrange work accordingly, providing such fittings, and accessories required to meet the conditions.
- C. The locations of all items shown on the Drawings or called for in the Specifications that are not definitely fixed by dimensions, are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project, and shall have the approval of the Owner before being installed. DO NOT SCALE DRAWINGS.

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- D. Follow Drawings as closely as actual building conditions will permit in laying out work. Check Drawings for other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions throughout. Where headroom or space conditions appear inadequate, the Owner shall be notified before proceeding with installation.
- E. If directed by the Owner, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.

1.7 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS:

- A. Any questions or disagreements arising as to the true intent of this Specification or the Drawings, or the kind and quality of work required thereby, shall be decided by the Owner, whose interpretations thereof shall be final, conclusive and binding on all parties.
- B. In the case of disagreement between Drawings and Specifications, or within either document itself, the better quality, greater quantity or more costly work shall be included in the contract price, and the matter referred to the Owner's attention for decision and/or adjustment.

1.8 APPROVALS:

- A. The materials, workmanship, design and arrangement of all work installed under the Contract shall be subject to the approval of the Owner. If material or equipment is installed before it is approved, the Contractor shall be liable for removal and replacement, at no extra cost to the Owner, if, in the opinion of the Owner, the material or equipment does not meet the intent of the Drawings and Specifications.

1.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES:

- A. The Contractor shall submit five (5) copies of Shop Drawings, Product Data and/or Samples to the Owner for review prior to releasing an order for fabrication and/or shipment. These submittals shall be given for materials and equipment and as called for under each particular Section of the Specifications.
- B. Product Data submittals shall consist of complete catalog data clearly indicating all applicable items, in the following manner:
 - 1. State sizes, capacities, brand names, accessories, materials, gauges, dimensions, and other pertinent information.
 - 2. List on catalog covers page numbers of submitted items.

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3. Underline applicable data. Highlighting applicable data is not sufficient.
- C. Incomplete or unclear submittals will be returned unreviewed for correction and resubmission. Additional copies beyond five (5), or submittals of items other than what is called for under each particular Section, will be returned unreviewed.
- D. Submittals of equipment or materials other than those indicated on the Drawings or in the Specifications will be returned unreviewed, except for reasons as noted under SUBSTITUTIONS.
- E. This Division shall coordinate all aspects of respective subsections with the contractor including material data, and overall drawings, and installation sequencing, etc. See Division 1 requirements.

1.10 SUBSTITUTIONS:

- A. Substitutions of equipment or materials other than those shown on the Drawings or called for in the Specifications will be considered for review only under one or more of the following conditions. (Sports light system shall be Musco Sports Lighting, no substitution)
 1. Less than three (3) acceptable manufacturers are indicated on the Drawings or in the Specifications.
 2. Substitution is required for compliance with subsequent interpretations of code requirements or insurance regulations.
 3. Substitution is required due to unavailability of special products, through no fault of the Contractor. Excluded is lack of availability within a desired time frame due to Contractor's failure to order equipment or material early enough.
 4. Manufacturer/fabricator refuses to certify or guarantee performance of specified product as required.
 5. Within fifteen (15) days of Award of Contract, the Contractor and Subcontractors under this Division shall submit to the Owner a complete list of manufacturers and model numbers proposed for the work of Division 15. Refer to the Paragraphs of this Section regarding: Approvals; Shop Drawings, Product Data and Samples; and Substitutions. The intent by the Contractor or Subcontractors to use the exact manufacturers and/or model numbers specified does not void the requirement for this Submission for Approval.
- B. The particular condition necessitating a substitution must be clearly indicated on the substitution's transmittal or it will be returned unreviewed.

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- C. The Contractor shall submit a substitution for review before releasing an order for fabrication and/or shipment. The Owner reserves the right to reject such substitution, provided the item offered, in his opinion, is not equal to the item specified.
- D. When a Contractor proposes to use an item of equipment other than that specified or detailed on the Drawings, and which requires any redesign of structure, partitions, foundations, wiring, or of any other part of the electrical, or Ownerural layout, the Contractor shall assume responsibility for additional costs incurred in planning, design and construction to accommodate the substitution. If approved by the Owner, redesigned drawings and details to accommodate the substitution may be prepared by the Contractor at his own expense.
- E. If a substitution requires a different quantity and arrangement of wiring, conduit, and equipment from that specified or indicated on the Drawings, subject to approval of the Owner, the Contractor shall provide any such structural supports, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the Owner.

1.11 CODE REQUIREMENTS, PERMITS AND FEES:

- A. Perform work in accordance with applicable provisions of the accepted version of the NFPA codes including the National Electric Code and Life Safety Code, and all state and local codes. All work shall also be in compliance with utility companies' requirements.
- B. In cases of differences between building codes, state laws, local ordinances, utility company regulations, and Contract Documents, the most stringent shall govern. Promptly notify Owner in writing of such differences.
- C. Include in the work, without extra cost to the Owner, any labor, material, service, test, apparatus, or drawing (in addition to Contract Drawings and Documents) in order to comply with applicable laws, ordinances, rules, regulations, and local authority's requirements, whether or not shown on Drawings and/or specified.
- D. Give all necessary notices, obtain all permits before commencing work, and pay all governmental taxes, fees and other costs in connection with the work. File all necessary plans, prepare all documents and obtain all necessary approvals of the authorities having jurisdiction. Obtain all required Certificates of Inspection for the work and deliver them to the Owner before requesting final payment for the work.
- E. The Contractor shall be licensed in accordance with the guidelines of the Department of Consumer Protection. The workers employed by the Contractor shall be skilled and licensed to perform the work involved.

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1.12 ROYALTIES AND PATENTS:

- A. The Contractor shall pay all royalties and shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.
- B. If the Contractor observes that a process or article specified is an infringement of a patent, the Contractor shall promptly notify the Owner in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work specified, knowing it to be an infringement of a patent, the Contractor shall bear all costs arising therefrom.

1.13 RECORD DRAWINGS:

- A. Clearly record differences between mechanical and electrical work as installed and as shown or called for in the Contract Documents. Accurate notations of all locations, sizes and inverts of all concealed materials shall be made. These records shall be marked, concurrent with progress, on a set of prints labeled "RECORD DRAWINGS."
- B. On completion of project, mark a set of prints with data transferred from the Record Drawings, and submit them to the Owner for review for legibility and clearness of presentation of the recorded conditions of construction.

1.14 INSTRUCTION OF OWNER'S PERSONNEL:

- A. After completion of all work and all tests and at such time as designated by the Owner's representative, the Contractor shall provide the necessary skilled personnel to operate each entire installation for a period of two (2) days of eight hours.
- B. During the operating period, the Contractor shall fully instruct the Owner's representative in the complete operation, adjustment, and maintenance of the entire installation.

1.15 OPERATION AND MAINTENANCE MANUALS:

- A. Prepare a manual of operation and maintenance instructions, in draft form, and submit to the Owner for review.
- B. The Manual shall contain the following items:
 - 1. Brief description of each system covering its basic operating characteristics.
 - 2. List of all equipment with manufacturer's name and model number for each item.

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3. Contractor's own written operating and maintenance instructions, including detailed step-by-step instruction for starting, summer operation, winter operation, and shutdown of each system.
 4. Copies of submittals having final review stamps.
 5. Manufacturer's bulletins, data, parts lists, operating and maintenance instructions, guarantees and any other information pertinent to the proper operation of each system and item of equipment installed.
 6. Copy of each automatic control diagram with respective sequence of operation.
 7. Copy of each valve chart.
 8. Information of actions to be taken in the event of a malfunction or other emergency.
 9. Time schedule for recommended maintenance operation.
- C. At least two weeks prior to the scheduled instruction of Owner's representatives, provide the Owner with five (5) complete copies of the final form of the Operation and Maintenance Manual, bound in booklet form in durable binders, suitable indexed with labeled tabs for each item.

1.16 WARRANTY:

- A. The Contractor shall warrant that all work installed will be free from any and all defects, and that all apparatus will develop capacities and characteristics specified, and that if, during a period of one (1) year from date of completion and acceptance of the work, any such defects in workmanship, materials, or performance appear, the Contractor shall immediately replace, repair or otherwise correct the defect or deficiency without cost and within a reasonable time to be specified in writing to the Owner.
- B. The Contractor shall also replace or repair, to the satisfaction of the Owner and Owner, all damage done to any material or finish in consequence of work performed in fulfilling the warranty.
- C. In the case of default on this warranty by the Contractor, the Owner may have such work done as required, and charge the cost to the Contractor.

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1.17 VISITING THE SITE:

- A. Before submitting a final proposal, the Contractor shall examine the site of the proposed work to determine the existing conditions that affect the work. The Contractor will be held responsible for any assumptions made by him in regard thereto. Time for this examination must have prior approval of the Owner.
- B. No subsequent allowance for time or money will be considered for any consequence related to failure to examine site conditions. All existing systems shall remain in operation at all times except as otherwise arranged under shutdowns.

1.18 FINAL ACCEPTANCE:

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following list.
 - 1. Submit the final payment request to the Owner with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit an updated final statement to the Owner, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Owner's Final Inspection list of items to be completed or corrected, stating that each item has been completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Owner.
 - 4. Submit consent of surety to final payment.
 - 5. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Owner will reinspect the Work upon receipt of notice from the Contractor that the Work, including Final Inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Owner.
 - 1. Upon Completion of reinspection, the Owner will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

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2. If necessary, reinspection will be repeated, and the Contractor will bear the cost.

PART 2 PRODUCTS

2.1 MANUFACTURER'S IDENTIFICATION:

- A. Manufacturer's nameplate, name, or trademark shall be permanently affixed to all equipment and material furnished under this Specification. The nameplate of a subcontractor or distributor will not be acceptable.

2.2 NAMEPLATES:

- A. Provide for each item of equipment, including controls, a permanently attached nameplate made of laminated bakelite with incised letters; nameplate shall have black surface and white core.
- B. Nameplates shall be a minimum of 3" long by 1-1/2" wide and shall bear the equipment name and item as designated in the equipment schedule.
- C. All panel directories shall be typed, indicating what each circuit breaker or fuse controls.
- D. Tape labels embossed adhesive tape 3/16" white letters on black background.
- E. Wire and cable markers: Cloth markers split sleeve or tubing type.

2.4 SLEEVES, INSERTS AND ANCHOR BOLTS:

- A. Each Section of Division 16 shall be responsible for the location and proper position of sleeves and anchor bolts. If failure to do so requires cutting and patching of finished work, it shall be done at no extra cost to the Owner.
- B. Sleeves through concrete floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with wall, floor or ceiling surface. Sleeves through floors shall be sealed with a fireproof, resilient material to maintain the fire rating integrity of the assembly.

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2.6 MATERIALS AND EQUIPMENT:

- A. Prior to ordering or use of any material or equipment, it shall be the sole responsibility of the Contractor to ensure that the manufacturer certifies in writing that all material and equipment supplied is suitable and approved by code, and in accordance with the manufacturer's recommendations and installation instructions for use in the particular manner and location intended. Contractor shall make due allowance for this in the bid and shall include any accessories or revisions required at no additional charge.
- B. New materials and equipment installed into existing work shall be compatible with the existing work. The Contractor shall advise the Owner before ordering and/or installing any materials or equipment if he disputes those items and/or methods specified. Otherwise, the Contractor shall take full responsibility for their performance and suitability. Only new materials and/or equipment shall be used.

PART 3 EXECUTION

3.1 PROTECTION OF WORK AND PROPERTY:

- A. The Contractor shall be responsible for the maintenance and protection of all equipment, materials and tools supplied by the Contractor and stored or installed on the job site, from loss or damage of all causes, until final acceptance by the Owner.
- B. The Contractor shall be responsible for the protection of any finished work of other trades from damage or defacement by the Contractor's operation and must remedy any such injury at the Contractor's own expense.

3.2 SCAFFOLDING, RIGGING, AND HOISTING:

- A. The Contractor shall provide all scaffolding, rigging, hoisting and services necessary for erection and delivery into the premises for all equipment and materials furnished, and remove same from premises when no longer required.

3.3 CUTTING, PATCHING, EXCAVATION AND BACKFILL:

- A. All cutting, patching, excavation and backfill shall be provided by other Divisions. Coordinate all requirements well in advance.

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3.4 ACCESSIBILITY:

- A. The Contractor shall install all items so that parts requiring inspection, maintenance and repair are readily accessible. Minor deviations from the Drawings may be made to accomplish this, but changes of magnitude shall not be made without prior written approval of the Owner.

3.5 SEISMIC REQUIREMENTS:

- A. All new electrical equipment, wiring and conduit shall be installed to resist vertical and lateral forces in accordance with the State Building Code and applicable regional seismic codes, with the exception of the following: All electrical conduit less than 2-1/2" inside diameter.
- B. Acceptable Manufacturers: Subject to compliance with requirements, provide products of one of the following manufacturers.

Seismic Restraints:

1. Mason Industries, Inc.
2. Vibration Eliminator Co., Inc.
3. Vibration Mountings and Controls, Inc.

3.6 QUIET OPERATION:

- A. All equipment and material provided by the Contractor shall operate under all conditions of load without any sound or vibration which in the opinion of the Owner is objectionable. Where sound or vibration is objectionable in the opinion of the Owner, the Contractor shall eliminate it in a manner approved by the Owner.

3.7 CLEANING OF CONDUIT AND EQUIPMENT:

- A. Clean exposed conduit equipment and fixtures. Repair damaged finishes and leave everything in working order satisfactory to the Owner.
- B. Thoroughly clean all equipment inside and outside of all foreign substances before being placed into operation. If any part of a system should be stopped by any foreign matter after being placed in operation, the system shall be disconnected, cleaned and reconnected wherever necessary to locate and remove obstructions. Any work damaged in the course of removing obstructions shall be repaired or replaced when the system is reconnected, at no additional cost to the Owner.

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3.8 TESTS:

- A. All equipment shall be tested as determined by all authorities having jurisdiction, but in no case less than that specified under each section of the Specifications. Labor, materials, instruments and power required for testing shall be furnished by the Contractor, unless otherwise indicated under the particular section of the Specifications.
- B. Tests shall be performed to the satisfaction of the Owner and such other parties as may have legal jurisdiction.
- C. All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Owner.
- D. Any damages resulting from tests shall be repaired and damaged materials replaced, all to the satisfaction of the Owner.
- E. Equipment and systems which normally operate during certain seasons of the year shall be tested during the appropriate season. Tests shall be performed on individual equipment, systems and their controls. Whenever the equipment of a system under test is interrelated with, and depends upon, the operation of other equipment, systems and controls for proper operation, functioning and performance, the latter shall be operated simultaneously with the equipment or system being tested.

3.9 INSTALLATION OF LABELS AND MARKERS:

- A. Decrease and clean surfaces to receive nameplates and labels.
- B. Install nameplates (and tape labels) parallel to equipment lines.
- C. Secure nameplates to equipment fronts using screws, rivets, or adhesive. Secure nameplate to inside face of recessed panelboard doors in finished locations.
- D. Embossed tape will not be permitted for any applications.
- E. Apply typed tape labels to inside of all receptacles and light switchplates to indicate panel and circuit that items is fed from.
- F. Add the following WIRE IDENTIFICATION specification.
 - 1. Provide wire markers on each conductor in panelboard gutters, pullboxes, junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits.

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G. Nameplate Engraving Schedule

1. Provide nameplates of minimum letter height as schedule below.
2. Panelboards: 1/4 inch; identify equipment designation 1/8 inch; identify voltage rating and source.
3. Individual circuit breakers, and switches, in panelboards: 1/8 inch; identify circuit and load served, including location.
4. Individual circuit breakers, enclosed switches, and motor starters: 1/8 inch; identify load served.

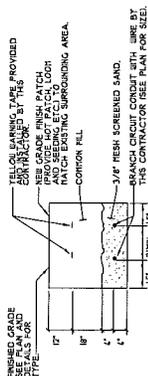
END OF SECTION 16010

LIGHTING AT HENRY PARK
SOFTBALL FIELD
120 SOUTH STREET
VERNON, CT

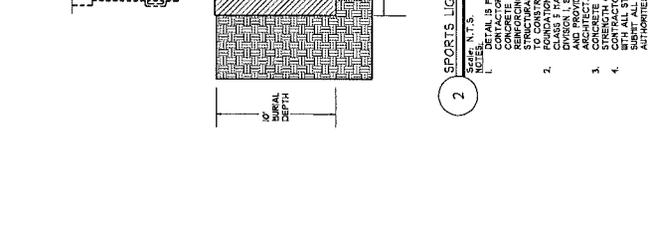
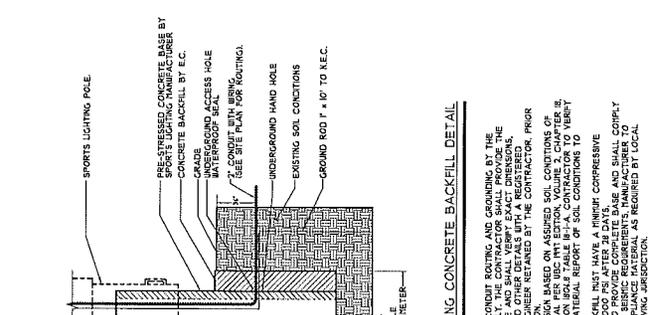
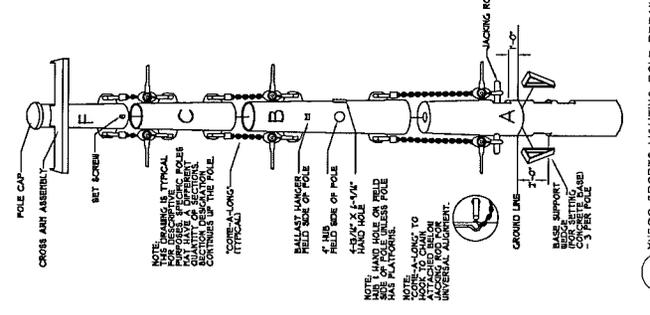
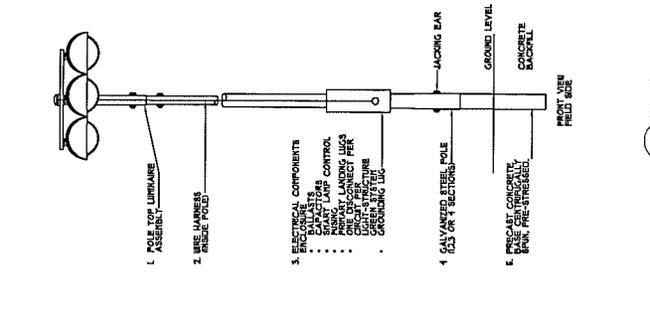
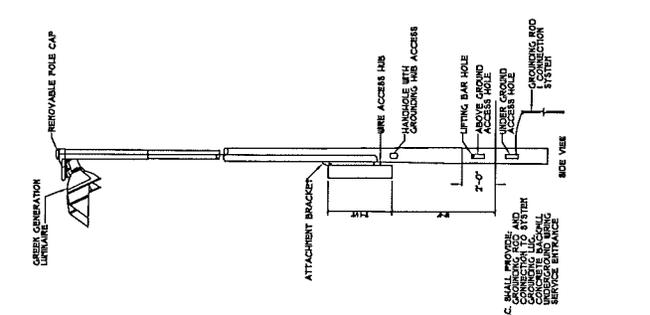
Sheet Description:
ELECTRICAL
SYMBOLS,
SCHEDULES,
NOTES &
DETAILS

Sheet No.	E0.01
Date	11/6/12
Drawn By	P.P.
Checked By	P.P.
Project Name	SOFTBALL
Sheet #	8 of 8

SYMBOL	DESCRIPTION
MSCO	MISCO SPORTS LIGHTING
EL	ELECTRICAL
BR	BRING AND CONDUIT
ON	OVERHEAD SECONDARY ELECTRIC SERVICE
IP	IN-PUSH MOUNTED WEATHERPROOF PULL BOX
RP	RUSH MOUNTED WEATHERPROOF PULL BOX
CP	CORNER FLASHING FLOOR
ER	EXISTING TO BE REMOVED
TLG	TALL LIGHTS ONLY
EC	ELECTRICAL CONTRACTOR
IB	INSTALL BREAKER



TYPE	MANUFACTURER CATALOG #	VOLTAGE	LAMPS	VA	REMARKS
A1	MISCO	200V-3Ø	(3) 1500W MH	3400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.
A2	MISCO	200V-3Ø	(3) 1500W MH	1400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.
B1	MISCO	200V-3Ø	(3) 1500W MH	1400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.
B2	MISCO	200V-3Ø	(3) 1500W MH	1400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.
C1	MISCO	200V-3Ø	(3) 1500W MH	1400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.
C2	MISCO	200V-3Ø	(3) 1500W MH	1400	SPORTS LIGHTING FIXTURE ASSEMBLY (ALL LISTED) CONSISTING OF: PREMANUFACTURED POLE FOR LUMINAIRE ASSEMBLY (2 BODIES LAPPED), STEEL POLE ELECTRICAL COMPONENTS ENCLOSURE WITH DISCONNECTS FOR CIRCUITS, INSING ETC. AND PRECAST CONCRETE BASE.



1 MISCO SPORTS LIGHTING POLE DETAIL 1

Scale: N.T.S.

1. GALVANIZED STEEL POLE (20 OR 4 SECTIONS)

2. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

3. 3/4" MESH SCREENED SAND.

4. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

2 MISCO SPORTS LIGHTING POLE DETAIL 2

Scale: N.T.S.

1. GALVANIZED STEEL POLE (20 OR 4 SECTIONS)

2. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

3. 3/4" MESH SCREENED SAND.

4. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

3 MISCO SPORTS LIGHTING POLE DETAIL 3

Scale: N.T.S.

1. GALVANIZED STEEL POLE (20 OR 4 SECTIONS)

2. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

3. 3/4" MESH SCREENED SAND.

4. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

4 SPORTS LIGHTING CONCRETE BACKFILL DETAIL

Scale: N.T.S.

1. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

2. 3/4" MESH SCREENED SAND.

3. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

4. COMMON RILL

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

5 CROSS ARM ASSEMBLY

Scale: N.T.S.

1. GALVANIZED STEEL CROSS ARM

2. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

3. 3/4" MESH SCREENED SAND.

4. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

6 MISCO SPORTS LIGHTING POLE DETAIL 4

Scale: N.T.S.

1. GALVANIZED STEEL POLE (20 OR 4 SECTIONS)

2. PRECAST CONCRETE BASE (PREPARED BY CONTRACTOR)

3. 3/4" MESH SCREENED SAND.

4. BRANCH CIRCUIT CONDUIT WITH WIRE BY THIS CONTRACTOR (SEE PLAN FOR SIZE).

5. 1/2" GRASS PATCH

6. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

7. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

8. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

9. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

10. 1/2" GRASS PATCH EXISTING SURROUNDING AREA.

TOWN OF VERNON

CONTRACT #1043-10/31/13

**INSTALLATION OF SOFTBALL LIGHTS AT
HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUT**

PROPOSAL

TO: Town of Vernon
14 Park Place
Vernon, CT 06066

Sirs:

THE UNDERSIGNED HEREBY DECLARES that:

A. No person or persons other than those named herein are interested in this Proposal or in the Contract proposed to be taken; that it is made without any connection with any other person or persons making any proposal for the same work, and is in all respects fair and without collusion or fraud; that no person acting for or employed by the Town of Vernon (the Town) is now or will hereafter be directly or indirectly interested therein, or in any portion of the profits thereof in any manner which is unethical or contrary to law;

B. He has read the information contained herein relating to the work;

C. That in the event a Contract, as contemplated by this Proposal, is awarded to him, he will enter into a written Contract with the Town, and agrees that in case he fails to do so, the Town may determine that the bidder has abandoned the Contract, and thereupon the acceptance of this Proposal and the award shall be null and void, and that the proposal guarantee may be forfeited in whole or in part to the Town as the Town may determine, and he will, by such Contract, agree to furnish all materials herein required, within the time stipulated by the Town, will perform all services and will assume all liabilities and obligations connected therewith, all in accordance with the Contract,
Specifications, and Instructions to Bidders, all of which are made a part hereof, and will accept in full payment therefore the following sums, to wit:

BID PROPOSAL

The undersigned representative of _____
hereby submits the following bid proposal for labor as specified:

1. Total cost for removing and replacing the Softball Lights at Henry Park 120 South Street, Connecticut.

\$ _____

_____ DOLLARS

2. DELIVERY TO BE 90 CALENDAR DAYS FROM CONTRACT AWARD. EXTENSION SUBJECT TO WRITTEN APPROVAL BY DIRECTOR OF PARKS AND RECREATION.

3. BID BOND ATTACHED: YES _____ NO _____

4. Bidder shall submit the name, address, responsible party and phone number of three or more references (preferably municipalities) where similar work has been done.. If none, state so.

1) _____

2) _____

3) _____

5. The undersigned declares that the signer of this proposal is:

(a) INDIVIDUAL doing business as

(b) PARTNERSHIP doing business as

(c) CORPORATION entitled

organized under the laws of the State of _____ and having its

principal offices at

The names of all partners of a partnership or the principal offices of a corporation will be submitted upon request.

Signature of Authorized Representative

Print Name and Title

Print Firm Name

Print Street Address

Print City, State and Zip Code

Contact Name

Area Code and Telephone Number

Area Code and Telecopier (Fax) Number

I, _____, hereby certify that I do not hold any executive or appointive office in the government of the Town of Vernon; furthermore, I do not anticipate holding or seeking office in the Town of Vernon for the duration of this contract. I further certify that the firm, which I represent, as named above, is an Equal Opportunity Employer.

Date

Signature

TOWN OF VERNON

CONTRACT #1043-10/31/13

**INSTALLATION OF SOFTBALL LIGHTS AT
HENRY PARK
120 SOUTH STREET
VERNON, CONNECTICUT**

CONTRACT

This agreement, made and concluded by and between the Town of Vernon, a Municipal corporation organized and existing under the laws of the State of Connecticut, acting herein by its Town Administrator duly authorized, hereinafter designated the "Town" and _____ (being the party named in the attached copy of the proposal) hereinafter designated the "Contractor".

A. WITNESSETH, That said Contractor has agreed, and by these presents does for his, their, or its heirs, executors, administrators, successors, and assigns covenant, promise and agree to and with the said Town, for the consideration hereinafter mentioned and contained, and under the penalty expressed in bonds hereunto annexed, that the said Contractor shall and will, at his, its, or their own proper charge, cost and expense furnish all materials in accordance with this contract and the specifications which are a part hereof, viz.; all to be in accordance with the terms of the proposal for said material submitted to the Town Administrator of the Town, and made part of this contract.

B. TOWN ADMINISTRATOR TO BE JUDGE. The Town Administrator of the Town and his duly authorized representatives, hereinafter referred to as the "Administrator" shall be judge of the character, nature and fitness of all the materials furnished under this contract.

C. (1) CONTRACTOR RESPONSIBLE FOR WHOLE WORK. The Contractor shall be responsible for the entire work until its final acceptance, and any unfaithful or imperfect work or defective material that may be discovered at any time before said final acceptance shall be immediately corrected or removed by said Contractor on requirement of the Administrator.

(2) DEFECTS IN MATERIAL. In the case the nature of the defect(s) is such that it is not expedient to have them corrected, the Administrator shall have the right to deduct from the amount due the Contractor on the final settlement of the accounts such sum of money as he considers a proper equivalent for the difference between the value of the materials specified and that furnished, or a proper equivalent for the damage.

(3) PARTIAL PAYMENT NOT ACCEPTANCE. It is also agreed that this is an entire contract for one whole and complete work, and that no partial payments on account by the Town, nor the presence of the Administrator or inspectors, or their supervision or inspection of work or materials, shall constitute an acceptance of any part of the work before its entire completion and final acceptance.

D. (1) COMMENCEMENT AND COMPLETION OF WORK. The Contractor shall furnish the material contracted for within the time stated therefore in the specifications for this work.

(2) EXTENSION OF TIME. If the Contractor is delayed in the prosecution or completion of the work by or on account of any act or omission of the Town, or by strikes or causes beyond control of the Contractor, he shall be entitled to such reasonable extension of time for the completion of the work as may be decided upon by the Administrator, provided, however, that no claim for an extension of time for any reason shall be allowed, unless, within three days after such delay occurs, notice in writing of the fact of said delay, its causes, and the extension claimed, shall be given by the Contractor to the Administrator.

(3) TIME LIMITS. All time limits stated in the Contract Documents are of the essence of the Contract.

E. (1) CONTRACTOR'S DUTIES AND LIABILITIES. The Contractor shall comply with all local, state and national laws and regulations, and with all Town ordinances in the prosecution of the work, and shall secure all necessary permits and licenses.

(2) CONTRACTOR LIABLE FOR DAMAGES.

a. The Contractor shall indemnify and save harmless the Town, its officer, agents and servants against and from all damages, costs and expenses which they or any of them may suffer by, from or out of any and all claims for payment for materials or labor used or employed in the execution of this contract, and also for injuries or damages received or sustained to person or property, or both, in consequence

of or resulting from any work performed by said Contractor, or of or from any negligence in guarding said work, or of or from any act or omission of said Contractor, and said Contractor shall also indemnify and save harmless said Town from all claims under the Workmen's Compensation Act arising under or out of this contract.

b. Employees' Compensation Insurance shall be as provided by Connecticut law and custom.

c. See specifications for required types of insurance.

d. Sub-contractors must be protected by insurance the same as the principal contractor.

e. It is agreed between the parties hereto that the amount of insurance set forth above does not in any way limit the liability of the Contractor to the Town by virtue of his promise to hold the Town harmless so that in the event that any claim results in a settlement or judgment in any amount above said limits, the Contractor shall be personally liable to the Town for the difference.

f. Certificates of the insurance company or companies, must be submitted to the Administrator before the Contractor starts work. Should any

insurance expire or be terminated during the period in which the same is required by this contract, the Administrator shall be notified thirty (30) days in advance and such expired or terminated insurance must be replaced with new insurance and a new certificate furnished to the Administrator.

g. Failure to provide the required insurance and certificates may, at the option of the Town, be held to be a willful violation of this Contract.

(3) PATENTS. The Contractor shall defend any suits or proceedings brought against the Town for alleged infringements of patents by or by reason of any material furnished under this contract, and shall pay any damages or costs that may be awarded against the Town as a result of such suits, free of all expense to the Town.

F. AVOIDANCE OF CONTRACT. If this Contract shall be assigned without the written consent of the Administrator, or if at any time the Administrator shall be of the opinion that the work on said material is necessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or agreements of this contract, or that the progress of the work is, in his opinion, being so delayed that said material

cannot be supplied within the required time, the Administrator may give written notice, postage prepaid, to the Contractor, at his business address, to that effect. If the Contractor shall not, within ten days after the mailing of such notice, take appropriate measures, in the judgement of the Administrator, to insure the satisfactory completion of the work, he may notify the Contractor in writing, to discontinue all work on said material under this contract; and it is hereby agreed that the Contractor shall thereupon at once stop work and cease to have the right or claim to possession of the material; and the Town may, by means of such other agents or contractors as shall to it seem advisable, complete the work herein described, or such part thereof as it may deem necessary, and may take possession of and use such materials, except as otherwise provided. The Contractor shall not remove any portion of the materials after receiving such notice as aforesaid. And said Town is hereby authorized and empowered to apply sums of money due or to become due to said Contractor under this Contract by way of reduction in damages, and as part payment of such additional expense incurred by the Town as aforesaid.

G. (1) PAYMENTS. The Town will pay and the Contractor will receive, as full compensation for furnishing such materials, the amount stated in the proposal,

or the sums of money computed at the several unit prices stated in the proposal submitted by the Contractor to the Administrator. A copy of the proposal is made a part of this Contract. The Town may make such deductions from these sums as are provided for in this Contract.

(2) FINAL COMPLETION AND FINAL PAYMENT. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of Final Application for Payment, the Administrator will promptly make such inspection and, when he finds the work acceptable under the Contract Documents and the contract fully performed, he will promptly issue a final Certificate of Payment stating that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable. The Administrator's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth herein had been fulfilled.

The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment.

(3) NO INTEREST TO BE PAID. No interest is to be allowed or paid by the Town upon any monies retained under the provisions of this contract.

H. CONTENTS OF CONTRACT. The information for bidders, the proposal, the specifications, together with special provisions following herewith, and the bond and any and all additions which may be inserted or attached to any, or all of the sections as listed above, together with the drawings named in the information for bidders are made a part of this Contract.

I. AUTHORITY AND DUTIES OF INSPECTOR. An Inspector is a representative (but not a duly authorized representative as referred to in Article B of this Contract) of the Administrator assigned to make any and all necessary inspections of the work performed and materials furnished by the Contractor. Inspectors shall be authorized to inspect all work done on materials furnished. Such inspection may extend to all or any part of the work and to the preparation of

the materials to be used. In case of dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Administrator. The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of the specifications nor to approve or accept any portion of the

work, nor to issue instruction contrary to the plans and specifications. The Inspector shall not act as foreman or perform other duties of the Contractor nor interfere with the management of the work by the Contractor. Any advice which the Inspector may give the Contractor shall in no way be construed as binding the Administrator of the Town in any way nor releasing the Contractor from the fulfillment of the terms of the Contract.

J. FAIR EMPLOYMENT PRACTICES. The Contractor hereby agrees that neither he nor his subcontractors will refuse to hire or employ or to bar or to discharge from employment an individual or to discriminate against him in compensation or in terms, condition or privilege of employment because of race, color, religious creed, age, sex, national origin or ancestry, except in the case of bona fide occupational qualification or need.

The Contractor further agrees that neither he nor his subcontractors will discharge, expel or otherwise discriminate against any person because he has opposed any unfair employment practice or because he has filed a complaint or testify or assisted in any proceeding under Section 31-127 of the Connecticut General Statutes. The

advertisement of employment opportunities will be carried out in such manner as not to restrict such employment so as to discriminate against individuals because of their race, color, religious creed, age, sex, national origin or ancestry, except in the case of a bona fide occupational qualification or need.

The terms stated above are taken from Section 31-126 of the Connecticut General Statutes, "Unfair Employment Practices".

K. LAWS AND JURISDICTION. The parties hereto agree that this contract is subject to the laws and jurisdiction of the State of Connecticut.

L. COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986. The Contractor hereby agrees that he is aware of and has complied

with the hiring and documentation requirements of the Immigration Reform and Control Act of 1986.

The Contractor agrees that it has asked for and examined documentation in order to verify the legal employability of its employees and has executed the appropriate forms attesting thereto pursuant to the Act.

The Contractor further agrees to indemnify and hold the Town harmless from any costs and/or penalties incurred, including but not limited to fines, attorney's fees and costs arising from a claim of violation of said Act.

M. DISPUTES. The parties agree that any dispute will be submitted to the Superior Court, Judicial District of Tolland, at Rockville, Connecticut.

O. ANTI-TRUST PROVISIONS. The Contractor or Subcontractor offers and agrees to assign to the Town all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. Section 15, or under Chapter 624 of the General Statutes of Connecticut, arising out of the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the Town awards or accepts such contract, without further acknowledgement by the parties.

WITNESS WHEREOF, the parties hereto set their hands and seal this

_____ day of _____ 2013.

Signed in the presence of:

Signed in the presence of:

THE TOWN OF VERNON:

By: _____

John D. Ward

Town Administrator

By: _____

Name:

Title: