

**POCATELLO/CHUBBUCK
SCHOOL DISTRICT NO. 25
Bannock County, Idaho**

**Administration Offices
3115 Pole Line Road
Pocatello, Idaho**

S P E C I F I C A T I O N S

**STADIUM LIGHTING
CENTURY HIGH SCHOOL**

BIDS WITH CONDITIONS WILL NOT BE ACCEPTED

BID OPENING

**April 3, 2019
11:00 A.M.**

**POCATELLO/CHUBBUCK
SCHOOL DISTRICT NO. 25
Bannock County, Idaho**

INVITATION TO BID

**STADIUM LIGHTING
Century High School
School District No. 25**

Sealed bids will be received and opened by a Representative of the Board of Trustees of School District No. 25, Bannock County, Idaho at 3115 Pole Line Road, Pocatello, Idaho, 83201 until 11:00 AM on April 3, 2019 for Stadium Lighting at Century High School.

A pre-bid conference and walk-thru to review projects will be held at 2:00 PM on March 15, 2019 at Century High School, 7801 Diamondback Drive, Pocatello, Idaho.

Specifications or additional details, (including bid forms), may be secured at 3115 Pole Line Road, Pocatello, Idaho, 83201. All bids must be on the forms furnished, all blank spaces filled in, and signed with the name and address of the Bidder. No unqualified bids will be read.

Each bid shall be accompanied by a certified check, cashier's check, or a bidder's bond, (executed by a qualified surety company with the power to do business in the State of Idaho) in the sum of not less than five percent, (5%) of the total bid, made payable to School District No. 25, Bannock County, Pocatello, Idaho. This surety shall be forfeited by the bidder in the event of failure to enter into a contract. Personal or company checks will not be accepted. Compliance with Idaho Public Works Law is required.

The Board of Trustees reserves the right to reject any/or all bids or to waive any informalities, or to accept the bid or bids deemed best for School District No. 25, Bannock County, Pocatello, Idaho.

Renae Johnson, Clerk
School District No. 25

To be published on the dates of:

March 12, 2019
March 19, 2019

IDAHO STATE JOURNAL

INSTRUCTIONS TO BIDDERS

BIDS:

Sealed "BIDS" will be received on or before the time and date set forth under "INVITATION TO BID".

The owner reserves the right to accept or reject any part or all bids.

Bidders submitting a "Bid" on this work will be required to figure and furnish everything as called for by these specifications and the requirements of the Bid sheet.

All bids shall be in a sealed envelope addressed to the Board of Trustees of School District No. 25, 3115 Pole Line Road, Pocatello, Idaho. The following shall be written on the exterior of the envelope:

"BIDS FOR STADIUM LIGHTING AT CENTURY HIGH SCHOOL
TO BE OPENED ON APRIL 3, 2019 AT 11:00 AM"

Bids not delivered by contractors at time of bid opening must be received in mail or no later than 4:00 PM on April 2, 2019 the day before the bid opening.

EXAMINATION OF THE SITE AND DOCUMENTS: *Pre-Bid Walk through.*

Refer all questions to Mr. Alan Spidell, School Plant Coordinator, at (208)233-2604. Contact with other district staff, Board of Trustees, or Administration, will be by written permission only.

A **pre-bid** conference and walk-thru to review projects will be held on March 15, 2019 at 1:00 PM at Century High School, 7801 Diamondback Dr, Pocatello, Idaho.

The purpose of the pre-bid conference and prior to submitting a proposal, the bidder shall:

1. Carefully examine the specifications.
2. Visit the worksite.
3. Be fully informed of existing conditions and limitations.
4. Include in the bid sums sufficient to cover all items required by the contract, which shall rely entirely upon your own examinations in making this proposal.

INTERPRETATIONS:

Should a bidder find discrepancies in, or omissions from the specifications, or be in doubt as to their meaning, he should at once notify the Owner, who will send written instructions or addenda to all bidders. The owner will not be responsible for oral interpretations. Questions received less than 48 hours before time for bid opening cannot be answered. All addenda issued during the time of bidding will be incorporated in the contract.

BID GUARANTEE:

As a guarantee, each bid will be accompanied by a Certified Check, Cashier's Check, or Bid Bond for not less than five percent (5%) of the base bid payable to Owner. NO PERSONAL OR COMPANY CHECKS WILL BE ACCEPTED

OBJECTIONS:

Written objections to specifications or bid procedures must be received by the clerk, secretary, or other authorized official of the District at least one (1) business day before the date and time upon which bids are scheduled to be received, per Idaho Code Section 68-2806(c).

EVIDENCE OF QUALIFICATIONS:

Upon request of Owner, a bidder whose bid is under consideration for award of the contract shall submit, promptly, satisfactory evidence of his financial resources, his experiences, and the organization and equipment he has available for performance of the contract.

LAWS AND ORDINANCES:

The contractor hereby binds himself to protect and save harmless the owner from all damages arising from the violation of any and all Federal, State, County, City, and all other laws, rules, regulations, in the performance of the terms of the contract.

HOLD HARMLESS AGREEMENTS:

The District expects your work to conform to professional standards. The contractor is expected to hold the District harmless for all damages or claims arising out of the work performed by the contractor. The District will not agree to hold the contractor harmless for damages or claims.

EQUIPMENT:

The contractor shall provide all labor, materials, tools, and equipment, etc. necessary for the complete and substantial execution of everything described in the specifications.

STORAGE OF MATERIALS:

The contractor shall make arrangement and coordinate with the Maintenance Department for delivery and storing of materials. Any damages of life or property caused by storage of materials on the above-indicated place shall be paid for by the contractor, who shall hold the owner harmless for any damages concerning the same.

SUPERVISION:

The supervision of this work will be done by School District No. 25's Maintenance Department.

EMPLOYMENT OF RESIDENTS OF IDAHO:

In compliance with Idaho Laws, Section 44-1001 and 44-1002 Idaho Code, the contractor must employ ninety-five percent 95% bona fide Idaho residents as employees on any such contracts except where under such contracts fifty (50) or less persons are employed the contractor may employ ten percent (10%) nonresidents, provided however, in all cases such employers must give preference to the employment of bona fide Idaho residents in the performance of such work.

CONTRACTOR'S LICENSE:

In compliance with Idaho Laws, the contractor must be registered with the State of Idaho, and hold the required ***Public Works Contractor's License*** before obtaining the contract documents and before submitting a bid for this work.

INSURANCE:

All contractors who provide goods or services to the District are required to provide the District with certificates of insurance for General Liability, Auto Liability, Workers Compensation, and Professional Liability if applicable.

The General Liability and/or Professional Liability certificate must name the District as an additional insured under the contractor’s policy. Certificates are to be provided to the District prior to any work commencing on District property. This would include the placement of any equipment or materials at the work site.

Minimum Insurance Limits

General Liability	\$1,000,000 per occurrence \$1,000,000 products and completed operations \$1,000,000 annual aggregate
Auto Liability	\$1,000,000 per occurrence
Workers Compensation	Statutory
Professional Liability	\$1,000,000 per occurrence \$1,000,000 annual aggregate

PERFORMANCE BOND:

The successful bidder will be required to furnish a 100% performance bond when entering into the contract work, per Idaho Code Section 54-1926, "...conditioned upon the faithful performance of the contract in accordance with the plans, specifications and conditions thereof."

PAYMENT BOND:

The successful bidder will be required to furnish a 100% payment bond when entering into the contract work, per Idaho Code Section 54-1926, "solely for the protection of persons supplying labor or materials, or renting, leasing, or otherwise supplying equipment to the contractor or his subcontractors in the prosecution of the work provided for in such contract."

5% RETAINAGE:

The Owner will retain 5% of the Contractor's earned sum to ensure faithful performance. This 5% will be released to the Contractor upon receipt of tax release from State of Idaho.

OWNER/CONTRACTOR AGREEMENT:

The Agreement for the work will be written on a District provided Form of Agreement between Owner and Contractor where the basis of payment is a stipulated sum.

The District will award the project(s) to the vendor with the lowest responsible total bid.

LIQUIDATED DAMAGES:

Contractor shall be required to pay Owner as liquidated damages the sum of \$200 for each day, after the scheduled completion date, that the project is unfinished.

CHANGES IN THE WORK:

The owner, without invalidating the contract, may order extra work or make changes by altering, adding to, or deducting from the work; the contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract, except that any claim for extension of the time caused thereby shall be adjusted at the time of ordering such change.

- 1) The total allowance for combined overhead and profit for changes shall be included in the total cost to the owner and shall be based on the following schedule:
- 2) For the Contractor, 10% over cost;
- 3) For the Sub-Contractor, 15% over cost to be divided 10% for Sub-Contractor and 5% for Contractor; and
- 4) For any Sub-Subcontractor, 15% over cost to be divided 5% for Contractor, 5% for Sub-Contractor, and 5% for Sub-Subcontractor.

FORM WH5:

Per Idaho Code Section 54-1904A, within thirty (30) days of award of bid, the contractor shall file with the State Tax Commission a form WH-5, Public Works Contract Report.

INSPECTION OF WORK:

The representative of the owner shall at all times have access to the work wherever it is in preparation or progress and the contractor shall provide facilities for such access and for inspection.

WARRANTY:

Manufacturer shall warrant products under normal use and service to be free from defects in materials and workmanship for a period of one year from date of delivery.

Warranty shall cover repair or replacement of such parts determined defective upon inspection. Warranty does not cover any product or part of a product subject to accident, negligence, alteration, abuse or misuse. Warranty does not cover any accessories or parts not supplied by the manufacturer.

Warranty shall not cover any labor expended or materials used to repair any equipment without manufacturer's prior written authorization.

CLEAN UP:

The contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish from and about the building and all tools and surplus materials and shall leave his work clean. In case of dispute, the owner shall remove the rubbish and surplus materials and charge the cost to the contractor. At no time shall the School District Dumpsters be used to remove the Contractor's waste, garbage and carpet scraps.

IDAHO EMPLOYER ALCOHOL AND DRUG-FREE WORKPLACE ACT: Include with your bid sheet a contractor's affidavit pursuant to Idaho Code Section 72-1717.

BIDDER CERTIFICATION FORM: All bidders must complete and submit the Bidder Certification Form included with this bid request .

PAYMENTS:

Prices must remain firm as quoted by supplier until quantity awarded is received. Application for payment dated on or before the 25th of the month, shall be paid by the 15th of the following month. Application for payment dated after the 25th of the month, shall be paid within 30 days.

Delivery may be accepted any time, however, payment for the 2019-2020 fiscal year cannot be made until after July 3, 2019 when those funds have been released.

BID:

The following universal specifications are being used as a guideline. Alternate bids for equal equipment will be considered. Substitutions or major alternations must be indicated upon the proposal sheet at the time of the bid submission. Bids must be based upon conditions at the site and these specifications. Bids shall be submitted in accordance with the requirements shown on the bid form.

BID EVALUATION CRITERIA:

Contractor selection on this project will be evaluated based on the following:

1. Price
2. Contractor reputation for quality of work with current customers or past performance with District 25. (please list all jobs/contracts greater than \$10,000 performed in the past two years if contractor has not performed one for the District in past 5 years)
3. Vendor ability to best match the listed criteria as specified.

The contract will be awarded to the lowest responsive and responsible bidder or bid/offer most advantageous to the District with price and other factors considered.

DELIVERY AND START OF WORK:

The time frame for door replacement to be completed is between **June 4, 2019 and July 31, 2019.**

SCOPE OF WORK: As per attachment submitted by Musco Sports Lighting, LLC.

BID SHEET

STADIUM LIGHTING

To be Opened April 3, 2019 at 11:00 AM

Board of Trustees
School District No. 25
3115 Pole Line Road
Pocatello, ID 83201-6119

Date: _____

We, the undersigned, propose to furnish all labor, materials, tools, and equipment to complete work called for by these specifications for Stadium Lighting at Century High School.

The District will award the project(s) to the vendor with the lowest responsible total bid.

PROJECT: Stadium Lighting at Century High School

TOTAL BID: \$ _____

We encourage work to be accomplished between June 4, 2019 and July 31, 2019.

The School Board of Trustees reserves the right to reject any or all bids, likewise, to reject any item or items in any such bids and the right to waive any technicality.

Respectfully submitted,

- Attached, if applicable, is a listing of subcontractors names and addresses for this project.
- Attached is our Affidavit of Alcohol and Drug-Free Worksite, as pursuant to Idaho Code 72-1717.
- Attached is Bidder Certification Form.

Company Name

Authorized Signature / Date

Address

Title

City, State, Zip

Public Works License Number

Phone / Fax Number

Worker's Comp & Liability Insurance Exp. Date

CONTRACTOR'S AFFIDAVIT
CONCERNING ALCOHOL AND DRUG-FREE WORKPLACE

STATE OF _____

COUNTY OF _____

Pursuant to the Idaho Code, Section 72-1717, I, the undersigned, being duly sworn, depose and certify that named contractor is in compliance with the provisions of Idaho Code section 72-1717; that named contractor provides a drug-free workplace program that complies with the provisions of Idaho Code, title 72, chapter 17 and will maintain such program throughout the life of a state construction contract and that named contractor shall subcontract work only to subcontractors meeting the requirements of Idaho Code, section 72-1717(1)(a).

Name of Contractor

Address

City and State

By: _____
(Signature)

Subscribed and sworn to before me this _____ day of _____, 2019.

Commission expires:

NOTARY PUBLIC, residing at

BIDDER CERTIFICATION FORM

1. **Debarment and Suspension** – In submitting this bid proposal, we hereby certify that we have not been suspended or in any way excluded from Federal procurement actions by any Federal Agency. We fully understand that if information contrary to this certification subsequently becomes available, such evidence may be grounds for non-award or nullification of a bid contract.
2. **Anti-Collusion** – In submitting this bid proposal, we hereby certify this proposal was developed and prepared without any collusion with any competing bidder or District employee. The content of this proposal has not been disclosed to any competing or potentially competing bidder prior to the proposal due date and time. Furthermore, no action to persuade any person, partnership or corporation to submit or withhold a bid has been made.
3. **Anti-Lobbying** – In submitting this bid proposal, we hereby certify that to the best of our knowledge and belief, no appropriated Federal funds have been paid or will be paid by or on behalf of person associated with this proposal to any person for influencing or attempting to influence and officer or employee of any agency, a member of Congress, an office or employee of Congress or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.
4. **National Sexual Offender Registry** – In submitting this bid proposal, you certify to the District that your company will prohibit any persons in your employ who are registered or required to register under the Idaho Sex Offender Registration Act from participation in company business with the District if such participation would require them to be present on school property. You certify further that you have cross checked such employees against the National Sex Offender Registry found at the following web link: <http://www.nsopr.gov/>

Signed: _____

Name & Title: _____

Company: _____

Address: _____

City & State: _____

Date: _____

LIGHTING SPECIFICATION
PREPARED FOR

Century High School

Football Lighting Project
Pocatello, Idaho
February 27, 2019

Project # 163321

SUBMITTED BY:

Musco Sports Lighting, LLC

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



SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

Musco Lighting System with LED Light Source

PART 1 – GENERAL

1.1 SUMMARY

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the approved lighting system performance and design standards for Century High School using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- C. The term “manufacturer” refers to the approved manufacturer, Musco Sports Lighting. No substitutions will be considered or accepted.
- D. The sports lighting will be for the following venues:
 - 1. Football
 - 2. Track
- E. The primary goals of this sports lighting project are:
 - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - 2. **Environmental Light Control:** It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors. The LED design should provide better control than a good HID design.
 - 3. **Life-cycle Cost:** In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
 - 4. **Control and Monitoring:** To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

1.2 LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Football	50FC	2:1	72	30' x 30'
Track	10FC	n/a	45	30' x 30'

NOTE: Pole IDs F1 and F2 need to each be produced with (2) future fixture accommodations for additional egress lighting mounted at 50'.

- B. Color: The lighting system shall have Musco LED fixtures with a color temperature of 5700K and a CRI of 75.
- C. Lumen output shall be >156,000 per lighting luminaire
- D. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
4	F1-F4	80'

1.3 ENVIRONMENTAL LIGHT CONTROL

- A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.
- B. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified independent testing laboratory with a minimum of five years experience or by a manufacturer’s laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

1.4 LIFE-CYCLE COSTS

- A. 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 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.

PART 2 – PRODUCT

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

- A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- B. Manufacturer pole shall include built in laser for easy aiming of pole in the field.
- C. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.
- D. System Description: Lighting system shall consist of the following:
 1. Musco is the only approved manufacturer
 2. Galvanized steel poles and cross-arm assembly.
 3. Non-approved pole technology:
 - a. Square static cast concrete poles will not be considered

- b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
- 4. Lighting systems shall use concrete foundations. See Section 2.3 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
- 5. Manufacturer will supply all drivers and supporting electrical equipment
 - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure.
- 6. Manufacturer shall provide integrated surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
- 7. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 - a. Wire harness shall be completely enclosed, with no slit in sleeve
- 8. All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment.
- 9. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
- 10. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
- E. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 - 1. Electric power: 480 Volt, 3 Phase
 - 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the field lighting system shall not exceed 54.20 kW.

2.3 STRUCTURAL PARAMETERS

- A. Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 115mph and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
- C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report. If no geotechnical report is available, the foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2009 IBC Table 1806.2.

2.4 CONTROL

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- C. Dimming: System shall provide for "High, Medium, Low" dimming. System shall include key-activated switches to allow for automated dimming control or manual override.
- D. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

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

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

- E. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
- F. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility
2. Report hours saved by using early off and push buttons by users.

- G. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
 1. Providing engineered foundation embedment design by a registered engineer in the State of Idaho for soils other than specified soil conditions;
 2. Additional materials required to achieve alternate foundation;
 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information.

3.3 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. Field Light Level Accountability

1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 Years.
2. The contractor/manufacture shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner's light meter in the presence of the owner.
3. The contractor/manufacture will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

- A. 25-Year Warranty: The manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system at driver level, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

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

Manufacturer: _____

Signature: _____

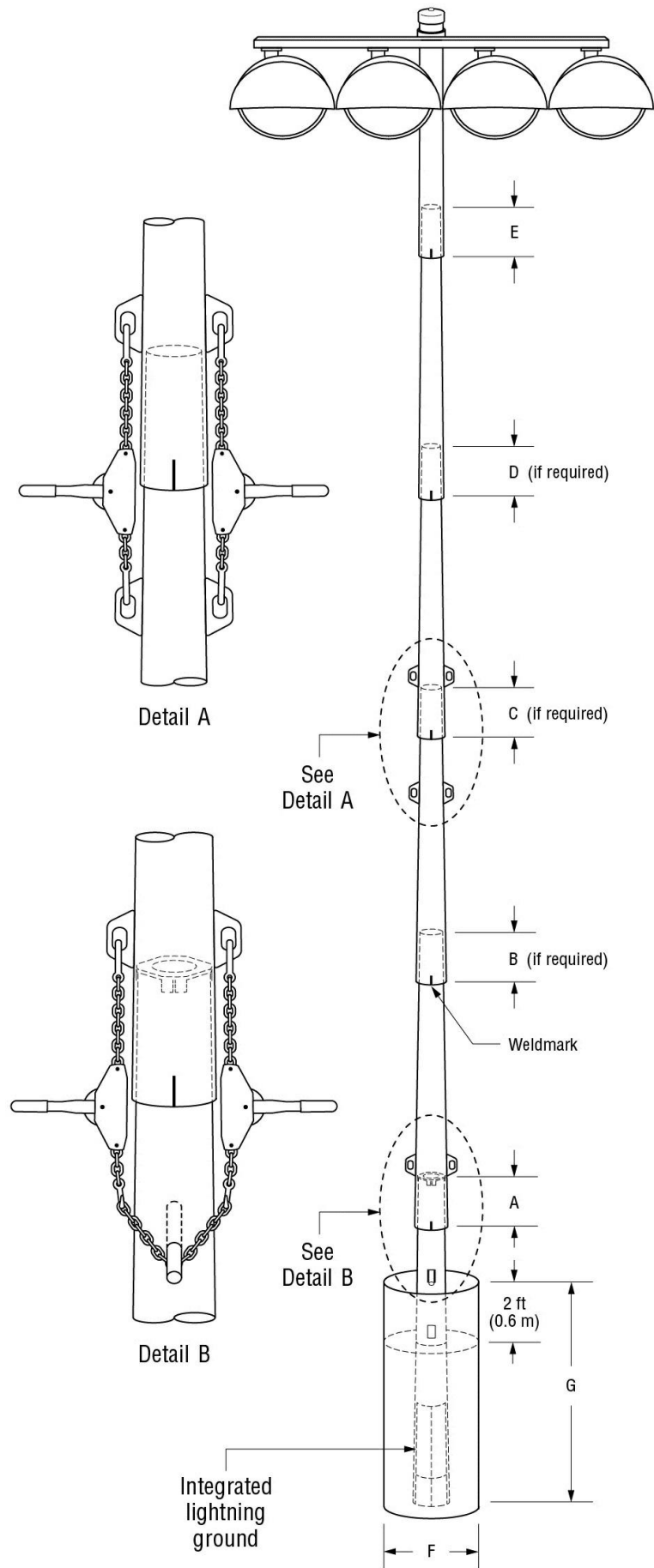
Contact Name: _____

Date: ____/____/____

Contractor: _____

Signature: _____

PRELIMINARY FOUNDATION AND POLE ASSEMBLY DRAWING



POLE ID	POLE HEIGHT ft (m)	# OF LUMINAIRES	ASSEMBLED POLE WEIGHT ³ lb (kg)
F1	80 (24.4)	12	3641 (1652)
F2	80 (24.4)	12	3641 (1652)
F3	80 (24.4)	10	3641 (1652)
F4	80 (24.4)	10	3641 (1652)

Pole Assembly Notes:

1. Steel pole should overlap concrete base and be seated tight with 1 1/2 ton come-alongs (contractor provided).
2. Align weldmarks on steel sections before assembling.
3. Assembled pole weight includes steel sections, crossarms, luminaires, and electrical components enclosures.
4. Section overlap must be pulled together until tight. Overlap measurement should be +/- 6 in (150 mm).
5. This document is not intended for use as an assembly instruction. See *Installation Instructions: Light-Structure System™ Lighting System* for complete assembly procedure.

POLE ID	CONCRETE BASE WEIGHT lb(kg)	BURIAL INFORMATION ^{3,4}		CONCRETE BACKFILL ^{1,2} yd ³ (m ³)	CUT BASE	LIGHTNING GROUND ⁵	
		F in (mm)	G ft (m)			TYPE	SUPPLEMENTAL INSTRUCTION
F1	5300 (2404)	30 (762)	16 (4.9)	1.6 (1.2)	NO	INTEGRATED ⁶	N/A
F2	5300 (2404)	30 (762)	16 (4.9)	1.6 (1.2)	NO	INTEGRATED ⁶	N/A
F3	5300 (2404)	30 (762)	16 (4.9)	1.6 (1.2)	NO	INTEGRATED ⁶	N/A
F4	5300 (2404)	30 (762)	16 (4.9)	1.6 (1.2)	NO	INTEGRATED ⁶	N/A

Foundation Notes:

1. Concrete backfill is calculated to 2 ft (0.6m) below grade (no overage included). Top 2 ft (0.6m) to be class 5 soil compacted to 95% density of surrounding undisturbed soil unless otherwise specified in stamped structural design.
2. Concrete backfill required 3000 lb/in² (20 MPa) minimum.
3. Foundation design per 2012 IBC, 115 mph, exposure category C, variation STD (Risk Category II).
4. Assumes IBC class 5 soils.
5. Standard bases include integrated lightning protection. If bases are cut, supplemental lightning protection is required. Contact Musco for materials and instruction.
6. Lightning protection is a manufacturer installed concrete encased electrode and connector. Ground connection is made when concrete base is installed and footing is poured. No additional steps required.

R60-60-00_A

Century High School Football - Pocatello, ID, USA

Date: 02/28/2019

Scale: N/A

Rep: Creighton Fuss

Page: 1 of 1

Project: 163321

Preliminary



Century High School Football

Pocatello, ID

Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	80'	80'	8	TLC-LED-1500	12.00 kW	A
		20'	2	TLC-BT-575	1.15 kW	A
		50'	2	FUTURE	0.80 kW	B
F3-F4	80'	80'	8	TLC-LED-1500	12.00 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
4			44		54.20 kW	

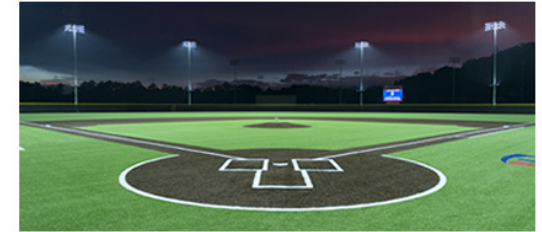
Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football	52.6 kW	40
B	Egress	1.6 kW	4

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1500W	156,100	>81,000	>81,000	>81,000	32
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>81,000	>81,000	>81,000	8

Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Football	Horizontal Illuminance	53.4	42	65	1.57	1.27	A	40
Track	Horizontal Illuminance	13.1	1	31	23.72	13.09	A	40

From Hometown to Professional



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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	F1-F2	80'	-	20'	TLC-BT-575	2	2	0
				50'	TLC-LED-400	2	0	2
				80'	TLC-LED-1500	8	8	0
2	F3-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	8	8	0
4	TOTALS					44	40	4

Century High School Football

Pocatello, ID

GRID SUMMARY

Name: Football
Size: 360' x 160'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid	
Guaranteed Average:	50
Scan Average:	53.40
Maximum:	65
Minimum:	42
Avg / Min:	1.28
Guaranteed Max / Min:	2
Max / Min:	1.57
UG (adjacent pts):	1.37
CU:	0.61
No. of Points:	72

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 156,100 / 52,000 lumens
No. of Luminaires: 40
Total Load: 52.6 kW

Luminaire Type	Lumen Maintenance		
	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

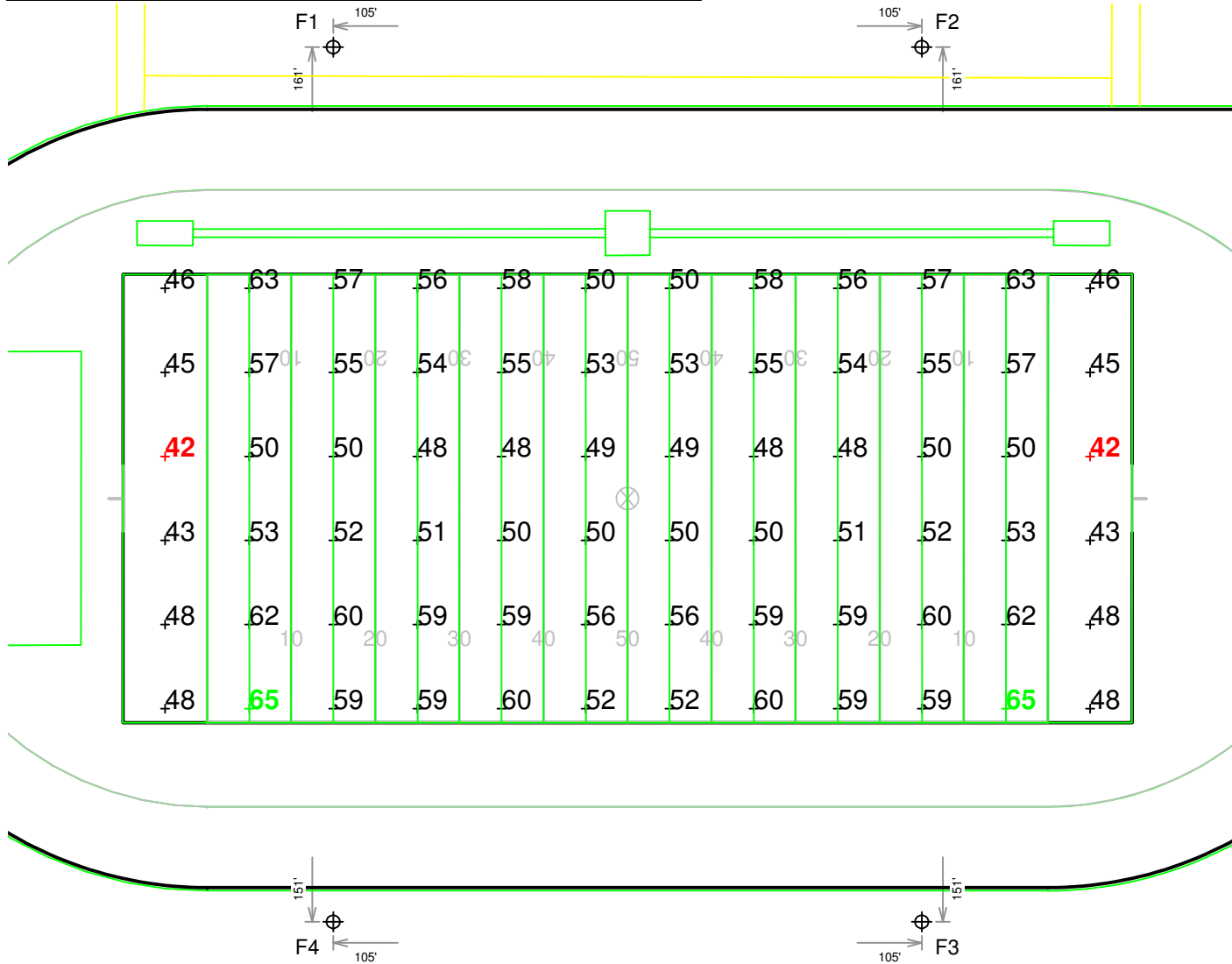
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

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

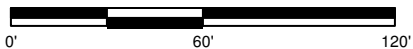


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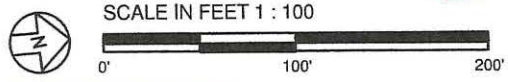
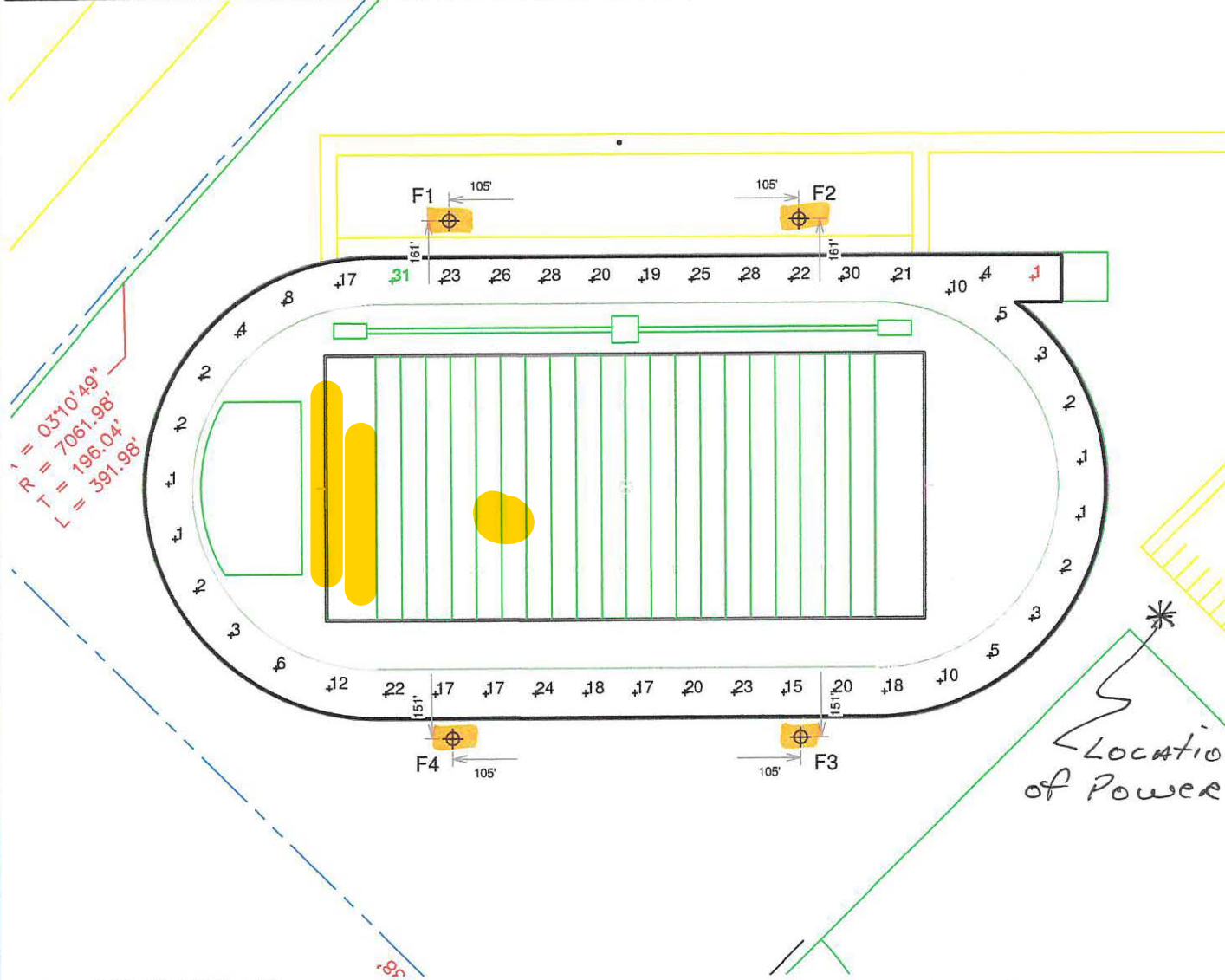
SCALE IN FEET 1 : 60



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

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	F1-F2	80'	-	20'	TLC-BT-575	2	2	0
				50'	TLC-LED-400	2	0	2
				80'	TLC-LED-1500	8	8	0
2	F3-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	8	8	0
4	TOTALS					44	40	4



ENGINEERED DESIGN By: Connor Ramstead • File #163321A • 21-Feb-19

Century High School Football

Pocatello, ID

GRID SUMMARY	
Name:	Track
Size:	Irregular
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	13.09		
Maximum:	31		
Minimum:	1		
Avg / Min:	10.13		
Max / Min:	23.72		
UG (adjacent pts):	0.00		
CU:	0.09		
No. of Points:	45		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	156,100 / 52,000 lumens		
No. of Luminaires:	40		
Total Load:	52.6 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000
Reported per TM-21-11. See luminaire datasheet for details.			

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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ILLUMINATION SUMMARY

Century High School Football

Pocatello, ID

EQUIPMENT LAYOUT

INCLUDES:

- Egress
- Football
- Track

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

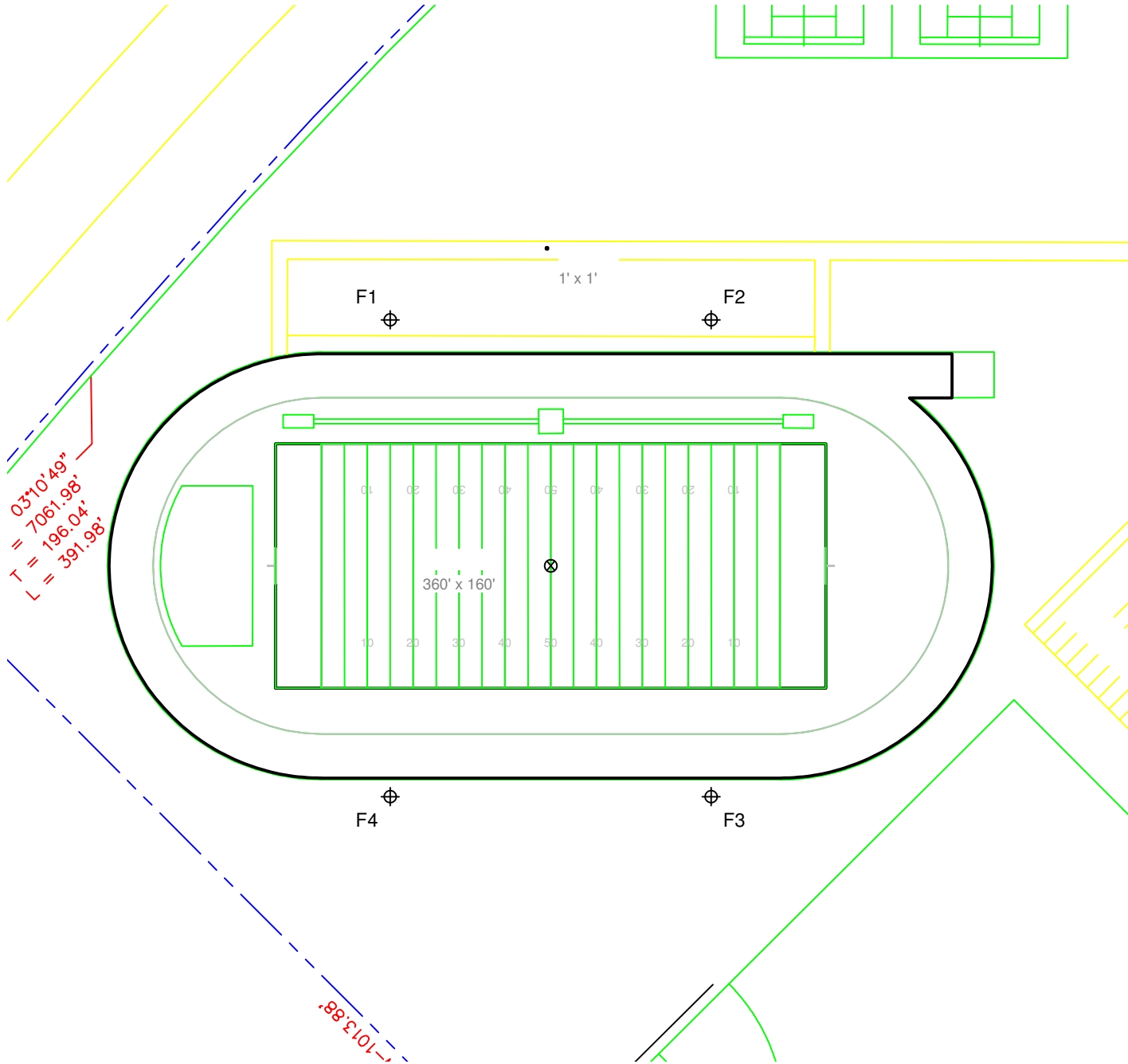
Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	SIZE	GRADE ELEVATION	Luminaires		
				MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	F1-F2	80'	-	20'	TLC-BT-575	2
				50'	TLC-LED-400	2
				80'	TLC-LED-1500	8
2	F3-F4	80'	-	15.5'	TLC-BT-575	2
				80'	TLC-LED-1500	8
				TOTALS		

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-400-A	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-1500	9.0	8.5	7.8	6.7	5.4	4.9	3.9
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5



SCALE IN FEET 1 : 100



Pole location(s) \oplus dimensions are relative to 0,0 reference point(s) \otimes



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Control System Summary

Project Specific Notes:

Project Information

Project #: 163321
 Project Name: Century High School Football
 Date: 02/21/19
 Project Engineer: CRamstead
 Sales Representative: Creighton Fuss
 Control System Type: Control and Monitoring
 Communication Type: Digital Cellular
 Scan: 163321A
 Document ID: 163321P1V1-0221144037
 Distribution Panel Location or ID: Football
 Total # of Distribution Panel Locations for Project: 1
 Design Voltage/Hertz/Phase: 480/60/3
 Control Voltage: 120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE	
1.Control and Monitoring Cabinet	24 X 48	
	QTY	SIZE
Total Contactors	6	30 AMP
Total Off/On/Auto Switches:	2	

Materials Checklist

Contractor/Customer Supplied:

- A dedicated control circuit must be supplied per distribution panel location.
 - If the control voltage is NOT available, a control transformer is required.
- Electrical distribution panel to provide overcurrent protection for circuits
 - HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- Wiring:
 - See chart on page 2 for wiring requirements
 - Equipment grounding conductor and splices must be insulated. (per circuit)
 - Lightning ground protection (per pole), if not Musco supplied.
- Electrical conduit wireway system
 - Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- Mounting hardware for cabinets
- Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- Anti-corrosion compound to apply to ends of wire, if necessary

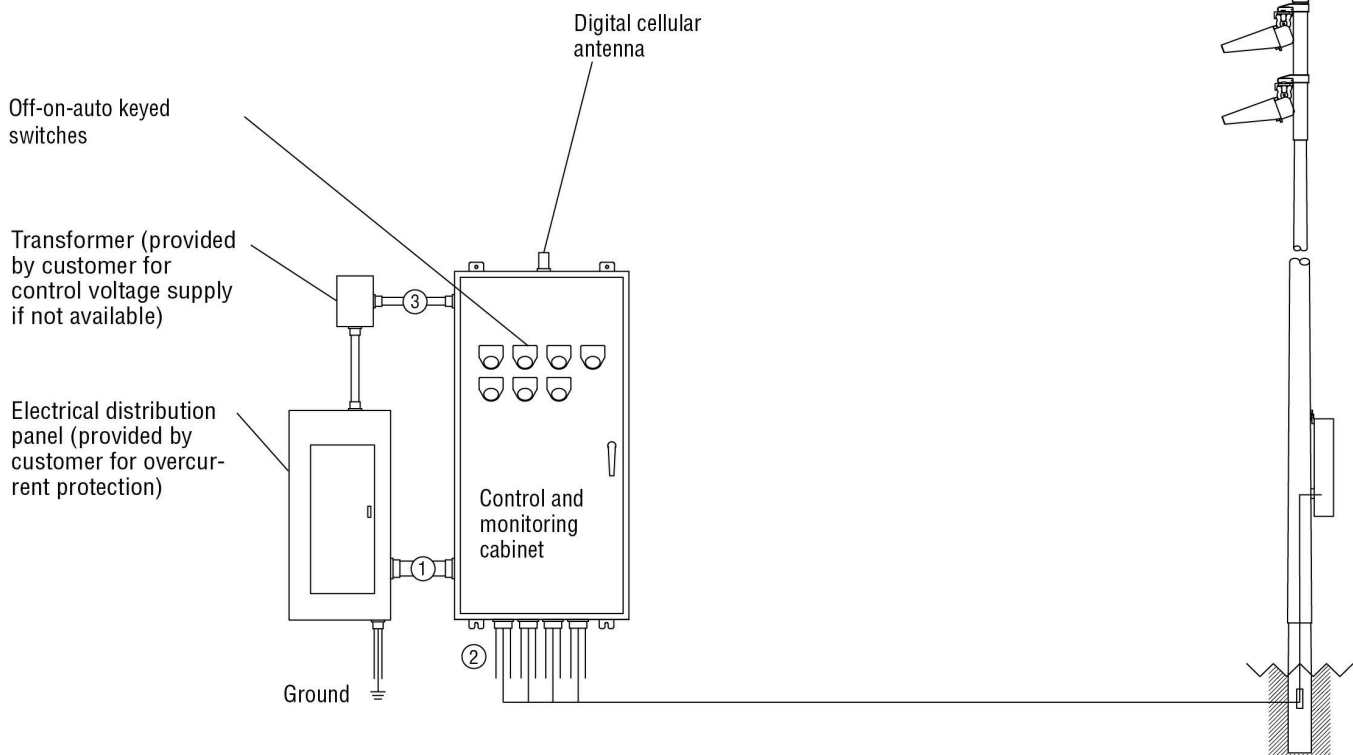
Call Control-Link Central™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation.
 Note: Activation may take up to 1 1/2 hours

IMPORTANT NOTES

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

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

Control•Link® Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
1	Power-line Communication Connection (dedicated, 20A)	*A	12	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E

* Notes:

- A. See voltage and phasing per the notes on cover page.
- B. Calculate per load and voltage drop.
- C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
- D. Equipment grounding conductor and any splices must be insulated.
- E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).



Control System Summary

Century High School Football / 163321 - 163321A
Football - Page 3 of 4

SWITCHING SCHEDULE

Field/Zone Description	Zones
Football	1
Egress	2

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 2043.0
	SEALED: 231.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
F1	Football	10	10	21.4	30	C1	1
F2	Football	10	10	21.4	30	C2	1
F3	Football	10	10	21.4	30	C3	1
F4	Football	10	10	21.4	30	C4	1
F1	Egress	2	1	1.7	30	C5	2
F2	Egress	2	1	1.7	30	C6	2

*Full Load Amps based on amps per driver.



Control System Summary

Century High School Football / 163321 - 163321A
Football - Page 4 of 4

PANEL SUMMARY						
CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole F1	21.42		
1	1	C2	Pole F2	21.42		
1	1	C3	Pole F3	21.42		
1	1	C4	Pole F4	21.42		
1	1	C5	Pole F1	1.73		
1	1	C6	Pole F2	1.73		

ZONE SCHEDULE				
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION	
			POLE ID	CONTACTOR ID
Zone 1	1	Football	F1	C1
			F2	C2
			F3	C3
			F4	C4
Zone 2	2	Egress	F1	C5
			F2	C6