

**Stadium Lighting LED Retrofit Bid at these sites: Churchill, Franklin, Stevenson  
Livonia, MI**

**Customer Responsibilities:**

1. Complete access to the site for construction utilizing standard 2-wheel drive rubber tire equipment.
2. Locate existing underground utilities not covered by your local utilities (i.e. water lines, electrical lines, irrigation systems, and sprinkler heads). Musco or Subcontractor will not be responsible for repairs to unmarked utilities.
3. Locate and mark field reference points per Musco supplied layout (i.e. home plate, center of FB field).
4. Pay any power company fees and requirements.
5. The contractor shall pay all permitting fees and obtain the required electrical permitting.
6. Provide area on site for dumpsters.
7. Provide sealed Electrical Plans (if required).

**Contractor Responsibilities**

**General:**

1. Obtain any required permitting.
2. Contact Livonia Public Schools for locating underground public utilities and then confirm they have been clearly marked.
3. Contact the facility owner/manager to confirm the existing private underground utilities and irrigation systems have been located and are clearly marked to avoid damage from construction equipment. Notify owner and repair damage to marked utilities. Notify owner and Musco regarding damage which occurred to unmarked utilities.
4. Provide labor, equipment, and materials to offload equipment at jobsite per scheduled delivery.
5. Provide storage containers for material (including electrical components enclosures), as needed.
6. Provide necessary waste disposal and daily cleanup.
7. Provide adequate security to protect Musco delivered products from theft, vandalism or damage during the installation.
8. Keep all heavy equipment off playing fields when possible. Repair damage to grounds which exceeds that which would be expected. Indentations caused by heavy equipment traveling over dry ground would be an example of expected damage. Ruts and sod damage caused by equipment traveling over wet grounds would be an example of damage requiring repair.
9. Provide startup and aiming as required to provide complete and operating sports lighting system.
10. Installation to commence upon delivery and proceed without interruption until complete. Notify Musco immediately of any breaks in schedule or delays.

**Demolition:**

1. Contractor is responsible demolition per plans. This will include the recycling of lamps, aluminum reflectors, ballast, and steel, as necessary.
2. Leave existing power feed in place for connection to new pole locations.

**Foundations, Poles, and Luminaires:**

1. Mark and confirm pole locations per the aiming diagram provided. If there are any issues, immediately notify your Musco Project Manager.
2. Remove spoils and leave on-site.

3. Provide labor, materials, and equipment to assemble Musco TLC-LED luminaires, electrical component enclosures, poles, and pole harnesses.
4. Provide labor, equipment, and materials to erect dressed LSS Pole Top/Cross-arm assemblies and aim utilizing the pole alignment beam.

**Electrical:**

1. Contractor to provide labor. LPS to purchase materials and equipment reuse existing electrical service panels as required.
2. Provide labor, materials, and equipment to reuse existing electrical wiring as permitted.
3. Complete electrical installation per Musco Control System Summary and Musco Best Practices: Supply Wiring Installation document. If there are any discrepancies between Musco documents and electrical plans (if present), notify your Musco contact.
4. Complete required insulation resistance (Megger) tests on all current-carrying conductors per ANSI/NETA ATS-2021. Use the instructions and forms provided by Musco to provide test results to your Musco contact. Note conduits must be full of water prior to testing. Any conductors with resistance values less than (<) 100MOhms — phase to ground — must be repaired or replaced to meet the standard.
5. Underground splices are strongly discouraged. If underground splicing is required per the electrical plans, use only listed connector systems, rated for wet locations.
6. Provide as-built drawings upon completion of installation (if required).

**Show-Light® Entertainment**

1. Contractor to provide labor. LPS to purchase equipment, and materials to install Musco control and monitoring cabinet(s), communication cabinet(s) and terminate all necessary wiring.
2. Provide a dedicated 120 V 20 A controls circuit or a step-down transformer for 120 V control circuit if not available.
3. Provide 24 AWG twisted wire pair cable. Recommended Belden 7937A or equal. Cable should be underground rated (working distance 1500 ft (457 m)).
4. Cable is terminated on surge protection device in both communication cabinet and control and monitoring cabinet. Drain wire is landed at surge device on control and monitoring cabinet. Communication cabinet requires earth ground.
5. Plug ethernet cable into port on the side of communication cabinet and bottom of touch screen (working distance 300 ft (91 m)).
6. Connect provided touch screen power supply. Requires 120 V outlet.
7. Provide audio cable 1/8 in (3.5 mm) plug from customer audio system to communication cabinet (land on Cueserver, must be within 50 ft (15 m)).
8. Land customer provided DMX cable in control and monitoring cabinet on DMX512 input terminals.
9. Check all zones to make sure they work in both auto and manual mode.

Commission Control-Link® by contacting Control-Link Central™ at 877-347-3319