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# Control System Summary

## Project Specific Notes:

## Project Information

| | |
|---|---|
| Project #: | 174790 |
| Project Name: | Mountain Brook Cherokee Bend Elementary |
| Date: | 03/03/20 |
| Project Engineer: | Isaac Sanders |
| Sales Representative: | Jimmy Jumper |
| Control System Type: | LED C&M |
| Communication Type: | PowerLine-ST |
| Scan: | 174790A |
| Document ID: | 174790P1V1-0303163316 |
| Distribution Panel Location or ID: | Service 1 |
| Total # of Distribution Panel Locations for Project: | 1 |
| Design Voltage/Hertz/Phase: | 480/60/3 |
| Control Voltage: | 120 |

## Equipment Listing

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

| | QTY | SIZE |
|---|---|---|
| Total Contactors | 8 | 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

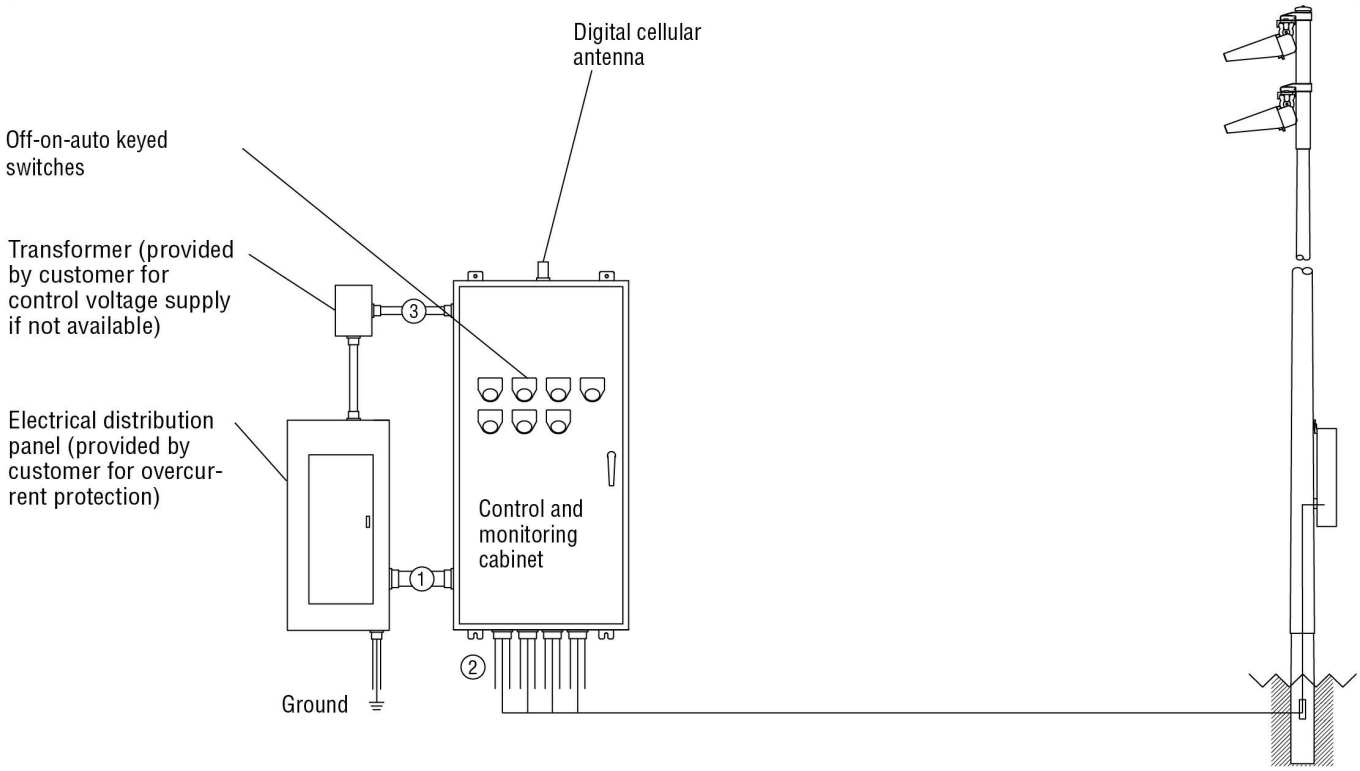
*Call Control-Link Central ™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours*

### 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:

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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



## SWITCHING SCHEDULE

| Field/Zone Description | Zones |
|---|---|
| **Multipurpose** | **1** |
| **Security** | **2** |

| CONTROL POWER CONSUMPTION | |
|---|---|
| 120V Single Phase | |
| VA loading of Musco Supplied Equipment | INRUSH: 2533.0 |
| | SEALED: 283.8 |

## CIRCUIT SUMMARY BY ZONE

| POLE | CIRCUIT DESCRIPTION | # OF FIXTURES | # OF DRIVERS | *FULL LOAD AMPS | CONTACTOR SIZE (AMPS) | CONTACTOR ID | ZONE |
|---|---|---|---|---|---|---|---|
| P1 | Multipurpose | 3 | 3 | **6.4** | 30 | C1 | 1 |
| P2 | Multipurpose | 3 | 3 | **6.4** | 30 | C2 | 1 |
| P3 | Multipurpose | 3 | 3 | **6.4** | 30 | C3 | 1 |
| P4 | Multipurpose | 3 | 3 | **6.4** | 30 | C4 | 1 |
| P5 | Multipurpose | 3 | 3 | **6.4** | 30 | C5 | 1 |
| P6 | Multipurpose | 3 | 3 | **6.4** | 30 | C6 | 1 |
| P7 | Multipurpose | 3 | 3 | **6.4** | 30 | C7 | 1 |
| P1,P2 | Security | 2 | 2 | **0.6** | 30 | C8 | 2 |

*Full Load Amps based on amps per driver.

# Control System Summary



## PANEL SUMMARY

| CABINET # | CONTROL MODULE LOCATION | CONTACTOR ID | CIRCUIT DESCRIPTION | FULL LOAD AMPS | DISTRIBUTION PANEL ID (BY OTHERS) | CIRCUIT BREAKER POSITION (BY OTHERS) |
|---|---|---|---|---|---|---|
| 1 | 1 | C1 | Pole P1 | 6.41 | | |
| 1 | 1 | C2 | Pole P2 | 6.41 | | |
| 1 | 1 | C3 | Pole P3 | 6.41 | | |
| 1 | 1 | C4 | Pole P4 | 6.41 | | |
| 1 | 1 | C5 | Pole P5 | 6.41 | | |
| 1 | 1 | C6 | Pole P6 | 6.41 | | |
| 1 | 1 | C7 | Pole P7 | 6.41 | | |
| 1 | 1 | C8 | Pole P1,P2 | 0.60 | | |

## ZONE SCHEDULE

| | | | CIRCUIT DESCRIPTION | |
|---|---|---|---|---|
| ZONE | SELECTOR SWITCH | ZONE DESCRIPTION | POLE ID | CONTACTOR ID |
| Zone 1 | 1 | Multipurpose | P1 | C1 |
| | | | P2 | C2 |
| | | | P3 | C3 |
| | | | P4 | C4 |
| | | | P5 | C5 |
| | | | P6 | C6 |
| | | | P7 | C7 |
| Zone 2 | 2 | Security | P1 | C8 |
| | | | P2 | C8 |