

System Requirements: Control System Summary

Project Name: Billings Downtown Skatepark | Project #: 233245

Control System ID: 1 of 1

Distribution Panel Location/ID: Service #1

Project Information

Control System

Control System ID: 1 of 1

Control System Type: Control-Link® Control and Monitoring System

Communication Type: PowerLine-ST

Project Notes:

Power Requirements

Control cabinet(s):

Control voltage (phase to neutral) 120/60

VA loading - Inrush 2043.0

VA loading - Sealed 232.0

Lighting Circuits:

Voltage/Hertz/Phase 240/60/3

Equipment Listing

Description	Qty	Size (in)
Control and monitoring cabinet - primary	1	24 X 48
Contactors, 30 amperes	6	-
Off/On/Auto switches	1	-

Important Notes:

1. Please confirm that the lighting circuit voltage listed above is accurate for this facility. This is the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate 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 location. Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each circuit at each pole location. Contactors are 3 pole and 100% rated for the published continuous load.
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. Size overcurrent devices using the full load amps column of the Circuit Summary by Switch chart (Minimum power factor is 0.9). Size conduit per code unless otherwise specified as larger to allow for harness connectors.
6. Avoid use of in-ground junction/pull boxes when possible. If used, the following best practices must be followed:
 - Underground handholes (pull boxes) must be supported to prevent settling. Boxes buried directly in soil, without support, are not allowed.
 - Use polymer concrete lids marked with ELECTRIC for underground handholes. Steel lids are not allowed.
 - Avoid underground connections when possible. If used, all wire connectors must be UL listed for Wet Locations to prevent leakage current.
7. Control power wiring must be in separate conduit from line or load power wiring. Communication cables must be in separate conduit from any power wiring.
8. Test wire per ANSI/NETA ATS-2021. Wires with insulation resistance less than 100 MOhms, in water-filled conduit, must be replaced.
9. Refer to Installation Instructions for more details on equipment information and the installation requirements.

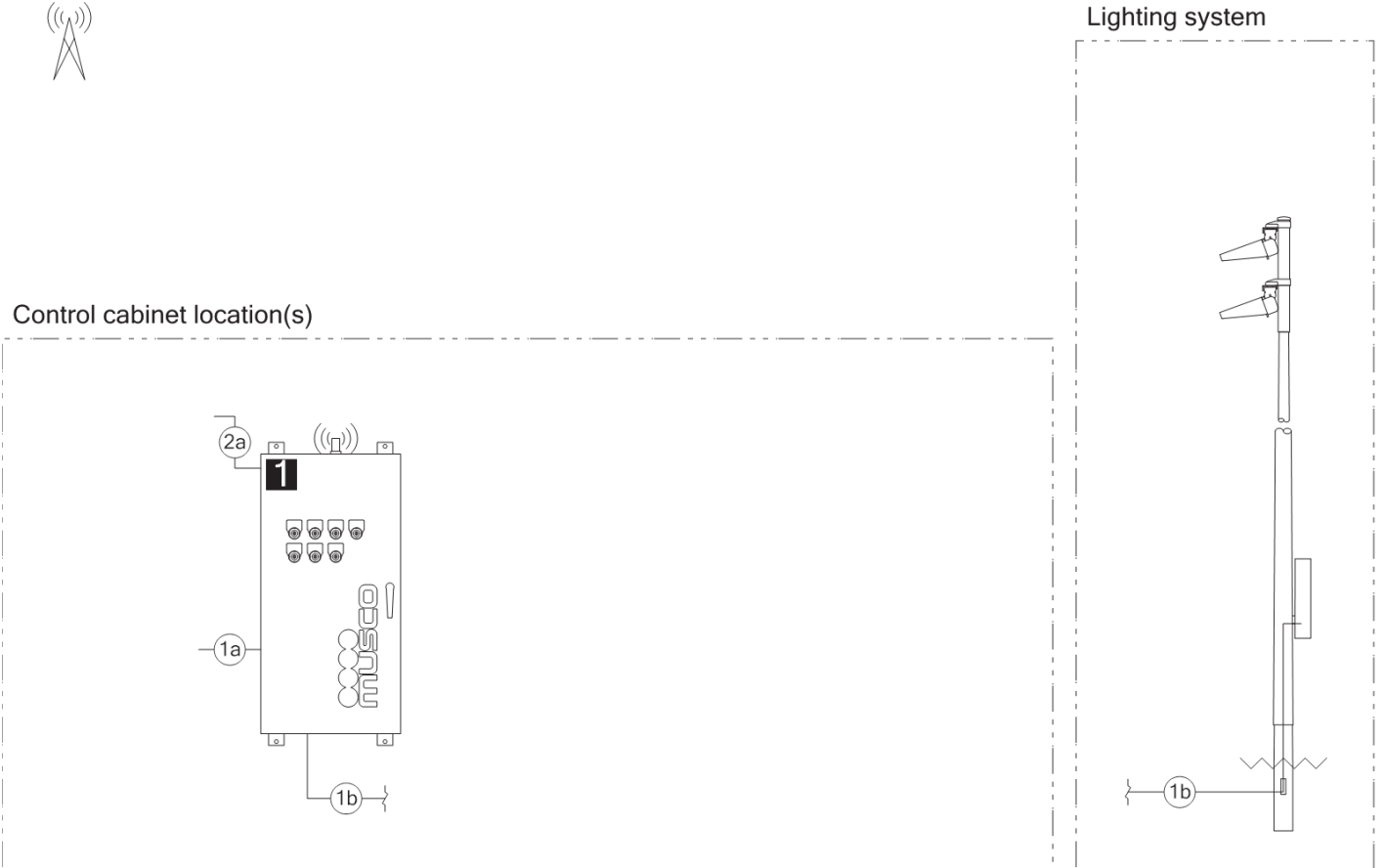
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Equipment Layout and Connection Details



Connection Details

ID	Description
1a	Line power to contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
1b	Load power from contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
2a	Control power with equipment ground to control cabinet. Requires dedicated 20 A circuit. Provide transformer if control voltage not present.

Equipment

ID	Description
1	Control and monitoring cabinet - primary

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Circuit Summary

Switching Schedule

Field/Switch Description	Switches
Skatepark	1

Control Module ID: 1

Lighting Circuit Voltage: 240/60/3

Circuit Summary by Switch

Switch	Zone Description	Pole ID	Qty of Fixtures	Full load amperes	Contactor Size (Amps)	Cabinet #	Contactor ID
1	Skatepark	SK1	2	7.83	30	1	C1
	Skatepark	SK2	4	11.74	30	1	C2
	Skatepark	SK3	2	7.83	30	1	C3
	Skatepark	SK4	2	7.83	30	1	C4
	Skatepark	SK5	4	11.74	30	1	C5
	Skatepark	SK6	2	7.83	30	1	C6