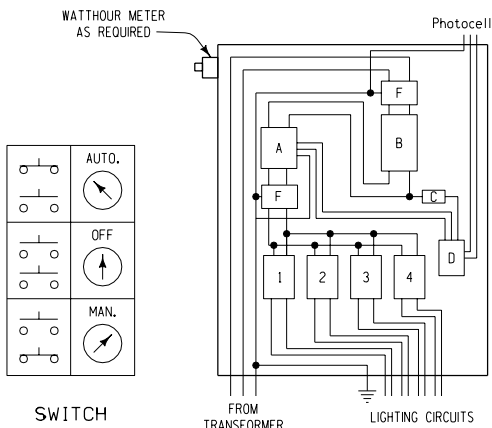


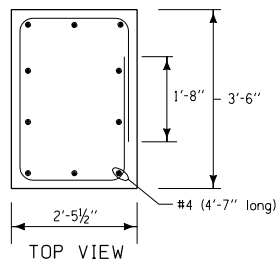
**SCHEMATIC DIAGRAM**

- A. Contactor (2P.)
- B. Line Breaker (2P.)
- C. Control Fuse
- D. Test Switch
- E. Photocell
- F. Surge Suppressor
- 1 thru 4. Branch Circuit Breakers (2P.)

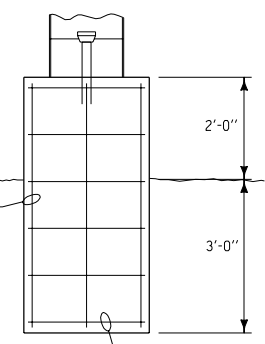


**CONTROL PANEL WIRING DIAGRAM**

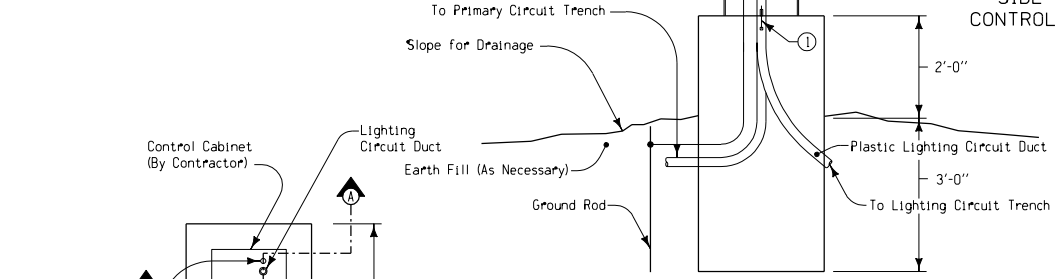
10 #4 (4'-7" long)



**TOP VIEW**



**SIDE VIEW CONTROLLER PAD**



**PLAN VIEW**

① Anchor Bolts (As Required)

① 1/2" x 4" long Bolts (2 required)

ESTIMATED QUANTITIES (One Pad)	
Reinforcing Steel	79.5 lbs.
Structural Concrete	1.6 yd <sup>3</sup>

LAYOUT LEGEND	
Control Station (Pad-Mounted)	

Estimated quantities for plastic conduit include all circuit ducts shown. The ground wire duct shall be considered incidental to the length of plastic conduit. The No. 12, AWG grounding jumper for the photoelectric control shall be considered incidental to the length of ground wire. All line and control circuit wire and cable, except the cable to the remote photoelectric control socket, shall be considered incidental to the control cabinet. The estimated quantities for wire and cable include connections to the loadside terminals of the branch circuit breakers.

**GENERAL NOTES:**

The details indicated hereon are for the installation of pad-mounted control stations. Alternate design may be submitted to the Engineer for approval.

Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Primary service cable, pad-mounted transformer, and required meters will be furnished by the Utility Company in accordance with their service agreement. The Contractor shall furnish and install meter sockets and meter loops unless an agreement for un-metered service has been secured at the time of construction.

All requirements for a pad mounted control cabinet with contactor shall apply. Minimum interior dimensions shall be 2'-6" (H) x 3'-0" (W) x 2'-0" (D). All seams shall be continuously welded.

All load circuits within the control cabinet shall be connected phase-to-phase, with neutral connections to grounds only.

All internal wiring for line and control circuits shall meet requirements for single conductor cable, except that thermoplastic cable may be used with the approval of the Engineer.

Line circuit conductor sizes shall comply with NEC requirements based on the total load current ratings of the branch circuit breakers supplied by the respective circuit segments, with a minimum size of No. 8, AWG. Minimum size for control circuit conductors shall be No. 12, AWG.

Minimum interrupting ratings for line circuit breakers at 480 volts, A.C., shall be 20,000 amperes, asymmetrical, and 18,000 amperes, symmetrical. Load current ratings shall not exceed the total of the load current ratings of all the specified branch circuit breakers, nor be less than 80% of that total.

Minimum interrupting ratings for branch circuit breakers shall be identical to line circuit breakers. Provide one branch breaker for each active circuit and specified spare.

Load current ratings for branch circuit breakers will be 30 amperes, and main circuit breakers will be 100 amperes unless shown otherwise on the project plans.

Interrupting ratings for the contactor shall not be less than the load current rating for the line circuit breaker.

The minimum working voltage rating of the control fuse shall be 240 volts. The fuse shall be cartridge type with dimensions 13/32 inch by 1-1/2 inch. Current ratings shall be as recommended by the manufacturer.

The test switch shall have a double-break contact block.

The control cabinet shall be electrically bonded to the ground rod(s) with a copper wire or jumper equivalent to No. 6, AWG or larger.

The photoelectric control shall be remotely mounted as indicated on the detail plans. The photoelectric control socket shall be connected to the nearest accessible grounding connection, or where indicated on the detail plans, by means of a No. 12, AWG bare copper wire.

All duct connections into the control cabinet shall be weatherproof threaded hubs or compression glands.

The top surface of the concrete pad shall slope one-quarter inch per foot in the direction of the natural ground. The placement of all concrete pads shall be at the direction of the Engineer.

Iowa Department of Transportation Project Development Division	
<b>STANDARD ROAD PLAN</b>	<b>RM-36</b>
REVISION: Removed reference to steel control panel.	REVISION NO. 2
APPROVED BY: <i>Gregory C. Christy</i> DESIGN METHODS ENGINEER	REVISION DATE 10-03-00
CONTROL STATION DETAILS (PAD-MOUNTED)	

**SECTION A-A INSTALLATION DETAILS**