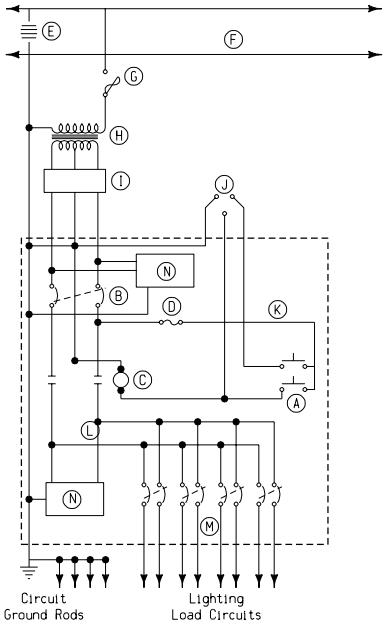
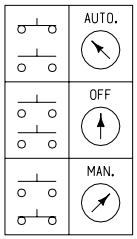
A. Test Switch
B. Line Breaker
C. Contactor
D. Control Fuse
E. Lightning Arrestor
F. Primary Line
G. Primary Fused Cutout
H. Distribution Transformer
I. Meter
J. Photoelectric Control
K. Control Circuits
L. Line Circuits
M. Branch Circuit Breakers
N. Surge Suppressors

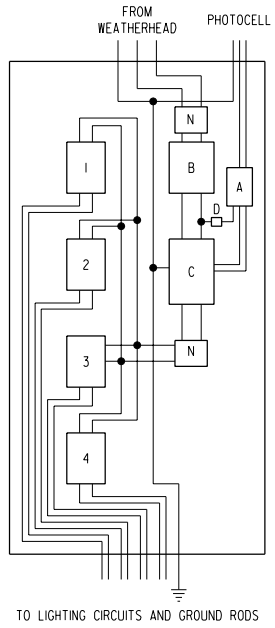


SCHEMATIC DIAGRAM

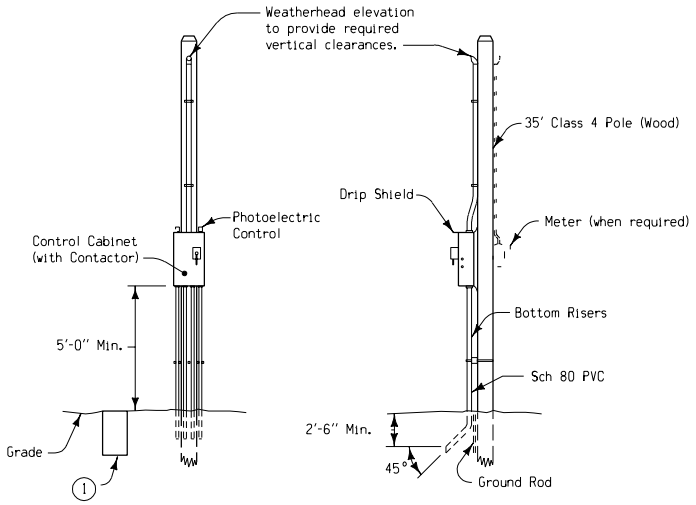


SWITCH
OPERATION

A. Test Switch
B. Line Breaker (2P.)
C. Contactor (2P.)
D. Control Fuse
1 thru 4. Branch Circuit Breakers (2P.)
N Surge Suppressors



CONTROL PANEL WIRING DIAGRAM



TYPICAL INSTALLATION

LAYOUT LEGEND

Control Station (Pole-Mounted)

GENERAL NOTES:

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

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

Aerial service drop 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 unmetered service has been secured at the time of construction.

All components within the control cabinet shall be so arranged to provide access for maintenance and space for four (4) branch circuit breakers without disturbing other components or wiring.

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, unless detailed on project plans.

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 inches. 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.

All risers shall be rigid conduit of the type shown on the plans. All top risers shall have a Nominal Outside Diameter of 2 inches or larger. One 2-inch Nominal Outside Diameter bottom riser shall be provided for each active circuit and specified spare unless otherwise shown on the project plans.

All internal line slide and control circuit wiring shall be considered incidental to the contract price for the control cabinet, and will not be measured for payment.

(1) Handhole where shown on plans, or when the control cabinet is at a low point in the conduit system, and could possibly be flooded with water entering at other points in the conduit system.

Iowa Department of Transportation
Project Development Division

STANDARD ROAD PLAN RM-35

REVISION: Add Surge Suppresors; revise notes.	REVISION NO.
	1
05-24-99 APPROVED BY DESIGN METHODS ENGINEER	REVISION DATE
	09-21-99

CONTROL STATION DETAILS
(POLE-MOUNTED)