

IRRIGATION AND WATER PUMPING

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THREE PHASE IRRIGATION AND WATER PUMPING

GENERAL

All pump control panels, main disconnect and metering panels shall be weather proof.

Across the line starting is normally acceptable up through 40 horsepower.

Three phase motors rated above 40 horsepower shall utilize reduced voltage starting equipment and be furnished and installed by the consumer.

The above specification may be modified to allow the use of across the line starting devices for larger motors by specific approval of the Engineering Department of the Cooperative, depending on the characteristics of the motor and location on the Cooperative's system.

The main switch shall be immediately adjacent to the meter panel. Meters and metering equipment shall be located ahead or on the supply side of the consumers main disconnect.

All main disconnects shall simultaneously open all ungrounded conductors of the circuit. All ungrounded conductors shall be fused in the main disconnects.

A three pole circuit breaker which will interrupt all three phases may be substituted for the main fused disconnect switch provided it is properly sized for the equipment and can safely interrupt the available fault current.

If for any reason the total actual operating load current, excluding motor starting current exceeds the rating of the consumer's service equipment, either at the time of installation or thereafter, the consumer shall install facilities consisting of an approved meter/C.T. box or an approved switchboard to accommodate current transformer metering.

CONSUMERS CONTROL EQUIPMENT

Three element running overload protection shall be required on all motors.

Example: One overload unit in each phase in the starter.

Under-voltage, phase failure and phase reversal protection, time-delay backspin relays, surge capacitors and lightning arresters are strongly recommended for the protection of motor installations.

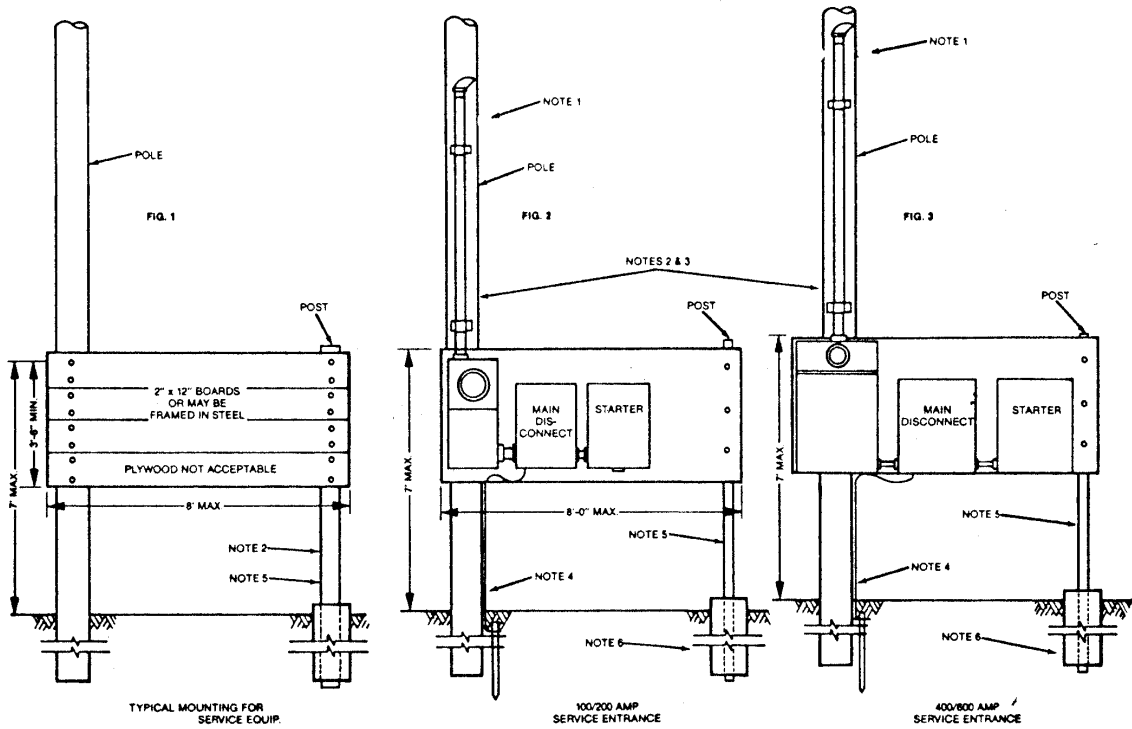
All reduced voltage starters shall be automatically switched from start to run mode of operation. Manual transfer is not acceptable.

All reduced voltage starters must conform to the latest National Electric Manufacturers Association Standards and the installation must be in accordance with the National Electrical Code.

Consumers switch and motor control equipment shall be of proper horsepower and voltage rating and shall be weatherproof.

Consumers switch and motor control cover shall be effectively locked or sealed if the enclosure contains accessible electrically energized parts.

TYPICAL SERVICE ENTRANCE SUPPORTS FOR SERVICE EQUIPMENT



NOTES

1. For service pole size requirements, see Overhead Service section of this manual. For underground see Underground Service and Trenching sections of this manual.
2. All wood poles used for service equipment shall be full length pressure treated. Refer to Service Pole Requirements in the Overhead Service section.
3. Refer to Service Pole Requirements for pole sizes and minimum setting depth.
4. See Grounding and Bonding section.

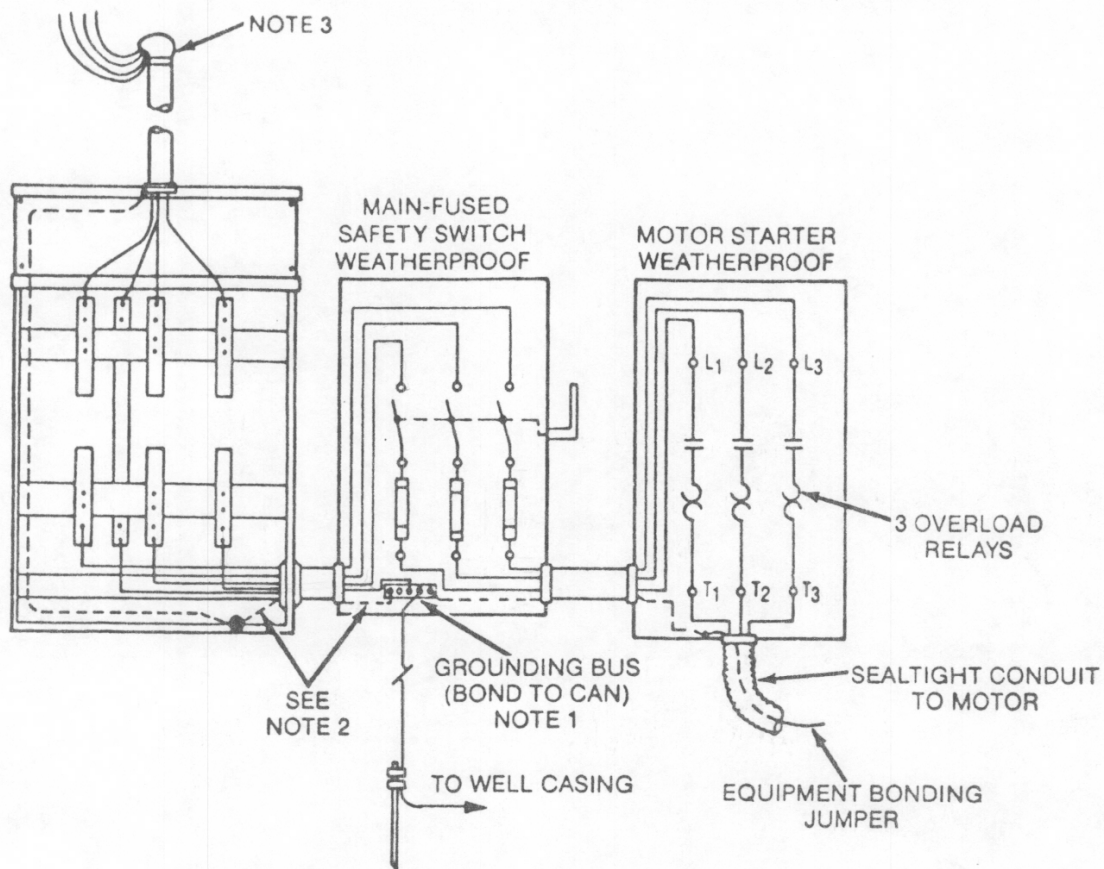
5. Minimum dimensions shall be:

A. Wood Pole = 8" in diameter with a maximum length of ten feet.

B. Pipe or steel poles = 3" in diameter. Pipe poles to be of rigid galvanized steel.
Maximum length of 10 feet.

6. The steel post shall be placed in the center of a 12 inch minimum diameter concrete footing. The footing shall be a minimum 36 inches in the ground and extend a minimum of 4 inches above ground level and have a 1/2 inch slope away from the steel post to allow for drainage.

TYPICAL IRRIGATION AND WATER PUMPING INSTALLATION



NOTES

1. Neutral conductor to run through meter can into main disconnect enclosure where it shall land on a grounding bus bar. All grounding and bonding shall be made on this bus.
2. See Grounding and Bonding section.
3. See Overhead Service section for requirements. If underground, see Underground Service section for requirements.
4. See Metering section for metering specifications.