PEDERNALES ELECTRIC COOPERATIVE
PRIMARY METERING

Primary Metering Requirements

1. Pedernales Electric Cooperative (PEC) permits 7.2/12.47 kV (12.5 kV) and 14.4/24.9 kV (25 kV), three-phase (four-wire) or single-phase, grounded-neutral primary service on its electric distribution system. PEC can provide primary voltage service to qualified members at the primary voltage distribution system standard for the location at which the service is requested.
2. All transformers must be connected in a wye-wye configuration. Any other configurations will require approval from PEC Engineering Planning and may require additional protective equipment on the member's side.
3. Member is responsible for the cost of all poles, conductors, cables, transformers and protective devices, as well as the integration and installation of primary metering.
4. All electrical facilities downstream of the metering point are identified as "member-owned." They shall be owned, operated and maintained by the member.
5. Member-owned equipment shall be of the same quality and specifications as equipment used by PEC. Member-owned equipment shall be insulated at 25 kV in accordance with PEC standards. Member-owned equipment shall also be dual voltage if located in a region that may experience future voltage conversion. This requirement may be discussed with PEC Design and Planning.
6. Member is responsible for routine and emergency maintenance of the primary metered facilities. This includes emergency transformer replacement and emergency primary facility repair. It is recommended that the facility owner contract these emergency repair/replacement services.
7. For overhead primary metering, all equipment will be installed on PEC poles. Generally PEC requires a 50' pole for primary metering.
8. Current transformers (CTs) and potential transformers (PTs) are required, obtained and installed by PEC.
9. Member shall ensure electrical service, CTs and disconnects are inspected by local city or county authorities having jurisdiction.
10. PEC will design, install, maintain and own the primary meter system. PEC will own the pole if the primary meter system is overhead or the pad-mounted meter enclosure if underground. The member will pay all costs associated with the primary meter installation. This may include upgrades to up-line facilities if needed to adequately serve the member's load.
11. The member shall design and engineer their primary system past the primary meter and submit plans to PEC Design and Planning for review and approval. This is to ensure the facilities on the load side of the primary meter will coordinate with PEC's distribution system protection.
12. The member shall install, own and maintain a PEC-approved disconnect switch on the first pole past the primary meter.
13. All primary facilities interconnected with PEC's distribution system shall obtain design review and approval from PEC Design and Planning before installation or modification. After installation, the member shall obtain PEC approval prior to installation of additional facilities or modifications to the existing primary system.
14. Installations by the member shall comply with the current National Electrical Code (NEC), the National Electrical Safety Code (NESC) and local governing authority requirements.
15. The member shall submit a detailed motor load survey for motor loads 50 HP or greater for review by PEC Engineering Planning. The member shall comply with PEC motor starting requirements.
16. No other connections are permitted in PEC enclosures. PEC enclosures are locked and sealed after service is commissioned. If PEC equipment or enclosures are tampered with, PEC reserves the right to discontinue service.

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PEDERNALES ELECTRIC COOPERATIVE
PRIMARY METERING

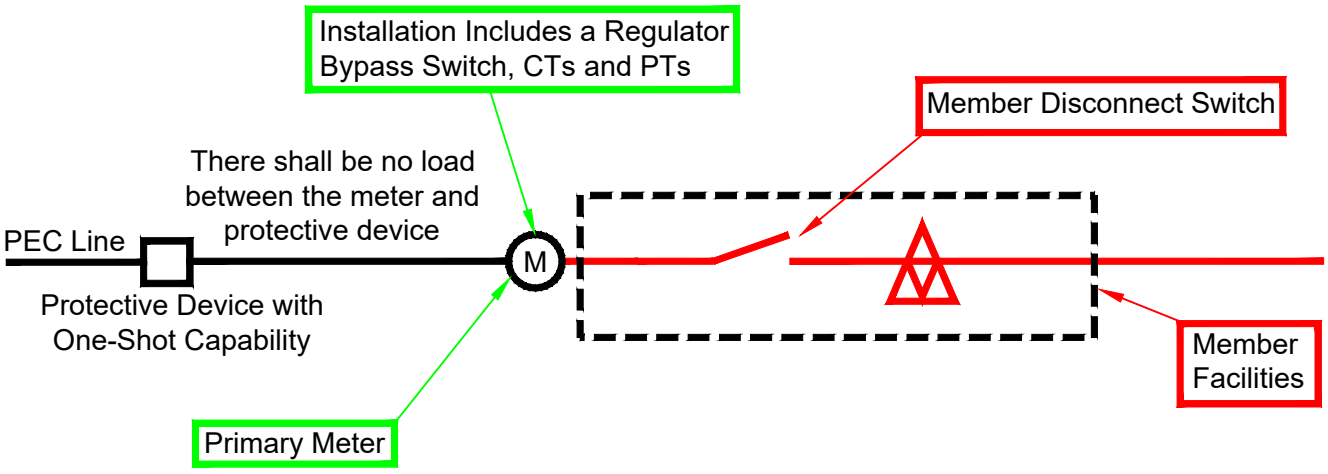
Basic Primary Metering Process

The basic steps in a primary metering project are as follows:

1. Request by member for power delivery at the primary voltage level.
2. PEC Design and Planning participates in a project meeting with developer and/or member to determine mutual, satisfactory solutions for location of point-of-delivery; primary metering equipment; disconnect devices to separate PEC and member distribution systems; system protection; and grounding.
3. Primary metering location, load and voltage data is obtained by PEC AMI and PEC Design and Planning.
4. PEC Design and Planning send the CT Meter Request Form to PEC Meter Maintenance.
5. Costs for CT's and PT's will be sent by PEC Meter Maintenance to PEC Design and Planning.
6. PEC Design and Planning will compile and provide an invoice for primary metering project. Material will be ordered after payment by member.
7. Metering material selected and requisitioned by PEC Meter Maintenance. (Note: Primary CTs and PTs are built to order. Allow eight weeks minimum order time.)
8. Metering package built by PEC Meter Maintenance.
9. PEC Meter Maintenance installs primary CT/PT package.

Typical Electrical Diagram for Primary Metering

The following electrical diagram illustrates the equipment required for primary metering. This diagram can be used to illustrate either three-phase or single-phase primary metering.



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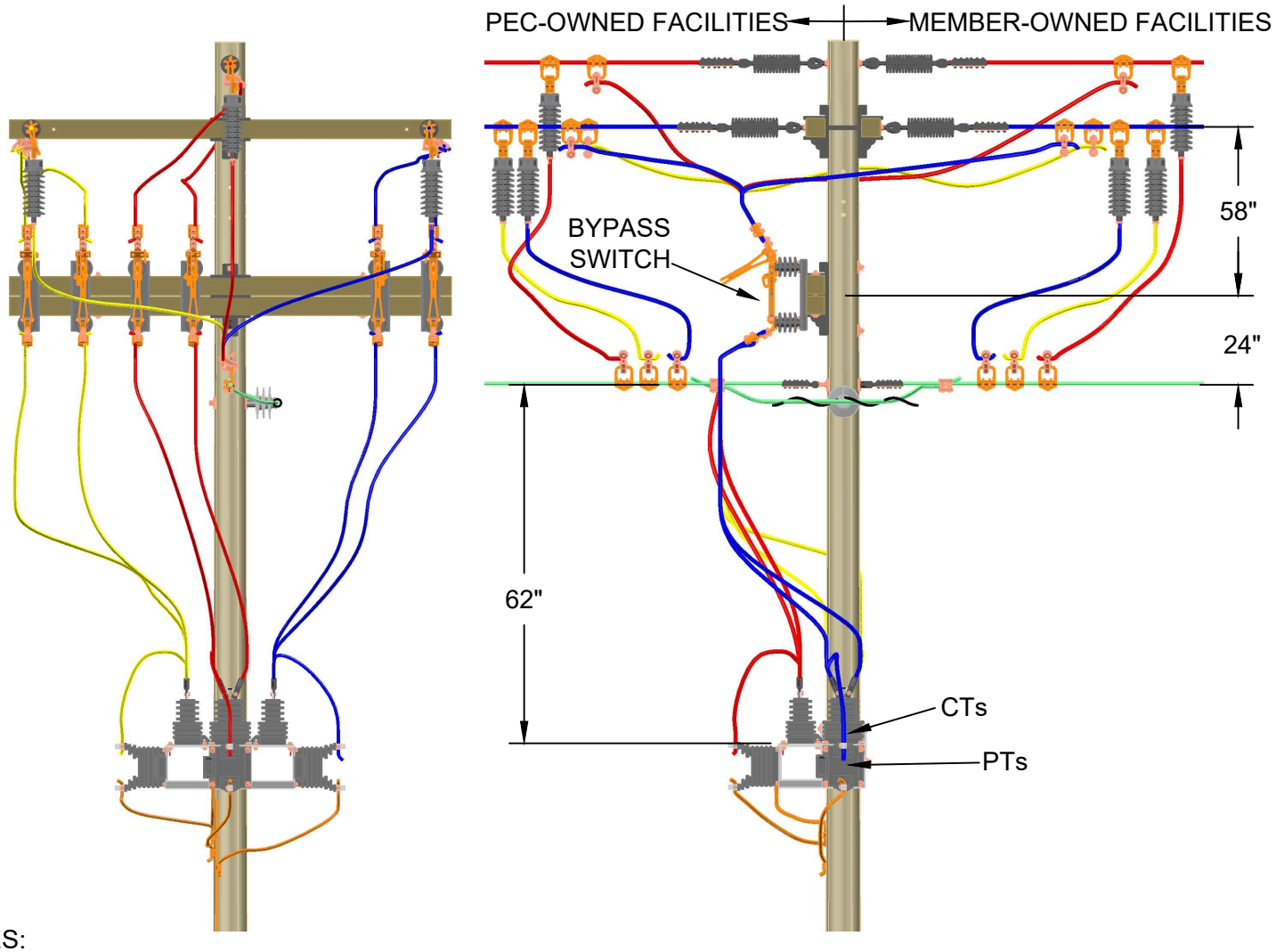
7.2/12.5 kV OR 14.4/25 kV PRIMARY METERING WITH REGULATOR BYPASS SWITCHES ON LOWER ARM



NOTES:

- DO NOT INSTALL ON LESS THAN A 50-FOOT POLE.
- MEMBER FACILITIES NOT ALLOWED ON PEC PRIMARY METER POLE.
- MEMBER SHALL PROVIDE A POLE NEAR PRIMARY METER POLE FOR MEMBER SWITCHES, FUSES AND OVERHEAD OR UNDERGROUND DISTRIBUTION.
- THE LENGTH OF THE SLACK SPAN SHALL NORMALLY BE A MAXIMUM OF 40 FEET, BUT IN SOME INSTANCES, IT MAY BE LIMITED TO 25 FEET. CONTACT PEC DESIGN AND ENGINEERING FOR SPECIFICATIONS.
- FOR 4-WIRE, 3-PHASE SERVICE UNDERGROUND, MEMBERS ARE TO BE SERVED FROM A SEPARATE MEMBER-OWNED TERMINAL POLE. UNDERGROUND DOES NOT ATTACH TO THIS POLE.
- SOURCE-SIDE CUTOUT AND BYPASS ARE 100A FUSED. THE LOAD SIDE IS A 300A, SOLID-BLADE DISCONNECT.
- IF LOAD EXCEEDS 200A, CONSULT PEC DESIGN AND ENGINEERING FOR SWITCHES AND PROTECTION.
- CUTOUT CONNECTORS CAN ACCOMMODATE 4/0 COPPER WHEN LARGER-SIZE COPPER JUMPERS ARE USED. IF 900A SWITCHES ARE USED, 750 KCMIL COPPER OR SMALLER CAN BE USED AS JUMPERS.

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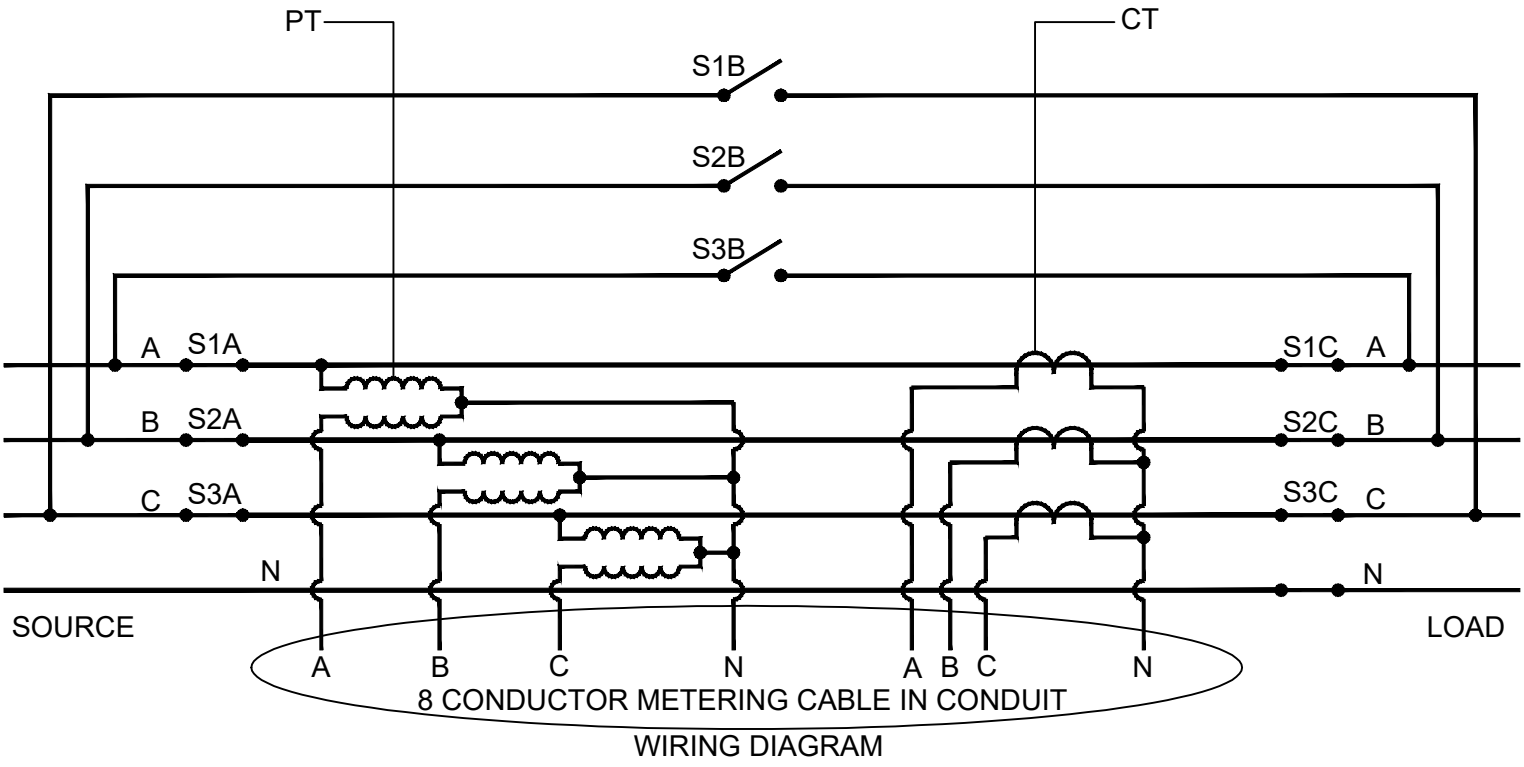
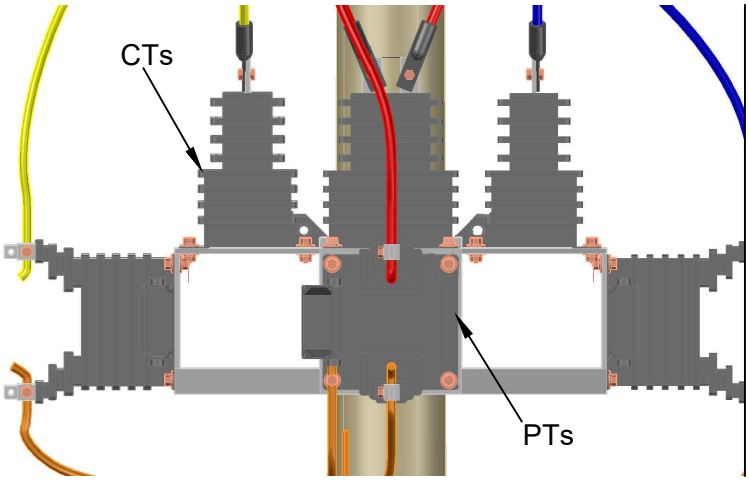
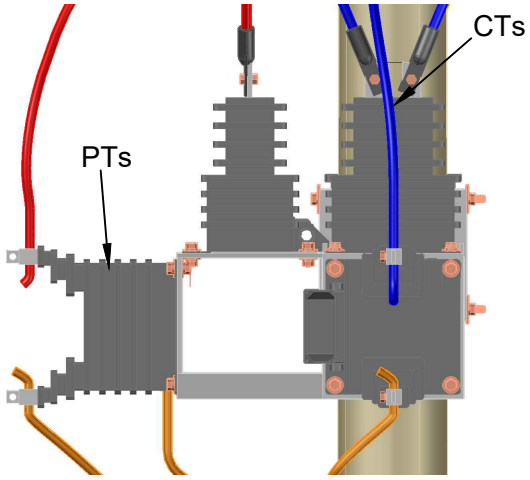


WIRING DIAGRAM



FRONT VIEW



SIDE VIEW

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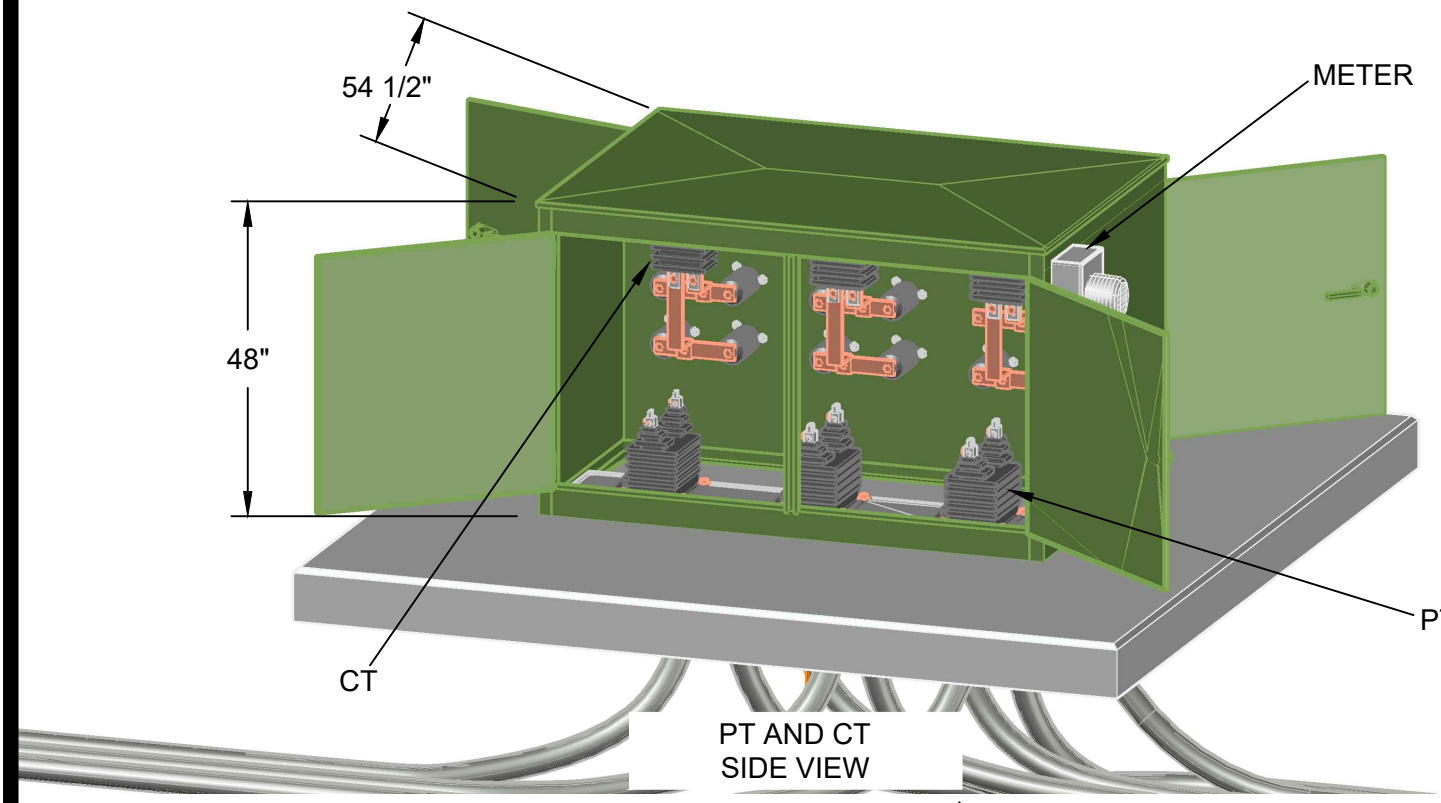
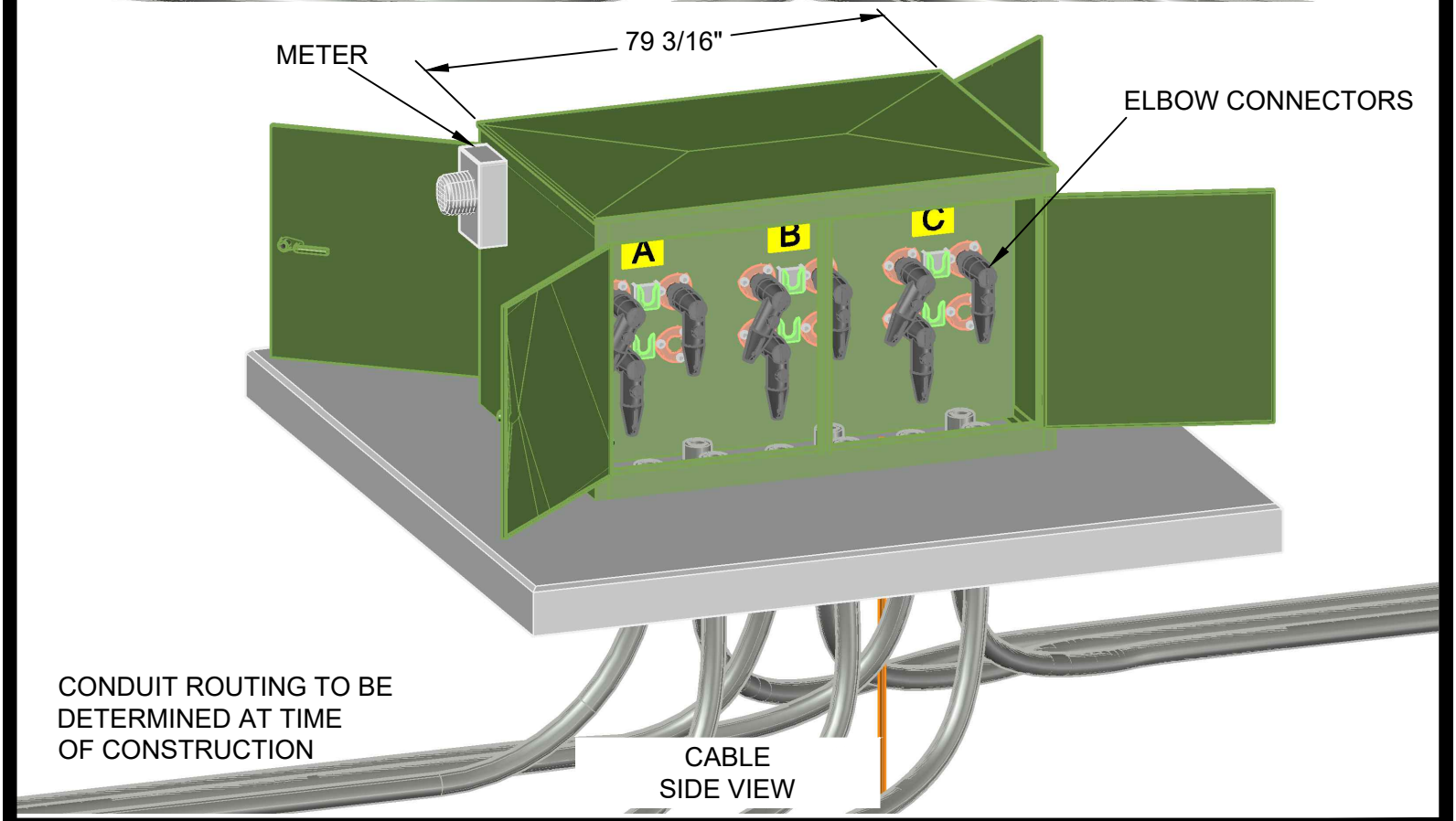
URD PRIMARY METERING ENCLOSURE



PT AND CT
SIDE VIEW



CONDUIT ROUTING TO BE
DETERMINED AT TIME
OF CONSTRUCTION

CABLE
SIDE VIEW

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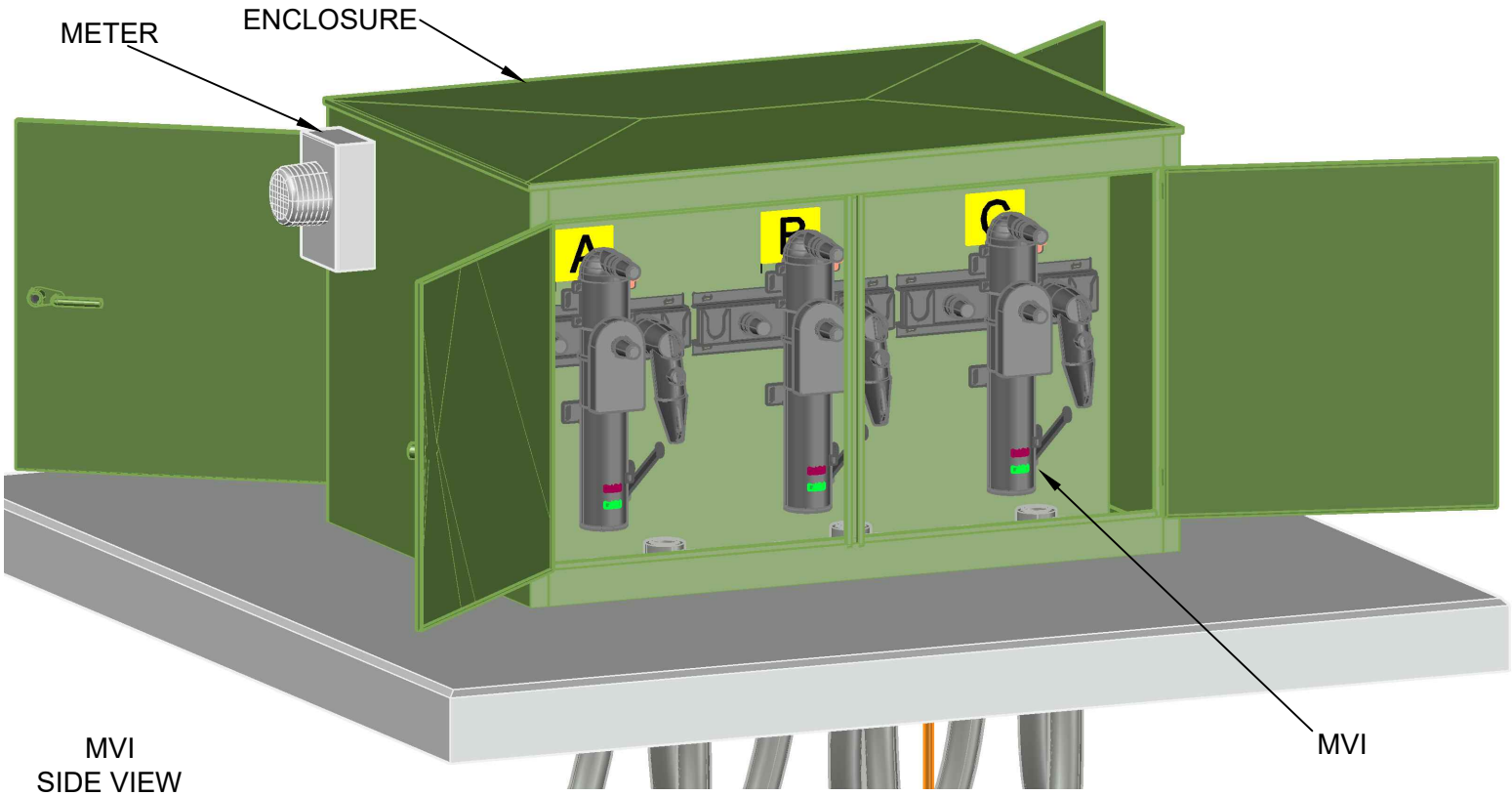
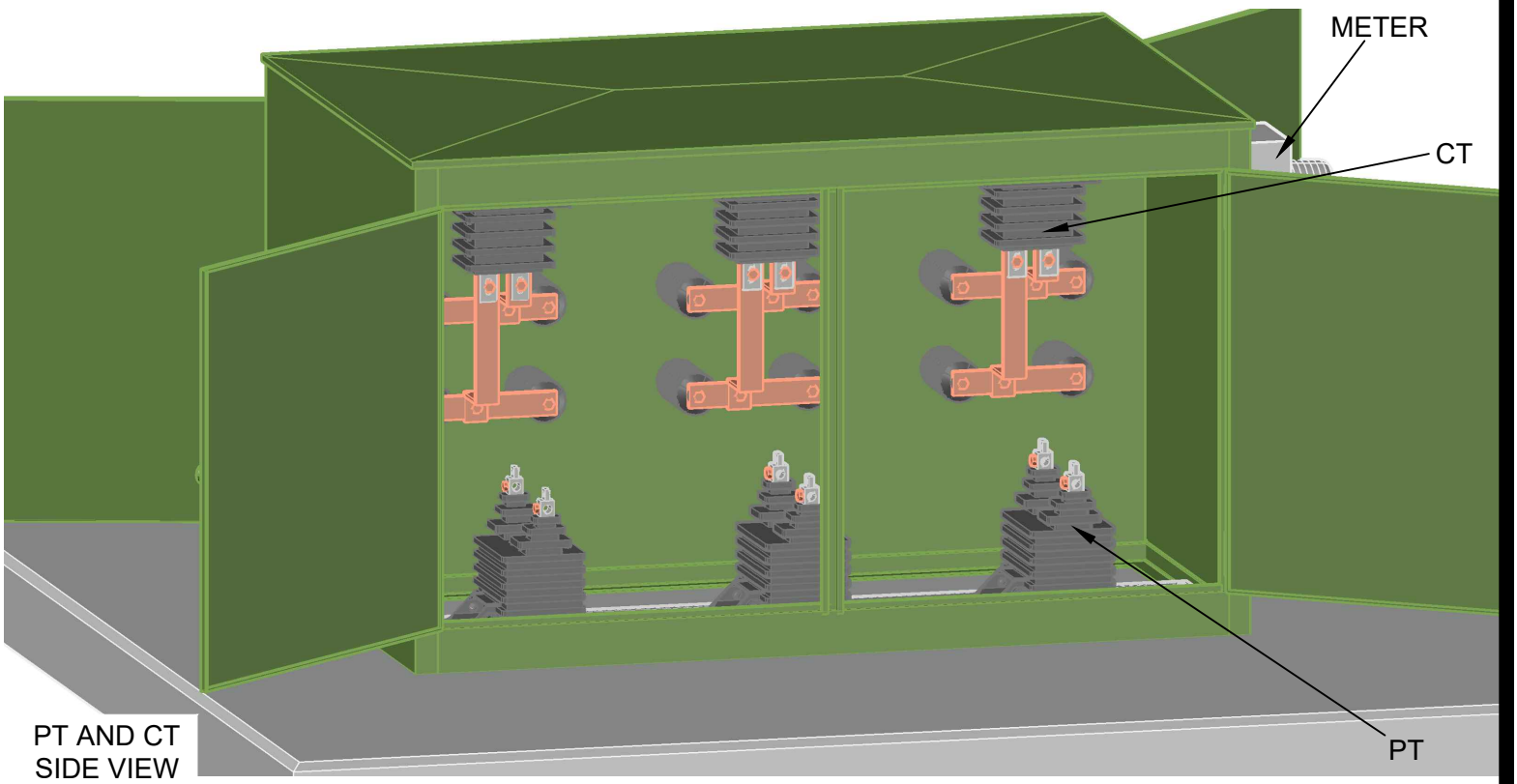
URD PRIMARY METERING ENCLOSURE WITH MVI



MVI
SIDE VIEW



PT AND CT
SIDE VIEW

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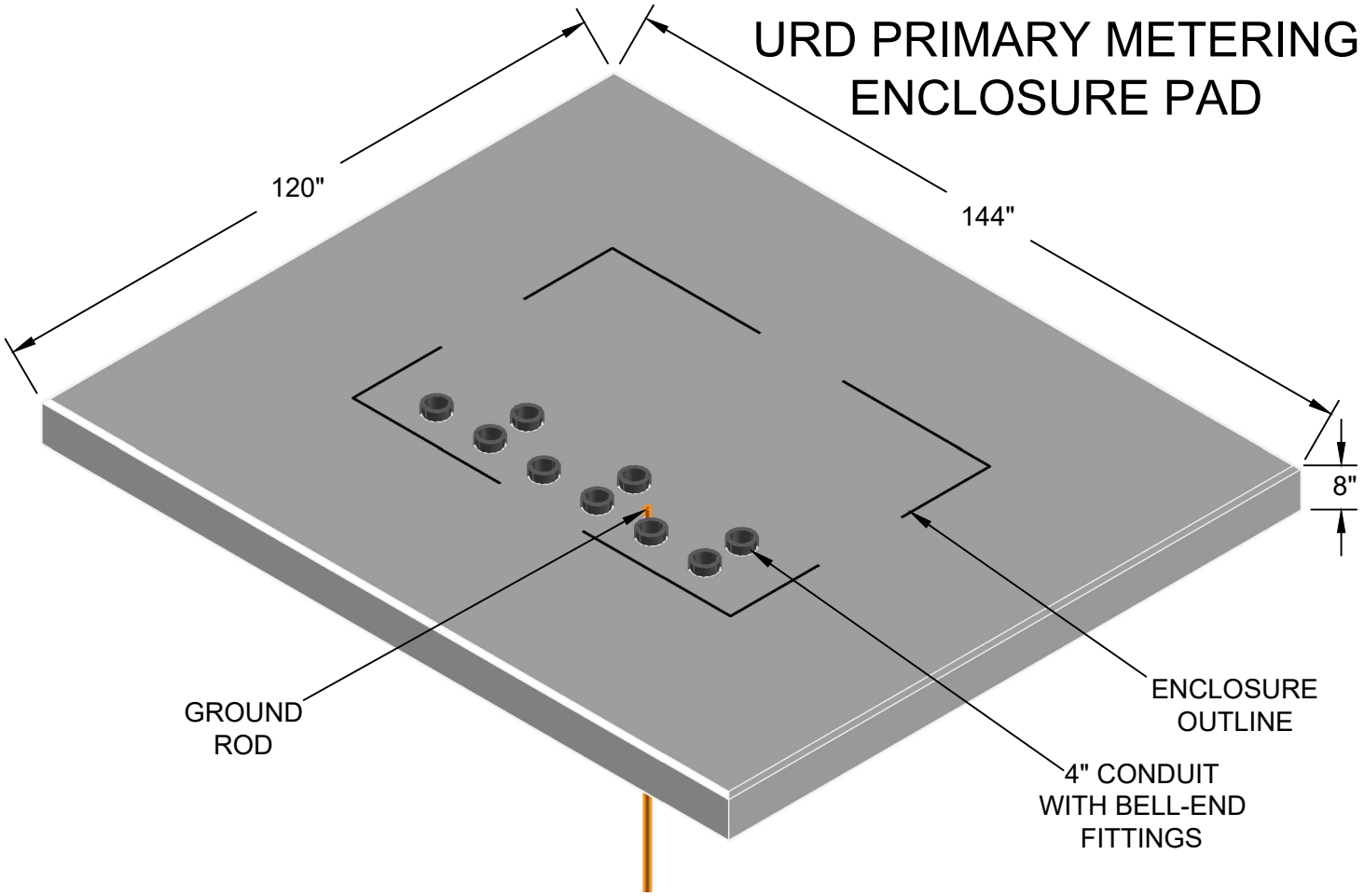

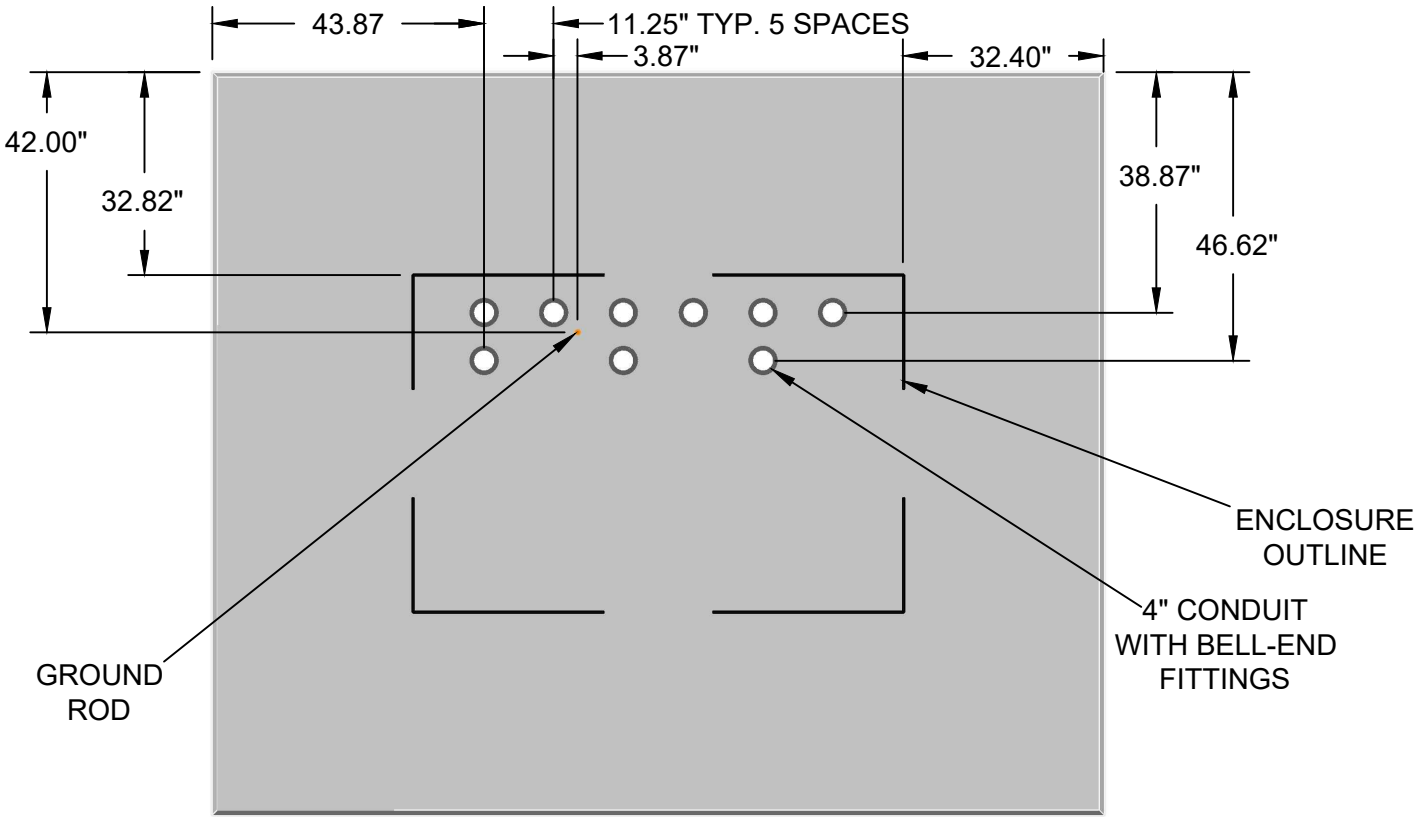

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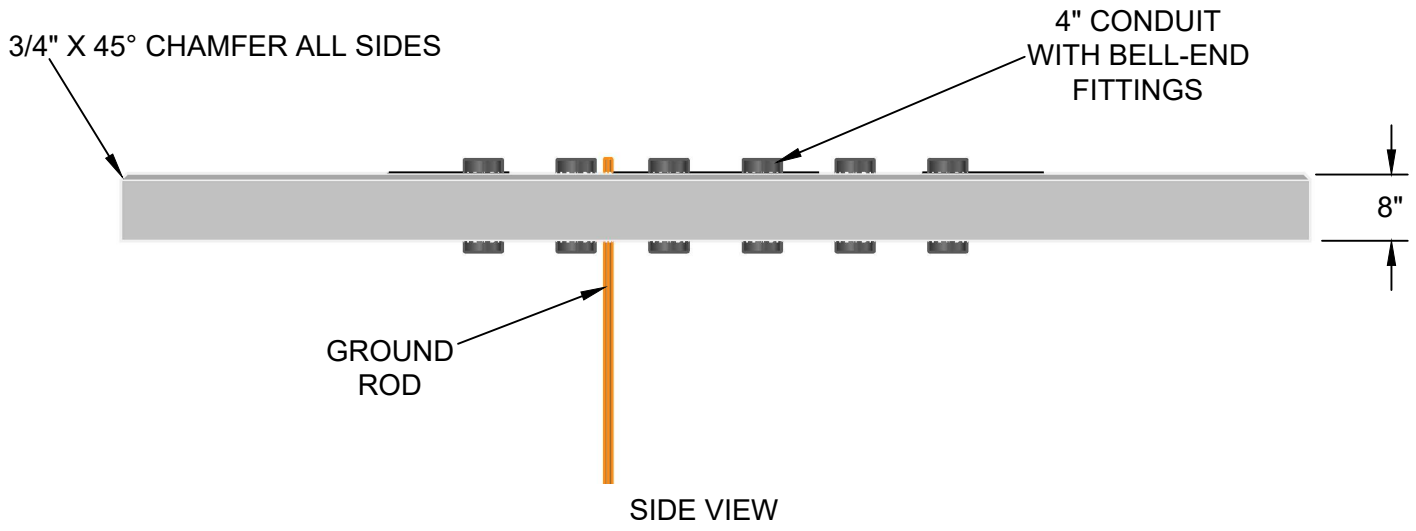
URD PRIMARY METERING ENCLOSURE PAD



Typical All Pads

1. Require 3" conduit (unless otherwise specified by PEC) with bell-end fittings to extend 1 1/2" to 2" above pad.
2. Pads must extend a minimum of 4" above final grade and 1 1/2" below final grade. All pads must be placed on a slope less than or equal to 3:1. If greater than 3:1, contractor must bring slope to required grade.
3. All disturbed soil underneath pad must be replaced by concrete.
4. All ground rods shall be 3/4" X 10' copper-clad with clamp and must extend 3" above top of pad.
5. Wood float finish leaving pad square and level with no dips or crown.
6. **Contact PEC before pouring concrete and comply with the following instructions:**
   - Pre-pour inspection: Check framing and layout of pad and conduit components.
   - Final inspection: Overall review of pad and conduits. Ensure bell ends are on conduit.
7. Concrete testing, 4,000 PSI; 4%-6% entrained air, 3/4" maximum-size aggregate.
8. Steel reinforcement shall be 3/8" re-bar on 12" center to stop 1" from sides.
9. Minimum concrete cover over reinforcing steel 2" unless noted.

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