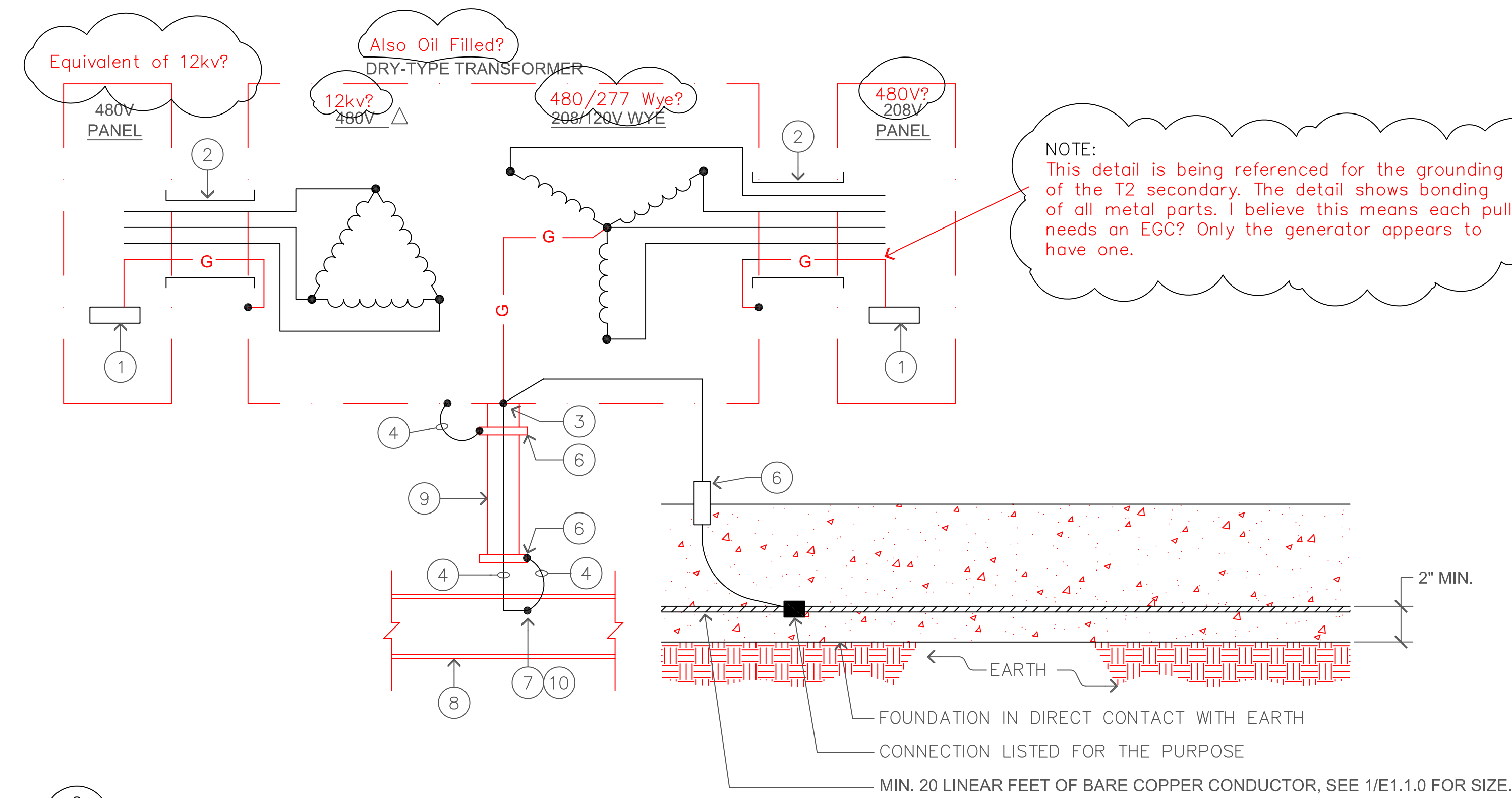


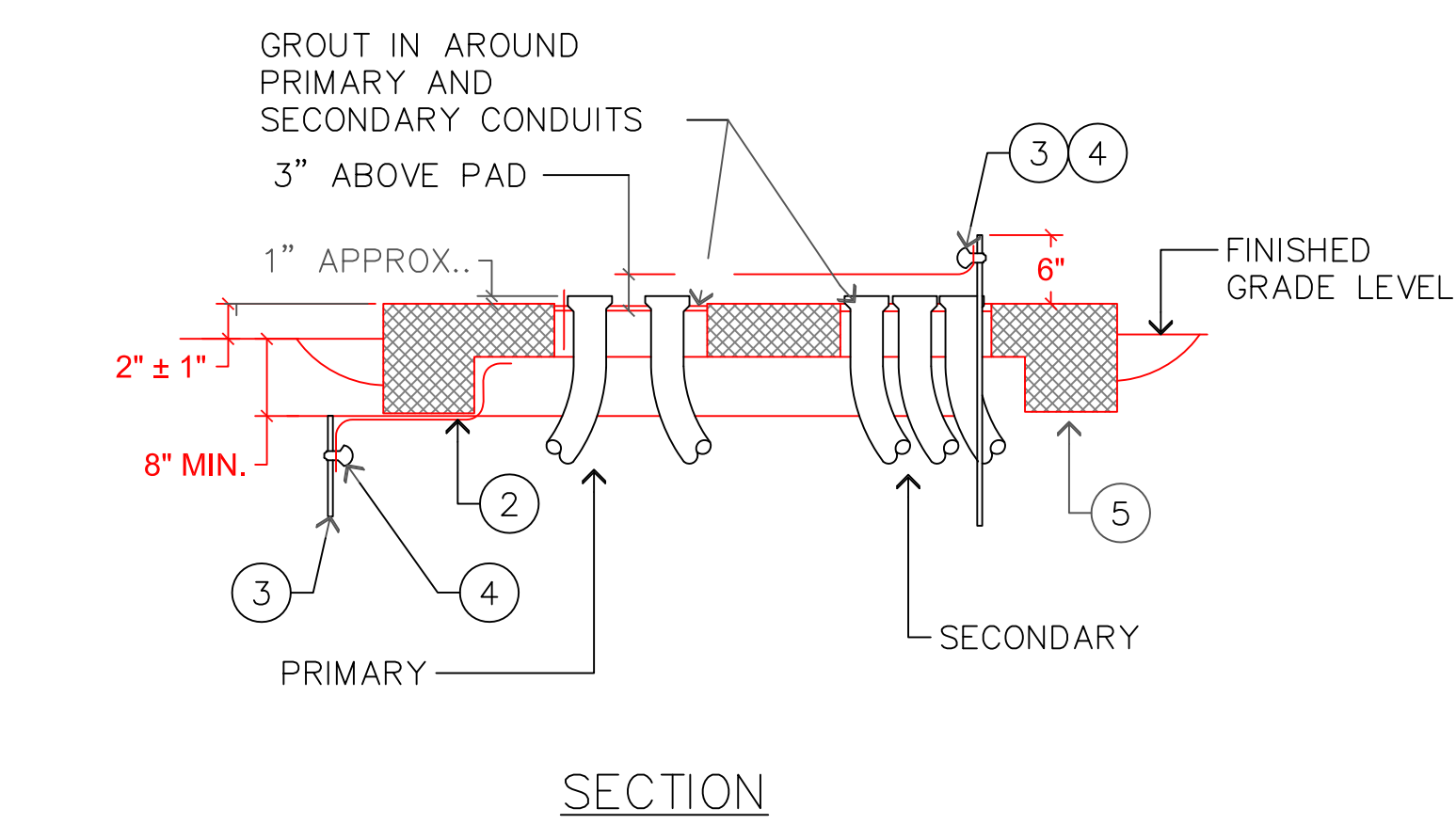
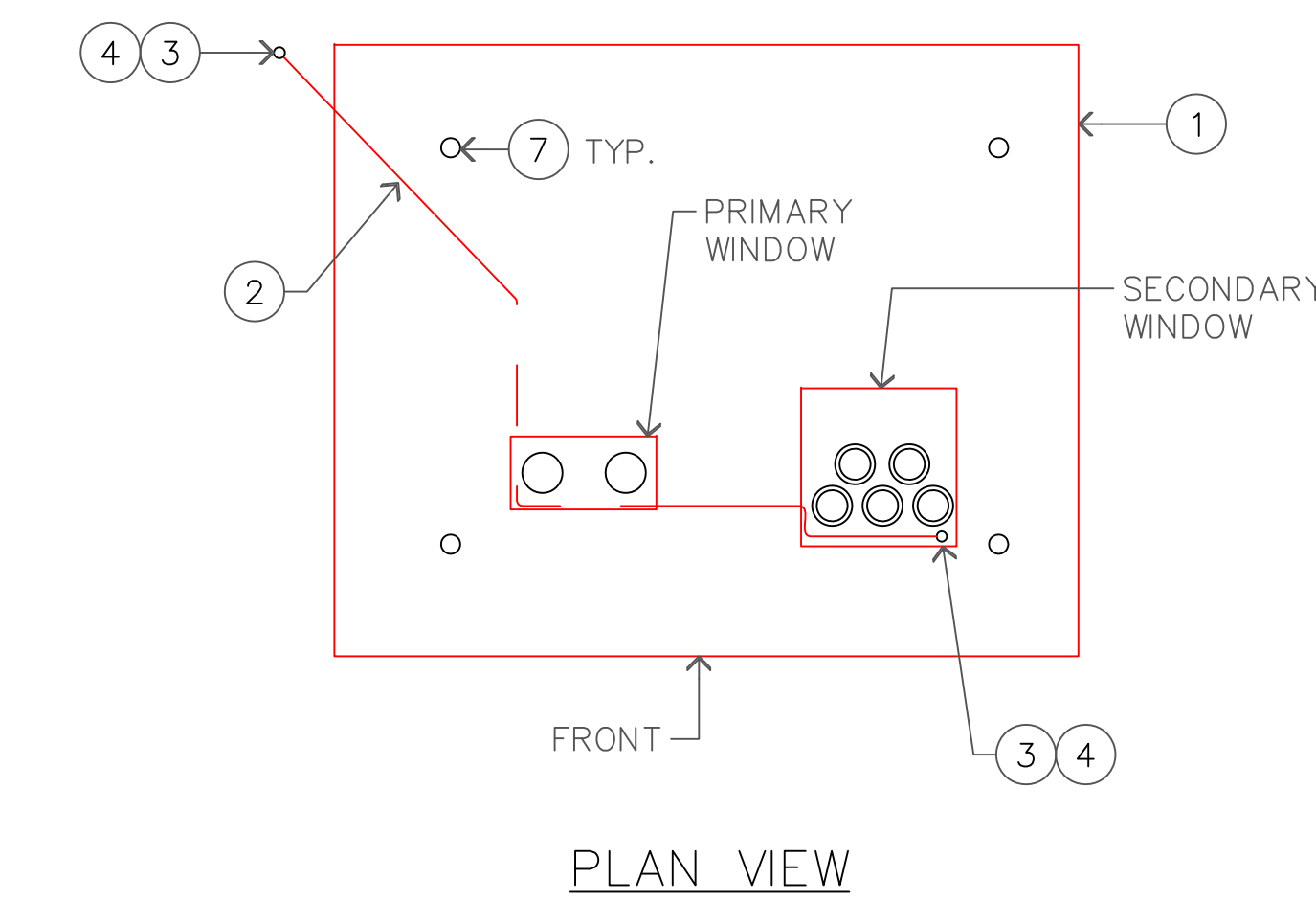
I have tried to highlight my perception of important points as well as questions. No breakers, etc, just meant to highlight grounding.

EACH SET OF WIRES:

- 480VAC 4 wire wye? from PGE to GH MSB, 4th wire = grounded conductor?
- 480VAC 3 wire wye T2 Primary
- 12kv 3 wire w/ shield from T1 Secondary to GC T2 Primary, no EGC?
- 480VAC 4 wire no EGC? from T2 to transfer switch
- 480VAC 5 wire from generator to transfer switch, only device with a grounded conductor and an EGC?

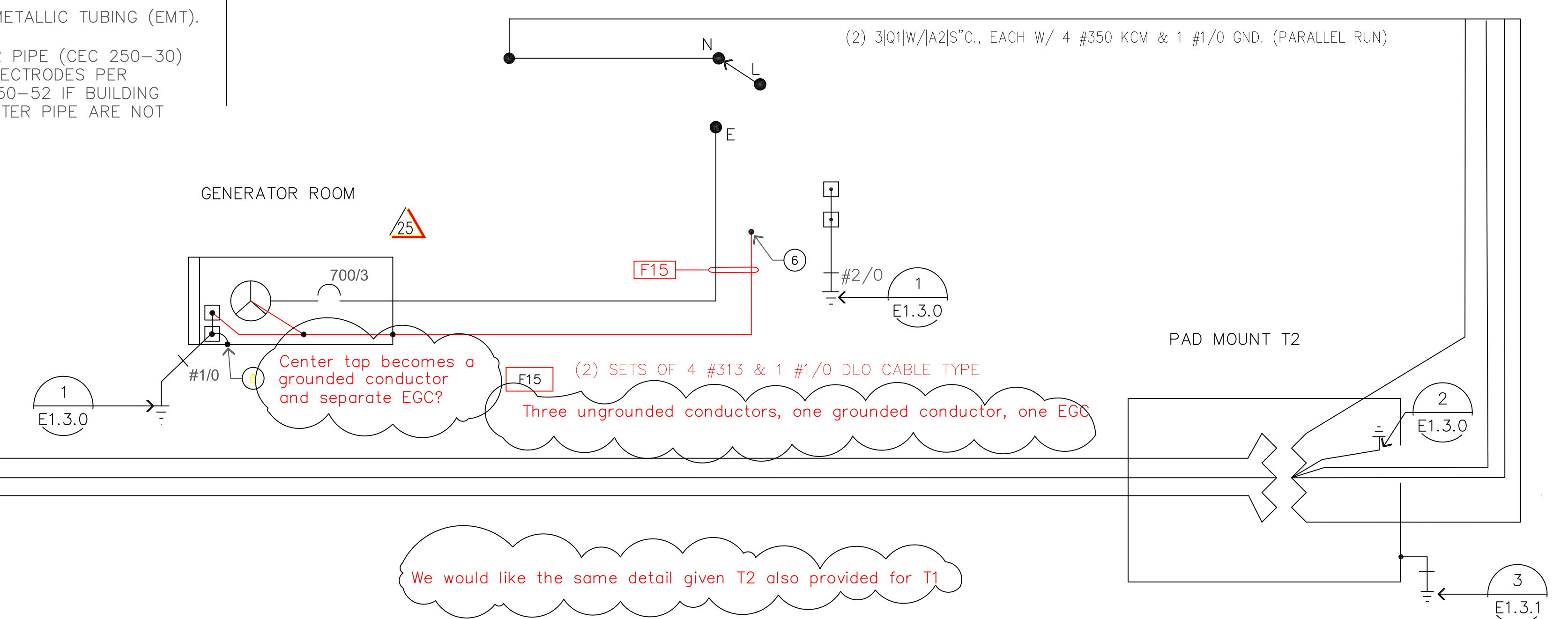


1. PANEL OR SWITCHBOARD EQUIPMENT GROUND BUS.
2. CONDUIT WITH SEAL-TITE FLEX CONNECTION TO TRANSFORMER.
3. TRANSFORMER CASE GROUND.
4. BARE COPPER GROUND, PER CEC 250-66.
5. PVC WITH BARE COPPER GROUND, SEE 1/E1.1 FOR SIZE.
6. GROUNDING BUSHINGS.
7. THERMOWELD CONNECTION.
8. BUILDING STEEL STRUCTURE FRAMING.
9. ELECTRICAL METALLIC TUBING (EMT).
10. METAL WATER PIPE (CEC 250-30) OR OTHER ELECTRODES PER 250-30 & 250-52 IF BUILDING STEEL OR WATER PIPE ARE NOT AVAILABLE.

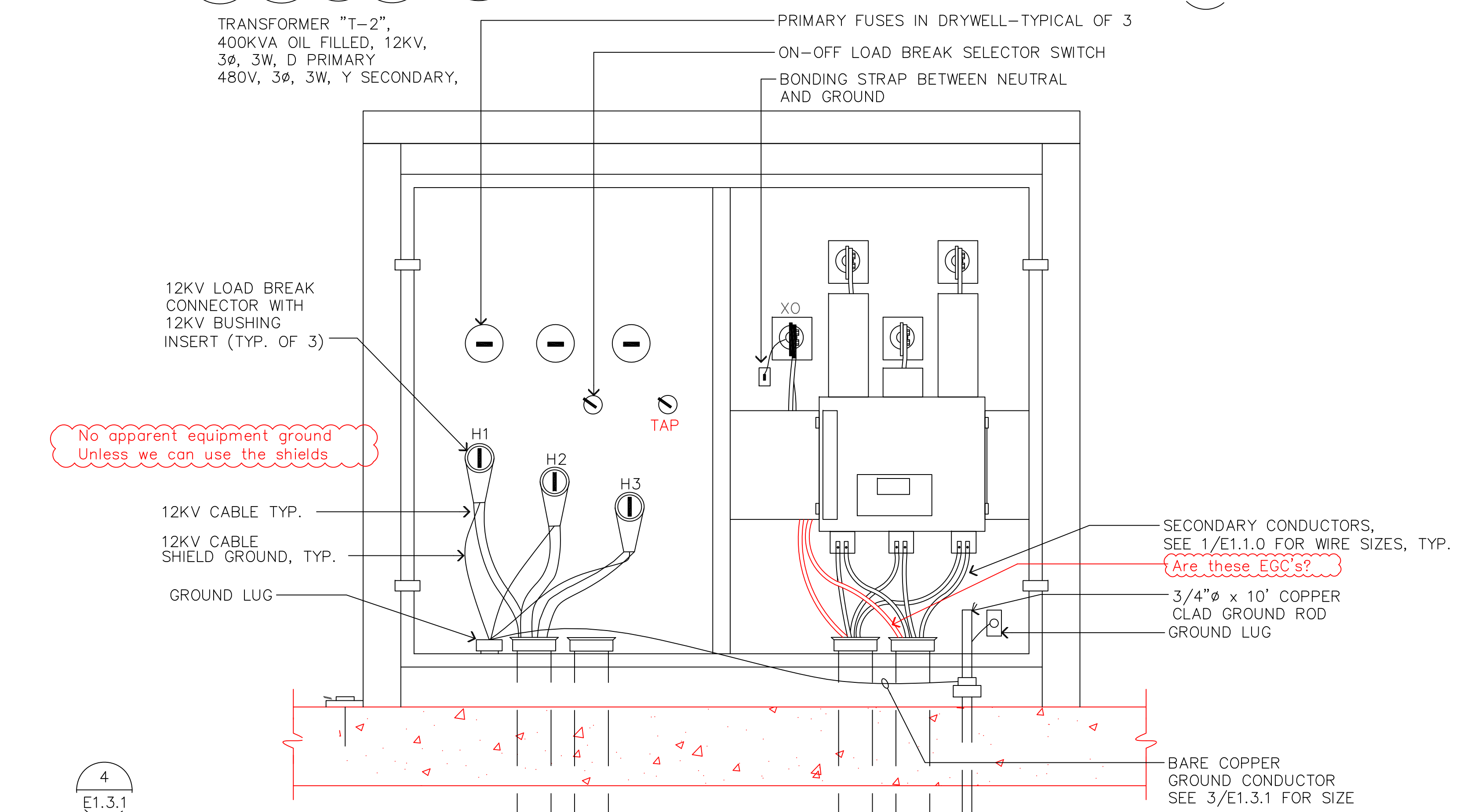


- DETAIL NOTES:
1. PRECAST CONCRETE TRANSFORMER PAD.
 2. WIRE #2 AWG, SOLID, SOFT DRAWN, BARE COPPER.
 3. GROUND ROD, 3/4" X 10" COPPERCLAD.
 4. GROUND CLAMP, CAST BRONZE DIRECT BURIAL TYPE FOR ITEM 3.
 5. COMPACTED BACK FILL MINIMUM 12" DEEP.
 6. **A 6-FOOT MINIMUM SEPARATION SHALL BE MAINTAINED BETWEEN GROUND RODS.**
 7. CAST IN PLACE HOLD DOWN BOLT INSERTS 1/2", 2" PENETRATION.

3 TRANSFORMER "T2" PAD GROUNDING DETAIL



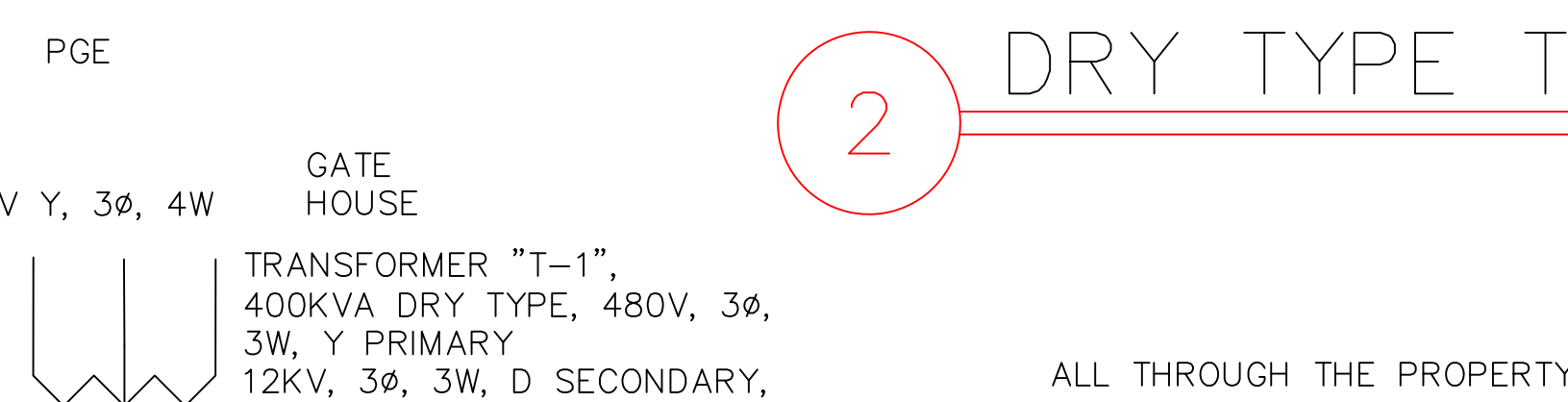
We would like the same detail given T2 also provided for T1



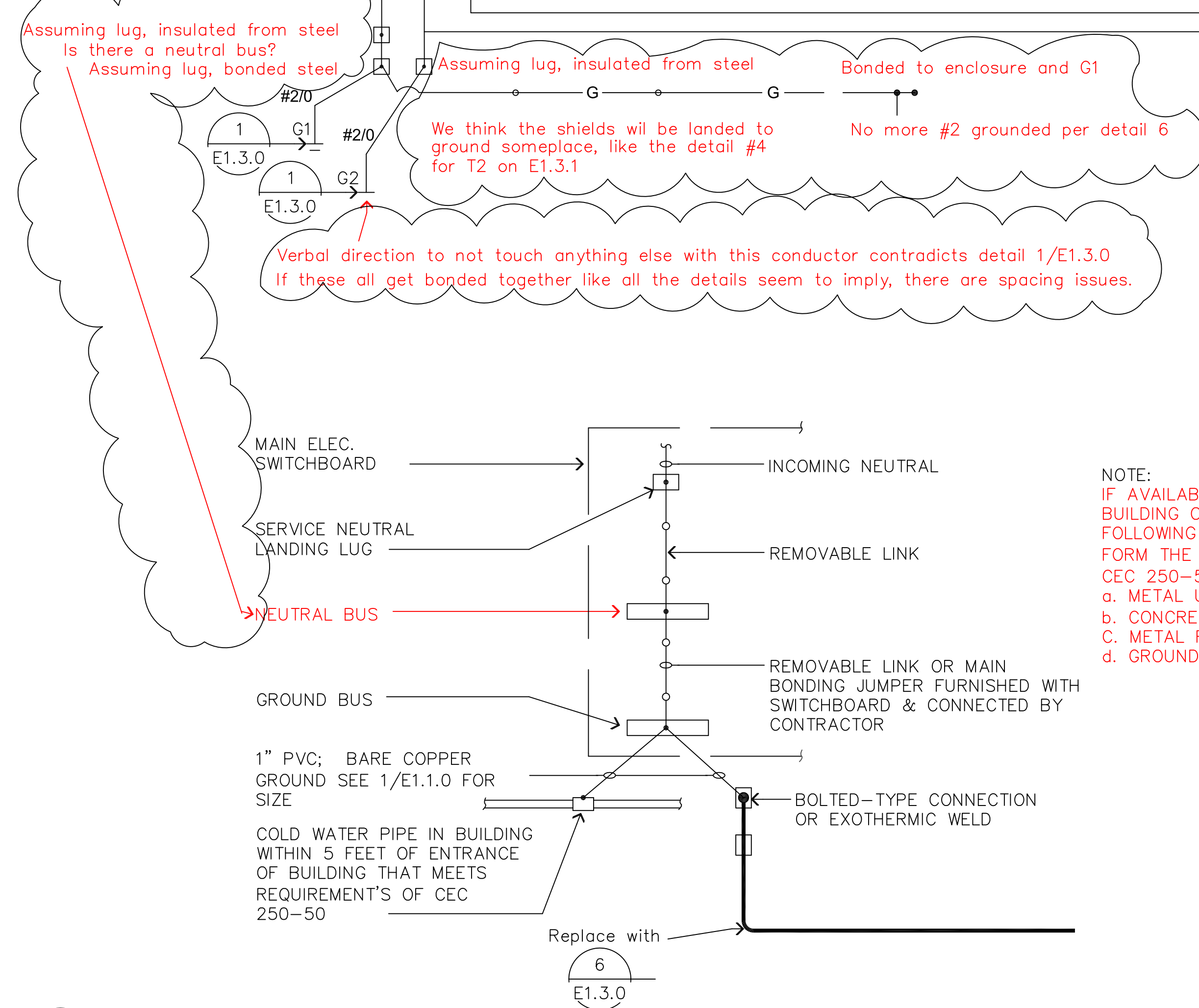
SECONDARY CONDUCTORS,
SEE 1/E1.1.0 FOR WIRE SIZES, TYP.
Are these EGC's?
3/4" ϕ x 10' COPPER
CLAD GROUND ROD
GROUND LUG

BARE COPPER
GROUND CONDUCTOR
SEE 3/E1.3.1 FOR SIZE

DRY TYPE TRANSFORMER UFER GROUND GROUNDING DETAIL

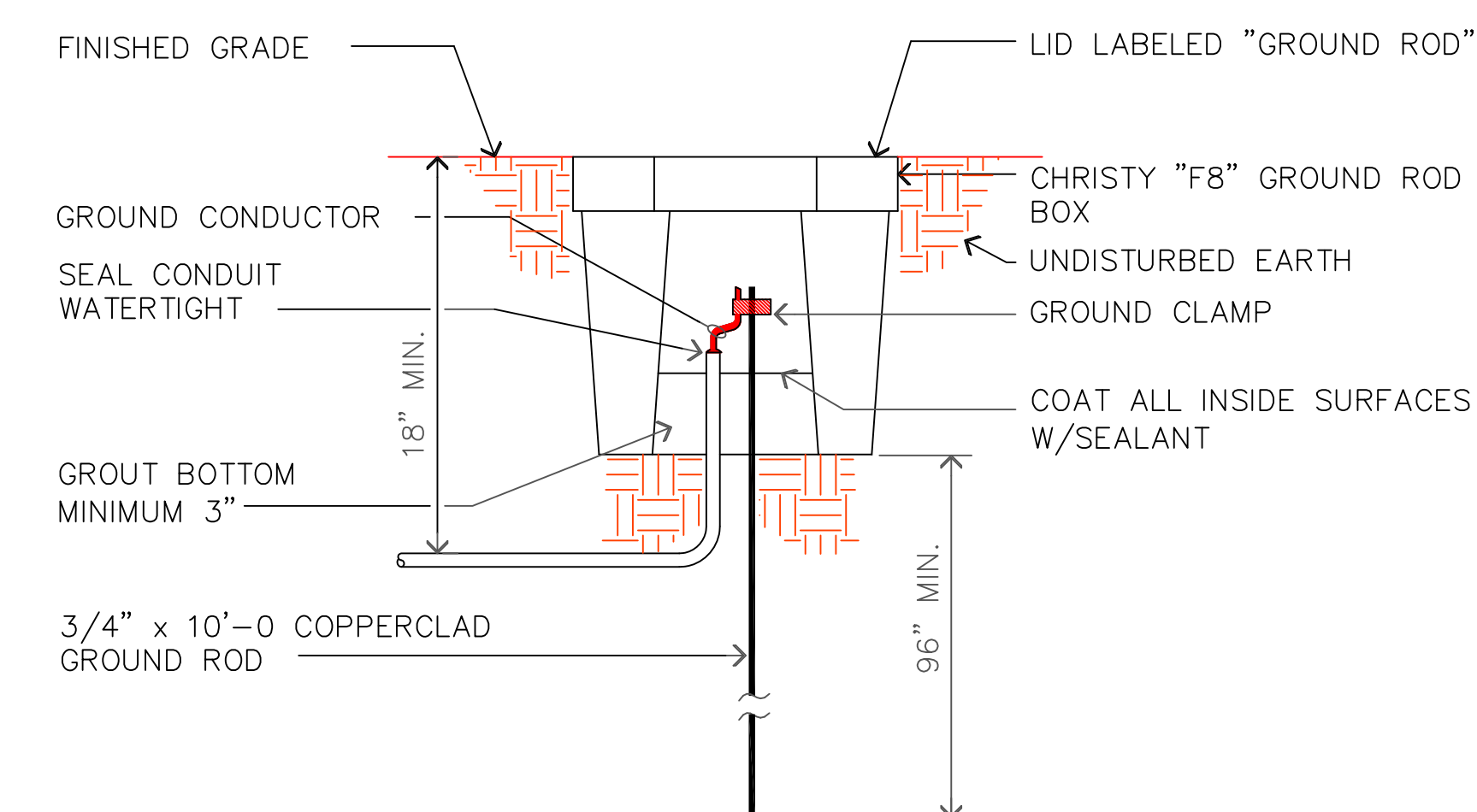


Approximately 1700 feet of PVC with Vaults. Shield only landed on a ground rod on most vaults



NOTE:
IF AVAILABLE ON THE PREMISES AT EACH BUILDING OR STRUCTURE SERVED EACH OF THE FOLLOWING SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM (PER CEC 250-50):

- a. METAL UNDERGROUND WATER PIPE
- b. CONCRETE ENCASED ELECTRODE (UFER)
- c. METAL FRAME OF BUILDING
- d. GROUND RING



Implies intent for direct path?

NOTE:
WHERE METAL CONDUIT USED IN
LIEU OF PVC, PROVIDE GROUND
BUSHINGS & BONDS PER CODE

GROUND ROD BOX DETAIL

ELECTRICAL SERVICE (UFER) GROUND

PAD MOUNT TRANSFORMER "T2"