

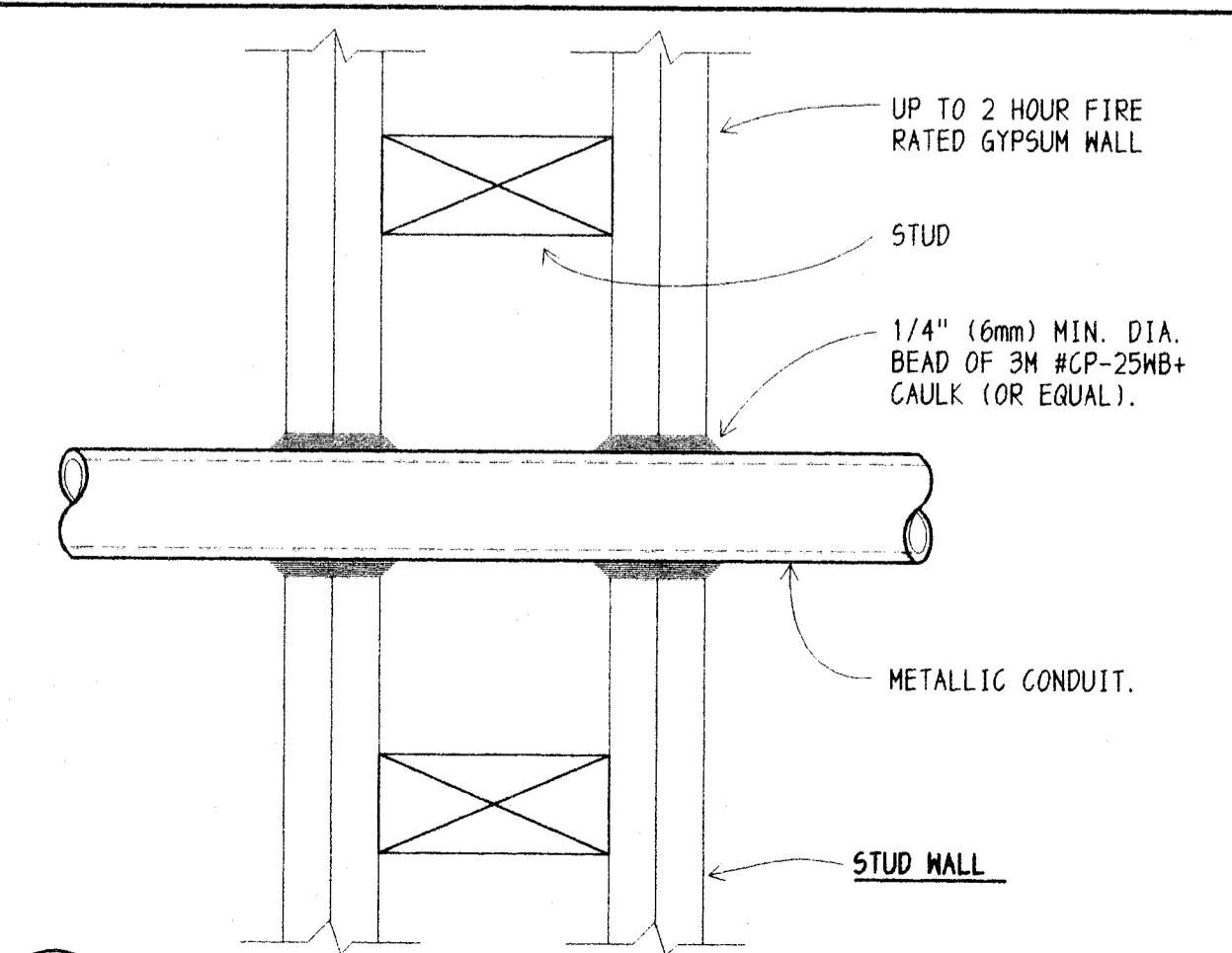
**LOAD CALCULATION:**

(1) EXISTING MAIN SMD MAX DEMAND	= 90.1 kW
(2) H.V.A.C. x 100%	= 206.3 kW
(3) FUTURE RELOCATABLES	= 149.7 kW
<b>TOTAL</b>	<b>454.1 kW</b>
+ 10% SPARE CAPACITY	= 45.4 kW
<b>TOTAL</b>	<b>499.5 kW</b>
AMPS AT 480/277V 3Ø 4W	= 601.5 AMPS
THEREFORE A 1000 AMP SERVICE IS ADEQUATE	

- LOAD CALCULATION NOTES:**
- MAX DEMAND FROM PG & E OVER PAST 12 MONTHS. x 125% & A .9 POWER FACTOR.
  - INCLUDES LARGEST MOTOR AT 125%.
  - ESTIMATE OF 12 FUTURE RELOCATABLE BUILDINGS.

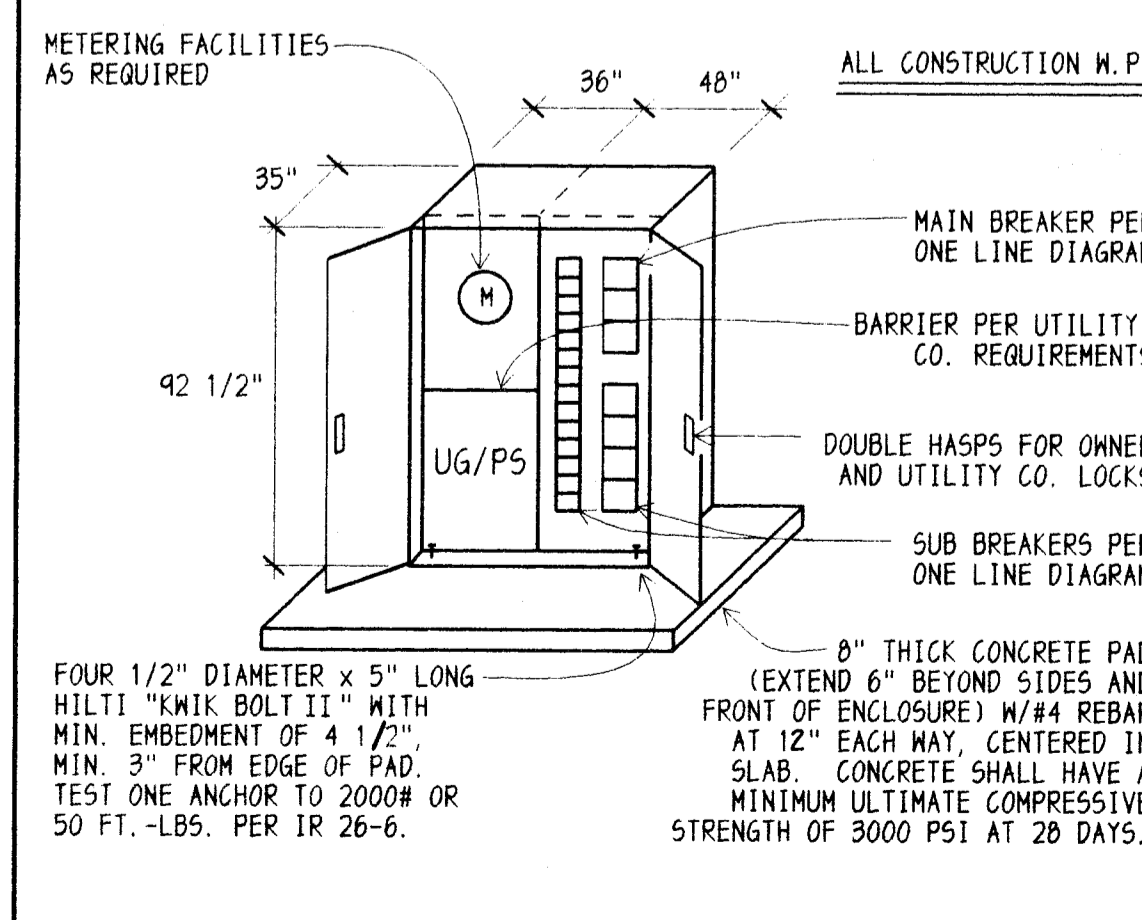
- ONE LINE DIAGRAM NOTES:**
- EXISTING UTILITY CO. POLE. VERIFY EXACT LOCATION AT SITE. SEE NOTE (3)
  - NEW UTILITY CO. POWER POLE. VERIFY EXACT LOCATION AT SITE.
  - PULL OUT EXISTING SERVICE CONDUCTORS & ABANDON OR REMOVE CONDUIT AS DIRECTED BY PG & E.
  - INTERCEPT EXISTING 4" & REUSE TO RE-SUPPLY EXISTING SERVICE. PULL IN NEW CONDUCTORS PER SITE ELECTRICAL PLAN, NOTE (11), SHEET E-1.
  - 1 - 4" (PRIMARY).
  - PROVIDE PAD PER PG & E REQUIREMENTS.
  - 3 - 4" (SECONDARY).
  - 1 #3/0 TO GND PER DETAIL #10/E-4.
  - FEED TO HVAC EQUIPMENT PER PLANS.
  - STUB OUTS PER SITE ELECTRICAL PLAN.
  - PULL BOX PER DETAIL #1/E-5.
  - BOND & GROUND PER DETAIL #0/E-4.
  - LANDING LUGS PER UTILITY CO. REQUIREMENTS.
  - PROVIDE SPACE & MOUNTING HARDWARE FOR A MINIMUM OF TWO 200/3 BREAKERS.
  - WEATHERPROOF SQUARE 'D' 'HCM', 'I-LINE' OR EQUAL WITH A MINIMUM OF 12" BREAKER MOUNTING SPACE & MAIN BREAKER AS NOTED.
  - VARIOUS FEEDERS TO REMAIN. NO WORK REQUIRED.
  - GND PER DETAIL #9/E-4.
  - 400/3 SECONDARY ENCLOSED, WEATHERPROOF CIRCUIT BREAKER.
  - MAKE ARRANGEMENTS WITH PG & E TO REMOVE METER. BUSS THRU & PROVIDE BLANK COVER AS REQUIRED TO RECONNECT.
  - PROVIDE SPACE & MOUNTING HARDWARE FOR A MINIMUM OF TEN 100/2 BREAKERS FOR FUTURE RELOCATABLE CLASSROOMS.
  - PROVIDE TWO SPARE 100/2 BREAKERS.
  - PROVIDE 13 - 1 1/4" STUBS & TWO 2" STUBS TO PULL BOX AT NOTE (11).
  - 2 1/2" - 3 #4/0 + 1 #4 GND (CU-THN).
  - TWO 2" - 3 #4/0 + 1 #2 GND (CU-THN) IN EACH.
  - 2 1/2" - 4 #4/0 + 1 #4 GND (CU-THN).
  - 3" - 4 #250 MCM + 1 #4 GND (CU-THN).
  - MAIN CIRCUIT BREAKER SHALL BE 100% ELECTRONIC TYPE, EQUIPPED WITH LONG TIME, INSTANTANEOUS OFF AND GROUND FAULT TRIP CONFIGURATIONS. IT SHALL BE EQUIPPED WITH TRIP INDICATOR & LOCAL CURRENT METER.
  - VERIFY AVAILABLE FAULT WITH PG & E. PROVIDE EQUIPMENT BRACED TO MEET OR EXCEED THAT RATING.
  - THREE 4" - 4 #300 MCM + 1 #1/0 GND (CU-THN) IN EACH.
  - TO REMAIN IN USE. RECONNECT AS NOTED.
  - 200A/3Ø PRIMARY, HEAVY DUTY RATED, NEMA 3Ø, NON-FUSED DISCONNECT SWITCH.
  - 4" - 4 #500 MCM + 1 #1 GND (CU-THN).

**1 ONE LINE DIAGRAM**

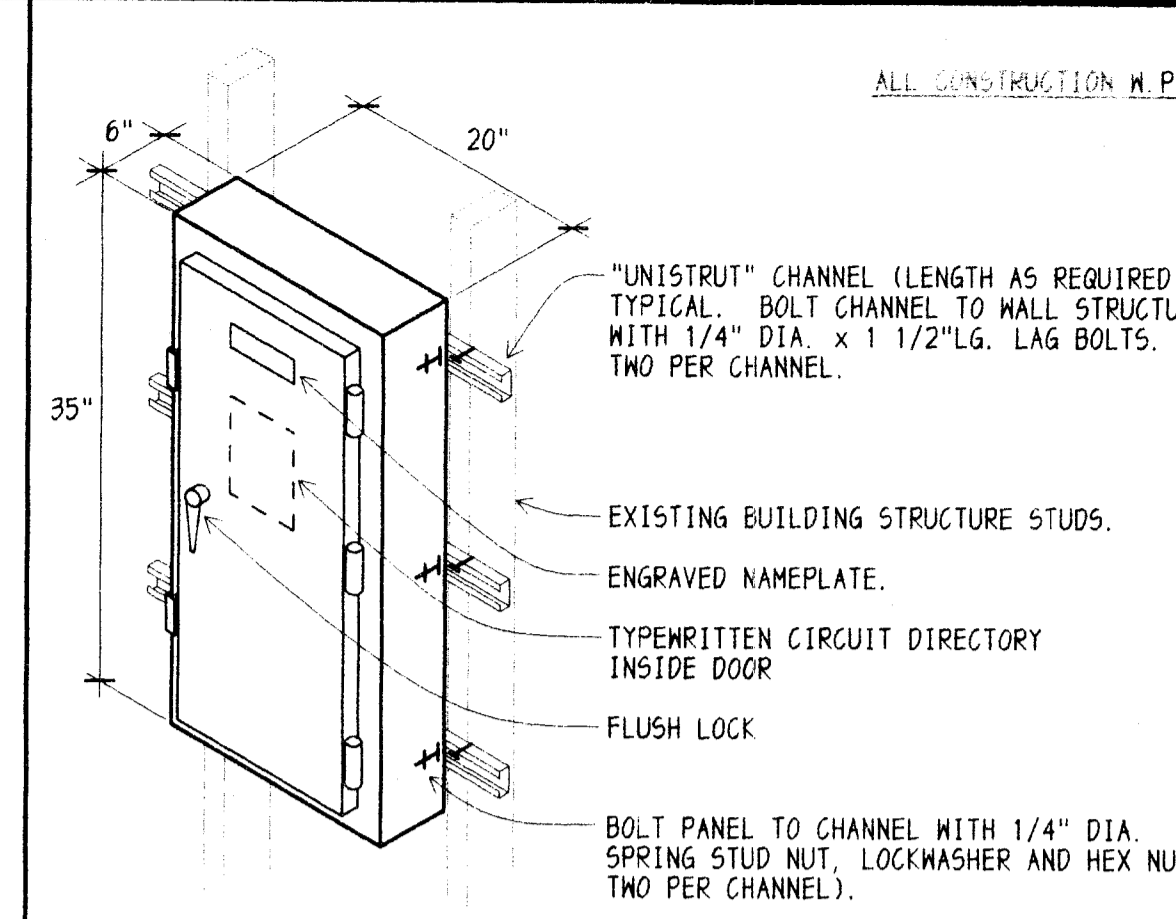


- THE FOLLOWING INFORMATION IS FOR REFERENCE ONLY. ALL PENETRATIONS IN FIRE-RATED ASSEMBLIES SHALL BE PROTECTED AS REQUIRED BY C.B.C., CHAPTER 7. THE U.L. FIRESTOP SYSTEM SHALL BE INSTALLED AND USED EXACTLY AS STATED IN THE U.L. FIRE RESISTANCE DIRECTORY.
- NOTES:**
- THE CAULK IS TO BE FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE
  - FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP-25MB+ CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
  - THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16" (5mm).
  - INSTALL 3M FIRESTOP ON BOTH SIDES OF THE WALL.
  - THESE RECOMMENDATIONS ARE BASED ON PRODUCT PERFORMANCE PER ASTM E814 (ANSI/UL 1479) FIRE TEST AND UL THROUGH-PENETRATION FIRESTOP SYSTEM #ML1001.
  - 3M MODEL #CP-25MB+ CAULK HAS C.S.F.M. LISTING #4405-0941-103.

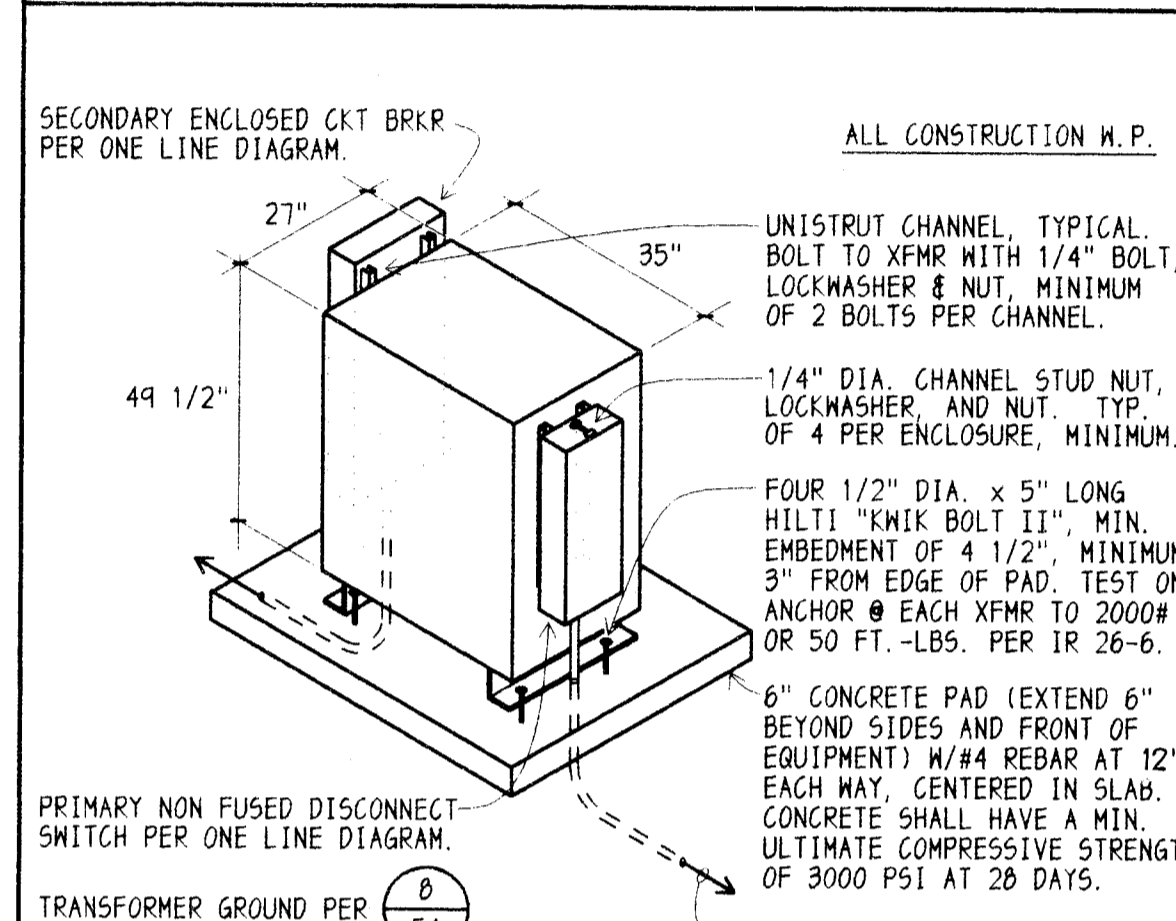
**2 CONDUIT PENETRATION FIRESTOP DETAIL (FOR METALLIC CONDUITS THROUGH FIRE RATED WALLS)**



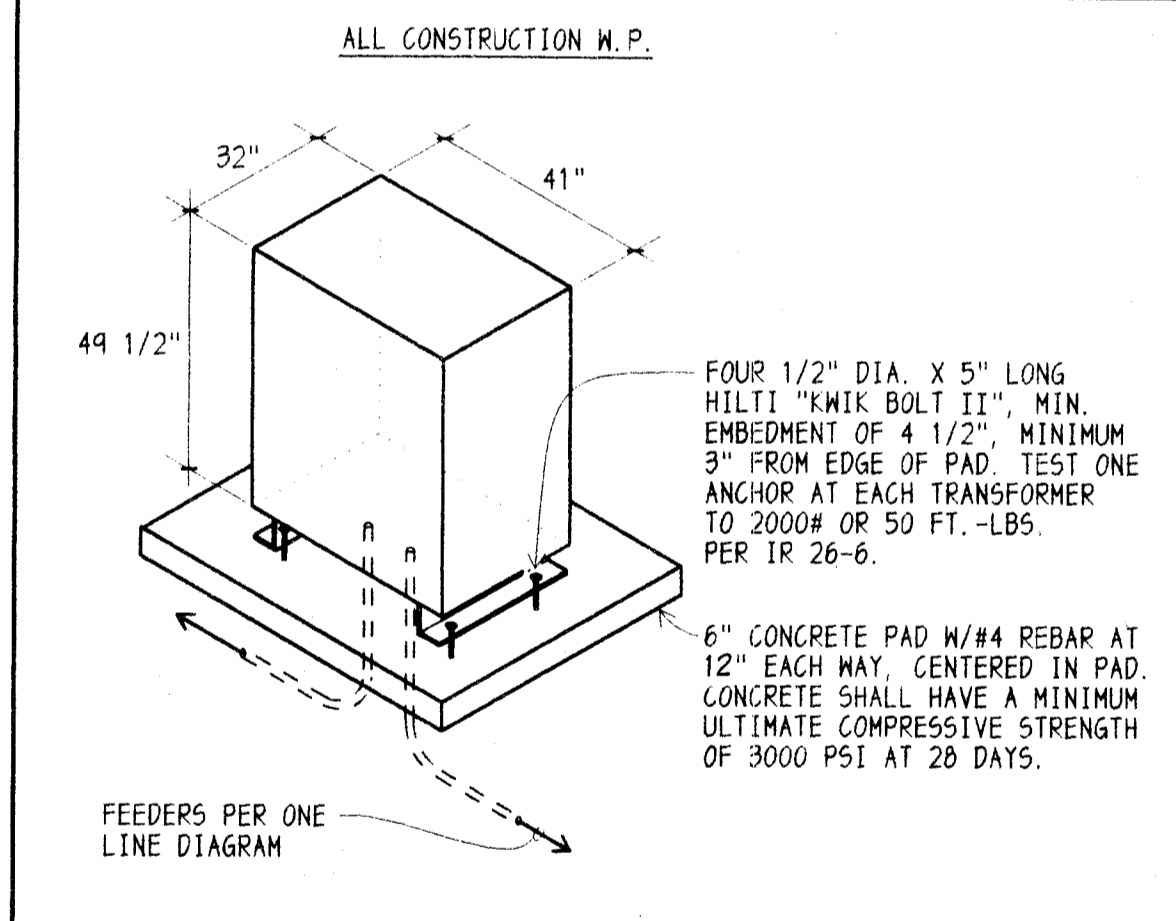
**3 MAIN SWITCHBOARD 'MSB'**



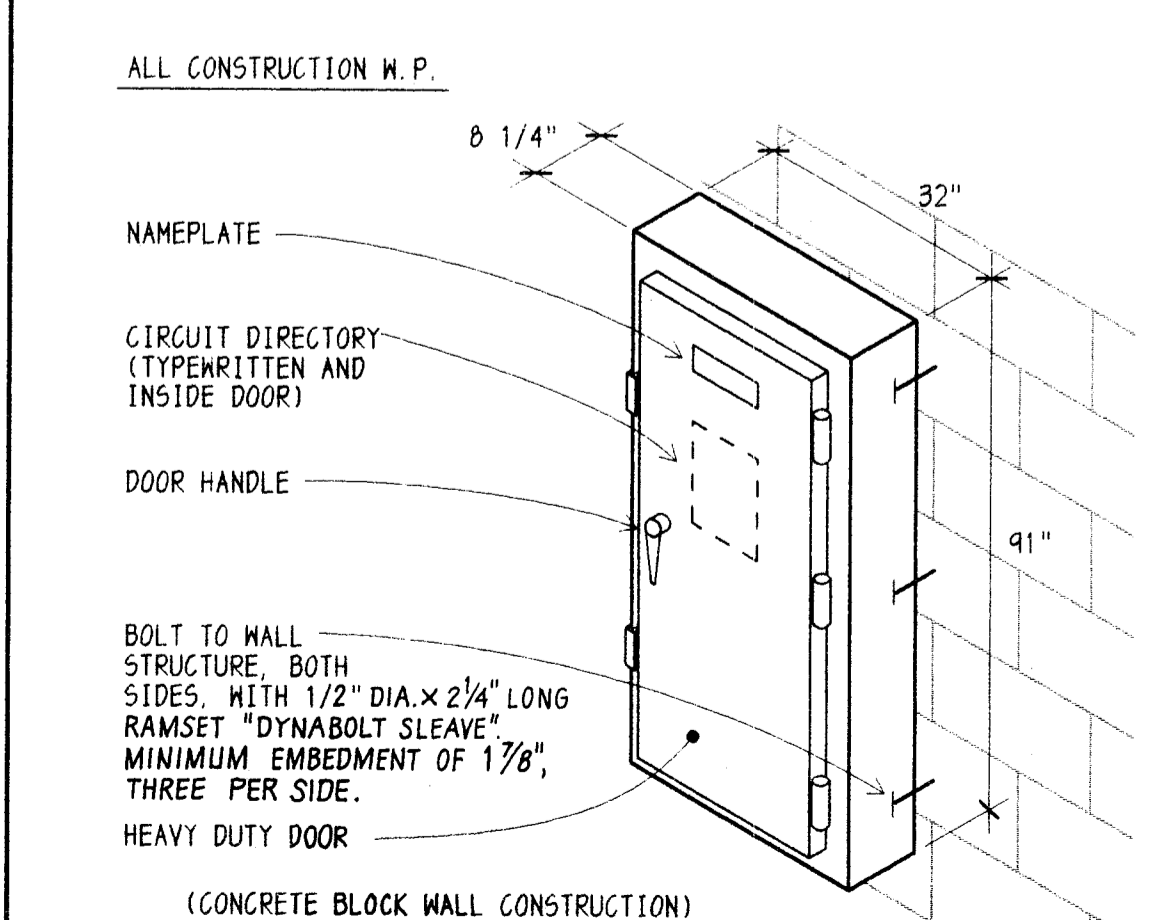
**4 SURFACE MOUNTED PANEL**



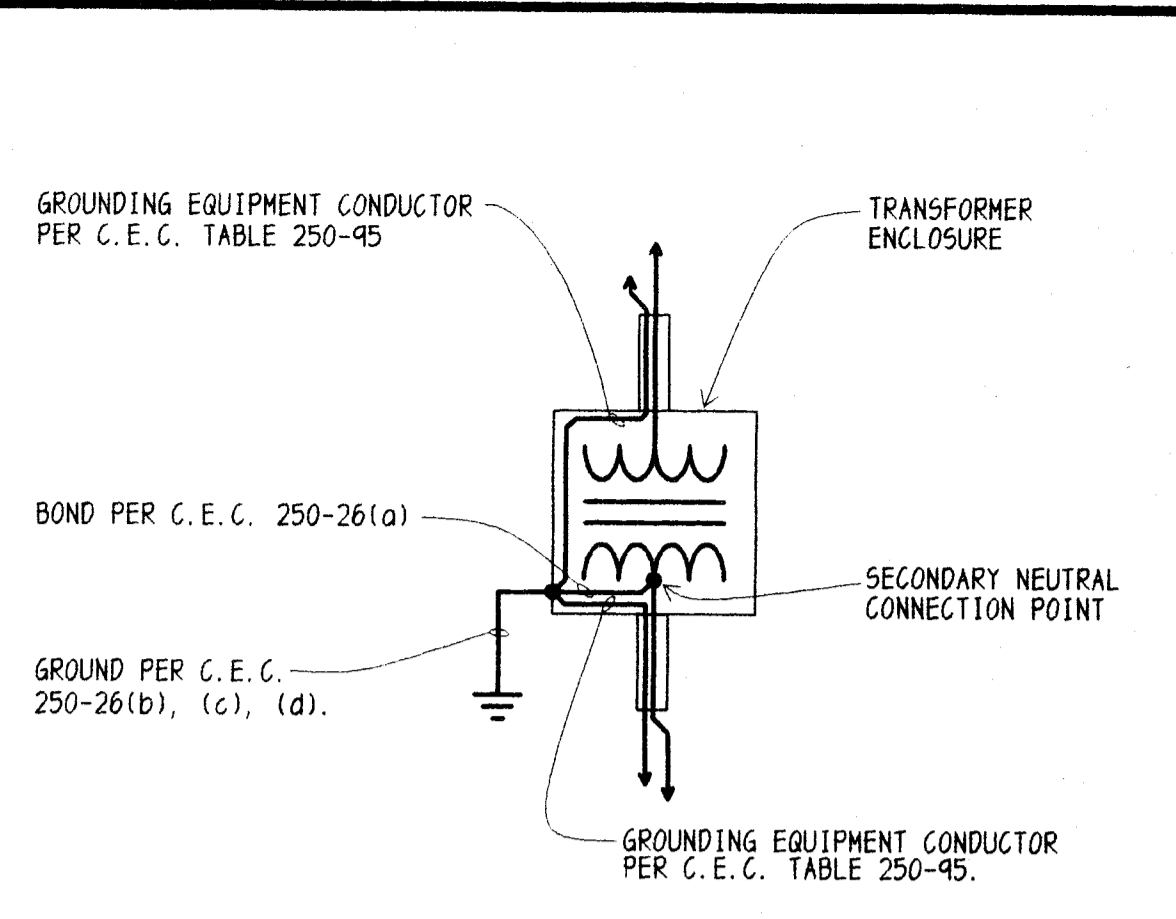
**5 PAD MOUNTED TRANSFORMER 'TMS'**



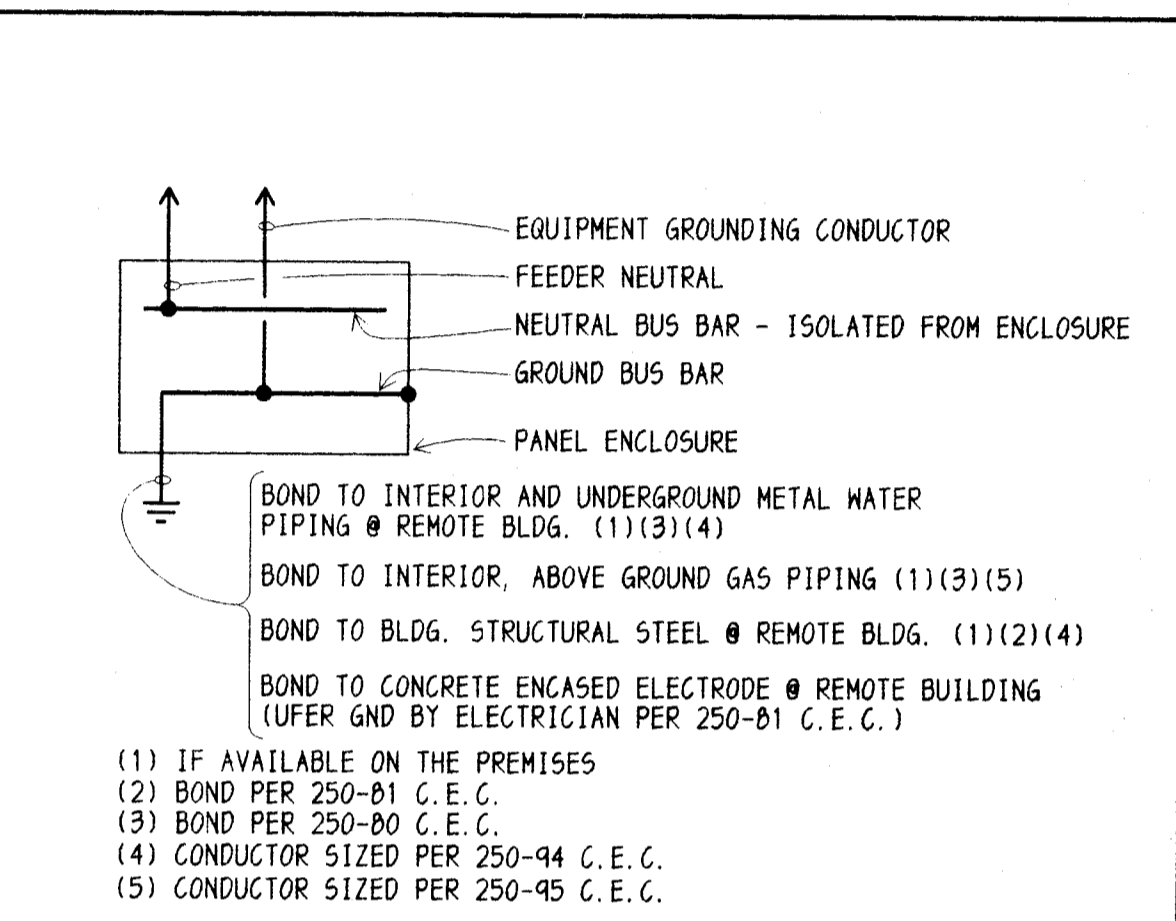
**6 PAD MOUNTED TRANSFORMER 'TPD'**



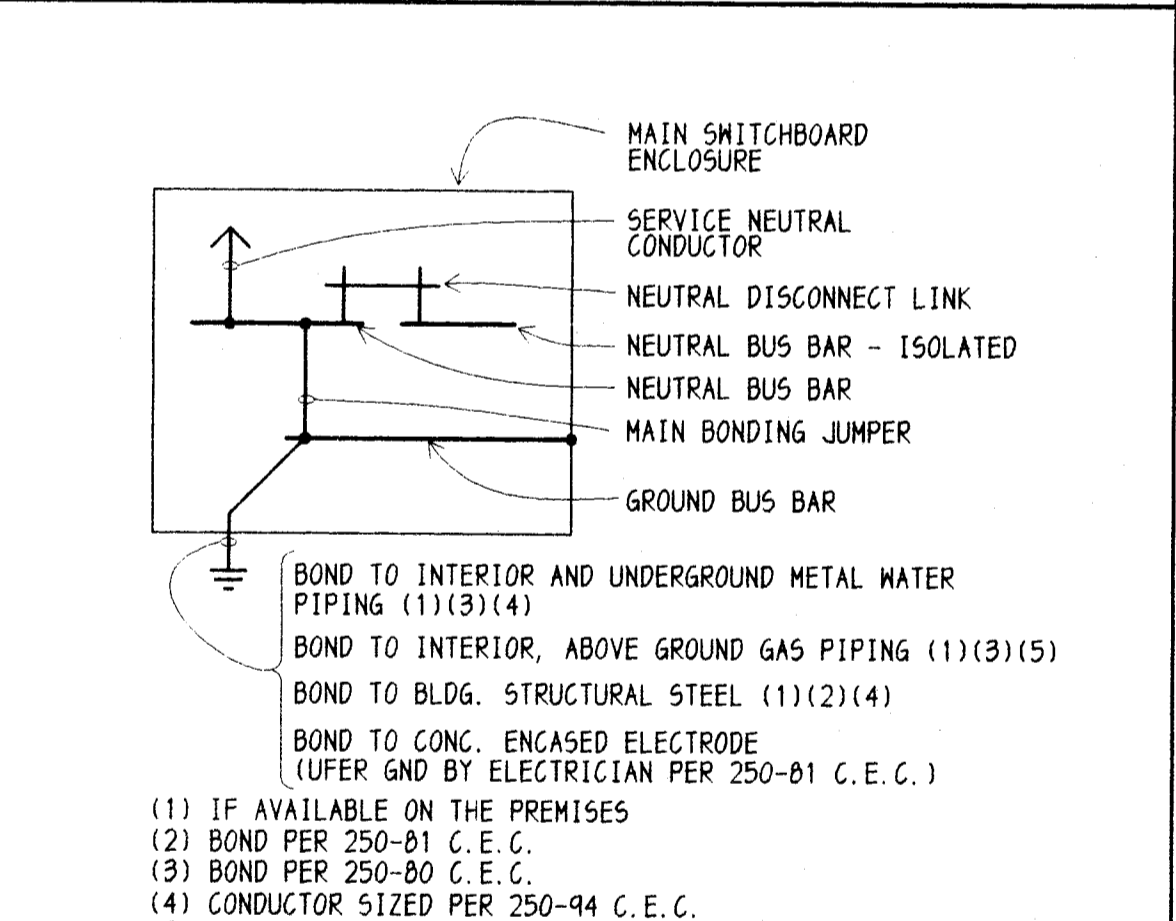
**7 SURFACE MOUNTED PANEL**



**8 TRANSFORMER GROUNDING & BONDING**



**9 GROUNDING ELECTRODE SYSTEM FOR REMOTE BUILDING SUB PANELS**



**10 GROUNDING ELECTRODE SYSTEM**

REVISIONS

HEATING & COOLING MODIFICATIONS

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DATE 4-2-97

DRAWN RTS

CHECKED J-L

PROJECT 46248

SHEET E-4