

480V 3 ϕ PRIMARY
CONNECTED DELTA

EQUIPMENT GROUNDING CONDUCTOR (EGC)
SIZE PER NEC 250-95

TRANSFORMER ENCLOSURE

BOND TO ENCLOSURE

EQUIPMENT BONDING JUMPER,
SIZE PER NEC 250-79(d)

NEUTRAL

GROUNDING ELECTRODE
CONDUCTORS SIZE PER
NEC 250-94, GROUND IN
ACCORDANCE WITH NEC 250-26(c)

NEUTRAL BUS

NEUTRAL GROUNDING BUS LINK

EQUIPMENT GROUND BUS

BONDING JUMPER,
SIZE PER NEC 250-79(D)

CIRCUIT BREAKER
SWITCH IN
PANELBOARD
CABINET

UL SERVICE
ENTRANCE RATED

LUGS

208Y/120V

* PER NEC



ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619
 FINCASTLE VIRGINIA 24090
 540.473.1253 FAX: 540.473.1254

The diagram illustrates a power distribution system with the following components and connections:

- OUTSIDE:** A box labeled "METER (WALL)" is connected to the "C.T. CABINET (ELEC)" via a line labeled "4".
- INSIDE:** The "C.T. CABINET (ELEC)" is connected to a "MP 480V (ELEC)" (Main Panel) via a line labeled "1".
- The "MP 480V (ELEC)" is connected to a "30 KVA TRANSFORMER 480/208-120 (ELEC)" via a line labeled "2".
- The transformer is connected to a "208V PANEL (ELEC)" via a line labeled "3".
- A ground symbol is shown connected to the bottom of the "C.T. CABINET (ELEC)".

Diagram illustrating the grounding system connections for a building, showing the connection of various components to the main service panel (MSP) and the grounding electrode system.

Components and Connections:

- NEC 250-80(A):** Interior metal water piping bonded to BGES.
- NEC 250-81(B):** Building metal frame where effectively grounded.
- NEC 250-81(C):** Building concrete-encased reinforcement steel.
- NEC 250-94:** Connections to the main service panel (MSP).
- CW MAINS:** Connections to the main service panel (MSP).
- SIZE PER NEC 250-94(TABLE) UNLESS INDICATED OTHERWISE ON POWER RISER DIAGRAM TO THE MAIN SERVICE PANEL MP:** Specification for conductor size.
- SEE NOTE 3:** Reference to the notes section.
- TYPICAL BUILDING GROUNDING ELECTRODE PER SPECIFIED SYSTEMS, TELEPHONE, DATA, ETC. #2 IN 3/4" UNLESS INDICATED OTHERWISE:** Specification for the grounding electrode.
- NEC 250-83(C):** Grounding rods.
- GROUNDING RODS: THREE(3) OR FOUR(4) AS REQUIRED PER SECTION 16450:** Requirement for the number of grounding rods.

Dimensions:

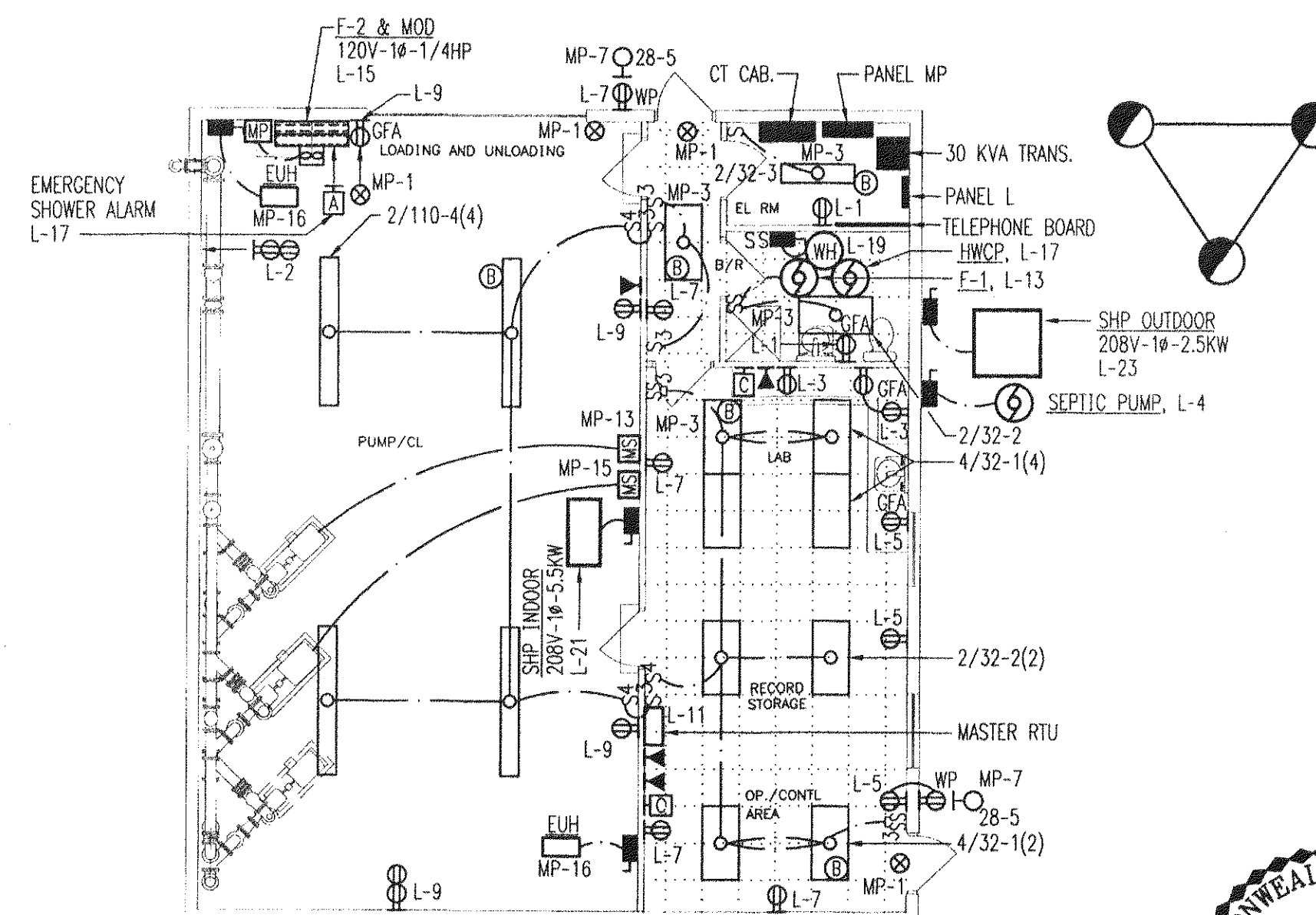
- 10'-0" MIN (Horizontal distance between grounding rods).
- 10'-0" MIN (Diagonal distance between grounding rods).
- 10'-0" MIN (Vertical distance between grounding rods).

Notes:

- ALL CONNECTIONS IN THE GROUNDING ELECTRODE SYSTEM SHALL BE EXOTHERMICALLY WELDED (CADWELD, NO SUBSTITUTE)
- BOND ALL GROUNDING ELECTRODE METALLIC RACEWAYS PER NEC 250-92.
- NEC 250-81 ALLOWS THE UNSPECIFIED GROUNDING ELECTRODE CONDUCTOR TO BE RUN TO ANY OF THE ABOVE CONVENIENT GROUNDING ELECTRODES OF THE GROUNDING ELECTRODE SYSTEM.

WIRE AND CONDUIT SIZING SCHEDULE (RISER DIAGRAMS)

- ① 4 - #500 & 1 - #1/0 IN 3-1/2" COND.
- ② 3 - #6 & 1 - #8 IN 1-1/4" COND.
- ③ 4 - #1 & 1 - #6 IN 2" COND.
- ④ 1 - 1-1/4" EMPTY CONDUIT.
- ⑤ 2 - 4" CONDUITS FROM AEP TRANSFORMER
- ⑥ 3 - #3/0 & 1 - #4 IN 2" COND.
- ⑦ SERVICE FROM AEP, IN 2" COND.
- ⑧ 3 - #1 & 1 - #6 IN 1-1/2" COND.

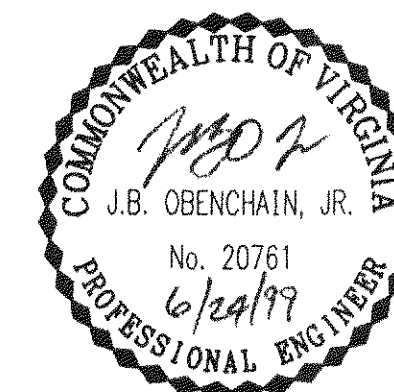


PANEL	<u>1</u>	VOLTS	<u>208/120</u>	MAIN BREAKER <u>100A</u> , TOP LOCATION	
MFG	<u>SQUARE-D</u>	WIRE	<u>4</u>	NEUTRAL AMPS <u>100</u> , GROUND BUS <u>YES</u>	
PNL TYPE	<u>NOOD</u>	PHASE	<u>3</u>		
ENCLOSURE	<u>SURFACE WITH DOOR</u>	MAIN AMPS	<u>100</u>		

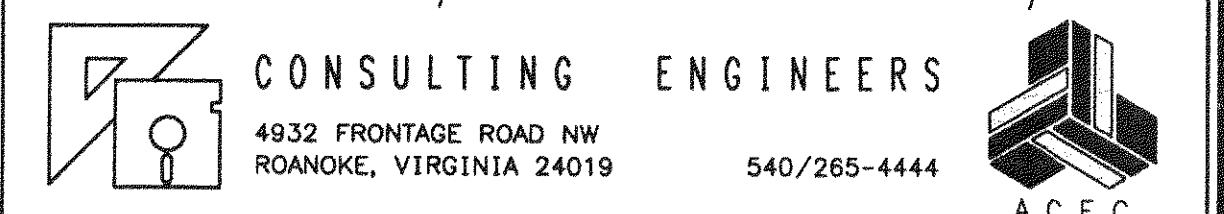
C I R C U I T N O	CIRCUIT DESCRIPTION	BRKR.		WIRE		CON DU IT	100A MAIN BRKR.	CON DU IT	WIRE		BRKR.		K V A	CIRCUIT DESCRIPTION	C I R C U I T N O					
		K V A	F R A M E	P O L E S	A M P S				K A L I F I C	P H A S E	N E U T	E G C				E G C	N E U T	K A L I F I C	P O L E S	F R A M E
1	RECEPTACLES	0.4	Q00B	1	20	10	12	12	3/4											
3	RECEPTACLES	0.5	Q00B	1	20	10	12	12	3/4											
5	RECEPTACLES	0.7	Q00B	1	20	10	12	12	3/4											
7	RECEPTACLES	0.7	Q00B	1	20	10	12	12	3/4											
9	RECEPTACLES	0.8	Q00B	1	20	10	12	12	3/4											
11	MASTER RTU	0.5	Q00B	1	20	10	12	12	3/4											
13	BATHROOM EXH. FAN	0.2	Q00B	1	20	10	12	12	3/4											
15	2 & MDD	0.8	Q00B	1	20	10	12	12	3/4											
17	HWSP & ALARM	0.3	Q00B	1	20	10	12	12	3/4											
19	WATER HEATER	4.5	Q00B	2	30	10	10	10	3/4											
21	HP INDOOR	5.5	Q00B	2	40	10	8	8	1											
23	HP OUTDOOR	2.5	Q00B	2	30	10	10	10	3/4											
	TOTAL	17.4																		

TOTAL	17.4	ADD	TOTAL	1.6	=	TOTAL	19 KVA (53 AMPS)
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PANEL LOCATION: <u>ELECTRIC ROOM</u>	REMARKS:
EGC = EQUIPMENT GROUND CONDUCTOR. PROVIDE IN ACCORDANCE WITH NEC TABLE 250-95 UNLESS OTHERWISE INDICATED. NEUT = NEUTRAL CONDUCTOR. PROVIDE SAME SIZE AS PHASE CONDUCTOR UNLESS OTHERWISE INDICATED. PHASE CONDUCTOR IS ONLY INDICATED ONCE FOR TWO & THREE POLE CRTS. KATC = AMPS INTERRUPTING CURRENT x 1000.	



WHITESCARVER, HURD & OBENCHAIN, INC.



DES: JBO	DRF: JBO	CHK: JBO	COMM: 99110
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GREENFIELD
CHLORINATION FACILITY

ELECTRICAL

SEE PLAN

JUNE 1999

PROJECT: 97075

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