

1 ONE LINE DIAGRAM - DEMOLITION

NEW MAIN SERVICE "MSB" LOAD CALCULATION:

LIGHTING x125%	17.5 kVA
H.V.A.C. x125%	140.7 kVA
RECEPTACLES (FIRST 10 kVA AT 100% REMAINDER AT 50%)	39.2 kVA
MISCELLANEOUS AT 100%	30.7 kVA
EV CHARGERS (FUTURE)	69.0 kVA
TOTAL	297.1 kVA
AT 120/208V 3ph 4W	825 AMPS

THEREFORE, THE NEW 1200 AMP MAIN SWITCHBOARD HAS CAPACITY FOR THE NEW LOAD.

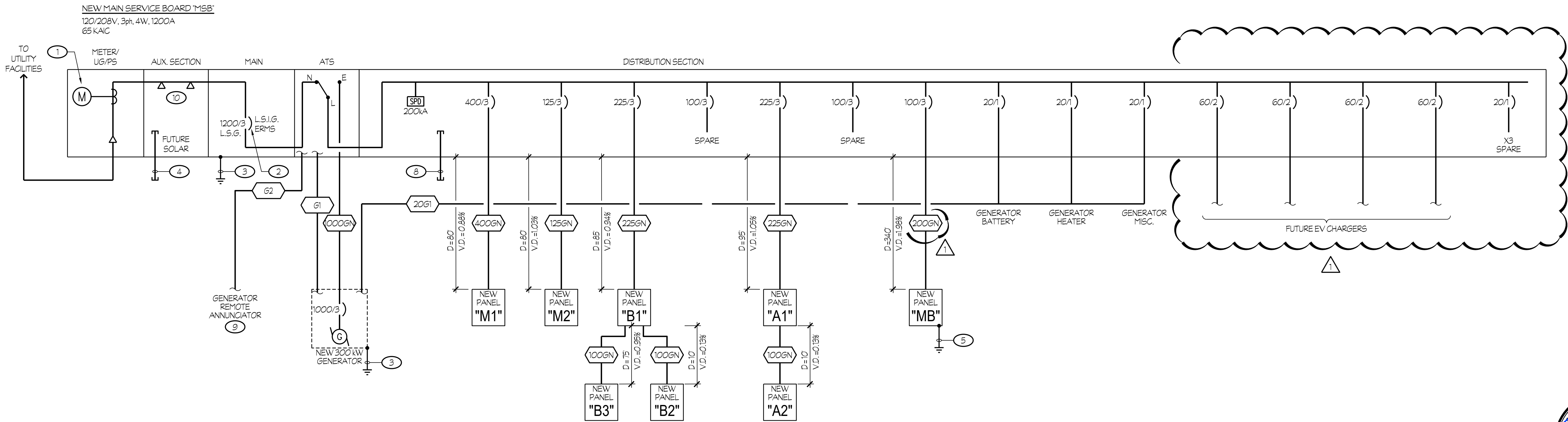
NOTES (THIS SHEET ONLY):

- 1 PROVIDE METERING FACILITIES PER S.C.E. REQUIREMENTS.
- 2 MAIN CIRCUIT BREAKER SHALL BE 100% RATED ELECTRONIC TYPE, EQUIPPED WITH LONG-TIME, SHORT-TIME, INSTANTANEOUS-OFF TYPE AND GROUND FAULT TYPE CONFIGURATIONS WITH ENERGY REDUCTION MAINTENANCE SWITCH. MAIN CIRCUIT BREAKER SHALL ALSO BE EQUIPPED WITH A TRIP INDICATOR AND LOCAL CURRENT METER. SQUARE D #RK SERIES OR EQUAL.
- 3 1 #3/0 TO GROUNDING ELECTRODE SYSTEM PER DETAIL #9/E5.2.
- 4 PROVIDE (3) 4" CONDUITS + (2) 1" CONDUITS FOR FUTURE SOLAR SYSTEM, TO BE VERIFIED WITH OWNER AND SOLAR CONTRACTOR.
- 5 1 #6 TO GROUNDING ELECTRODE SYSTEM PER DETAIL #9/E5.2.
- 6 DISCONNECT AND REMOVE EXISTING MAIN SWITCHBOARD.
- 7 COORDINATE WITH UTILITY COMPANY FOR REMOVAL OF EXISTING MAIN FEED.
- 8 PROVIDE (2) 4" + (2) 2 1/2" SPARE CONDUITS TO PULL BOX SHOWN IN DETAIL #2/ES1.1.
- 9 REFER TO SHEET #E1.5 FOR ANNUNCIATOR LOCATION IN ROOM #244.
- 10 PROVIDE LUG CONNECTION POINT MINIMUM 1 (4) PER PHASE FOR FUTURE SOLAR SYSTEM.

NEW FEEDER SCHEDULE:

ALL CONDUCTORS, INCLUDING THE EQUIPMENT GROUNDING CONDUCTOR, SHALL BE CU-THWN-2 FOR #8 AWG OR LARGER AND CU-THWN FOR #10 AWG OR SMALLER.

- |        |   |
|--------|---|
| 20G1   | 1C - 4 #12 + 1 #12 GND.   |
| 100GN  | 2C - 4 #2 + 1 #8 GND.   |
| 125GN  | 2C - 4 #1 + 1 #6 GND.   |
| 150GN  | 2 1/2C - 4 #1/0 + 1 #6 GND.   |
| 200GN  | 3C - 4 #3/0 + 1 #6 GND.   |
| 225GN  | 2-1/2C - 4 #4/0 + 1 #4 GND.   |
| 400GN  | 4C - 4 #500 kcmil + 1 #2 GND.   |
| 1000GN | FOUR SETS 3C - 4 #350 + 1 #2/0 GND EACH.  |
| G1     | 1C - GENERATOR START/STOP/COMM CABLES PER MANUFACTURER REQUIREMENTS.            |
| G2     | 1C - GENERATOR COMM CABLES TO REMOTE ANNUNCIATOR PER MANUFACTURER REQUIREMENTS. |



2 ONE LINE DIAGRAM - NEW

DATE	SUBMITTAL	100% CD	RESUBMITTAL ONE
11/23/22			
23/01/23			

APPROVED BY:

DATE SIGNATURE

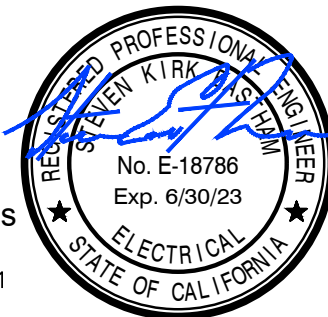
DRW BY: KA CHK BY: SE

PLOT DATE: 2/13/2023

JOB NO.: 21394

SCALE: AS NOTED

FILE NAME: E4.1.dwg



Rose Sing Eastham & Associates  
Electrical Consultants  
131 S. Dunworth - (559)733-2671  
Visalia, California 93292-6705



Z:\Working\Jobs\065\City of Tulare\Tulare Downtown Courthouse\E4.2.dwg DATE SW:CD: 10/25/22 BY: Karen DATE PLOTTED: 02/13/23 JOB #: 22-127-SG

120/208V, 3 PH, 4 W										10K BREAKER A.I.C.									
225 A BUSSING 225A MAIN BKR.										5 3/4" MAX. ENCL. DEPTH									
42 CIRCUIT										SURF MOUNTING PER #5/E5.1									
PANEL "A1"																			
CKT	BKR	LOAD: V.A.			DESCRIPTION			DESCRIPTION			LOAD: V.A.			BKR	CKT				
1	20/1	640				RECEPT - RESTROOM 216/217	RECEPT - MDF RM. 213				1000		20/1	2					
3	20/1		540			RECEPT - OFFICE 212	RECEPT - MDF RM. 213			1000			20/1	4					
5	20/1			720		RECEPT - COPY 245	RECEPT - MDF RM. 213		1000				20/1	6					
7	20/1	1000				RECEPT - COPY 245	RECEPT - COPY 211				1000		20/1	8					
9	20/1		1440			RECEPT - CONTROLLED	RECEPT - BREAK 214			720			20/1	10					
11	20/1			1080		RECEPT - BREAK	RECEPT - BREAK 214		1127				20/1	12					
13	20/1	800				RECEPT - BREAK	RECEPT - BREAK 214				1200		20/1	14					
15	20/1		500			RECEPT - IDF LAB	RECEPT - OFFICE 209A			720			20/1	16					
17	20/1			540		RECEPT - RECEPTION	RECEPT - OFFICE 209B		720				20/1	18					
19	20/1	360				RECEPT - RECEPTION	RECEPT - OFFICE 209B				720		20/1	20					
21	20/1		540			RECEPT - OFFICE 211	RECEPT - CONTROLLED			1440			20/1	22					
23	20/1			720		RECEPT - OFFICE 211	RECEPT - COPIER		180				20/1	24					
25	20/1	540				RECEPT - OFFICE 211	RECEPT - OFFICE 208				540		20/1	26					
27	20/1		720			RECEPT - OFFICE 211	RECEPT - OFFICE 202			540			20/1	28					
29	20/1			900		RECEPT - OFFICE 211	RECEPT - OFFICE 201		540				20/1	30					
31	20/1	900				RECEPT - CONTROLLED	RECEPT - OFFICE 200				900		20/1	32					
33	20/1		1260			RECEPT - OFFICE 243	RECEPT - CONTROLLED			900			20/1	34					
35	20/1			720		RECEPT - CONF. 206	RECEPT - REST 207		560				20/1	36					
37	100/3	5220				PANEL A2	RECEPT-RM 242				540		20/1	38					
39			5140			--	RECEPT-RM 211 TV			180			20/1	40					
41				5580		--	RECEPT - CONTROLLED		720				20/1	42					
LOAD SUMMARY					A	B	C	TOTAL CALCULATED											
CONNECTED LOAD (VA) :					15360	15640	15107	LOAD FOR PANEL:											
25% LCL/LML (VA) :					0	0	0	46107 VA											
TOTAL LOAD (VA) :					15360	15640	15107												
TOTAL LOAD (AMPS) :					128.0	130.3	125.9												

120/208V, 3 PH, 4 W										10K BREAKER A.I.C.											
225 A. BUSSING 225A MAIN BKR.										5 3/4" MAX. ENCL. DEPTH											
42 CIRCUIT										SURF MOUNTING PER #5/E5.1											
PANEL "B1"																					
CIRCUIT		BKR		LOAD: V.A.			DESCRIPTION			DESCRIPTION			LOAD: V.A.			BKR		CIRCUIT			
1	20/1	900				RECEPT-OFFICE 144	FIRE ALARM PANEL				500			20/1	2						
3	20/1		1080			RECEPT-OFFICE 145	LIGHTING CONTROLLER			500				20/1	4						
5	20/1			720		RECEPT-OFFICE 146	MECH CONTROLLER		500					20/1	6						
7	20/1	1440				RECEPT-CONTROLLED	RECEPT-OFFICE/COUNTER				900			20/1	8						
9	20/1		720			RECEPT-OFFICE 147	RECEPT-OFFICE 157			900				20/1	10						
11	20/1			720		RECEPT-OFFICE 148	RECEPT-CONTROLLED		1080					20/1	12						
13	20/1	720				RECEPT-OFFICE 149	RECEPT-RM 102				360			20/1	14						
15	20/1		1080			RECEPT-CONTROLLED	RECEPT-RM 102			360				20/1	16						
17	20/1			900		RECEPT-OFFICE 150	RECEPT - RM 101, 102, 104		540					20/1	18						
19	20/1	900				RECEPT-OFFICE 151	RECEPT-CONF 158, 140				1080			20/1	20						
21	20/1		900			RECEPT-CONTROLLED	RECEPT-CONF 158			720				20/1	22						
23	20/1			720		RECEPT-OFFICE 140	RECEPT-COFFEE BAR		1000					20/1	24						
25	20/1	1080				RECEPT-HALL	RECEPT-COFFEE BAR				1000			20/1	26						
27	20/1		1000			RECEPT-COPY MACHINE	RECEPT-COFFEE BAR			1000				20/1	28						
29	20/1			360		RECEPT-LACTATION 154	RECEPT-COFFEE BAR		1000					20/1	30						
31	20/1	720				RECEPT-OFFICE 155	RECEPT-COFFEE BAR				1000			20/1	32						
33	20/1		720			RECEPT-OFFICE 155	RECEPT-RM 101			1000				20/1	34						
35	20/1			360		RECEPT-OFFICE 155	RECEPT-RM 101		540					20/1	36						
37	20/1	6871				PANEL B2	PANEL B3				5000	100/3		38							
39	20/1		6530		--	--	--			5000				40							
41	20/1			4031	--	--	--			5000				42							
LOAD SUMMARY						A	B	C	TOTAL CALCULATED  LOAD FOR PANEL:  61453 VA												
CONNECTED LOAD (VA) :						22471	21510	17471													
25% LCL/LML (VA) :						0	0	0													
TOTAL LOAD (VA) :						22471	21510	17471													
TOTAL LOAD (AMPS) :						187.3	179.3	145.6													

120/208V, 3 PH, 4 W										10K BREAKER A.I.C.									
100 A. BUSSING MLO MAIN BKR.										5 3/4" MAX. ENCL. DEPTH									
42 CIRCUIT										SURF MOUNTING PER #5/E5.1									
PANEL "B3"																			
LOAD: V.A.										LOAD: V.A.									
1	20/1				SPARE	SPARE				20/1	2								
3	20/1				SPARE	SPARE				20/1	4								
5	20/1				SPARE	SPARE				20/1	6								
7	20/1				SPARE	SPARE				20/1	8								
9	20/1				SPARE	SPARE				20/1	10								
11	20/1				SPARE	SPARE				20/1	12								
13	20/1				SPARE	SPARE				20/1	14								
15	20/1				SPARE	SPARE				20/1	16								
17	20/1				SPARE	SPARE				20/1	18								
19	20/1				SPARE	SPARE				20/1	20								
21	20/1				SPARE	SPARE				20/1	22								
23	20/1				SPARE	SPARE				20/1	24								
25					SPACE	SPACE					26								
27					SPACE	SPACE					28								
29					SPACE	SPACE					30								
31					SPACE	SPACE					32								
33					SPACE	SPACE					34								
35											36								
37		5000									38								
39			5000		SPACE	SPACE					40								
41				5000							42								
LOAD SUMMARY					A	B	C	TOTAL CALCULATED  LOAD FOR PANEL:  15000 VA											
CONNECTED LOAD (VA) :					5000	5000	5000												
25% LCL/LML (VA) :					0	0	0												
TOTAL LOAD (VA) :					5000	5000	5000												
TOTAL LOAD (AMPS) :					41.7	41.7	41.7												

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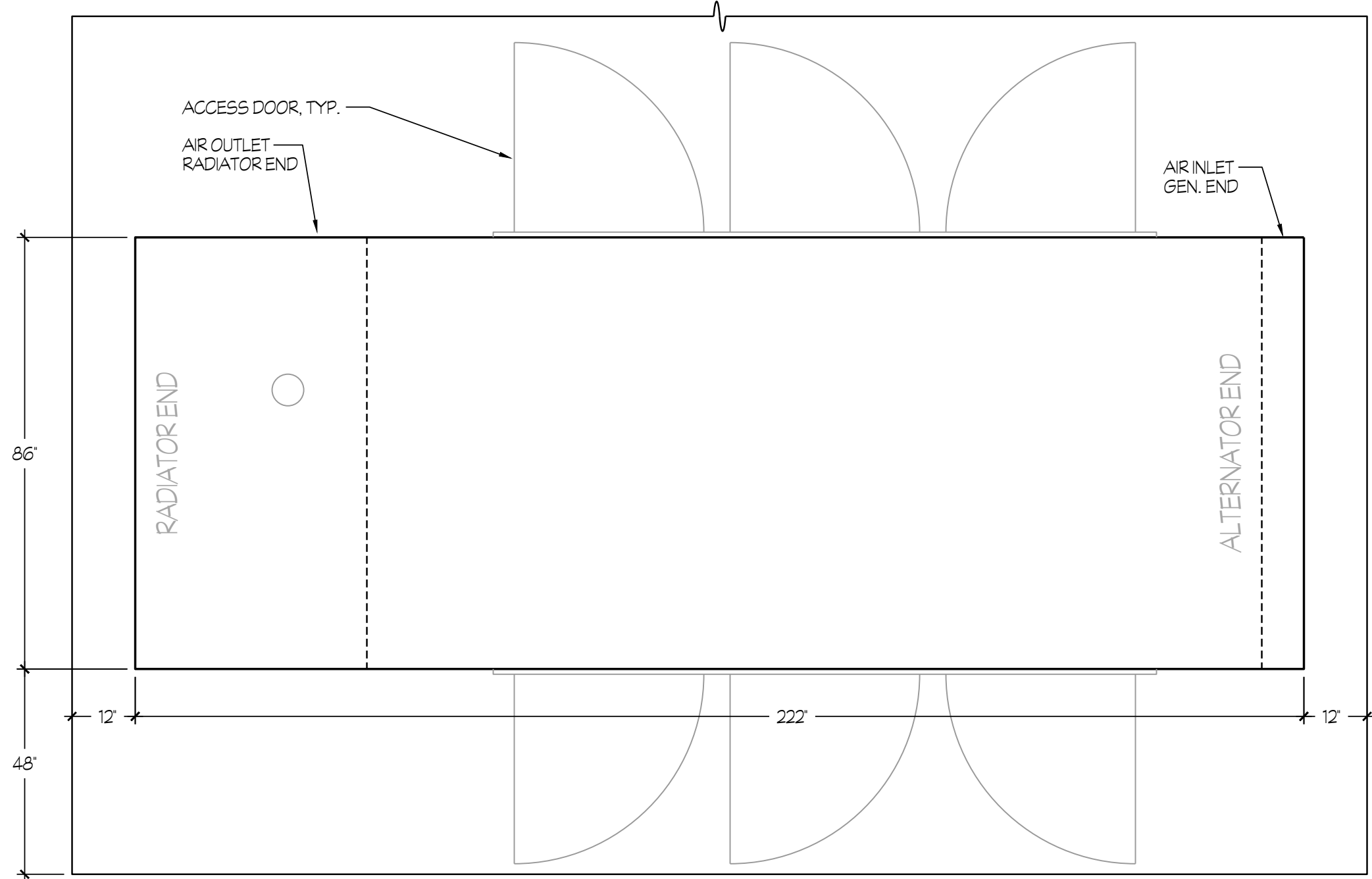
120/208V, 3 PH, 4 W										10K BREAKER A.I.C.									
100 A. BUSSING 100 A. MAIN BKR.										5 3/4" MAX. ENCL. DEPTH									
42 CIRCUIT										SURF MOUNTING PER #5/E5.3									
PANEL "MB"										NEMA 3R									
LT	CB	LOAD: V.A.			DESCRIPTION	DESCRIPTION	LOAD: V.A.			CB	LT								
C	B	A	B	C			C	B	A	C	B								
1	20/1	180			RECEPT	LIGHTS			360	20/1	2								
3	20/1		180		RECEPT	LIGHTS - EXTERIOR			130	20/1	4								
5	20/1			180	RECEPT	SPARE				20/1	6								
7	20/1	180			RECEPT	RECEPT-COMPRESSOR			1200	30/2	8								
9	20/1		1200		RECEPT-CHARGER				1200			10							
11	20/1			1200	RECEPT-CHARGER	RECEPT-COMPRESSOR	1200			30/2	12								
13	20/1	1200			RECEPT-CHARGER				1200			14							
15	20/1		1200		RECEPT-CHARGER	RECEPT		180		20/1	16								
17	20/1			1200	RECEPT-CHARGER	RECEPT	180			20/1	18								
19	20/1	1200			RECEPT-CHARGER	RECEPT			180	20/1	20								
21	20/1		180		RECEPT	EXHAUST FANS		1000		20/1	22								
23	20/1			180	RECEPT	SPARE				20/1	24								
25	20/1	180			RECEPT	SPARE				20/1	26								
27	20/1		180		RECEPT	SPARE				20/1	28								
29	20/1			180	RECEPT	SPARE				20/1	30								
31	20/1				SPARE	SPARE				20/1	32								
33	20/1				SPARE	SPARE				20/1	34								
35	20/1				SPARE	SPARE				20/1	36								
37					SPACE	SPACE					38								
39					SPACE	SPACE					40								
41					SPACE	SPACE					42								
LOAD SUMMARY					A	B	C	TOTAL CALCULATED LOAD FOR PANEL: 15773 VA											
CONNECTED LOAD (VA) :					5880	5450	4320												
25% LCL/LML (VA) :					90	33	0												
TOTAL LOAD (VA) :					5970	5483	4320												
TOTAL LOAD (AMPS) :					49.8	45.7	36.0												

120/208V, 3 PH, 4 W										22K BREAKER A.I.C.												
400 A. BUSSING										5 3/4" MAX. ENCL. DEPTH												
42 CIRCUIT										SURF MOUNTING PER #5/E5.1												
PANEL "M1"																						
CKT	BKR	LOAD: V.A.			DESCRIPTION	DESCRIPTION	LOAD: V.A.			BKR	CKT											
1		5520			ODU 1.1	ODU 2.1			5520		2											
3	50/3		5520					5520			50/3	4										
5				5520				5520				6										
7		8400			ODU 1.2	ODU 2.2			5520		8											
9	80/3		8400					5520			50/3	10										
11				8400				5520				12										
13		5520			ODU 3.1	RECEPT - ROOF			540	20/1	14											
15	50/3		5520			EXHAUST FAN			200		20/1	16										
17				5520		SPARE					20/1	18										
19		5520			ODU 3.2	SPACE					20											
21	50/3		5520			SPACE						22										
23				5520		SPACE						24										
25					SPACE	SPACE					26											
27					SPACE	SPACE					28											
29					SPACE	SPACE					30											
31					SPACE	SPACE					32											
33					SPACE	SPACE					34											
35					SPACE	SPACE					36											
37					SPACE	SPACE					38											
39					SPACE	SPACE					40											
41					SPACE	SPACE					42											
LOAD SUMMARY					A	B	C	TOTAL CALCULATED LOAD FOR PANEL: 112880 VA														
CONNECTED LOAD (VA) :					36540	36200	36000															
25% LCL/LML (VA) :					1380	1380	1380															
TOTAL LOAD (VA) :					37920	37580	37380															
TOTAL LOAD (AMPS) :					316.0	313.2	311.5															

125 A. BUSSING										5 3/4" MAX. ENCL. DEPTH									
42 CIRCUIT										SURF MOUNTING PER #5/E5.1									
PANEL "M2"																			
LT CKT	BKR	LOAD: V.A.				DESCRIPTION	DESCRIPTION	LOAD: V.A.				BKR	LT CKT						
	A	B	C				C	B	A										
1	20/1	1127			STORM LIFT STATION 1	SPACE					2								
3	20/1		1127		STORM LIFT STATION 2	ELEVATOR MOTOR		2080			30/2								
5	20/2			920	SEWER LIFT STATION		2080				6								
7		920			SPARE	ELEVATOR LIGHTS			500	20/1	8								
9	20/1				SPARE	WATER HEATER "A"		500		20/1	10								
11	20/1				SPARE	WATER HEATER "B"	500			20/1	12								
13	20/2	750			GATE 1	SPARE				20/1	14								
15			750								16								
17	20/2			750	GATE 2	208V RECEPT RM 101				30/2	18								
19		750							845		20								
21	20/2		750		GATE 3	FC - 2.1, 2.2		845		15/2	22								
23				750							24								
25	15/2	1170			FC - 1.1, 1.2, 1.3	FC - 2.3, 2.4	1040		1040	15/2	26								
27			1170			FC - 2.5		1009		15/2	28								
29	15/2			651	FC - 1.5, 1.6		1009			30	32								
31		651				FC - 2.6, 2.7			845	15/2	34								
33	15/2		934		FC - 1.7, 1.8, 1.9			845			36								
35				934		FC - 2.8, 2.9	609			15/2	38								
37	15/2	884			DOAS - 1				609		40								
39			884			FC - 2.10, 2.11		1040		15/2	42								
41					SPACE		1040												
LOAD SUMMARY					A	B	C												
CONNECTED LOAD (VA) :					10091	11934	10283	TOTAL CALCULATED											
25% LCL/LML (VA) :					0	0	0	LOAD FOR PANEL:											
TOTAL LOAD (VA) :					10091	11934	10283	32308 VA											
TOTAL LOAD (AMPS) :					84.1	99.5	85.7												

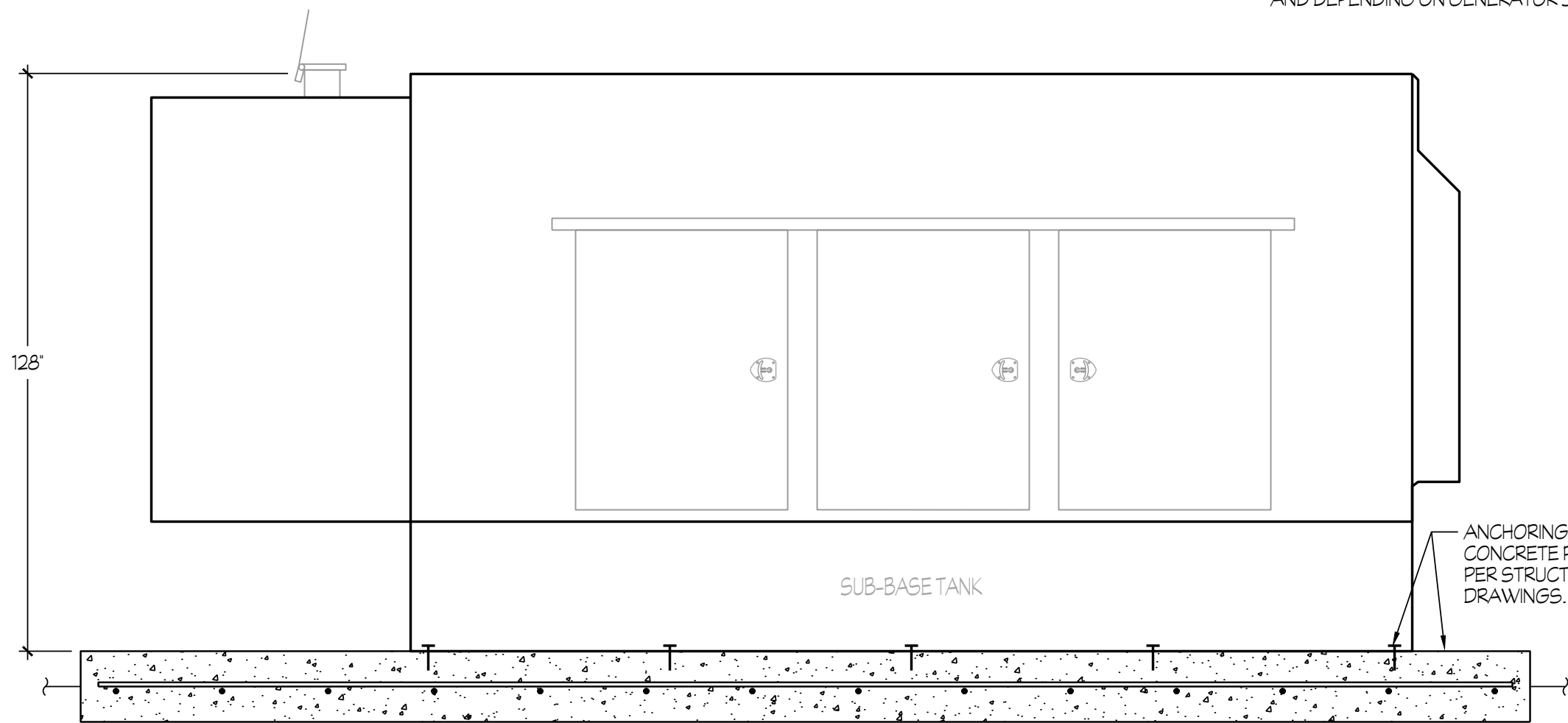


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PLAN VIEW

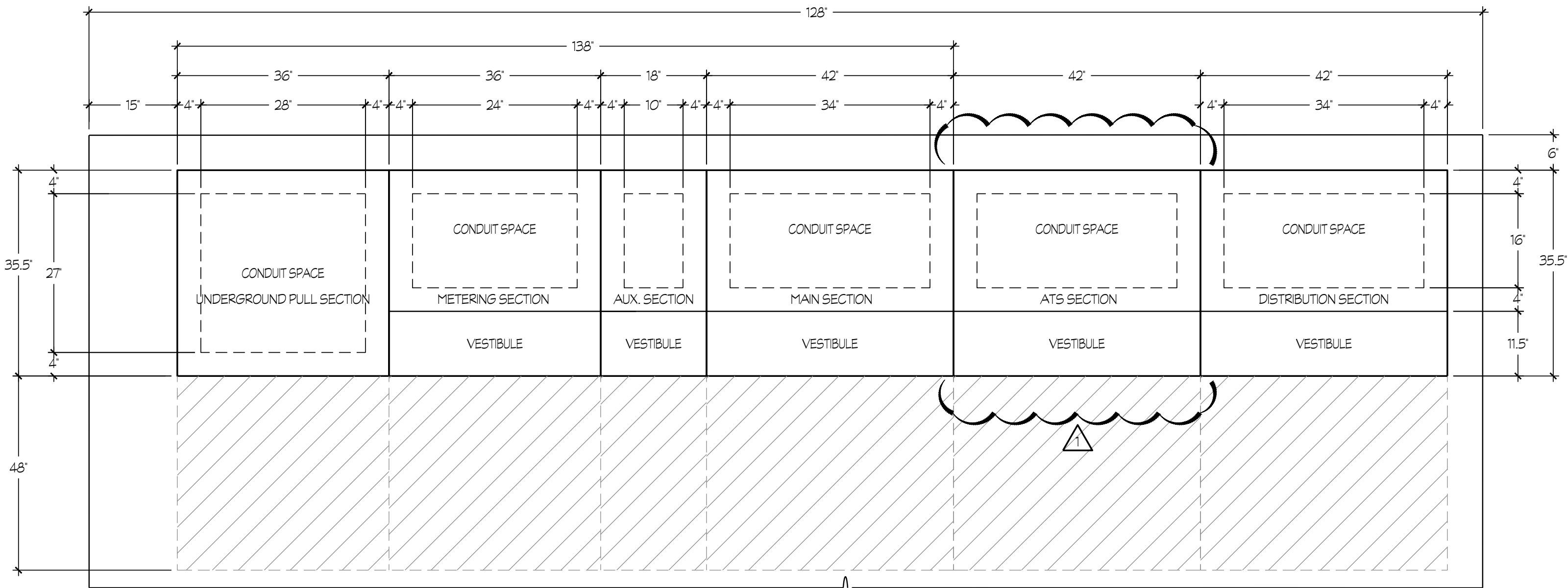
APPROX. GENERATOR WEIGHT: 24,964 LBS.  
GENERATOR DIMENSIONS SHOWN ARE TYPICAL  
AND DEPENDING ON GENERATOR SELECTED.



ELEVATION VIEW

### 1 NEW 300KW GENERATOR MOUNTING DETAIL

NTS



PLAN VIEW

WEATHERPROOF ENCLOSURE  
WITH LOCKABLE DOORS.  
PROVIDE DOUBLE HASP FOR  
OWNER AND UTILITY CO. LOCK.

PROVIDE ENGRAVED  
NAMEPLATE, TYPICAL.

METERING FACILITIES PER  
PG&E REQUIREMENTS.

MAIN CIRCUIT BREAKER PER  
ONE LINE DIAGRAM. PROVIDE  
ENGRAVED LABEL THAT READS:  
'MAIN 100% RATED.'

SUB-FEED CIRCUIT BREAKERS  
PER ONE LINE DIAGRAM.  
PROVIDE ENGRAVED NAMEPLATE  
AT EACH CIRCUIT BREAKER  
STATING LOAD BEING SUPPLIED.  
NOTE: COORDINATE WITH OWNER  
PRIOR TO ORDERING.

FOUR 1/2" DIA. x 5 1/2" LG. HILTI  
STAINLESS STEEL KWIK-BOLT  
T2Z. MIN. EMBEDMENT OF 3 5/8"  
(ESR-4266) AND MIN. OF 6 3/4"  
FROM EDGE OF PAD. TESTING  
TORQUE IS 40 FT-LB.

6" THICK CONCRETE PAD W/ #5  
REBAR AT 18" EACH WAY,  
CENTERED IN SLAB CONCRETE  
SHALL HAVE A MIN. ULTIMATE  
COMPRESSIVE STRENGTH OF  
3000 PSI AT 28 DAYS. SET TOP  
OF PAD 4" ABOVE EXISTING  
FINISH GRADE.

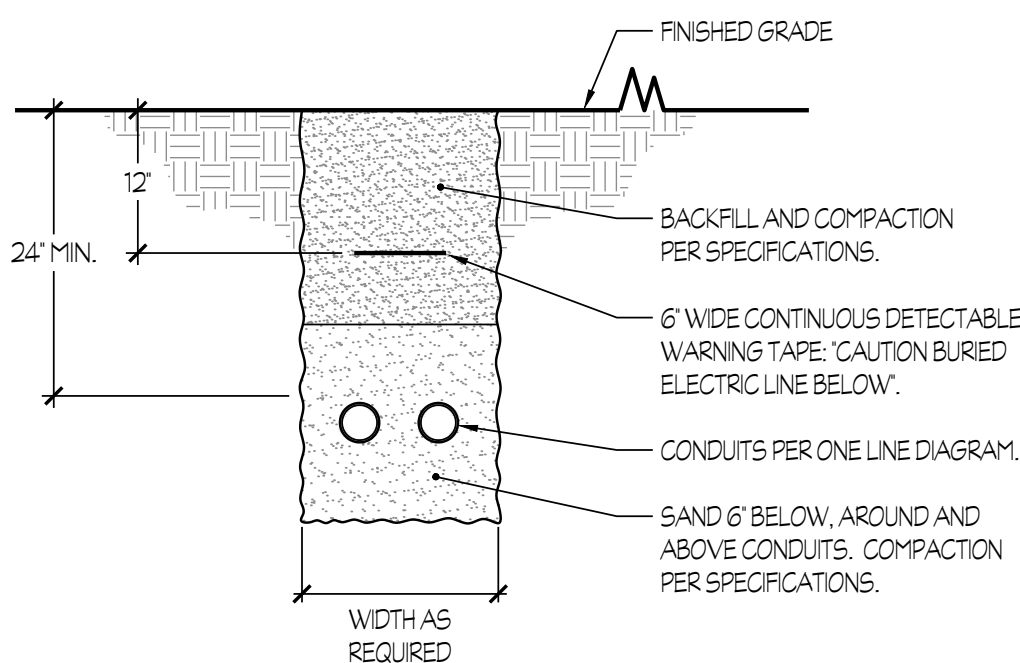
FINISH GRADE

FRONT VIEW

### 2 MAIN SWITCHBOARD "MSB" MOUNTING

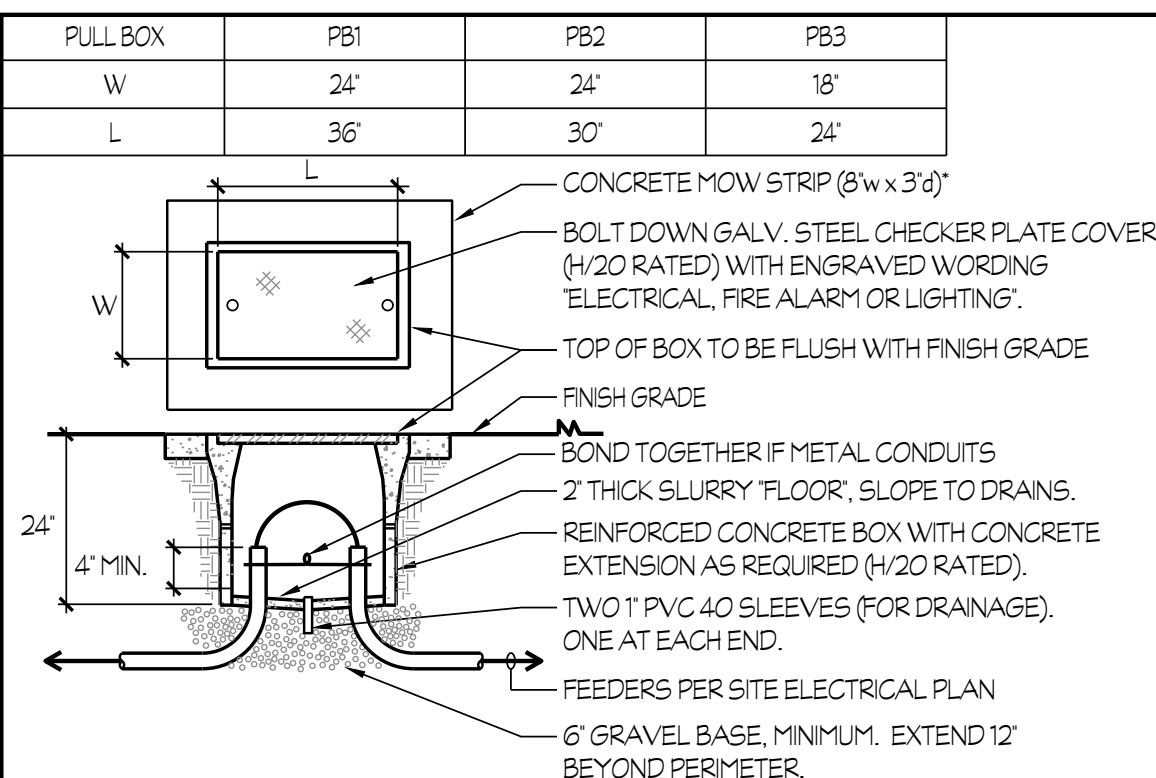
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NTS



### 3 TRENCH DETAIL

NTS

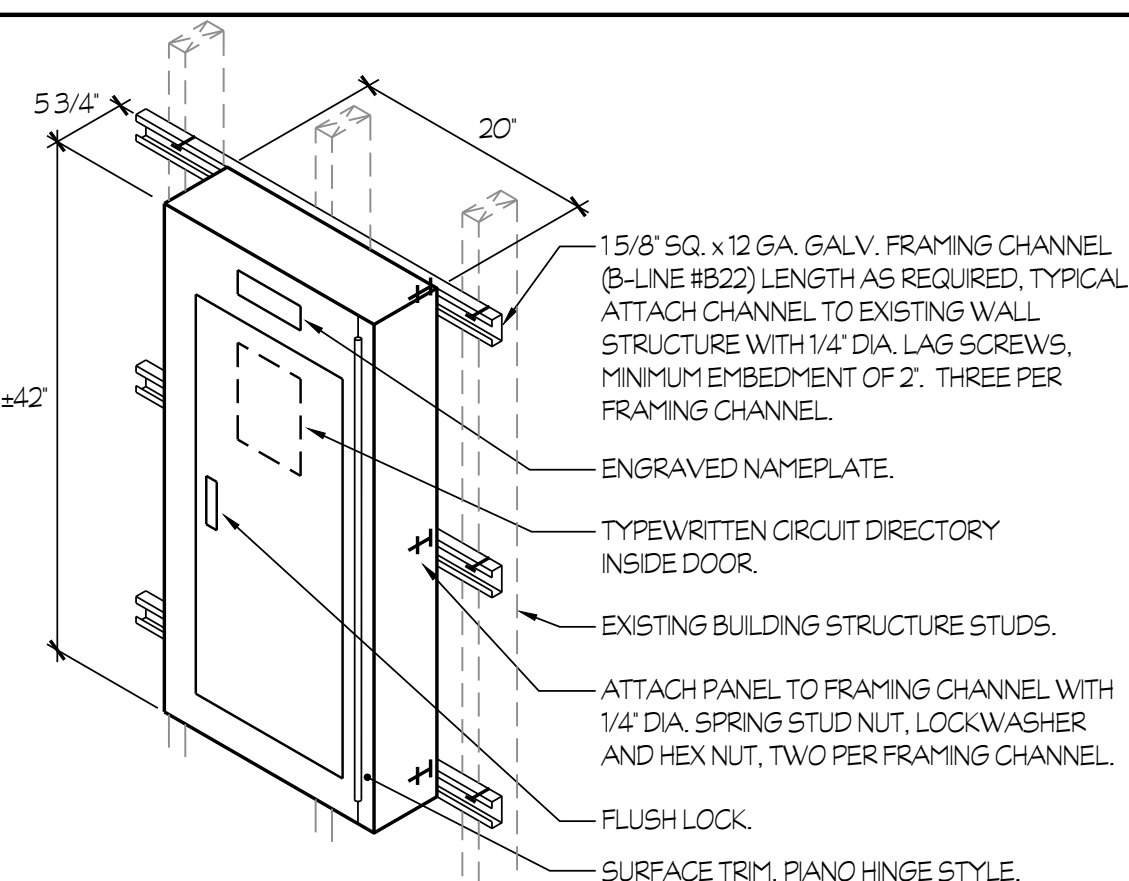


### 4 PULL BOX DETAIL

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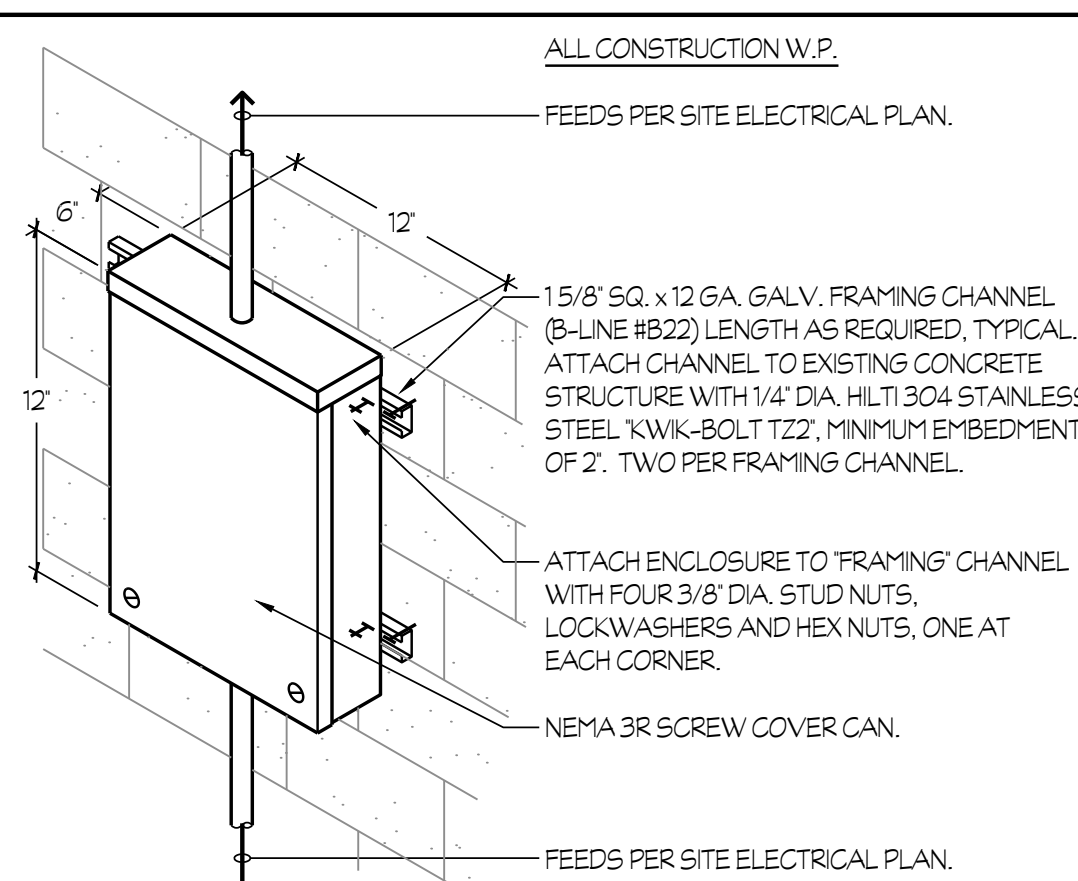
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\* NOTE: WHERE PULL BOX IS ADJACENT TO CONCRETE WALK, EXTEND MOW STRIP TO  
CONNECT WITH WALK. FOAM SEAL ALL CONDUITS IN YARD BOXES.  
\*\* NOTE: INTERIOR DIMENSIONS MEASURED AT "OPENING" OF PULL BOX.



### 5 SURFACE PANEL MOUNTING

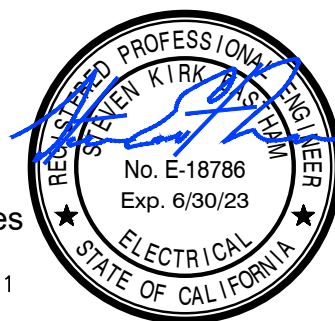
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### 6 PULL CAN MOUNTING

NTS

Rose Sing Eastham & Associates  
Electrical Consultants  
131 S. Dunworth - (559)733-2671  
Visalia, California 93292-6705



## CITY OF TULARE DOWNTOWN REVITALIZATION

DRW BY: KA CHK BY: SE  
PLOT DATE: 2/13/2023  
JOB NO.: 21394  
SCALE: AS NOTED  
FILE NAME: E5.1.dwg

DETAILS  
E5.1

**4CREEKS**  
324 S SANTA FE  
SUITE A  
VISALIA, CA 93292  
WEB: 4-Creeks.com  
TEL: 559.802.3052

DATE 11/23/22  
SUBMITTAL 100% CD  
230213 RE-SUBMITTAL ONE

APPROVED BY:

DATE SIGNATURE



