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EDWARDS AIR FORCE BASE
CALIFORNIA 93523-8450

REPAIR HVAC
BUILDING 1408

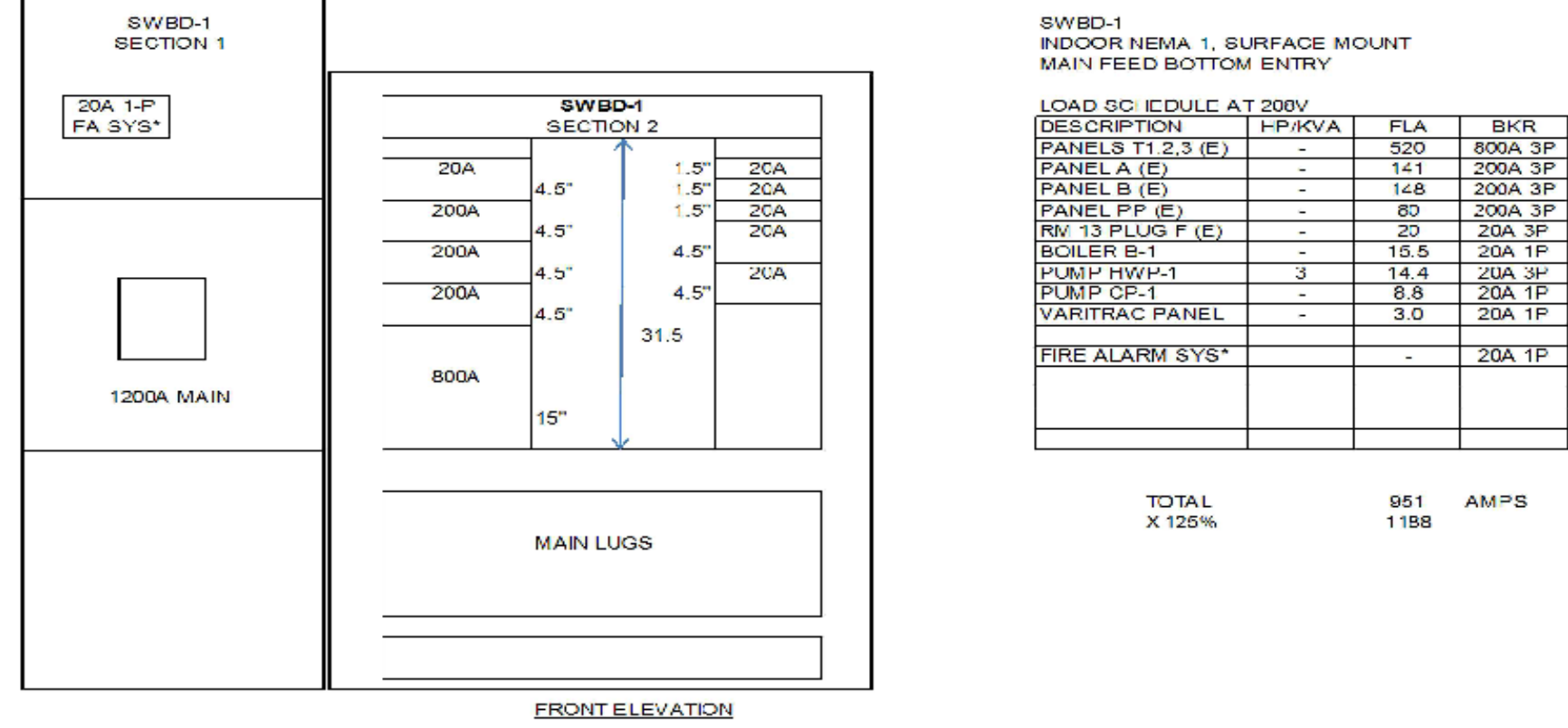
11/20/09	As-Built Drawings
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8/24/09	ISSUE (48)
8/24/09	ISSUE (49)
8/24/09	ISSUE (50)

PROJECT NO: PES#134
DRAWING FILE: E-101 NEW SINGLE-LINE
DRAWN BY: [Name]
CHECKED BY: [Name]
DATE: [Date]
SHEET TITLE: NEW SINGLE-LINE
E-101

CONDUIT NUMBER	QTY	SIZE	MATERIAL	CABLE	FROM	TO	LENGTH (FT)	VOLT DROP (%)	REMARKS
P01	3	4"	EXIST	4 #600 KCMIL (EXISTING)	SUB-1408 MS-3 (E)	SWBD-1	-	-	RECONNECT EXIST CABLE TO SWBD-1
P02	3	3"	EXIST	4 #500 KCMIL (EXISTING)	SWBD-1	PANLS T1, T2 & T3(E)	-	-	RECONNECT EXIST CABLE TO SWBD-1
P03	1	2-1/2"	EXIST	4 #30 AWG (EXISTING)	SWBD-1	PANEL "A"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-1
P04	1	3"	EXIST	4 #40 AWG (EXISTING)	SWBD-1	PANEL "B"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-1
P05	1	1-1/4"	EXIST	4 #8 AWG (EXISTING)	SWBD-1	PLUG "F"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-1
P06	1	3/4"	EXIST	4 #10 AWG (EXISTING)	SWBD-1	EXTERIOR LIGHTS	-	-	RECONNECT EXIST CABLE TO SWBD-1
P07	1	3/4"	RGS	2 #12 THWN & #12 GND	SWBD-1	B-1	15	0.36%	NEW BOILER
P08	1	3/4"	EMT	2 #12 THWN & #12 GND	SWBD-1	HWP-1	15	0.33%	NEW HOT WATER PUMP
P09	1	3/4"	EMT	2 #12 & #12 GND	SWBD-1	CP-1	15	0.20%	NEW COND PUMP
P10	1	3/4"	EMT	4 #12 & #12 GND	SWBD-1	FA SYSTEM (E)	-	-	RECONNECT EXIST CABLE TO SWBD-1
P11	1	3/4"	EMT	2 #12 THWN & #12 GND	SWBD-1	CCP 1	120	0.62%	VARITRAC CENTRAL CONTROL PANEL
P12									
P20	1	3"	EXIST	3 #500 THWN & #2 GND	SUB-1408 MS-2 (E)	PANEL "P-1"	180	0.67%	SEE NOTE 2
P21	1	1-1/4"	EMT/RGS	3 #1 THWN & #8 GND	PANEL "P-1"	CH-1	105	1.12%	NEW CHILLER
P22	1	1"	EMT/RGS	3 #8 THWN & #10 GND	PANEL "P-1"	AC-1	140	0.72%	NEW AIR CONDITIONER
P23	1	1-1/4"	EMT	3 #8 THWN & #8 GND	PANEL "P-1"	AH-1	75	0.42%	NEW AIR HANDLER
P24	1	1"	EMT	3 #10 THWN & #10 GND	PANEL "P-1"	AH-2	60	0.35%	NEW AIR HANDLER
P25	1	3/4"	EMT	3 #12 & #12 GND	PANEL "P-1"	CHWP-1	65	0.21%	NEW CHILLED WATER PUMP
P26									
P30	1	4"	EXIST	4 #40 AWG (EXISTING)	SUB-1408 MS-3 (E)	SWBD-2	-	-	RECONNECT EXIST CABLE TO SWBD-2
P31	1	3"	EXIST	7 #2 AWG (EXISTING)	SWBD-2	PANEL "S"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-2
P32	1	3/4"	EXIST	3 #12 THWN & #12 GND	SWBD-2	AH-3 (E)	-	-	SEE NOTE 1
P33	1	2"	EXIST	4 #2 AWG (EXISTING)	SWBD-2	PANEL "T"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-2
P34	1	3/4"	EXIST	3 #12 THWN & #12 GND	SWBD-2	AH-1 (E)	-	-	SEE NOTE 1
P35	1	2"	EXIST	4 #2 AWG (EXISTING)	SWBD-2	PANEL "B"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-2
P36	1	2"	EXIST	4 #1 AWG (EXISTING)	SWBD-2	PANEL "A"(E)	-	-	RECONNECT EXIST CABLE TO SWBD-2
P37	1	3/4"	EXIST	2 #12 THWN & #12 GND	SWBD-2	AH 120V CONTROL	-	-	RECONNECT EXIST CABLE TO SWBD-2
P38	1	3/4"	EXIST	3 #10 THWN & #12 GND	SWBD-2	AH-2 (E)	-	-	SEE NOTE 1
P39	1	3/4"	EMT	3 #12 THWN & #12 GND	SWBD-2	B-2	10	0.10%	NEW BOILER
P40	1	3/4"	EMT	3 #12 THWN & #12 GND	SWBD-2	HWP-2	10	0.10%	NEW HOT WATER PUMP
P41	1	3/4"	EMT	2 #12 & #12 GND	SWBD-2	CP-2	15	0.09%	NEW COND PUMP
P42									
P43									
P44									
P50	1	2"	EXIST	4 #30 AWG (EXISTING)	SUB-1408 MS-2 (E)	PANEL "P-2"	-	-	RECONNECT EXIST CABLE TO PANEL P-2
P51	1	1-1/4"	EMT/RGS	3 #2 THWN & #8 GND	PANEL "P-2"	CH-2	15	0.11%	NEW CHILLER
P52	1	3/4"	EMT	3 #10 & #12 GND	PANEL "P-2"	CHWP-2	20	0.08%	NEW CHILLED WATER PUMP
P53									
P54									

- CONDUIT AND CABLE NOTES**
- REPLACE EXISTING AH-1, AH-2 & AH-3 STARTERS ON WALL IN AIR HANDLER ROOM WITH VFD CONTROLLERS (PROVIDED BY SUPPLIER) AND RECONNECT EXISTING CABLES TO SWBD-2 AND NEW VFDs
 - REPLACE EXISTING 3 #40 CABLES IN EXISTING 3" CONDUIT WITH 3#500 THWN & #2 GND FROM SUB-1408 LOADCENTER 480V MAIN SWBD "MS-2" TO PANEL "P-1".

- CONSTRUCTION NOTES**
- FIRE ALARM FEED TAPPED AHEAD OF MAIN BREAKER IN SWBD-1 SECTION 1 PER FIRE ALARM NEC 760.21
 - VARIABLE FREQUENCY DRIVES (VFD) ARE TO BE FURNISHED BY THE HVAC SUPPLIER (MECHANICAL) AND INSTALLED BY THE CONTRACTOR.
 - DELTA-STAR COMBINATION STARTERS ARE TO BE FURNISHED BY THE HVAC SUPPLIER (MECHANICAL) AND INSTALLED BY THE CONTRACTOR.
 - ADD 350AT/400AF 3-POLE BREAKER IN EXISTING PANEL "MS-2" TO SUPPLY NEW POWER FEEDER TO POWER PANEL "P-1". CONTRACTOR TO PURCHASE AND INSTALL BREAKER.

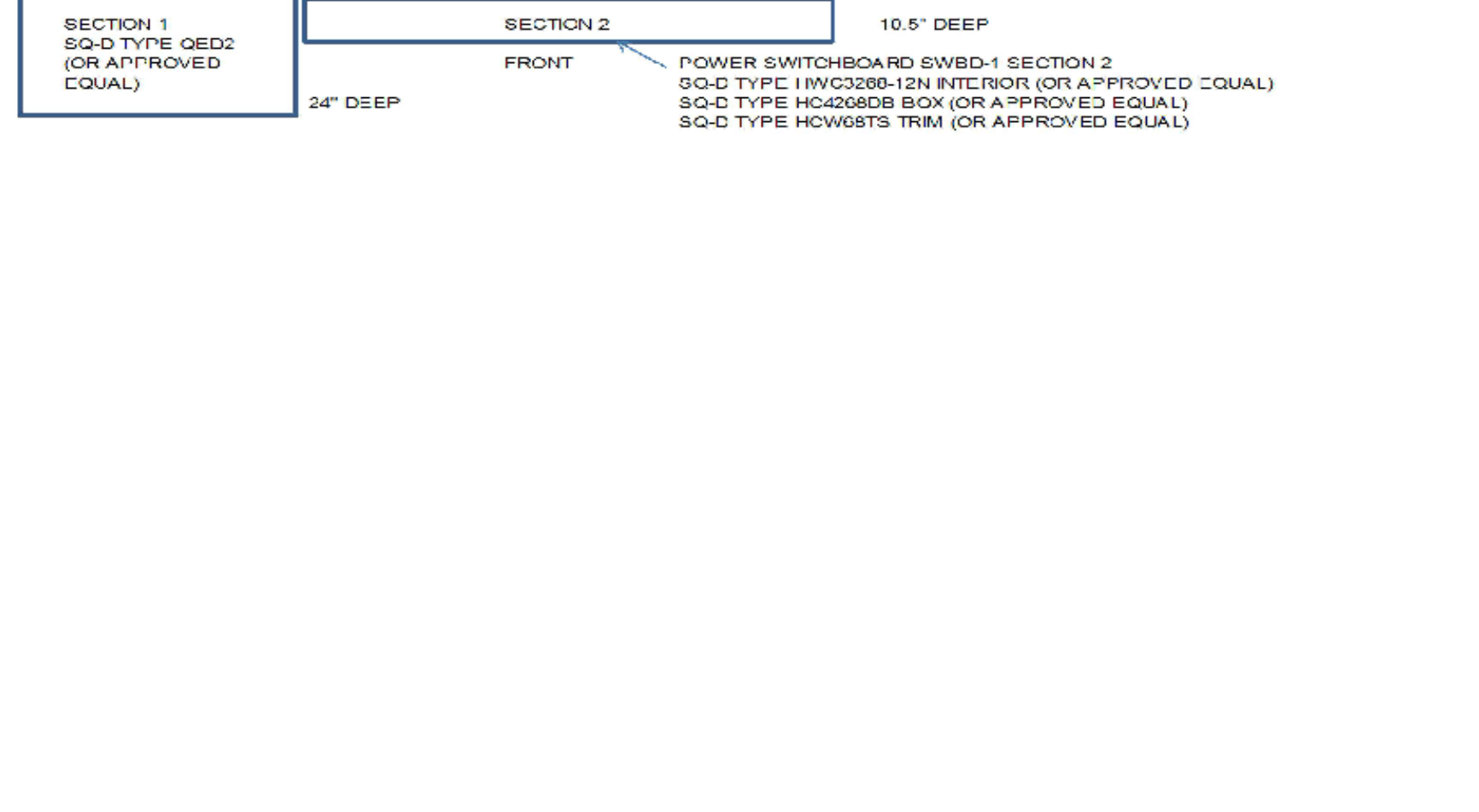


SWBD-1 INDOOR NEMA 1, SURFACE MOUNT MAIN FEED BOTTOM ENTRY

LOAD SCHEDULE AT 200V

DESCRIPTION	HP/KVA	FLA	BKR
PANELS T1, T2, T3 (E)	-	520	800A 3P
PANEL A (E)	-	141	200A 3P
PANEL B (E)	-	148	200A 3P
PANEL PP (E)	-	80	200A 3P
RV 13 FLUG P (E)	-	20	20A 3P
BOILER B-1	-	15.5	20A 1P
PUMP HWP-1	3	14.4	20A 3P
PUMP CP-1	-	8.8	20A 1P
VARITRAC PANEL	-	3.0	20A 1P
FIRE ALARM SYS*	-	-	20A 1P

TOTAL X 125% 951 1188 AMPS

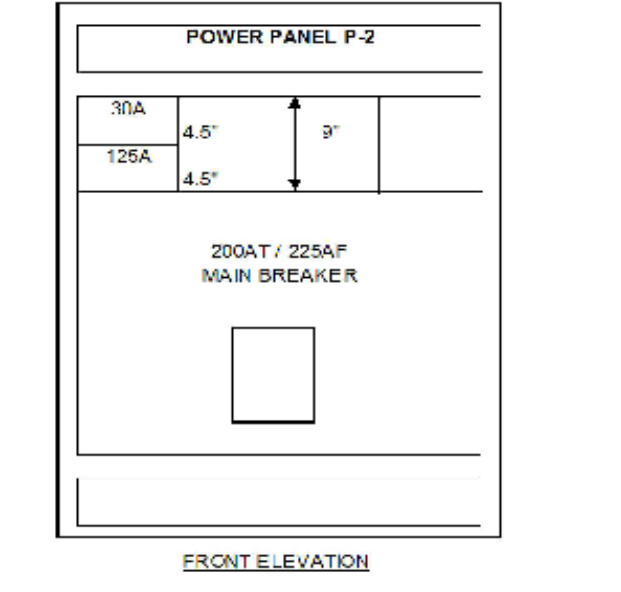


POWER PANEL P-2 INDOOR NEMA 1, SURFACE MOUNT MAIN FEED - BOTTOM ENTRY

LOAD SCHEDULE AT 480V

DESCRIPTION	HP/KVA	FLA	BKR
CHILLER CH-1	-	110	125A 3P
PUMP CHWP-2	5	7.8	30A 3P

TOTAL X 125% 118 147 AMPS



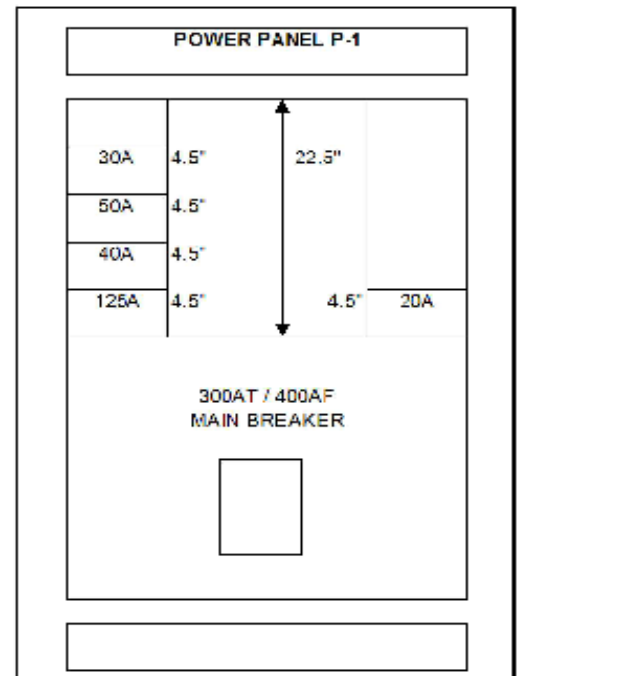
POWER PANEL P-2 SQ-D HCN0852-M (OR APPROVED EQUAL) WITH TRM HCN524TSD (OR APPROVED EQUAL)

POWER PANEL P-1 INDOOR NEMA 1, SURFACE MOUNT MAIN FEED BOTTOM ENTRY

LOAD SCHEDULE AT 480V

DESCRIPTION	HP/KVA	FLA	BKR
CHILLER (CH-1)	-	120	125A 3P
A/C UNIT AC-1	-	10.5	40A 3P
AIR HANDLER AH-1	25	34	50A 3P
AIR HANDLER AH-2	10	14	30A 3P
PUMP CHWP-1	3	4.8	20A 3P

TOTAL X 125% 192 240 AMPS



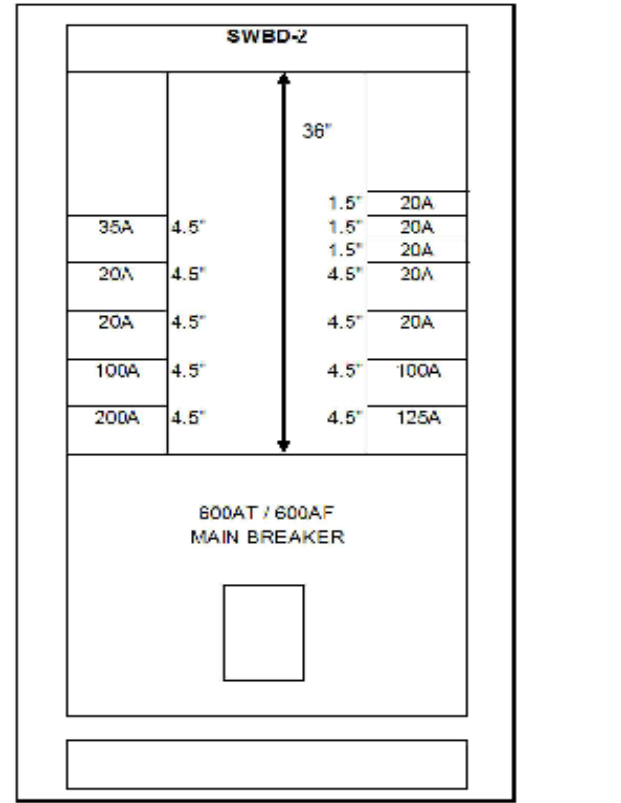
POWER PANEL P-1 SQ-D HCN2374-M (OR APPROVED EQUAL) WITH TRM HCN4375T (OR APPROVED EQUAL)

SWBD-2 INDOOR NEMA 1, SURFACE MOUNT MAIN FEED BOTTOM

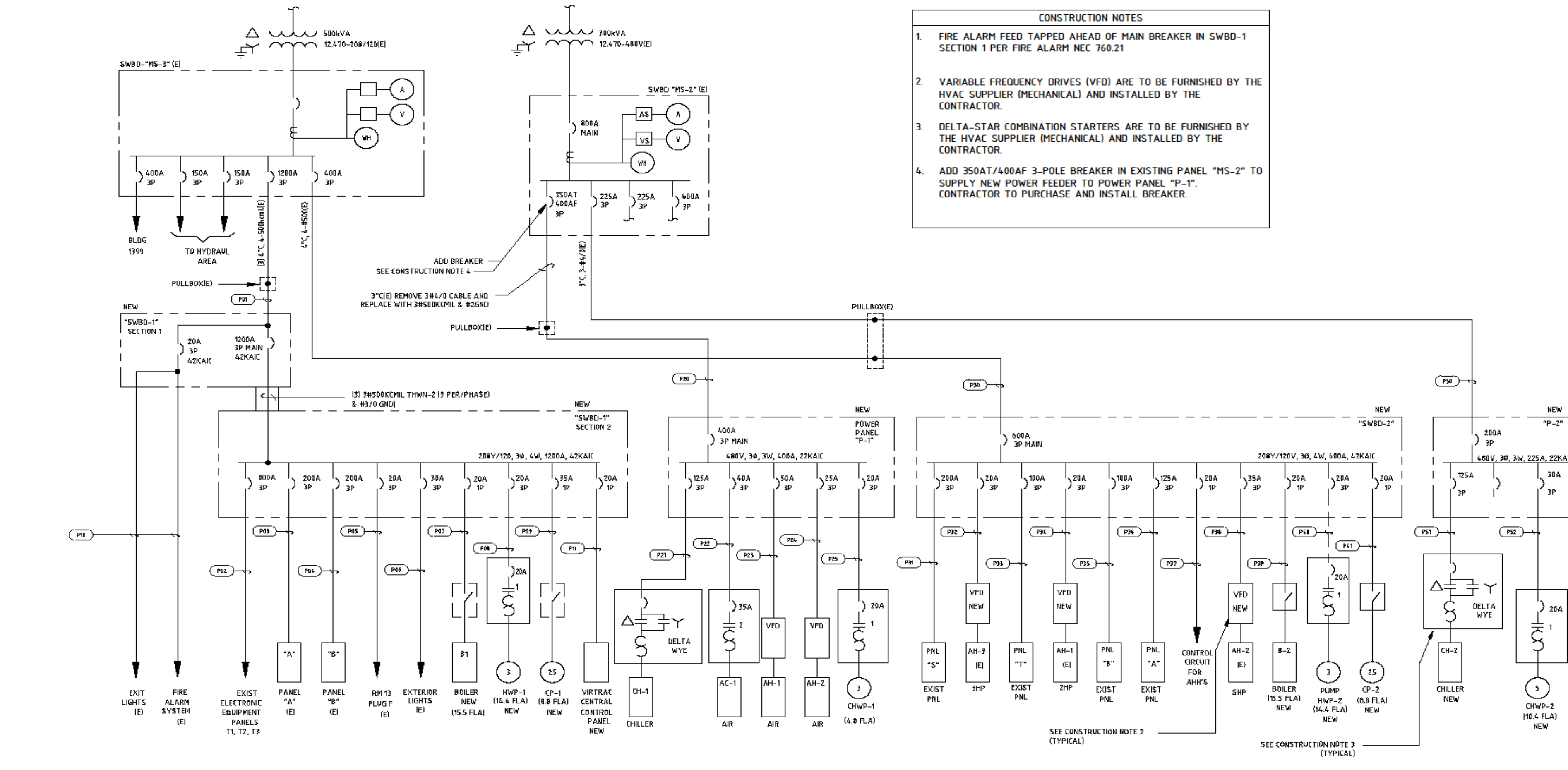
LOAD SCHEDULE AT 200V

DESCRIPTION	HP/KVA	FLA	BKR
PANEL S (E)	-	125	200A 3P
AH-3 (E)	-	11	20A 3P
PANEL T (E)	-	80	100A 3P
AH-1 (E)	2	9.7	20A 3P
PANEL B (E)	-	80	100A 3P
PANEL A (E)	-	100	125A 3P
AH-2 (E)	5	24	35A 3P
AH CONTROL PWIR	-	5	20A 1P
BOILER B-2	-	15.5	20A 3P
PUMP HWP-2	3	14.4	20A 3P
CP-2	-	8.8	20A 1P

TOTAL X 125% 429 537 AMPS



POWER SWITCHBOARD SWBD-2 SQ-D HCN3881-M (OR APPROVED EQUAL) WITH TRM HCN617S (OR APPROVED EQUAL)



As-Built Drawings