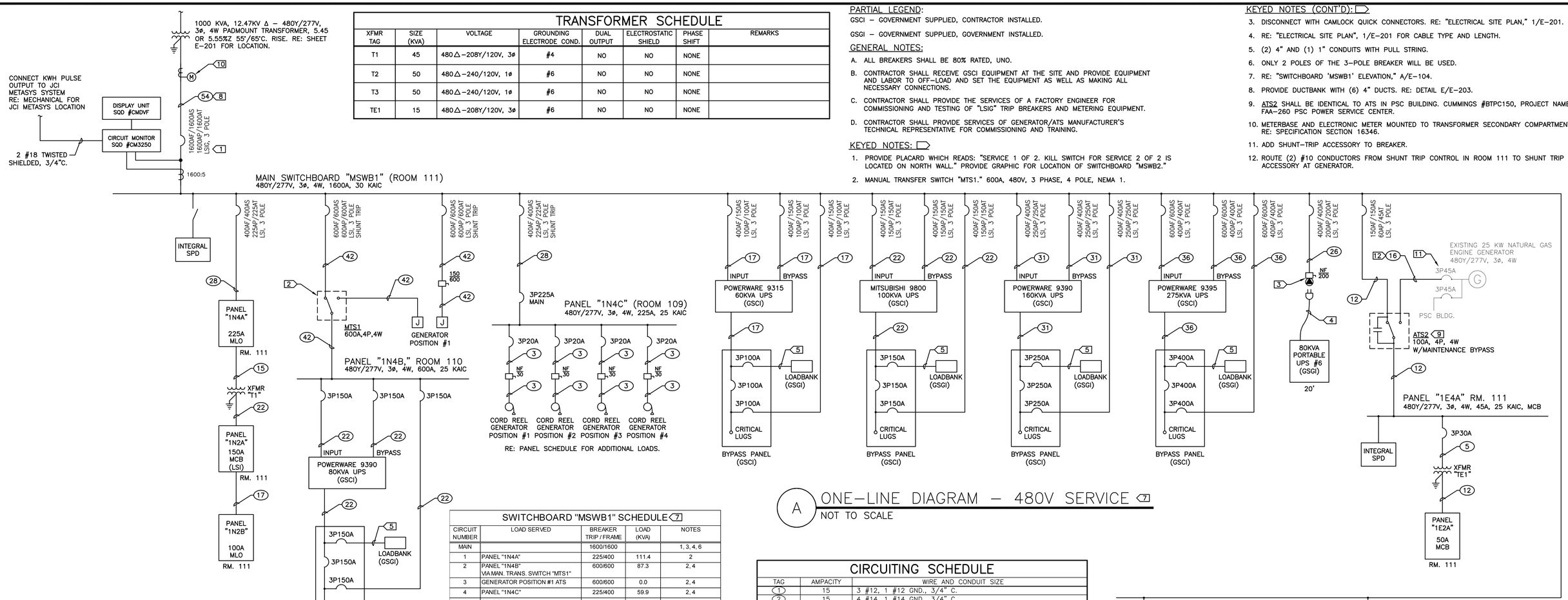


A ONE-LINE DIAGRAM – 480V SERVICE 7

NOT TO SCALE

TRANSFORMER SCHEDULE

XFMR TAG	SIZE (KVA)	VOLTAGE	GROUNDING ELECTRODE COND.	DUAL OUTPUT	ELECTROSTATIC SHIELD	PHASE SHIFT	REMARKS
T1	45	480Δ–208Y/120V, 3ø	#4	NO	NO	NONE	
T2	50	480Δ–240/120V, 1ø	#6	NO	NO	NONE	
T3	50	480Δ–240/120V, 1ø	#6	NO	NO	NONE	
TE1	15	480Δ–208Y/120V, 3ø	#6	NO	NO	NONE	

PARTIAL LEGEND:

GSCI – GOVERNMENT SUPPLIED, CONTRACTOR INSTALLED.

GSGI – GOVERNMENT SUPPLIED, GOVERNMENT INSTALLED.

GENERAL NOTES:

A. ALL BREAKERS SHALL BE 80% RATED, UNO.

B. CONTRACTOR SHALL RECEIVE GSCI EQUIPMENT AT THE SITE AND PROVIDE EQUIPMENT AND LABOR TO OFF-LOAD AND SET THE EQUIPMENT AS WELL AS MAKING ALL NECESSARY CONNECTIONS.

C. CONTRACTOR SHALL PROVIDE THE SERVICES OF A FACTORY ENGINEER FOR COMMISSIONING AND TESTING OF "LSIG" TRIP BREAKERS AND METERING EQUIPMENT.

D. CONTRACTOR SHALL PROVIDE SERVICES OF GENERATOR/ATS MANUFACTURER'S TECHNICAL REPRESENTATIVE FOR COMMISSIONING AND TRAINING.

KEYED NOTES:

1. PROVIDE PLACARD WHICH READS: "SERVICE 1 OF 2. KILL SWITCH FOR SERVICE 2 OF 2 IS LOCATED ON NORTH WALL." PROVIDE GRAPHIC FOR LOCATION OF SWITCHBOARD "MSWB2."
2. MANUAL TRANSFER SWITCH "MTS1." 600A, 480V, 3 PHASE, 4 POLE, NEMA 1.

KEYED NOTES (CONT'D):

3. DISCONNECT WITH CAMLOCK QUICK CONNECTORS. RE: "ELECTRICAL SITE PLAN," 1/E-201.
4. RE: "ELECTRICAL SITE PLAN", 1/E-201 FOR CABLE TYPE AND LENGTH.
5. (2) 4" AND (1) 1" CONDUITS WITH PULL STRING.
6. ONLY 2 POLES OF THE 3-POLE BREAKER WILL BE USED.
7. RE: "SWITCHBOARD 'MSWB1' ELEVATION," A/E-104.
8. PROVIDE DUCTBANK WITH (6) 4" DUCTS. RE: DETAIL E/E-203.
9. ATS2 SHALL BE IDENTICAL TO ATS IN PSC BUILDING. CUMMINGS #BTPC150, PROJECT NAME: FAA-260 PSC POWER SERVICE CENTER.
10. METERBASE AND ELECTRONIC METER MOUNTED TO TRANSFORMER SECONDARY COMPARTMENT. RE: SPECIFICATION SECTION 16346.
11. ADD SHUNT-TRIP ACCESSORY TO BREAKER.
12. ROUTE (2) #10 CONDUCTORS FROM SHUNT TRIP CONTROL IN ROOM 111 TO SHUNT TRIP ACCESSORY AT GENERATOR.

SWITCHBOARD "MSWB1" SCHEDULE 7

CIRCUIT NUMBER	LOAD SERVED	BREAKER TRIP / FRAME	LOAD (KVA)	NOTES
MAIN		1600/1600		1, 3, 4, 6
1	PANEL "1N4A"	225/400	111.4	2
2	PANEL "1N4B" VIA MAN. TRANS. SWITCH "MTS1"	600/600	87.3	2, 4
3	GENERATOR POSITION #1 ATS	600/600	0.0	2, 4
4	PANEL "1N4C"	225/400	59.9	2, 4
5	SPARE	100/400		2
6	POWERWARE 9315 60 KVA UPS	100/400	81.3	2
7	POWERWARE 9315 UPS INPUT BYPASS	100/400	0.0	2
8	POWERWARE 9315 UPS BYPASS	100/400	0.0	2
9	MITSUBISHI 9800 100 KVA UPS	150/400	86.5	2
10	MITSUBISHI 9800 UPS INPUT BYPASS	150/400	0.0	2
11	MITSUBISHI 9800 UPS BYPASS	150/400	0.0	2
12	POWERWARE 9390 160 KVA UPS	250/400	174.6	2
13	POWERWARE 9390 UPS INPUT BYPASS	250/400	0.0	2
14	POWERWARE 9390 UPS BYPASS	250/400	0.0	2
15	POWERWARE 9395 275 KVA UPS	400/600	307.6	2
16	POWERWARE 9395 UPS INPUT BYPASS	400/600	0.0	2
17	POWERWARE 9395 UPS BYPASS	400/600	0.0	2
18	PORTABLE UPS #6	200/400	104.0	2
19	PANEL "1E4A"	45/150	19.8	2
20	PANEL "1N3A" VIA XFMR "T2"	150/400	23.3	2, 4
21	PANEL "1N3B" VIA XFMR "T3"	150/400	32.0	2
22	SPARE	400/400		2
23	SPARE	400/400		2
24	SPARE	250/400		2
25	SPARE	150/400		2
26	SPACE	/400		5
27	SPACE	/400		5
28	SPACE	/400		5
29	SPACE	/400		5
30	SPACE	/400		5
31	SPACE	/400		5
32	SPACE	/400		5
33	SPACE	/400		5
34	SPACE	/400		5
35	SPACE	/400		5
36	SPACE	/400		5
37	SPACE	/400		5
		TOTAL CONNECTED LOAD	1055.7	
		ESTIMATED COINCIDENT LOAD	791.8	
		ESTIMATED DEMAND AMPS	952	

480	VOLTS (L-L), 3ø, 4W, WITH GND.	30,000	AIC RATING
1600	AMP BUS	NEMA 1	ENCLOSURE

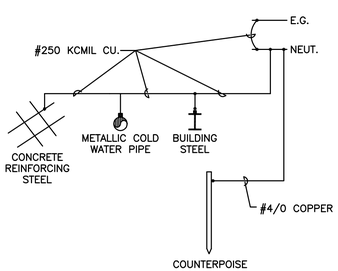
SWITCHBOARD "MSWB1" NOTES:

1. LSIGM PROGRAMMER
2. LSI PROGRAMMER
3. INTEGRAL SPD WITH DISCONNECT RATED 100KA PER MODE
4. SHUNT TRIP ACCESSORY
5. PROVIDE ALL NECESSARY ACCESSORIES FOR INSTALLATION OF FUTURE BREAKER
6. PROVIDE PADLOCKABLE HANDLE LOCKS ON MAIN AND ALL BRANCH BREAKERS

CIRCUITING SCHEDULE

TAG	AMPACITY	WIRE AND CONDUIT SIZE
1	15	3 #12, 1 #12 GND., 3/4" C.
2	15	4 #14, 1 #14 GND., 3/4" C.
3	20	4 #12, 1 #12 GND., 3/4" C.
4	30	2 #10, 1 #10 GND., 3/4" C.
5	30	3 #10, 1 #10 GND., 3/4" C.
6	30	4 #10, 1 #10 GND., 3/4" C.
7	40	2 #8, 1 #10 GND., 3/4" C.
8	40	3 #8, 1 #10 GND., 3/4" C.
9	40	4 #8, 1 #10 GND., 1" C.
10	60	2 #6, 1 #10 GND., 3/4" C.
11	60	3 #6, 1 #10 GND., 1" C.
12	60	4 #6, 1 #10 GND., 1" C.
13	70	3 #4, 1 #8 GND., 1" C.
14	70	4 #4, 1 #8 GND., 1-1/4" C.
15	85	3 #3, 1 #8 GND., 1-1/4" C.
16	85	4 #3, 1 #4 GND., 2 #10, 4" C., CONCRETE ENCASED
17	100	4 #2, 1 #8 GND., 1-1/4" C.
18	100	3 #2(PHASE), 2 #2(NEUT.), 1 #8 GND., 1-1/2" C.
19	110	3 #1, 1 #6 GND., 1-1/2" C.
20	150	2 #1/0, 1 #6 GND., 1-1/2" C.
21	150	3 #1/0, 1 #6 GND., 1-1/2" C.
22	150	4 #1/0, 1 #6 GND., 2" C.
23	150	3 #1/0(PHASE), 2 #1/0(NEUT.), 1 #6 GND., 2" C.
24	175	3 #2/0, 1 #6 GND., 2" C.
25	200	3 #3/0, 1 #6 GND., 2" C.
26	200	4 #3/0, 1 #6 GND., 2" C.
27	230	3 #4/0, 1 #4 GND., 2" C.
28	230	4 #4/0, 1 #4 GND., 2-1/2" C.
29	230	3 #4/0(PHASE), 2 #4/0(NEUT.), 1 #4 GND., 2-1/2" C.
30	255	2 #250 KCMIL, 1 #4 GND., 2-1/2" C.
31	255	4 #250 KCMIL, 1 #4 GND., 3" C.
32	255	3 #250 KCMIL(PHASE), 2 #250 KCMIL(NEUT.), 1 #4 GND., 3" C.
33	285	3 #300 KCMIL, 1 #4 GND., 2-1/2" C.
34	300	3 #350 KCMIL, 1 #4 GND., 3" C.
35	300	4 #350 KCMIL, 1 #4 GND., 3" C.
36	400	4 #600 KCMIL, 1 #3 GND., 3-1/2" C.
37	400	3 #600 KCMIL(PHASE), 2 #600 KCMIL(NEUT.), 1 #3 GND., 4" C.
38	460	2 – 2-1/2" C. EACH WITH 4 #4/0, 1 #2 GND.
39	500	2 – 2-1/2" C. EACH WITH 3 #250 KCMIL, 1 #2 GND.
40	500	2 – 3" C. EACH WITH 4 #250 KCMIL, 1 #2 GND.
41	600	2 – 3" C. EACH WITH 3 #350 KCMIL, 1 #1 GND.
42	600	2 – 3" C. EACH WITH 4 #350 KCMIL, 1 #1 GND.
43	800	3 – 2-1/2" C. EACH WITH 3 #300 KCMIL, 1 #1/0 GND.
44	800	3 – 2-1/2" C. EACH WITH 4 #300 KCMIL, 1 #1/0 GND.
45	800	3 – 3-1/2" C. EACH WITH 4 #300 KCMIL
46	1000	4 – 4" C. EACH WITH 3 #250 KCMIL, 1 #2/0 GND.
47	1000	4 – 4" C. EACH WITH 4 #250 KCMIL, 1 #2/0 GND.
48	1000	4 – 4" C. EACH WITH 4 #250 KCMIL
49	1200	4 – 4" C. EACH WITH 3 #350 KCMIL, 1 #3/0 GND.
50	1200	4 – 4" C. EACH WITH 4 #350 KCMIL, 1 #3/0 GND.
51	1200	4 – 4" C. EACH WITH 4 #350 KCMIL
52	1600	5 – 4" C. EACH WITH 3 #400 KCMIL, 1 #4/0 GND.
53	1600	5 – 4" C. EACH WITH 4 #400 KCMIL, 1 #4/0 GND.
54	1600	5 – 4" C. EACH WITH 4 #500 KCMIL, CONCRETE ENCASED

NOTE: ALL SCHEDULE ITEMS ARE NOT NECESSARILY USED ON THIS PROJECT.



B "MSWB1" GROUNDING DIAGRAM

NOT TO SCALE

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REV.	DATE	DESCRIPTION	CHECK	APP'D

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
MIKE MONRONEY AERONAUTICAL CENTER – OKLAHOMA CITY, OKLAHOMA

PSL – POWER SERVICES LABORATORY

ONE-LINE DIAGRAM – 480V SERVICE

Construction Work Request No: 09-018745

PREPARED BY: Rees Associates	APPROVED BY: Jon Berkman
DESIGNED: JDH	ISSUED BY: OFFICE OF FACILITY MANAGEMENT AMP-400
DRAWN: BLP	DATE: May 26, 2011
WORK ORDER NO. 09-018745	DRAWING NO. 08-008257

E-102

3 OF 31