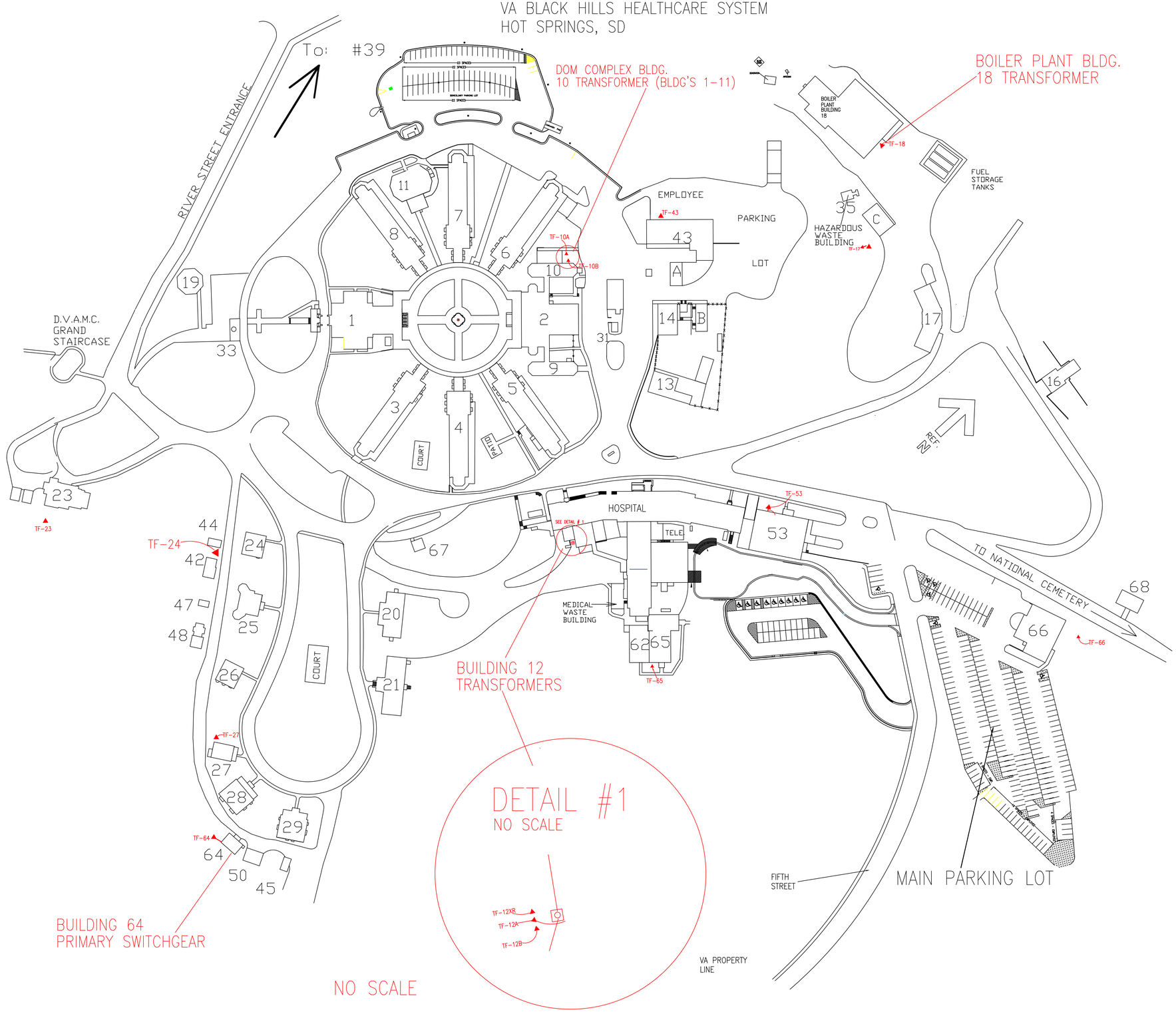
TESTING & CALIBRATING ELECTRICAL SYSTEMS
V.A. BLACK HILLS HEALTH CARE SYSTEM
HOT SPRINGS, S.D. AND FORT MEADE, S.D.

SHEET INDEX

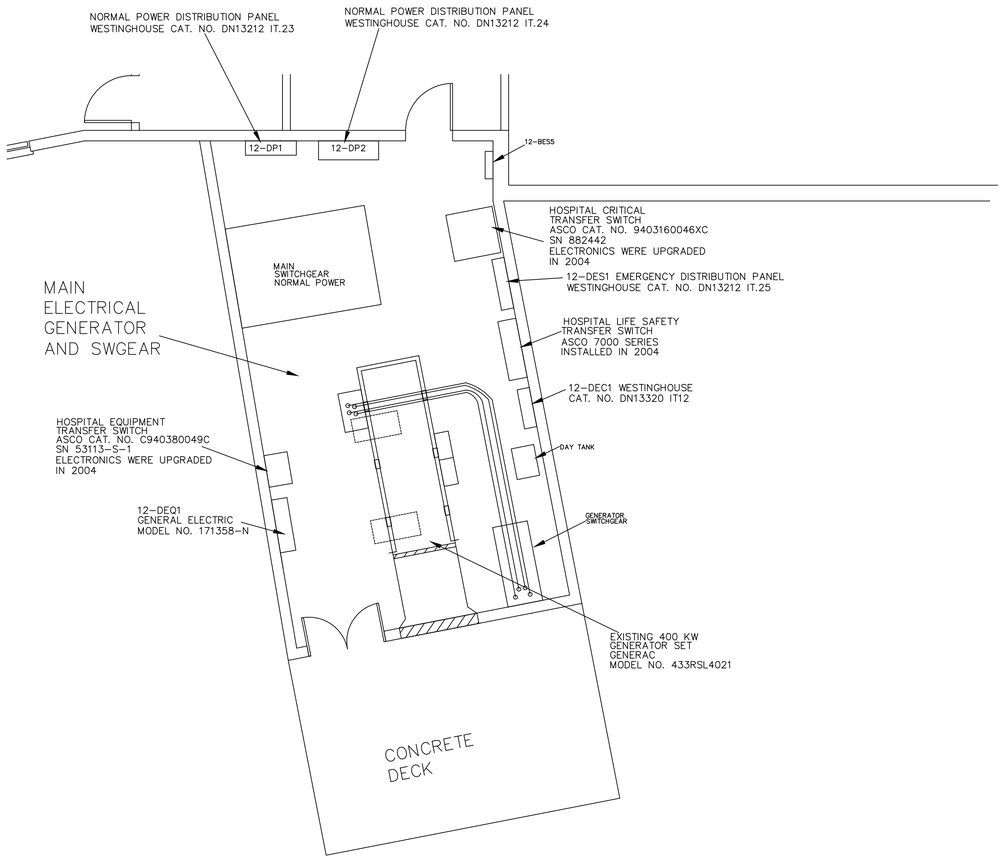
T-1 TITLE SHEET
E-1 HOT SPRINGS SITE PLAN
E-2 HOT SPRINGS PRIMARY SWITCHGEAR AND HOSPITAL SWITCHGEAR
E-3 HOT SPRINGS 15KV SWITCHGEAR
E-4 HOT SPRINGS PRIMARY POWER ONE-LINE DIAGRAM
E-5 HOT SPRINGS DOM COMPLEX ONE-LINE DIAGRAM
E-6 HOT SPRINGS DOM BUS DUCT
E-7 HOT SPRINGS BUILDING 12 NORMAL POWER RISER DIAGRAM
E-8 HOT SPRINGS BUILDING 12 EMERGENCY POWER RISER DIAGRAM
E-9 HOT SPRINGS BUILDINGS 18 & 53 ONE-LINE DIAGRAM
E-10 HOT SPRINGS BUILDINGS 65, 66 & 68 ONE-LINE DIAGRAM
E-11 FORT MEADE BUILDING 113 ONE-LINE DIAGRAM
E-12 FORT MEADE BUILDING 137 & 147 ONE-LINE DIAGRAM
E-13 FORT MEADE BUILDING 145 ONE-LINE DIAGRAM
E-14 FORT MEADE BUILDING 148 ONE-LINE DIAGRAM

Drawing Title: TITLE SHEET	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS			Date: Oct. 2013
				Project No.
Approved: Division Chief	Building Number	Checked	Drawn: DS	DRAWING NO. T-1
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA			Dwg 1 OF 15

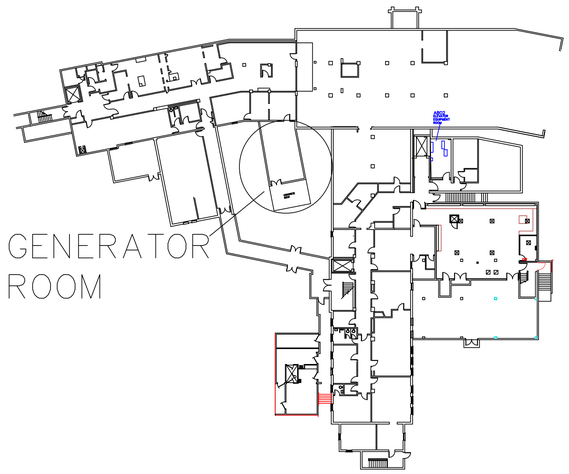
VA BLACK HILLS HEALTHCARE SYSTEM
HOT SPRINGS, SD



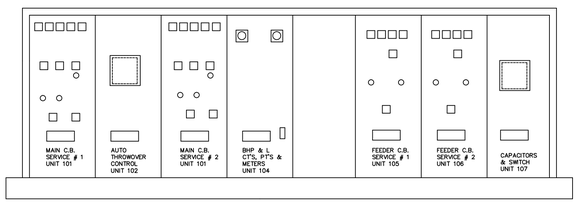
Drawing Title: HOT SPRINGS SITE PLAN	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-1



HOSPITAL SWITCHGEAR
AND GENERATOR
ROOM FLOOR PLAN
NO SCALE



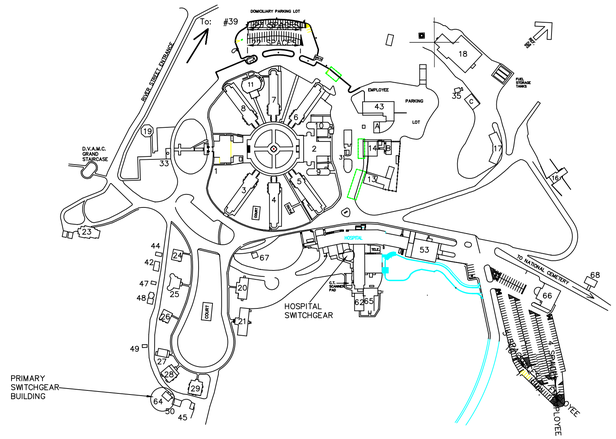
BUILDING 12 BASEMENT FLOOR
NO SCALE



MAIN PRIMARY SWITCHGEAR – BUILDING # 64
WESTINGHOUSE MODEL DS
INSTALLED 1978

UNIT 101	UNIT 102	UNIT 103	UNIT 104	UNIT 105
FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP	METER CABINET	METER CABINET	SPARE SPACE	METER CABINET
FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 400A TRIP	TIE DRAW OUT POWER AIR CIRCUIT BREAKER "T" 2000/3 FRAME NON-AUTOMATIC TRIP ONLY	EMPTY BAY NO BREAKER	FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP	FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP
FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME SPACE ONLY	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER MAIN A 2000/3 FRAME 2000A TRIP	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER MAIN B 2000/3 FRAME 2000A TRIP	1600A BREAKER	EMPTY BAY NO BREAKER
FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME SPACE ONLY	EMPTY BAY NO BREAKER	FUSED – DRAW OUT POWER AIR CIRCUIT BREAKER 1600/3 FRAME 1600 A TRIP	2000A SPARE BREAKER	1600A SPARE BREAKER

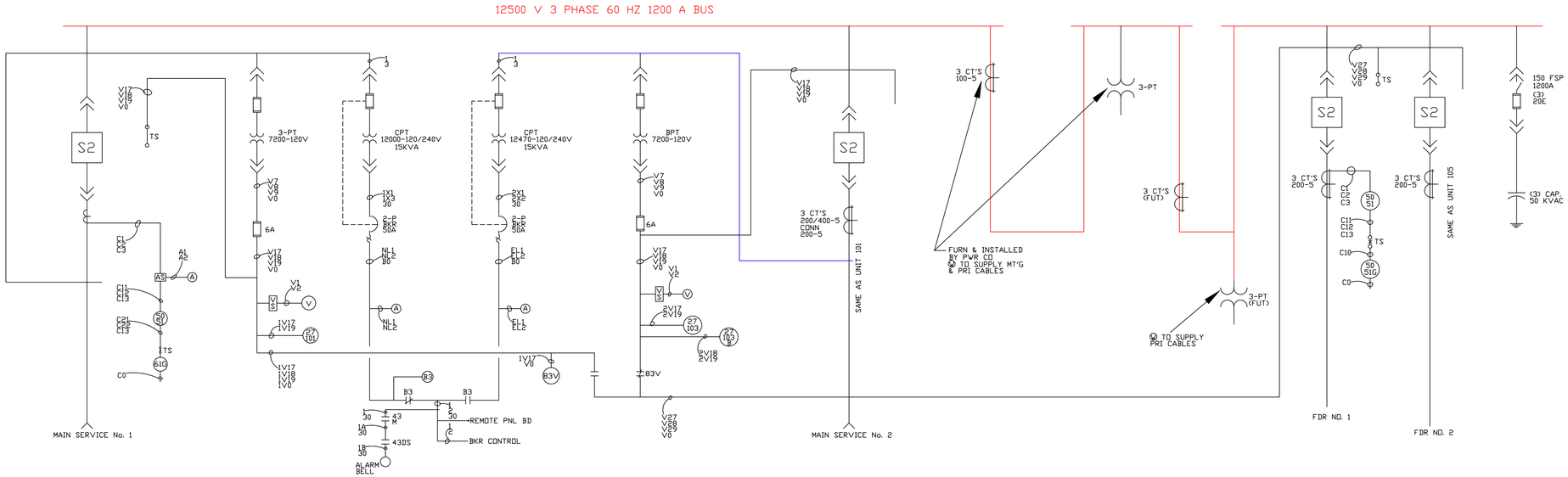
MAIN SWITCHGEAR – BUILDING # 12
WESTINGHOUSE MODEL DN-13212
INSTALLED 1978

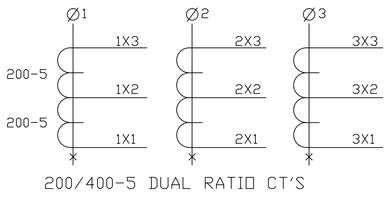


HOT SPRINGS SITE

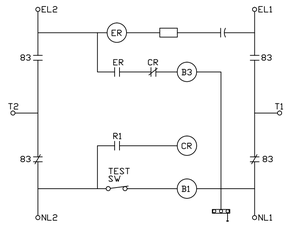
NO SCALE

Drawing Title: HOT SPRINGS PRIMARY SWITCHGEAR AND HOSPITAL SWITCHGEAR	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 12, 64	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E2 Dwg.3 Of 15





200/400-5 DUAL RATIO CT'S



DEVICE OF OPERATING SEQUENCE

WHEN NORMAL LINE IS DE-ENERGIZED, RELAY D1 WILL BE DE-ENERGIZED, THIS IN TURN WILL LEAVE CR DE-ENERGIZED WITH ITS CONTACT CLOSED IN THE B3 COIL CIRCUIT. PROVIDING THE EMERGENCY LINE IS ENERGIZED ER COIL WILL PICKUP AND CLOSE ITS CONTACT TO ENERGIZE B3 AND TRANSFER TO THE EMERGENCY SOURCE.

WHEN THE NORMAL LINE RESTORES, THE B1 RELAY OPERATES. THE CR RELAY IS ENERGIZED DISCONNECTING THE B3 COIL CIRCUIT. THE LOAD IS RELEASED FROM THE EMERGENCY LINE VOLTAGE AND IMMEDIATELY RESTORED TO THE NORMAL LINE.

DESCRIPTION OF OPERATION

NORMAL OPERATION IS WITH EITHER INCOMING SERVICE LINE BREAKER CLOSED. EITHER LINE, NO. 1 OR NO. 2 WHICH IS CLOSED, IS DESIGNATED AS THE "PREFERRED" LINE, AND THE OTHER LINE IS THEN THE "SECONDARY" LINE.

MAKE SURE THAT THE LOCKOUT RELAYS 66mm-101 & 86ER-103 ARE IN THE RESET POSITION, AND THE "STOP-MANUAL" TRANSFER SWITHCH, DEVICE 43 IN THE CONTROL BOX ON SWITCHGEAR PANEL NO. 102, IS IN THE MANUAL POSITION BEFORE CLOSING ONE OF THE INCOMING SERVICE LINE BREAKERS TO ENERGIZE THE MAIN BUS FOR NORMAL OPERATION. AFTER THE BREAKER HAS BEEN CLOSED, THE TRANSFER SWITCH, DEVICE 43, MUST BE TURNED TO THE "AUTO" POSITION TO PERMIT AUTOMATIC TRANSFER IN THE EVENT THERE IS A LOSS OF VADLTAGE ON THE PREFERRED LINE.

CAUTION - BE SURE THE PANEL FOR THE CONTROL BOX, ON THE SWITCHGEAR PANEL NO. 102, IS CLOSED BEFORE LEAVING THE STATION IF AUTOMATIC OPERATION IS REQUIRED.

IF THE ALARM BELL SOUNDS WHEN THE CONTROL BOX PANEL IS CLOSED IT INDICATES THAT THE TRANSFER SWITCH, DEVICE A3, IS IN THE "MANUAL" POSITION.

IN THE EVENT THE "PREFERRED" INCOMING SERVICE LINE BECOMES DE-ENERGIZED, THE UNDERVOLTAGE RELAY 27 WILL DROP OUT AND PICK UP AUXILIARY RELAY 27E, PROVIDING NORMAL VOLTAGE IS ON THE ENERGIZED LINE.

THE "PREFERRED" LINE BREAKER WILL BE TRIPPED, AND THE ENERGIZED LINE BREAKER WILL CLOSE IMMEDIATELY THEREAFTER TO REENERGIZE THE MAIN FUSE AND NORMAL OPERATION.

RETRANSFER BACK TO THE ORIGINAL NORMAL OPERATION WILL NOT OCCUR WHEN THE FAULTED LINE IS REENERGIZED. THE LINE WITH THE CLOSED BREAKER BECOMES THE "PREFERRED" LINE, AND THE ONE WITH THE OPEN BREAKER BECOMES THE "EMERGENCY" LINE. AUTOMATIC TRANSFER WILL TAKE PLACE, AS DESCRIBED, ABOVE, IN THE EVENT THE "PREFERRED" INCOMING SERVICE LINE BECOMES DEENERGIZED.

IF EITHER INCOMING LINE BREAKER IS TO BE OPERATED (CLOSE OR TRIP) BY THE CONTROL SWITCH ON THE SWITCHGEAR PANEL, THE TRANSFER SWITCH, DEVICE #3, MUST BE IN THE "MANUAL" POSITION, THE TWO INCOMING LINE BREAKERS ARE ELECTRICALLY INTERLOCKED TO PREVENT BOTH BREAKERS FROM BEING CLOSED IN THE CONNECTED POSITION. EITHER BREAKER, WHEN IN THE TEST POSITION OR OUT OF THE CELL, CAN BE CLOSED THOUGH THE OTHER BREAKER IS CLOSED AND IN SERVICE.

IF THERE IS AN OVERCURRENT FAULT ON THE INCOMING LINE THAT IS IN SERVICE, ONE OR MORE OF THE OVERCURRENT RELAYS 50/51 OR 316 WILL OPERATE TO PICK UP THE LOCKOUT RELAY, 66BR. THIS WILL TRIP AND LOCKOUT THE "PREFERRED" LINE BREAKER AND LOCK OUT THE "EMERGENCY" LINE BREAKER.

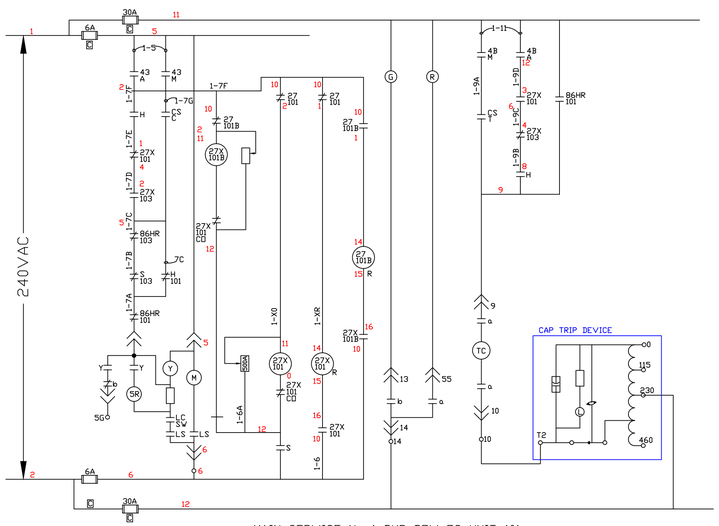
27X DEVICE

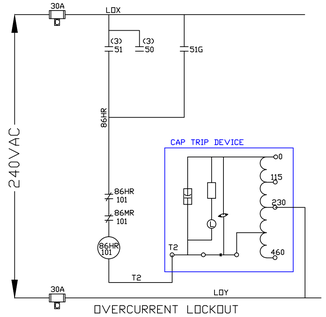
W MG-6 AUX RELAY
STYLE # 28913473A26
I.L. # 41-753.1

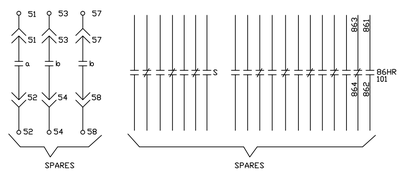
27 DEVICE
W CV-7 STYLE # 718138S0A30
I.L. # 41-201.183A283 240V
Ø1 & 03 INDUT A 9,8

CONTACT OUTPUT

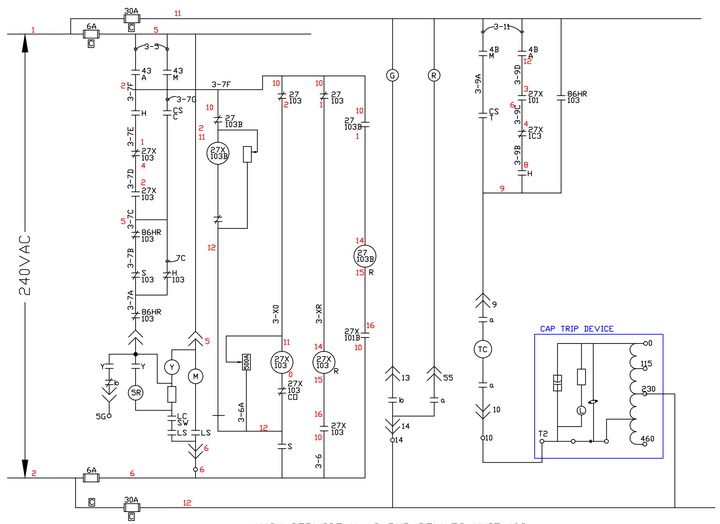
10 - COMMON
1 - CLOSED WHEN ENERGIZED (NORMAL)
2 - CLOSED WHEN DE-ENERGIZED (LOSS OF PRIMARY POWER)

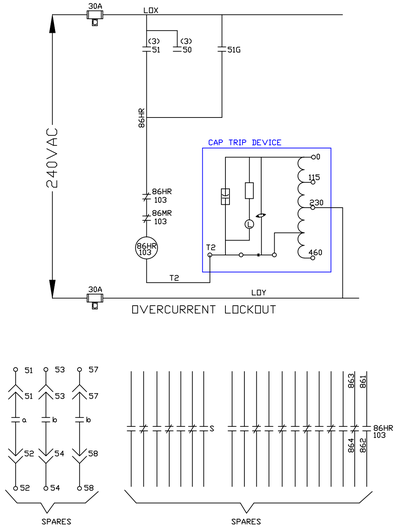




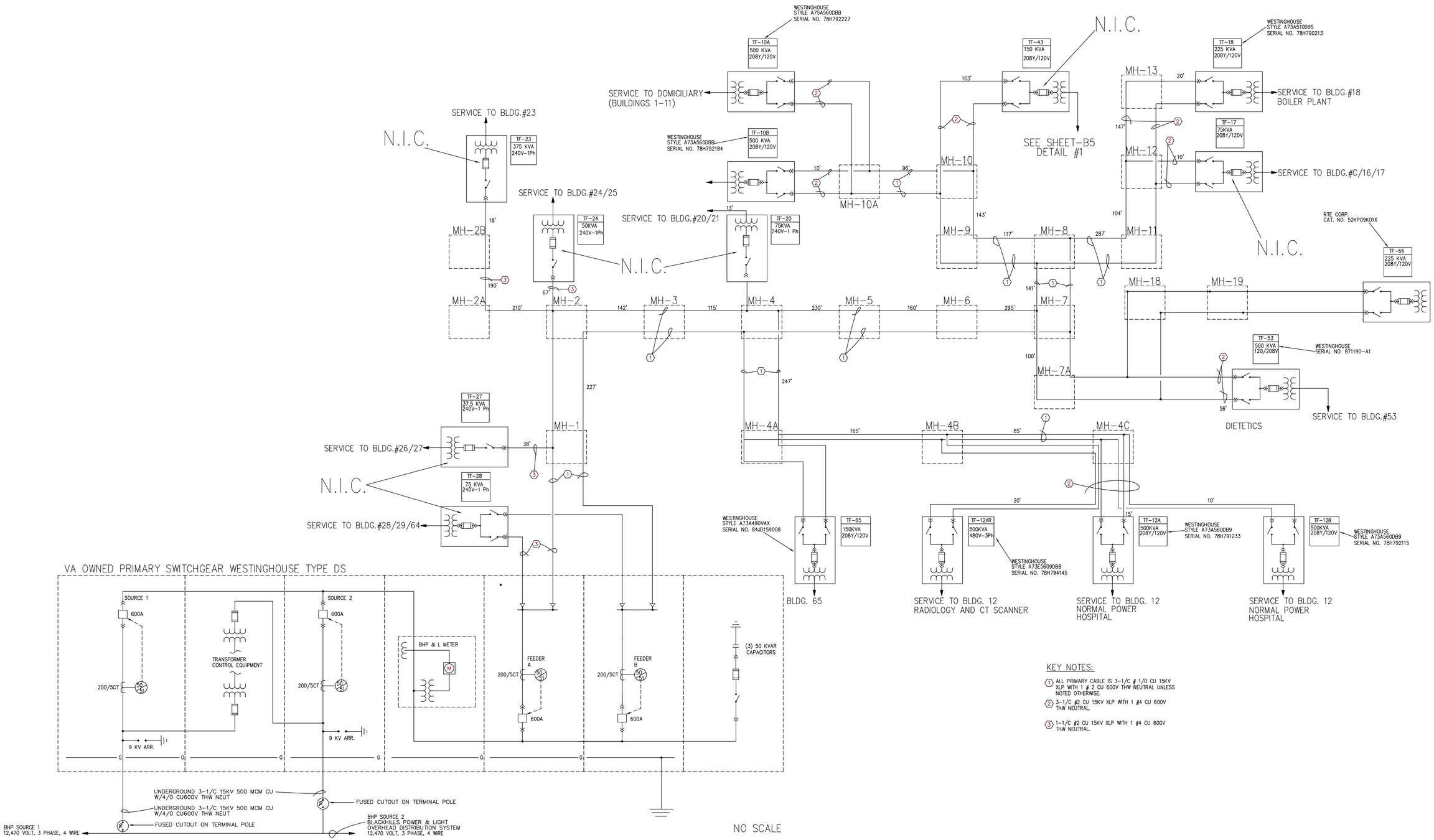


NO SCALE





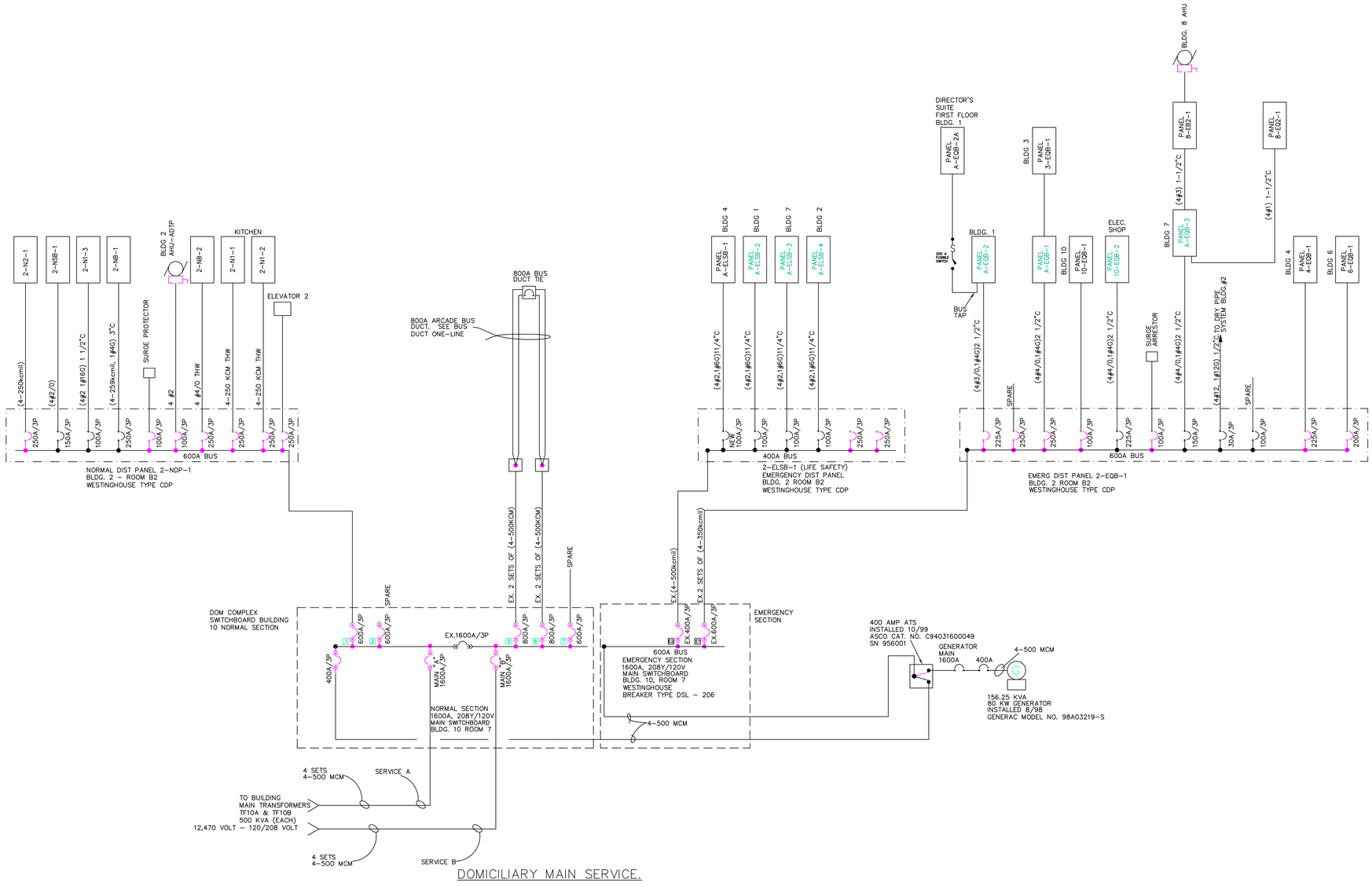
Drawing Title: HOT SPRINGS 15KV SWITCHGEAR	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO: E-3 Dwg.4 OF 15



KEY NOTES:

1. ALL PRIMARY CABLE IS 3-1/C # 1/0 CU 15KV XLP WITH 1 # 2 CU 600V THW NEUTRAL UNLESS NOTED OTHERWISE.
2. 3-1/C #2 CU 15KV XLP WITH 1 #4 CU 600V THW NEUTRAL.
3. 1-1/C #2 CU 15KV XLP WITH 1 #4 CU 600V THW NEUTRAL.

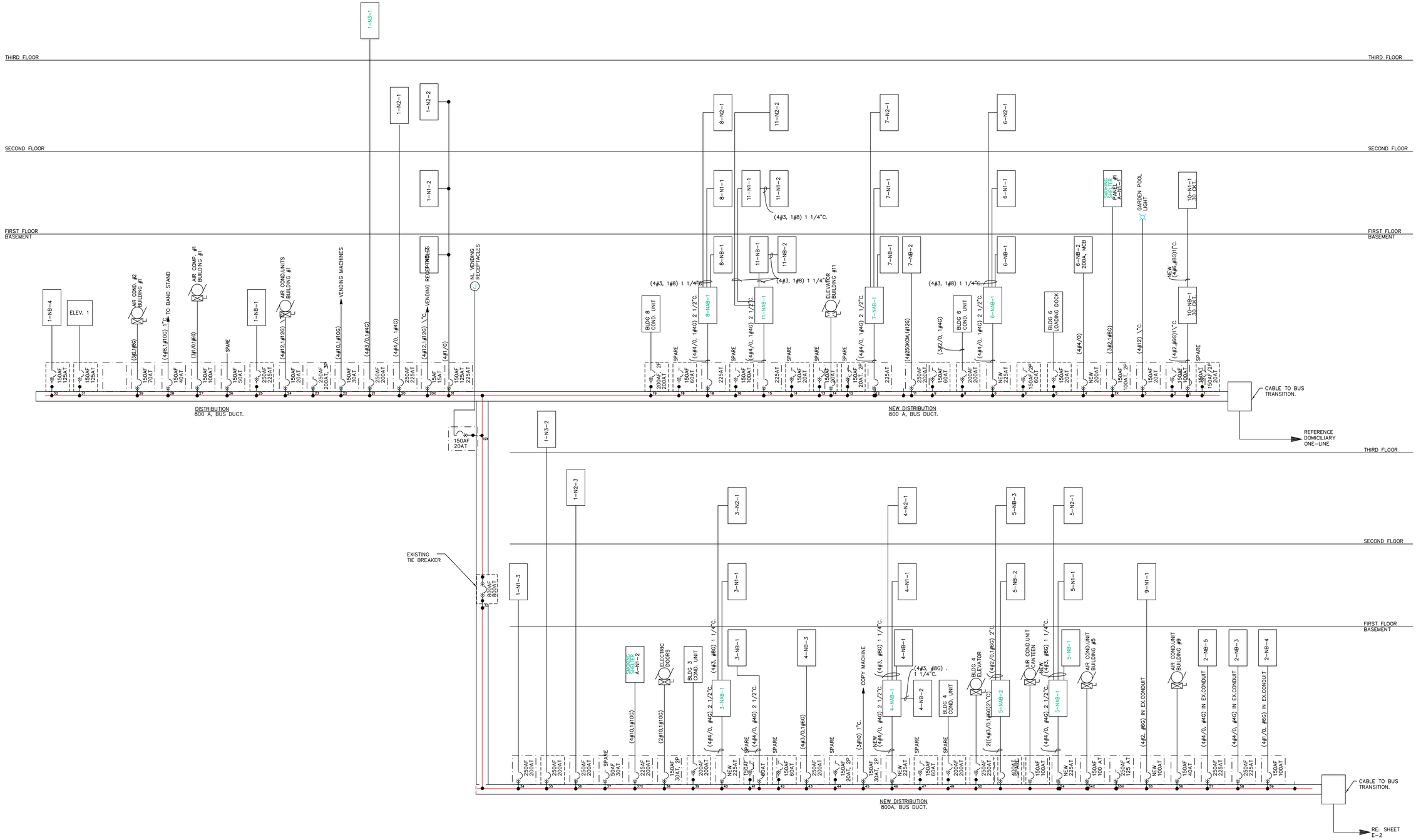
Drawing Title: HOT SPRINGS PRIMARY POWER ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS			Date: Oct. 2013
				Project No.
Approved: Division Chief	Building Number	Checked	Drawn: DS	DRAWING NO. E4
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA			Dwg 5 Of 15



DOM-COMPLEX
ELEVATION MAIN SWITCHBOARD
N.T.S.

WESTINGHOUSE DN-13212

Drawing Title: HOT SPRINGS DOM COMPLEX ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS	Date: Oct. 2013
		Project No.
Approved: Division Chief	Building Number: DOM / Checked / Drawn: DS	DRAWING NO. E-5
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA	Dwg.6 OF15



Drawing Title: HOT SPRINGS DOM BUS DUCT	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: OCT. 2013
			Project No.
Approved: Division Chief	Building Number: DOM	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-6
			Dwg. 7 OF 15

NORMAL SECTION

UNIT 101	UNIT 102	UNIT 103	UNIT 104	UNIT 105
FUSED - DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP 12-NSPS	METER CABINET	METER CABINET TRANSFORMER B	SPS-B 60A	METER CABINET
FUSED - DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 400A TRIP 12-LSTS	TIE DRAW OUT POWER AIR CIRCUIT BREAKER "1" 2000/3 FRAME 2000A/DYNAMIC TRIP ONLY	EMPTY BAY NO BREAKER	FUSED - DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP 12-NDPS2	FUSED - DRAW OUT POWER AIR CIRCUIT BREAKER 800/3 FRAME 800A TRIP 12-CDP
SPS-A 60A	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER "1" 2000/3 FRAME 2000A TRIP	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER "2" 2000/3 FRAME 2000A TRIP	600A BREAKER 12-EQTS	SPARE 1600A
SPARE 800A	EMPTY BAY NO BREAKER	FUSED - DRAW OUT POWER AIR CIRCUIT BREAKER 1600/3 FRAME 1600 A TRIP 12-CTS	2000A SPARE BREAKER	600A SPARE BREAKER

MAIN SWITCHGEAR - BUILDING # 12
WESTINGHOUSE MODEL DN-13212
INSTALLED 1978

NORMAL SOUTH WING

NORMAL EAST WING

NORMAL NORTH WING

PENTHOUSE
FOURTH FLOOR
THIRD FLOOR
SECOND FLOOR
FIRST FLOOR
GROUND FLOOR
BASEMENT

12-4P4 | 400 12-4P2 200MB | 400 12-4P1 200MB

2 SOUTH AHU
10 HP
VFD
D311 MECH. ROOM
3S-N3 100 MLO
100A 100A

3S-N2 225MB | 3S-N1 225MB

CORR 2S-N2 225MB | CORR 2S-N1 225MB
100A

CORR 1S-N2 225MB | CORR 1S-N1 225MB | CORR 1S-N3 225MB

CORR GS-N2 225MB | CORR GS-N1 225MB | CORR GS-N4 225MB | CORR GS-N3 100MB

COND. UNIT 60 FLA 15 TON 2 SOUTH WING
100A
PAD MOUNTED TRANSFORMER TF-12B 500KVA PRI: 12470Y/7200V SEC: 208Y/120V IMP:
TF-12B
100A A/C UNIT

PAD MOUNTED TRANSFORMER TF-12A 500KVA PRI: 12470Y/7200V SEC: 208Y/120V IMP:
TF-12A

MED WASTE ADDITION BE-N3 125 MLO

B5-N1 100MB | CORR B5-N2 200MB

BE-N1 225MB | BP-3 | BEN-2

3N-N1 225MB | 3N-N2 225MB
311A 311A

NUC MED EXHAUST FAN

CYSTOSCOPY X-RAY ROOM 254

A271 2E-N1 200MB

B216 2N-N1 225 MCB | B216 2N-N2 225 MCB 125A | CU-1
MECH. ROOM B216

A118 1E-N2 225A MLO | A118 1E-N1 225A MLO

B124 (2-DP3) 150 MCB | NORTH AHU | VFD

10 TON COND UNIT
100A
12 TON COND UNIT

3#1/0XHHW, 1 #3 NEUTRAL, 1 #6 GROUND 2"

CORR 1N-N1 225MB | CORR 1N-N2 225MB | ALCOVE 1N-N3
54

ELEC. CLOSET CORR GEN1 200MB | GEN2 225ML | GEN4 200MB

C001B GC-N1 | CORR 2N-N4 225MB

CORR 0N-N1 225MB | CORR 0N-N2 225MB | NUC MED AHU | NUC MED COND. UNIT

CHILLER AC/UNIT 200A
TF-12XR

B006 480V XRAY 12-DXR-1 RMSA | B006 480V XRAY 12-DXR-1 RMSD | 480V MOBILE CT SCANNER
150/3
110A
200

480V MOBILE CT SCANNER

MAIN BUS

GENERATOR DET "12G1" 400KW 208/120V 3 PHASE 4 WIRE

TO PRIMARY DISTRIBUTION TF-12A

TO ATS 12-LSTS | TO ATS 12-CTS | TO ATS 12-EQTS

2000A | 400/3 | 800/3 | 2000/3 | 800A/3 | 1600/3 | 800/3 | 800 | 2000A | 2000/3 | SPARE

EARTH | C.W. PIPE | BLDG STEEL

NORMAL POWER SECTION
2000A BUS, 208/120V, 3PH, 4 WIRE
100,000 A/C
WESTINGHOUSE TYPE DS-420
BREAKER TYPE DSL-206

TO PRIMARY DISTRIBUTION TF-12B

120PG

B40 | 100A 250A | 250A | 250A | 250A | 250A | 250A | 250A | 250A | 100A 250A | 2 SPACE

DISTRIBUTION PANEL "12-NDP1"
800A BUS, 200/120V, 3 PHASE 4 WIRE A/C
4/0 CU
WESTINGHOUSE TYPE CDP
CAT. # DN13212 IT.23

B40 | 250A | 250A | 250A | 250A | 4 - 250A SPARES | 40A | 100A 250A | 250A | 250A | 250A
15 16 40

DISTRIBUTION PANEL "12-NDP2"
800A BUS, 208/120V, 3 PHASE 4 WIRE A/C
CU
WESTINGHOUSE TYPE CDP
CAT. # DN13212 IT.24

TO PRIMARY DISTRIBUTION TRANSFORMER TF-12XR

B40 | 600 | 400A | 400A | 400A | 400A | 400A | 400A
CU
DISTRIBUTION PANEL "12-DXR1"
600A BUS, 480/277V, 3PHASE 4 WIRE A/C.
WESTINGHOUSE TYPE CDP
CAT. # DN13212 IT.26

FEEDER SCHEDULE

KEY	SETS	CONDUCTOR NO.	SIZE	NUETRAL	GND	TYPE	CONDUIT	NOTES
1	2	3	4/0	4/0	#2 AWG	THW	2-1/2"	
2	1	3	#4AWG	#4AWG	#8 AWG	THW	1-1/4"	
3	1	3	#1AWG	#1AWG	#6AWG	THW	2"	
4	1	3	3/0	3/0	#4	THW	2-1/2"	
5	2	3	500MCM	500MCM	2/0	THW	WIREWAY	
6	1	3	500MCM	500MCM		THW	3-1/2"	
7	2	3	500MCM	500MCM	2/0	THW	3-1/2"	
8	1	3	#2 AWG	#8 AWG		THW	2"	
9	1	3	2/0	2/0	#4 AWG		1 1/4"	
10	1	3	#2AWG	#2AWG		USE	2"	
11	1	3	#2AWG	#2AWG		USE	2-1/2"	
12	1	3	#2AWG	#2AWG		TW	2"	
13	1	3	#8AWG		#4AWG	THW	1-1/2"	
14	1	3	#4AWG	#4AWG		THW	2"	
15	1	3	#2AWG	#2AWG		TW	1-1/2"	
16	1	3	1/0		#4		1 1/2"	
17	1	3	#1AWG	#1AWG	#8AWG	THW	1-1/2"	
18	1	3	350MCM	350MCM		THW	3-1/2"	
19	2	3	500MCM	500MCM		XHHW	3"	
20	1	3	4/0			THW	2"	
21	1	3	4/0			RH	2-1/2"	
22	2	3	250MCM			RH	3"	
23	1	3	3/0			RH	2"	
24	1	3	4/0	4/0		XHHW		
25	1	3	1/0	1/0			2"	
26	1	3	#2 AWG	#2 AWG	#8 AWG	THW	2"	
27	1	3	500MCM	500MCM	#3 AWG	XHHW	3-1/2"	
28	2	3	500MCM	500MCM	1/0	XHHW	3-1/2"	
29	1	3	500MCM			RHW	3"	
30	2	3	350MCM	350MCM		THW	3"	
31	4	3	500MCM	500MCM		XHHW	3"	1-3" MT
32	4	3	500MCM	500MCM	4/0	XHHW	3-1/2"	
33	1	3	#2 AWG	#2 AWG		TW	1-1/4"	
34	1	3	4/0			THHN	2-1/2"	
35	1	3	4/0	4/0		THW	3"	
36	1	3	250MCM	250MCM		THW	2 1/2"	
37	1	3	1/0	1/0	#8 AWG	THW	2"	
38	1	3	500MCM	500MCM		XHHW	3"	
39	1	3	400MCM	400MCM		RH	3"	
40	1	3	#3 AWG		#8 AWG	THW	2"	
41	1	3	350MCM			THW	2-1/2"	
42	1	3	1/0			THW/TW	2"	
43	1	3	#3 AWG	#2 AWG	#6 AWG	TW		
44	1	3	#6 AWG			TW		
45	1	3	1/0	#8		THW/TW	2"	
46	1	3	3/0			THW	2"	
47	1	3	2/0	2/0		TW	2"	
48	1	3	4/0	4/0		TW	3"	
49	1	3	4/0	4/0		THW	2"	
50	1	2	350MCM	#6 AWG	#6 AWG	THW	2"	
51	1	3	4/0	4/0	#4	TW	2"	
52	1	3	#4 AWG			TW	2"	
53	1	3	4/0	4/0	#4	THW	2-1/2"	
54	1	3	4/0	4/0		TW	2-1/2"	
55	1	3	3/0	3/0	#6 AWG	XHHW/THW	2"	
56	1	3	250	250	#4 AWG		2 1/2"	
57	1	3	250	250			2"	
58	1	3	250	250			2"	
59	1	3	3/0	4/0		THW	3"	
60	1	3	4/0	4/0	#4	XHHW	2 1/2"	
61	1	3	1	1	#8	THHN	1 1/2"	
62	1	3	4		#8	THHN	1 1/2"	

Drawing Title: HOT SPRINGS BUILDING 12 NORMAL POWER RISER DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: OCT. 2013
			Project No.
Approved: Division Chief	Building Number: 12	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-7
			Dwg 8 OF 15

EMERGENCY SOUTH WING

EMERGENCY EAST WING

EMERGENCY NORTH WING

PENTHOUSE

FOURTH FLOOR

THIRD FLOOR

SECOND FLOOR

FIRST FLOOR

GROUND FLOOR

BASEMENT

LAB PENTHOUSE
4SC2A
ELEV. 3 CONTROL
ELEV. #3 150/3 CIRCUIT BREAKER
ROOM 400
4S-C2
4S-C1
ELEV. #5 125/3 DISC. SWITCH
EXISTING SURGERY AIR CONDITIONING MOTOR CONTROL CENTER.
SURGERY ROOFTOP PENTHOUSE
3E-MCC
CORR 3N-C1 225MB
CORR 300A 3S-C1 225MB 100A
300A 3S-C2 100A MLO
D21B 2S-LS1 100MB 225 MLO ELEC. CLOSET
D21B 2S-C1 225 MLO ELEC. CLOSET
2E-C2-IP1 OR PANEL RM. 263
2E-C2-IP2 OR PANEL RM. 263
OR PANEL RM. 263
OR PANEL RM. 260
OR PANEL RM. 254
2E-C2-IP2
2E-C2-IP4
2E-C2-IP5
271 2E-C4
271 2E-C1
271 2E-C3
271 2E-C2 ELEC. CLOSET
ICU MECH ROOM B216 2N-C1 225MB
B216 2N-LS1 100MB
2N-C2
ICU MECH ROOM B216
2 NORTH AHU
A118 1E-C1 1 EAST ELEC. ROOM
A118 1 EAST ELEC. ROOM 1E-LS1
CORR 1S-C1 225MB
CORR 1N-C1 225MB
CORR 1N-LS1 100MB
CORR GS-LS1 100MB
CORR GS-C1 225MB
D012A GS-C2
D01D GS-C3 MECH. ROOM D010
B8 BLDG. 53 53-LS1 100MB
D020-CAT SCAN BLDG BS-C2B
A030 GE-LS1
CORR 6N-C1 225MB
DB020 BS-C2A
DB19 ELEV. #4 100A DISC. SWITCH.
12A JTB BM BE-E01A 225MB
AB08D BEEQ2
AB02 ELEV. 7 CONTROL
ELEV. #7 200A DISCONNECT SWITCH
AB02 ELEVATOR 7 MACHINE ROOM
BE-EQ3
AB08B MCC BEEQ
GENERATOR ROOM B-LS1 100ML
AB06 TELEPHONE BUILDING BE-C2 150MB
AB06 BE-LS1 150MB
MAILROOM CORRIDOR BS-C1
DB020 MCC BS-C2
DB03 RPC CLOSET BS-C3
DB03 RPC CLOSET BS-C4
AB05 BE-EQ1 225MB
RMS CORR BE-C1 100MB

NORMAL SECTION

UNIT 101	UNIT 102	UNIT 103	UNIT 104	UNIT 105	EMERGENCY SECTION
FUSES - DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME 800A TRIP 12-MSP2	METER CABINET	METER CABINET TRANSFORMER B	SPD-B 60A	METER CABINET	
FUSES - DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME 400A TRIP 12-LSTS	TIE DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME NON-AUTOMATIC TRIP ONLY	EMPTY BAY NO BREAKER	FUSES - DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME 800A TRIP 12-MSP2	FUSES - DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME 800A TRIP 12-CDP	12-EQTS 800A
SPD-A 60A	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER 2000A FRAME 2000A TRIP	MAIN DRAW OUT POWER AIR CIRCUIT BREAKER 2000A FRAME 2000A TRIP	600A BREAKER 12-EQTS	SPARE 1600A	12-CTS FEED THRU MAIN 1600A
SPARE 800A	EMPTY BAY NO BREAKER	FUSES - DRAW OUT POWER AIR CIRCUIT BREAKER 1600A FRAME 1600 A TRIP 12-CTS	2000A SPARE BREAKER	600A SPARE BREAKER	12-LSTS 400A

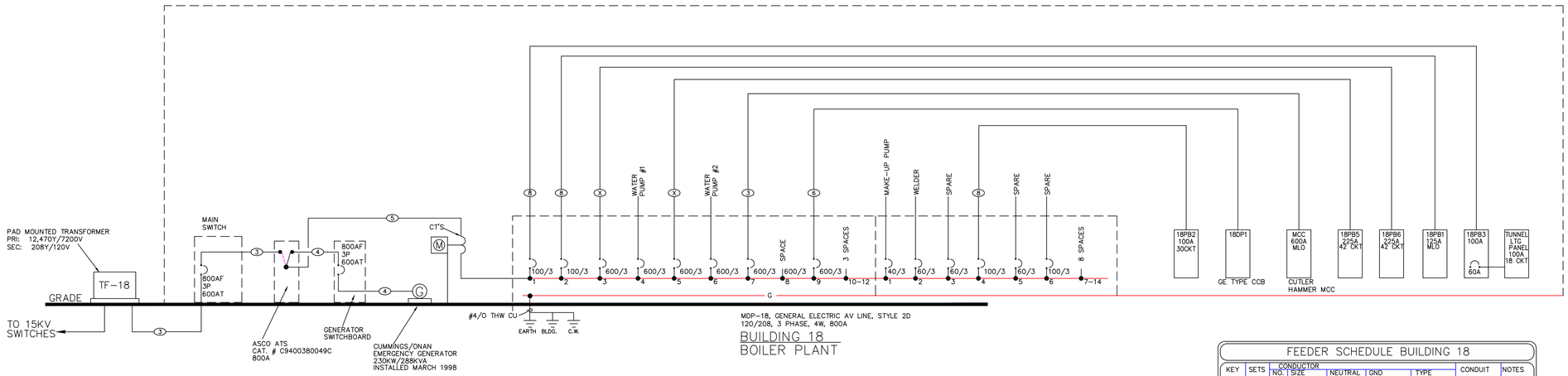
MAIN SWITCHGEAR - BUILDING # 12
WESTINGHOUSE MODEL DN-13212
INSTALLED 1978

ATS "12-LSTS" GSBD 400A
ATS "12-EQTS" 800A
TO NORMAL POWER SECTION MAIN SWITCHBOARD
NORMAL POWER
ATS "12-CTS" 1600A/3P
GENERATOR DET "12G1" 400KW 208/120V 3 PHASE 4 WIRE
1600/3 400/3 800/3
EARTH C.W. PIPE BLDG STEEL
#4/0 CU
EMERGENCY POWER SECTION 1600A BUS, 208/120V, 3PH, 4 WIRE 100,000 A/C
TO NORMAL POWER SECTION MAIN SWITCHBOARD
DIST PNL 12-LSDP 400A BUS, 208/120V 3 PHASE 4 WIRE A/C
LIFE SAFETY
#4 CU
DISTRIBUTION PANEL 12-CDP 800A BUS, 208/120V, 3 PHASE 4 WIRE A/C. CRITICAL
12-EQDP 800A MLO
EQUIPMENT
110-65 TO BUILDING 65 65-EQ1
MCC BE-EQ4

FEEDER SCHEDULE

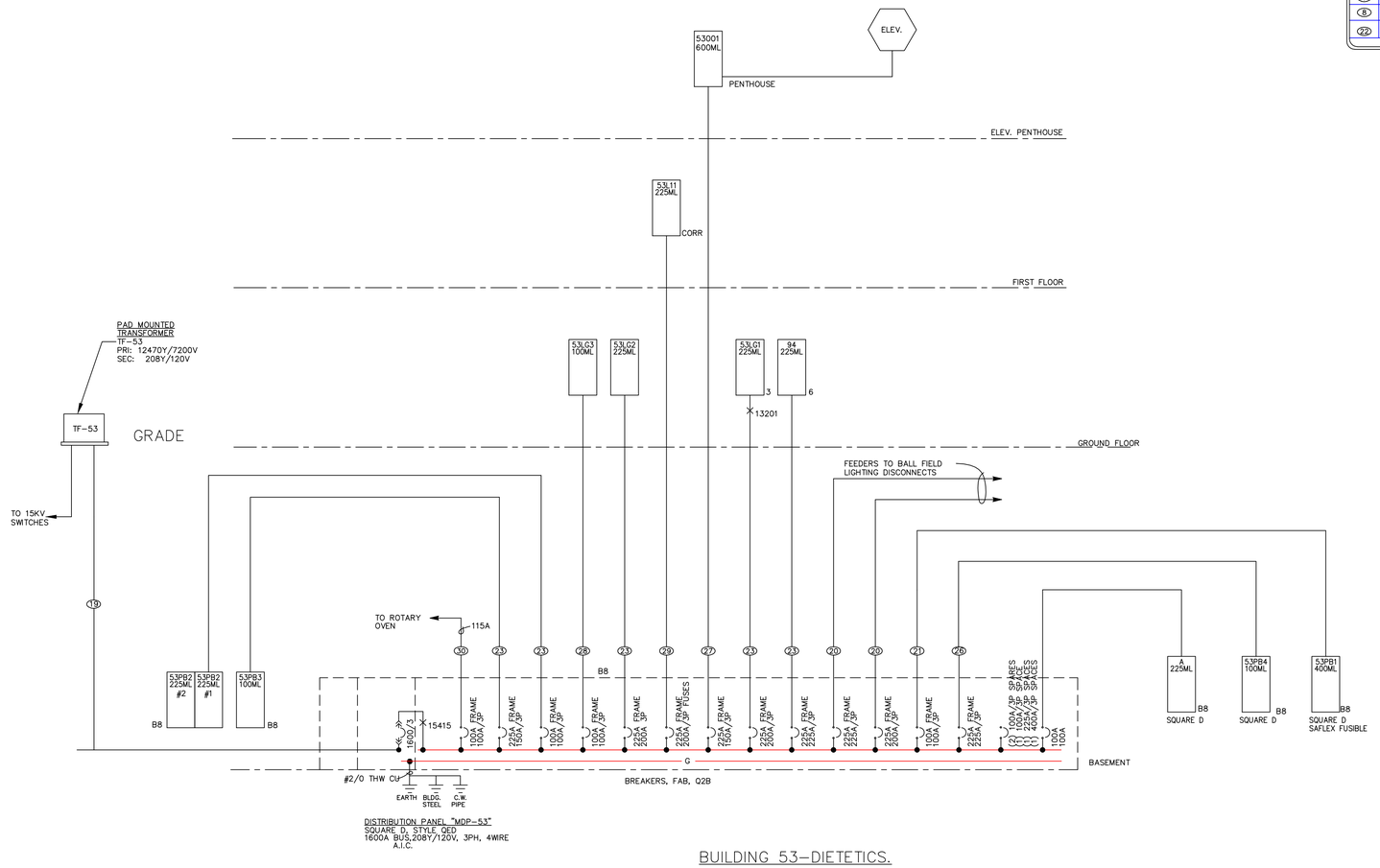
KEY	SETS	CONDUCTOR NO.	CONDUCTOR SIZE	NUETRAL	GND	TYPE	CONDUIT	NOTES
1	2	3	4/0	4/0	#2 AWG	THW	2-1/2"	
2	1	3	#4AWG	#4AWG	#8 AWG	THW	1-1/4"	
3	1	3	#1AWG	#1AWG	#6AWG	THW	2"	
4	1	3	3/0	3/0	#4	THW	2-1/2"	
5	2	3	500MCM	500MCM	2/0	THW	WIREWAY	
6	1	3	500MCM	500MCM		THW	3-1/2"	
7	2	3	500MCM	500MCM	2/0	THW	3-1/2"	
8	1	3	#2 AWG	#8 AWG		THW	2"	
9	1	3	2/0	2/0	#4 AWG		1 1/4"	
10	1	3	#2AWG	#2AWG		USE	2"	
11	1	3	#2AWG	#2AWG		USE	2-1/2"	
12	1	3	#2AWG	#2AWG		TW	2"	
13	1	3	#8AWG		#4AWG	THW	1-1/2"	
14	1	3	#4AWG	#4AWG		THW	2"	
15	1	3	#2AWG	#2AWG		TW	1-1/2"	
16	1	3	1/0		#4		1 1/2"	
17	1	3	#1AWG	#1AWG	#8AWG	THW	1-1/2"	
18	1	3	350MCM	350MCM		THW	3-1/2"	
19	2	3	500MCM	500MCM		XHHW	3"	
20	1	3	4/0			THW	2"	
21	1	3	4/0			RH	2-1/2"	
22	2	3	250MCM			RH	3"	
23	1	3	3/0			RH	2"	
24	1	3	4/0	4/0		XHHW		
25	1	3	1/0	1/0			2"	
26	1	3	#2 AWG	#2 AWG	#8 AWG	THW	2"	
27	1	3	500MCM	500MCM	#3 AWG	XHHW	3-1/2"	
28	2	3	500MCM	500MCM	1/0	XHHW	3-1/2"	
29	1	3	500MCM			RHW	3"	
30	2	3	350MCM	350MCM		THW	3"	
31	4	3	500MCM	500MCM		XHHW	3"	1-3" MT
32	4	3	500MCM	500MCM	4/0	XHHW	3-1/2"	
33	1	3	#2 AWG	#2 AWG		TW	1-1/4"	
34	1	3	4/0			THHN	2-1/2"	
35	1	3	4/0	4/0		THW	3"	
36	1	3	250MCM	250MCM		THW	2 1/2"	
37	1	3	1/0	1/0	#8 AWG	THW	2"	
38	1	3	500MCM	500MCM		XHHW	3"	
39	1	3	400MCM	400MCM		RH	3"	
40	1	3	#3 AWG		#8 AWG	THW	2"	
41	1	3	350MCM			THW	2-1/2"	
42	1	3	1/0			THW/TW	2"	
43	1	3	#3 AWG	#2 AWG	#6 AWG	TW		
44	1	3	#6 AWG			TW		
45	1	3	1/0	#8		THW/TW	2"	
46	1	3	3/0			THW	2"	
47	1	3	2/0	2/0		TW	2"	
48	1	3	4/0	4/0		TW	3"	
49	1	3	4/0	4/0		THW	2"	
50	1	2	350MCM	#6 AWG	#6 AWG	THW	2"	
51	1	3	4/0	4/0	#4	TW	2"	
52	1	3	#4 AWG			TW	2"	
53	1	3	4/0	4/0	#4	THW	2-1/2"	
54	1	3	4/0	4/0		TW	2-1/2"	
55	1	3	3/0	3/0	#6 AWG	XHHW/THW	2"	
56	1	3	250	250	#4 AWG		2 1/2"	
57	1	3	250	250			2"	
58	1	3	250	250			2"	
59	1	3	3/0	4/0		THW	3"	
60	1	3	4/0			THW		
61	1	3	4/0	4/0	4	XHHW	2 1/2"	
62	1	3	1	1	8	THHN	1 1/2"	

Drawing Title: HOT SPRINGS BUILDING 12 EMERGENCY POWER RISER DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS	Date: OCT. 2013	
		Project No.	
Approved: Division Chief	Building Number: 12	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA	DRAWING NO. E-8	Dwg. 9 OF 15



FEEDER SCHEDULE BUILDING 18

KEY	SETS	CONDUCTOR NO.	SIZE	NEUTRAL	GND	TYPE	CONDUIT	NOTES
③	2	3	500MCM	500MCM	2/0	XHHW	3-1/2"	
④	2	3	500MCM	500MCM	2/0	THW	4"	
⑤	2	3	500MCM	500MCM	2/0	THW	WIREWAY	
⑥	1	3	500MCM	500MCM		THW	3-1/2"	
⑧	1	3	#2 AWG	#2 AWG		THW	2"	
㉒	2	3	250MCM			RH	3"	

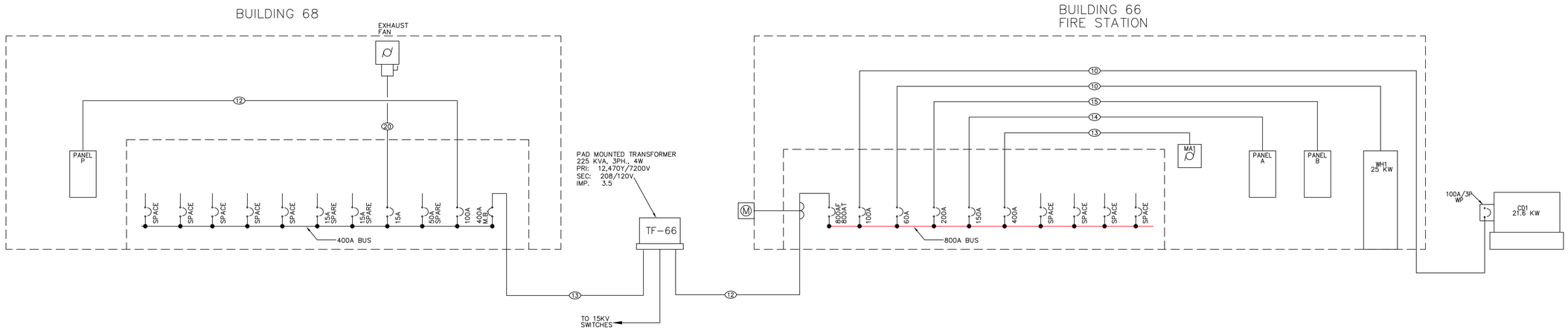


FEEDER SCHEDULE BUILDING 53

KEY	SETS	CONDUCTOR NO.	SIZE	NEUTRAL	GND	TYPE	CONDUIT	NOTES
①	1	3	500MCM	500MCM		XHHW		
②	1	3	250MCM		#2 AWG		3"	ISO. GR.
③	2	3	500MCM	500MCM	2/0	XHHW	3-1/2"	
④	2	3	500MCM	500MCM	2/0	THW	4"	
⑤	2	3	500MCM	500MCM	2/0	THW	WIREWAY	
⑥	1	3	500MCM	500MCM		THW	3-1/2"	
⑦	2	3	500MCM	500MCM	2/0	THW	3-1/2"	
⑧	1	3	#2 AWG	#2 AWG		THW	2"	
⑨	1	3	4/0	4/0		USE	3"	
⑩	1	3	#2AWG	#2AWG		USE	2"	
⑪	1	3	#2AWG	#2AWG		USE	2-1/2"	
⑫	1	3	#2AWG	#2AWG		TW	2"	
⑬	1	3	#4AWG	#4AWG		THW	1-1/2"	
⑭	1	3	#4AWG	#4AWG		THW	2"	
⑮	1	3	#2AWG	#2AWG		TW	1-1/2"	
⑯	1	3	#6AWG			R	1"	
⑰	1	3	#1AWG	#1AWG		THW	1-1/2"	
⑱	1	3	350MCM	350MCM		THW	3-1/2"	
⑲	2	3	500MCM	500MCM		XHHW	3"	
⑳	1	3	4/0			THW	2"	
㉑	1	3	4/0			RH	2-1/2"	
㉒	2	3	250MCM			RH	3"	
㉓	1	3	3/0			RH	2"	
㉔	1	3	4/0	4/0		XHHW		
㉕	1	3	1/0			RH	2"	
㉖	1	2	#2 AWG	#2 AWG	#8 AWG	THW	2"	
㉗	1	3	250MCM	250MCM		RHH	3"	
㉘	1	3	#1 AWG	#1 AWG			2"	
㉙	1	3	3/0			THHN	2"	
㉚	1	3	#2			THW	1 1/4"	
㉛								

BUILDING 53-DIETETICS.

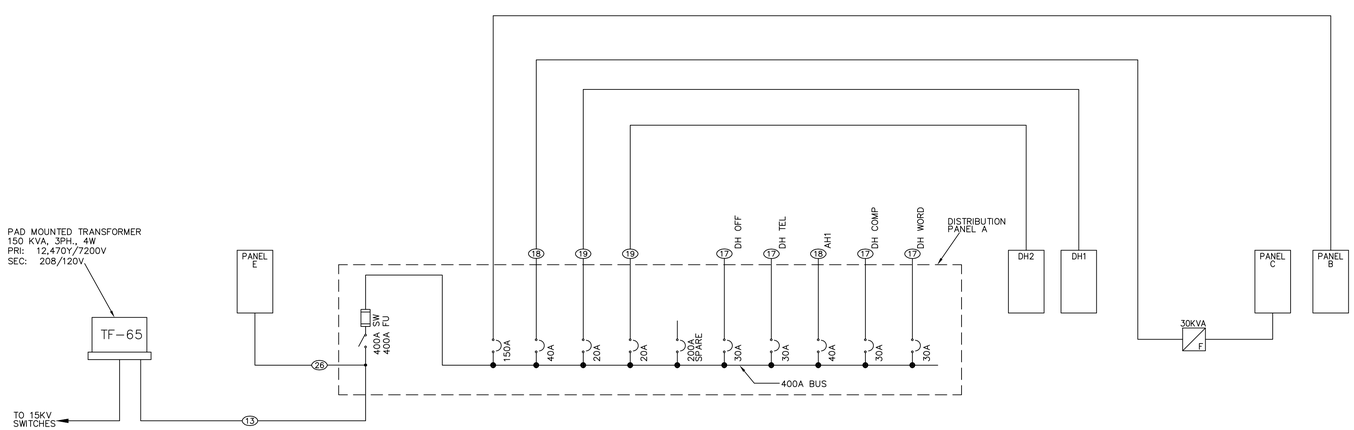
Drawing Title: HOT SPRINGS BUILDINGS 18 & 53 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 18, 53	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-9
			Dwg. 10 Of 15



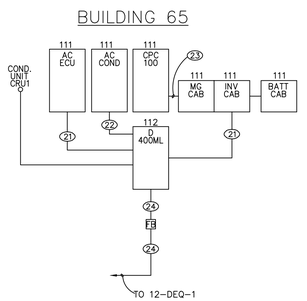
BUILDING 66/68
FIRE STATION, FORMER INCINERATOR

FEEDER SCHEDULE BUILDING 53

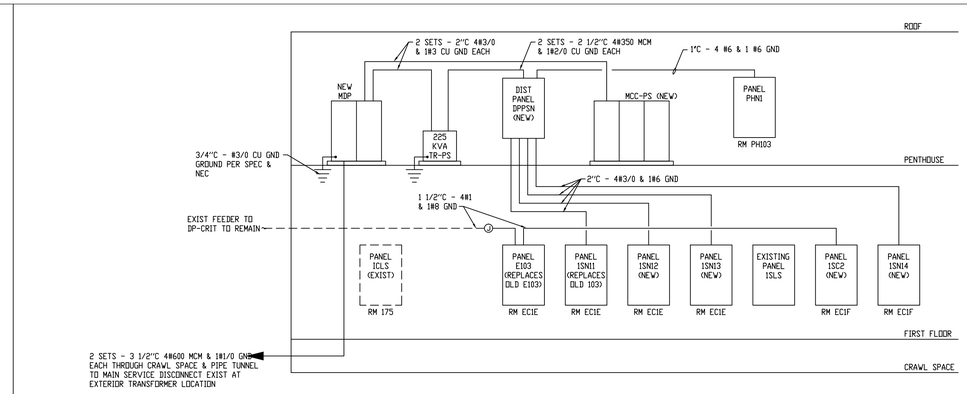
KEY	SETS	CONDUCTOR NO.	SIZE	NEUTRAL	GND	TYPE	CONDUIT	NOTES
①	1	2	3/0	3/0		THW	2"	
②	1	2	1/0	1/0		THW	1-1/2"	ISO. GR.
③	1	2	4/0	4/0		THW	2"	
④	1	2	2/0	2/0		THW	1-1/2"	
⑤	1	2	1/0	1/0		THW	2"	
⑥	1	2	350MCM	350MCM		XHHW	2-1/2"	
⑦	1	2	500MCM	500MCM		XHHW	3"	
⑧	1	2	#1 AWG	#1 AWG		THW	2"	
⑨	1	2	#1 AWG	#1 AWG		THW	1-1/2"	
⑩	1	2	#2 AWG	#2 AWG		THW	2"	
⑪	1	2	#2 AWG	#2 AWG		THW	1-1/2"	
⑫	2	3	#2 AWG	#2 AWG		THW	3"	
⑬	1	3	500 MCM	500 MCM	#2 AWG	THW	3"	
⑭	1	3	1/0	1/0	#6 AWG	THW	2"	
⑮	1	3	3/0	3/0	#6 AWG	THW	2"	
⑯	1	2	#2 AWG	#2 AWG	#8 AWG	THW	1-1/4"	
⑰	1	2	#10 AWG	#10 AWG		TW	3/4"	
⑱	1	2	#8 AWG	#8 AWG		TW	3/4"	
⑲	1	2	#12 AWG	#12 AWG		TW	1/2"	
⑳	1	3	#12 AWG	#12 AWG		TW	3/4"	
㉑	1	3	1/0		#4		1-1/2"	
㉒	1	3	#8		#4	THW	1-1/2"	
㉓	1	3	2/0	2/0	#4		1-1/4"	
㉔	1	3	250	250	#4		2-1/2"	
㉕	1	3	#6				1"	
㉖	1	3	#4	#4		THW		



BUILDING 65
COMPUTER BLDG.



Drawing Title: HOT SPRINGS BUILDINGS 65, 66 & 68 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 65,66,68	Checked	Drawn: DS
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-10 Dwg 11 OF 15

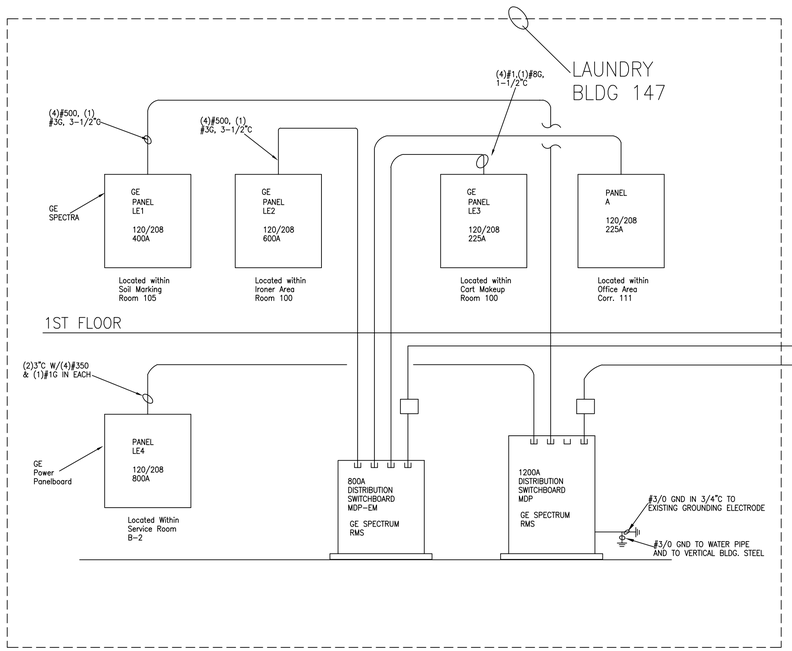


CLINIC ADDITION DISTRIBUTION RISER

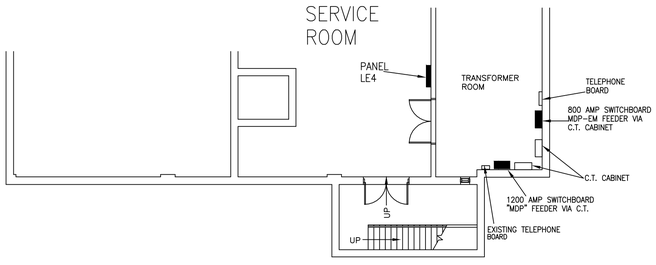
NO SCALE:

WESTINGHOUSE
POWER-LINE C

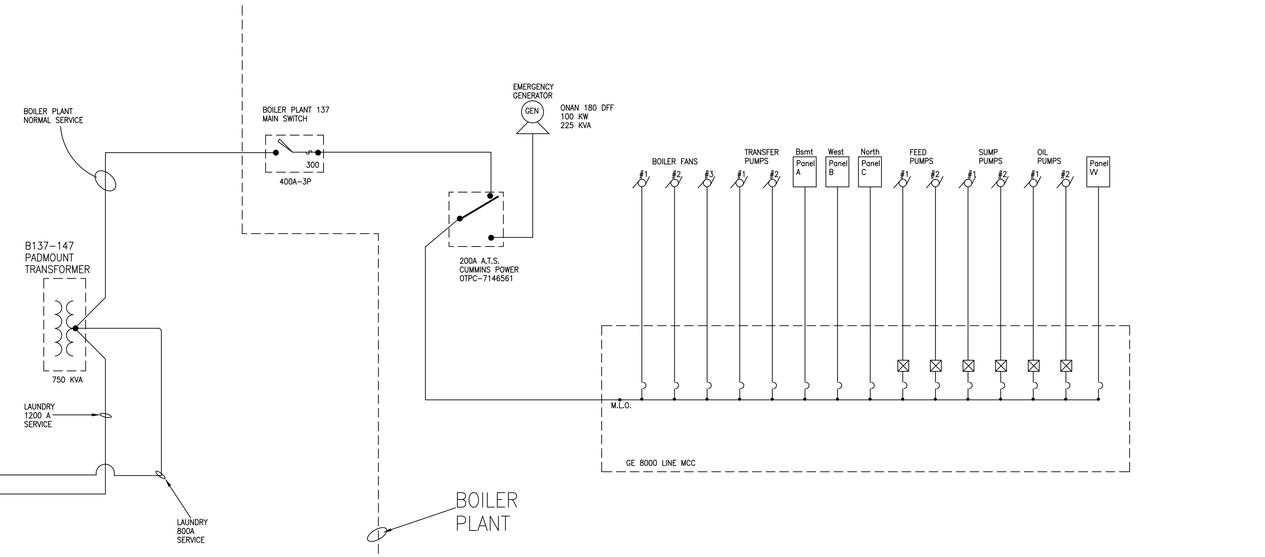
Drawing Title: FORT MEADE BUILDING 113 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 113	Checked: JW / Drawn: NH	DRAWING NO. E-11
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		Dwg.12 OF 15



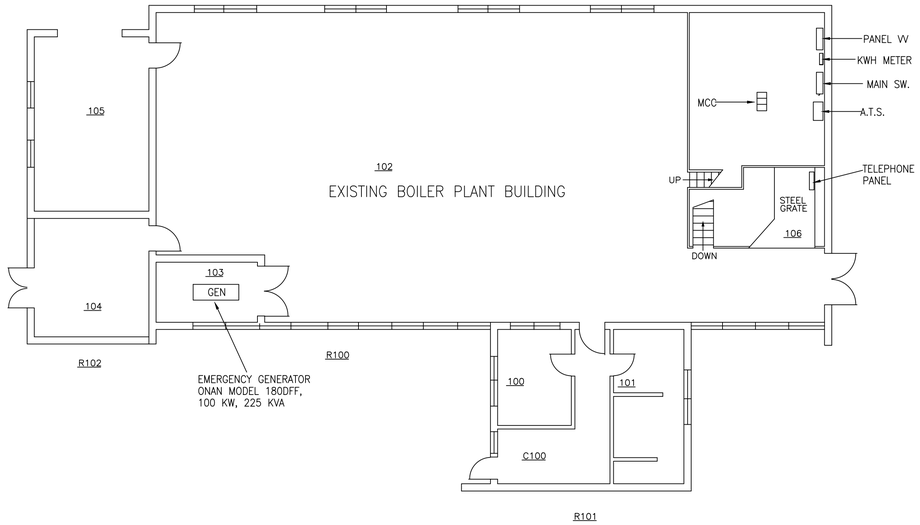
LAUNDRY BUILDING 147
ELECTRICAL RISER DIAGRAM



LAUNDRY BUILDING 147
BASEMENT FLOOR PLAN
ELECTRICAL RISER DIAGRAM

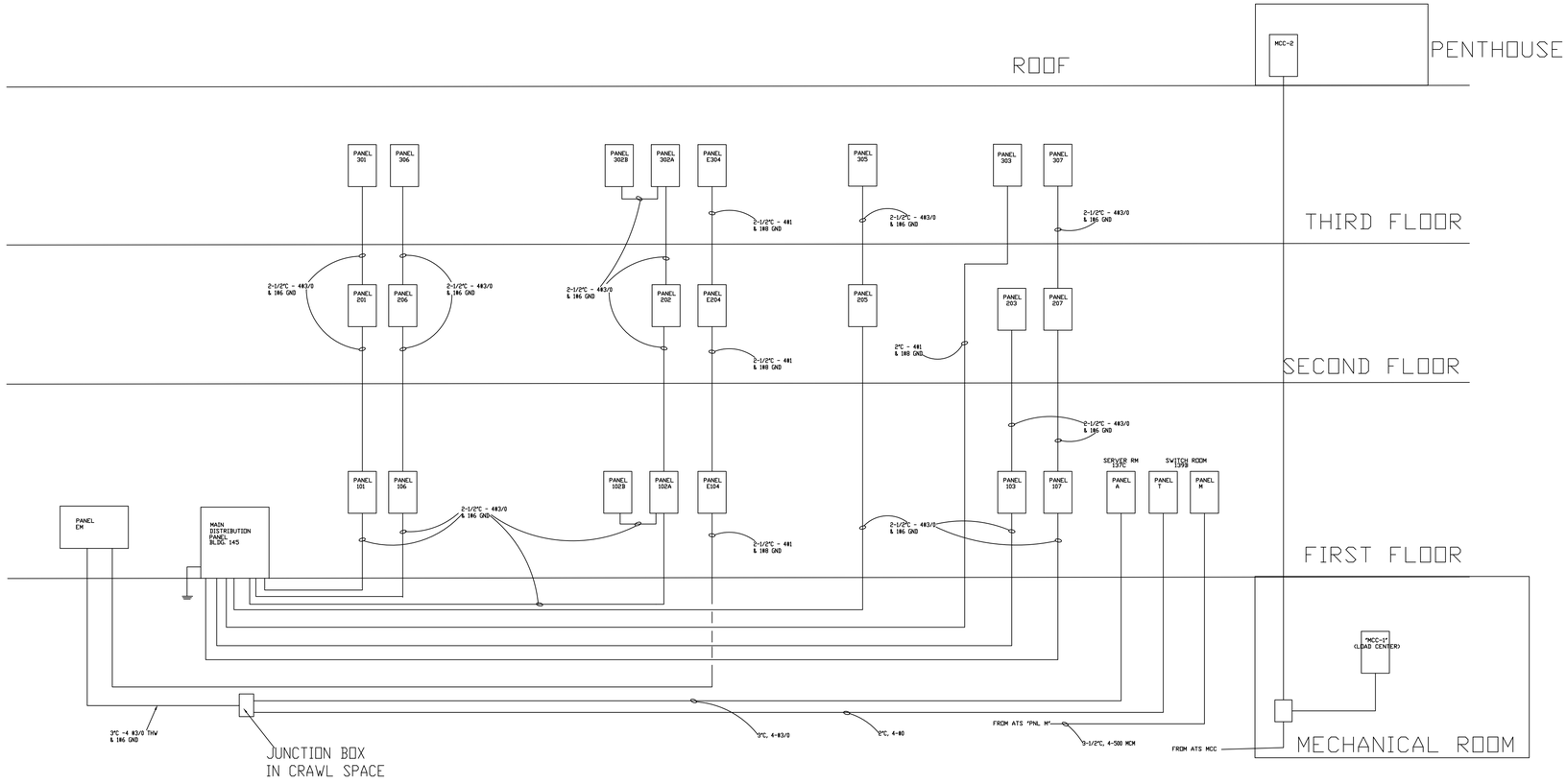


BOILER PLANT BLDG. 137 ONE LINE

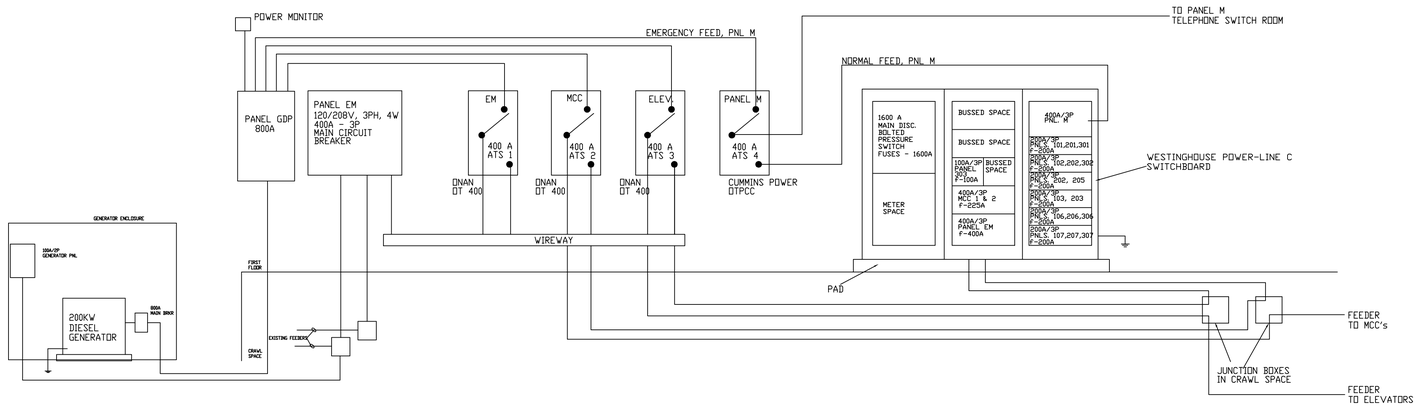


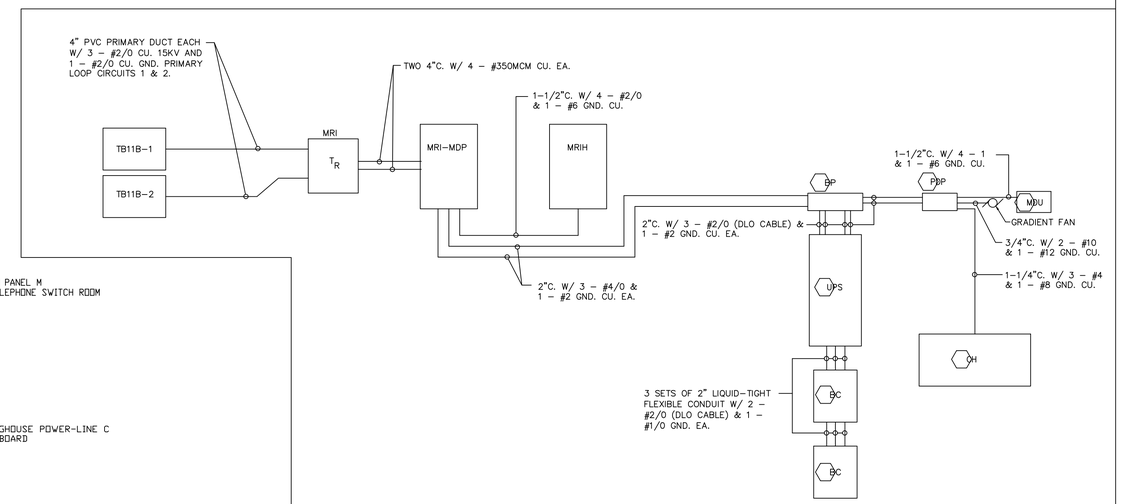
FIRST FLOOR BUILDING #137 – BOILER PLANT

Drawing Title: FORT MEADE BUILDING 137 & 147 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS			Date: Oct. 2013
				Project No.
Approved: Division Chief	Building Number: 137, 147	Checked	Drawn: DS	DRAWING NO. E-12
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA			Dwg.13 Of 15



PANEL SCHEDULES							
VOLTAGE - 120/208V, 3PH, 4W							
DESIGNATION	BUS	MAIN LUGS	SUBFEED LUGS	MOUNTING	BREAKERS	SPACES (POLES)	SPARES
101	225A	X	X	SURFACE	26-20A/1P 6-30A/1P 2-20A/2P 3-30A/2P		
102A	225A	X	X X (2)	SURFACE	47-20A/1P 3-30A/2P 1-40A/3P		4-20A/1P 12-30A/2P
102B	225A	X		SURFACE			
103	225A	X	X	SURFACE	30-20A/1P 3-30A/1P 2-20A/2P 1-30A/2P 1-40A/2P	1	
E104	100A	X	X	SURFACE	20-20A/1P 1-20A/2P	3	5-20A/1P
201	225A	X	X	SURFACE	33-20A/1P 1-30A/1P 1-50A/3P		6-20A/1P
202	225A	X	X	SURFACE	32-20A/1P 3-20A/2P 1-30A/2P		
203	225A	X		SURFACE	31-20A/1P 2-30A/2P 1-50A/3P		
E204	100A	X	X	SURFACE	12-20A/1P	3	5-20A/1P
205							
301	225A	X		SURFACE	28-20A/1P 1-20A/2P 1-30A/2P 1-30A/3P 1-50A/3P	4	
302A	225A	X	X	SURFACE	35-20A/1P 1-30A/1P 2-20A/2P 1-30A/2P	12	6-20A/1P 12-30A/2P
302B	225A	X		SURFACE			
303	225A	X		SURFACE	31-20A/1P 1-30A/1P 3-30A/2P	4	
E304	100A	X		SURFACE	12-20A/1P	3	9-20A/1P
305	225A	X		FLUSH	16-20A/1P 1-30A/1P 1-30A/2P 1-50A/2P 1-20A/3P	6	6-30A/2P
106, 107 206, 207	225A	X	X	SURFACE	18-30A/2P	6	
307	225A	X		SURFACE	18-30A/2P	6	
306	225A	X		SURFACE	4-20A/1P 1-20A/2P 12-30A/2P	12	
EM	225A	X		SURFACE	1-200A/3P 1-60A/3P 12-20A/1P	12	
A	225A	X		SURFACE			
T	200A	X		SURFACE			
M	400A	X		SURFACE			





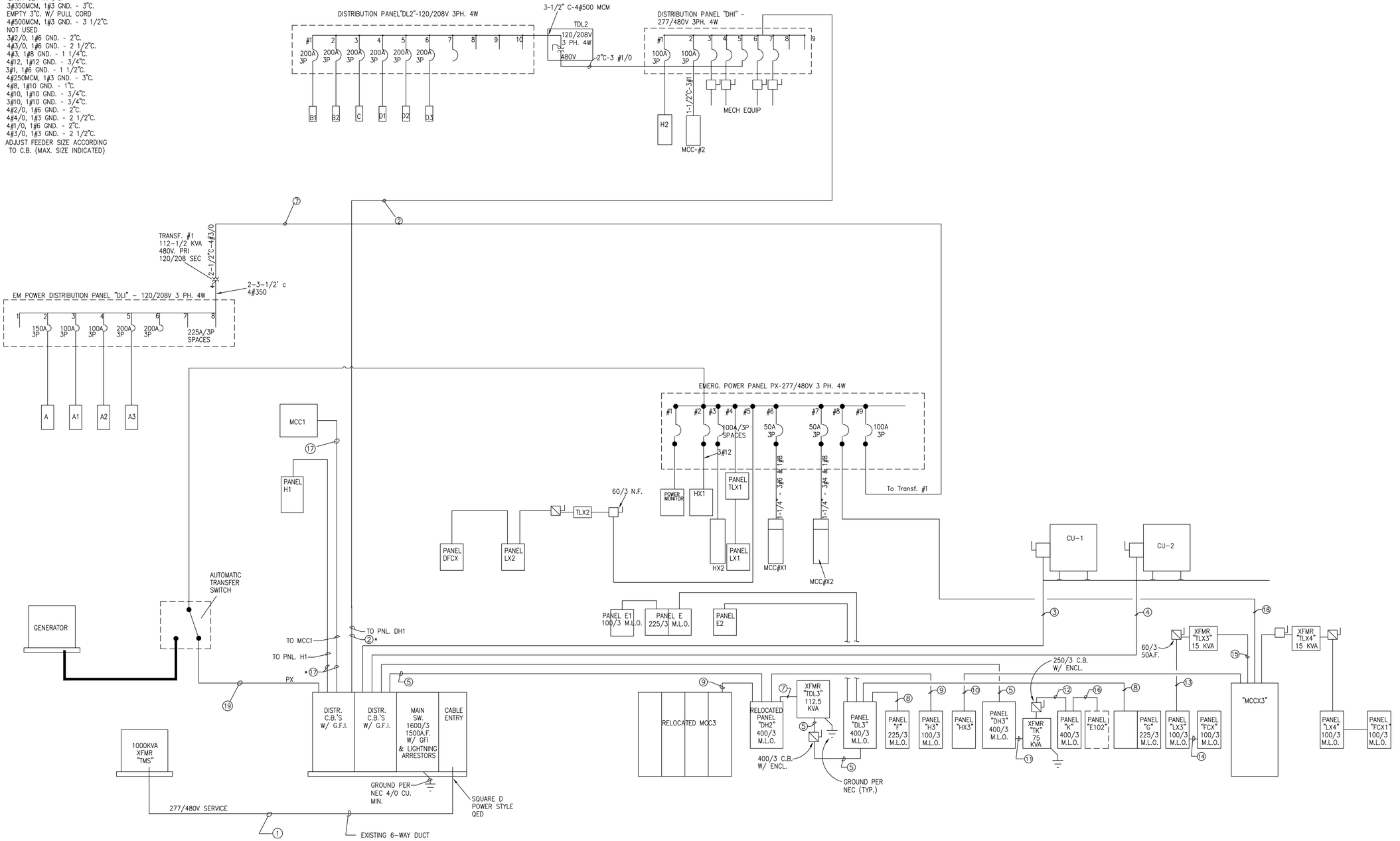
MRI POWER RISER
NO SCALE

Drawing Title: FORT MEADE BUILIDING 145 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 145	Checked:	Drawn: NH
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO. E-13 Dwg.14 OF 15

FEEDER SCHEDULE: ◯

1. 5 SETS - 4#400MCM, 1#4/0 GND. IN EXT'G 4"C. @ 6-WAY DUCT
2. 2 SETS - 4#350MCM, 1#1 GND. EACH SET IN 3"C.
3. 3#350MCM, 1#3 GND. - 3"C.
4. EMPTY 3"C. W/ PULL CORD
5. 4#500MCM, 1#3 GND. - 3 1/2"C.
6. NOT USED
7. 3#2/0, 1#6 GND. - 2"C.
8. 4#3/0, 1#6 GND. - 2 1/2"C.
9. 4#3, 1#8 GND. - 1 1/4"C.
10. 4#12, 1#12 GND. - 3/4"C.
11. 3#1, 1#6 GND. - 1 1/2"C.
12. 4#250MCM, 1#3 GND. - 3"C.
13. 4#8, 1#10 GND. - 1"C.
14. 4#10, 1#10 GND. - 3/4"C.
15. 3#10, 1#10 GND. - 3/4"C.
16. 4#2/0, 1#6 GND. - 2"C.
17. 4#4/0, 1#3 GND. - 2 1/2"C.
18. 4#1/0, 1#6 GND. - 2"C.
19. 4#3/0, 1#3 GND. - 2 1/2"C.

"*" ADJUST FEEDER SIZE ACCORDING TO C.B. (MAX. SIZE INDICATED)



ELECTRICAL RISER DIAGRAM

NO SCALE

BLDG. 148-NHCU

Drawing Title: FORT MEADE BUILDING 148 ONE-LINE DIAGRAM	Project Title: TESTING & CALIBRATING ELECTRICAL SYSTEMS		Date: Oct. 2013
			Project No.
Approved: Division Chief	Building Number: 148	Checked	Drawn: NH
Approved: Service Director	Location: HOT SPRINGS, SOUTH DAKOTA		DRAWING NO.: E-14 Dwg.15 Of 15