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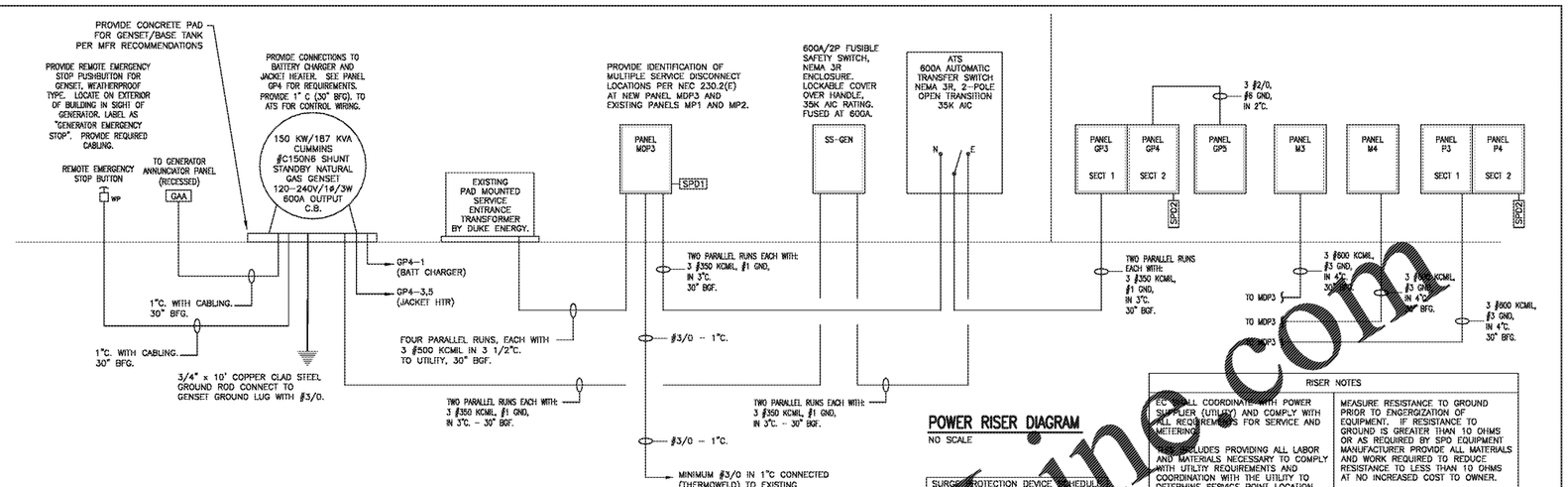

POWER RISER DIAGRAM

NO SCALE

SURGE PROTECTION DEVICE SCHEDULE

SPD1	MFR	#TEO1XDS204XZ
SPD2	MFR	#TEO1XCS1[illegible]

RISER NOTES

1. COORDINATE WITH POWER SUPPLIER (UTILITY) AND COMPLY WITH ALL REQUIREMENTS FOR SERVICE AND METERING.
2. INCLUDES PROVIDING ALL LABOR AND MATERIALS NECESSARY TO COMPLY WITH UTILITY REQUIREMENTS AND COORDINATION WITH THE UTILITY TO DETERMINE SERVICE POINT LOCATION AND TYPE.

POWER UTILITY: DUKE ENERGY
CONTACT: BOBBY LOWDER
PHONE: (803) 934-2521

COORDINATE WITH UTILITY FOR LOCATION AND REQUIREMENTS OF C.T. CABINET.

LABEL EQUIPMENT PER NEC 110.16, 110.21.

MEASURE RESISTANCE TO GROUND PRIOR TO ENGERGIZATION OF EQUIPMENT. IF RESISTANCE TO GROUND IS GREATER THAN 10 OHMS OR AS REQUIRED BY SPD EQUIPMENT MANUFACTURER PROVIDE ALL MATERIALS AND WORK REQUIRED TO REDUCE RESISTANCE TO LESS THAN 10 OHMS AT NO INCREASED COST TO OWNER.

A/C RATINGS ARE BASED ON A 167KVA PAD MOUNTED UTILITY TRANSFORMER WITH 3.0% IMPEDANCE, 240/120V LOCATED 50' FROM SERVICE ENTRANCE EQUIPMENT WITH AVAILABLE SHORT CIRCUIT CURRENT OF 38,220 AMPS LINE TO GROUND AT 120V AND 23,190 AMPS LINE TO LINE AT 240 VOLTS.

ALL SERVICE EQUIPMENT SHALL BE MARKED WITH MAXIMUM AVAILABLE FAULT CURRENT PER NEC 110.24.

NAME : MDP3 | BUS AMPS : 1200A | SERVICE RATED
SYSTEM : NORMAL | MAIN : 1200A MAIN CIRCUIT BREAKER | NEMA 3R
TYPE : SQUARE D I-LINE | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	PANEL M3	SEE RISER		82.0	400		A						PREPARED SPACE	2
3								B					PREPARED SPACE	4
5	PANEL M4	SEE RISER		81.2	400								PREPARED SPACE	6
7							B						PREPARED SPACE	8
9	PANEL P3/P4	SEE RISER		86.2	400		A						PREPARED SPACE	10
11								B					PREPARED SPACE	12
13	PANEL GP3/GP4	SEE RISER		85.4	600		A						PREPARED SPACE	14
15								B					PREPARED SPACE	16
17	PREPARED SPACE						A						PREPARED SPACE	18
19	PREPARED SPACE							B					PREPARED SPACE	20
21	PREPARED SPACE						A						PREPARED SPACE	22
23	PREPARED SPACE							B					PREPARED SPACE	24
25	PREPARED SPACE						A						PREPARED SPACE	26
27	PREPARED SPACE							B					PREPARED SPACE	28
29	PREPARED SPACE						A						PREPARED SPACE	30
31	PREPARED SPACE							B					PREPARED SPACE	32
33	PREPARED SPACE						A						PREPARED SPACE	34
35	PREPARED SPACE							B					PREPARED SPACE	36
37	PREPARED SPACE						A						PREPARED SPACE	38
39	PREPARED SPACE							B					PREPARED SPACE	40
41	PREPARED SPACE						A		40		1	8	SPD1	42

CONNECTED LOAD, THIS SECTION (KVA): 314.8

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : P3 | BUS AMPS : 400A | SECTION 1
SYSTEM : NORMAL | MAIN : MAIN LUGS ONLY
TYPE : SQUARE D NQOD | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	RECEPTACLES	12	1/2	0.8	20		A		20	0.8	1/2	12	RECEPTACLES	2
3	RECEPTACLES	12	1/2	0.6	20			B	20	0.8	1/2	12	RECEPTACLES	4
5	RECEPTACLES	12	1/2	1.8	20		A		20	0.8	1/2	12	RECEPTACLES	6
7	RECEPTACLES	12	1/2	0.4	20			B	20	0.8	1/2	12	RECEPTACLES	8
9	RECEPTACLES	12	1/2	1.0	20		A		20	0.8	1/2	12	RECEPTACLES	10
11	RECEPTACLES	12	1/2	0.8	20			B	20	0.8	1/2	12	RECEPTACLES	12
13	RECEPTACLES	12	1/2	0.8	20		A		20	1.4	1/2	12	RECEPTACLES	14
15	RECEPTACLES	12	1/2	0.8	20			B	20	1.0	1/2	12	RECEPTACLES	16
17	RECEPTACLES	12	1/2	0.8	20		A		20	0.8	1/2	12	RECEPTACLES	18
19	RECEPTACLES	12	1/2	0.8	20			B	20	0.8	1/2	12	RECEPTACLES	20
21	RECEPTACLES	12	1/2	0.8	20		A		20	0.8	1/2	12	RECEPTACLES	22
23	RECEPTACLES	12	1/2	0.8	20			B	20	0.8	1/2	12	RECEPTACLES	24
25	RECEPTACLES	12	1/2	1.2	20		A		20	0.8	1/2	12	RECEPTACLES	26
27	RECEPTACLES	12	1/2	0.6	20			B	20	1.0	1/2	12	MICROWAVE	28
29	RECEPTACLES	12	1/2	1.2	20		A		20	0.8	1/2	12	SCALES	30
31	RECEPTACLES	12	1/2	0.6	20			B	20	0.8	1/2	12	FUTURE PROJECTOR	32
33	RECEPTACLES	12	1/2	0.6	20		A		20				SPARE	34
35	RECEPTACLES	12	1/2	1.0	20			B	20				SPARE	36
37	SPARE				20		A		20				SPARE	38
39	SPARE				20			B	20				SPARE	40
41	SPARE				20		A		20				SPARE	42

CONNECTED LOAD, THIS SECTION (KVA): 28.0
CONNECTED LOAD, ALL SECTIONS (KVA): 86.2
SECTION 1 OF A TWO SECTION PANELBOARD. PROVIDE FEED THRU LUGS AND FULL SIZE FEEDER EXTENSION TO SECTION 2.

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : M3 | BUS AMPS : 400A
SYSTEM : NORMAL | MAIN : MAIN LUGS ONLY
TYPE : SQUARE D NF | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	PREPARED SPACE						A						PREPARED SPACE	2
3								B						4
5	HP-2	6	1	9.2	45		A		25	3.13	3/4	10	HP-2A	6
7								B						8
9	HP-3	6	1	9.2	45		A		25	3.13	3/4	10	HP-3A	10
11								B						12
13	HP-4	6	1	9.2	45		A		25	3.13	3/4	10	HP-4A	14
15								B						16
17	HP-5	6	1	9.2	45		A		25	3.13	3/4	10	HP-5A	18
19								B						20
21	HP-6	4	1 1/4	11.3	60		A		35	4.59	3/4	8	HP-6A	22
23								B						24
25	HP-7	4	1 1/4	11.3	60		A		45	5.43	1	6	HP-7A	26
27								B						28
29	PREPARED SPACE						A						PREPARED SPACE	30
31	PREPARED SPACE							B					PREPARED SPACE	32
33	PREPARED SPACE						A						PREPARED SPACE	34
35	PREPARED SPACE							B					PREPARED SPACE	36
37	PREPARED SPACE						A						PREPARED SPACE	38
39	PREPARED SPACE							B					PREPARED SPACE	40
41	PREPARED SPACE						A						PREPARED SPACE	42

CONNECTED LOAD, THIS SECTION (KVA): 81.94

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : GP3 | BUS AMPS : 600A | SECTION 1
SYSTEM : STANDBY | MAIN : MAIN LUGS ONLY
TYPE : SQUARE D NQOD | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	LIGHTS	12	1/2	0.8	20		A		20	0.4	1/2	12	LCP	2
3	LIGHTS	12	1/2	0.8	20			B	20	0.4	1/2	12	FACP ***	4
5	RECEPTACLES	12	1/2	0.5	20		A		20	0.8	1/2	12	RECEPTACLES	6
7	LIGHTS	12	1/2	0.4	20			B	20	0.8	1/2	12	RECEPTACLES	8
9	LIGHTS	12	1/2	0.4	20		A		20	0.8	1/2	10	AUTOMATIC DOOR	10
11	LIGHTS	12	1/2	0.8	20			B	20	0.8	1/2	10	AUTOMATIC DOOR	12
13	LIGHTS	12	1/2	0.7	20		A		20	0.8	1/2	10	AUTOMATIC DOOR	14
15	LIGHTS	12	1/2	1.0	20			B	20	0.8	1/2	10	COPIER	16
17	LIGHTS	12	1/2	0.8	20		A		20	0.8	1/2	12	RECEPTACLES	18
19	LIGHTS	12	1/2	0.6	20			B	20	0.8	1/2	12	COPIER	20
21	RECEPTACLES	12	1/2	0.6	20		A		20	0.8	1/2	12	RECEPTACLES	22
23	RECEPTACLES	12	1/2	0.6	20			B	20	0.8	1/2	12	SCALES	24
25	RECEPTACLES	12	1/2	0.6	20		A		20	0.8	1/2	12	REFRIGERATOR	26
27	RECEPTACLES	12	1/2	0.6	20			B	20	0.8	1/2	12	REFRIGERATOR	28
29	WHEELCHAIR SCALES	10	1/2	0.8	20		A		20	0.8	1/2	12	REFRIGERATOR	30
31	LIGHTS	12	1/2	0.8	20			B	20	0.8	1/2	12	SCALES	32
33	RECEPTACLES	12	1/2	0.4	20		A		20	0.8	1/2	12	RECEPTACLES	34
35	RECEPTACLES	12	1/2	0.4	20			B	20	0.8	1/2	10	AUTOMATIC DOOR	36
37	RECEPTACLES	12	1/2	0.6	20		A		20	0.8	1/2	10	AUTOMATIC DOOR	38
39	RECEPTACLES	12	1/2	1.0	20			B	20				SPARE	40
41	RECEPTACLES	12	1/2	0.8	20		A		20				SPARE	42

CONNECTED LOAD, THIS SECTION (KVA): 52.7
CONNECTED LOAD, ALL SECTIONS (KVA): 85.4
SECTION 1 OF A TWO SECTION PANELBOARD. PROVIDE FEED THRU LUGS AND FULL SIZE FEEDER EXTENSION TO SECTION 2.

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED
*** LABEL AND PROVIDE LOCKING PROVISIONS ON BREAKER PER NFPA 72.

NAME : P4 | BUS AMPS : 400A | SECTION 2
SYSTEM : NORMAL | MAIN : MAIN LUGS ONLY
TYPE : SQUARE D NQOD | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	RECEPTACLES	12	1/2	0.8	20		A		20	1.0	1/2	12	RECEPTACLES	2
3	RECEPTACLES	12	1/2	0.8	20			B	20	1.2	1/2	10	RECEPTACLES	4
5	RECEPTACLES	12	1/2	0.8	20		A		20	1.2	1/2	10	RECEPTACLES	6
7	RECEPTACLES	12	1/2	0.8	20			B	20	1.2	1/2	10	RECEPTACLES	8
9	RECEPTACLES	12	1/2	1.2	20		A		20	0.8	1/2	10	ATTIC RECEPTACLES	10
11	RANGE HOOD	12	1/2	1.2	20			B	20	1.2	1/2	10	RECEPTACLES	12
13	RECEPTACLES	12	1/2	1.2	20		A		20	0.8	1/2	10	ATTIC LIGHTING	14
15	RECEPTACLES	12	1/2	1.8	20			B	20	0.8	1/2	10	ROOF HOODS	16
17	RECEPTACLES	12	1/2	0.8	20		A		20	0.8	1/2	10	RANGE HOOD	18
19	RECEPTACLES	12	1/2	0.8	20			B	20	0.8	1/2	10	WATER COOLER	20
21	RECEPTACLES	12	1/2	0.8	20		A		20	0.6	1/2	10	RECEPTACLES	22
23	RECEPTACLES	12	1/2	0.4	20			B	20	0.8	1/2	10	RECEPTACLES	24
25	RECEPTACLES	12	1/2	1.2	20		A		20	0.6	1/2	10	RECEPTACLES	26
27	RECEPTACLES	10	1/2	0.6	20			B	20	1.0	1/2	10	MICROWAVE	28
29	RECEPTACLES	10	1/2	0.8	20		A		20	0.8	1/2	12	FUTURE PROJECTOR	30
31	----- SHUNT TRIP -----				20			B	20					32
33	RANGE	6	1	6.0	50ST		A		20					34
35								B	20	1.0	3/4	10		36
37	RANGE	6	1	6.0	50ST		A		20					38
39								B	30			10	SPD2	40
41	----- SHUNT TRIP -----						A							42

CONNECTED LOAD, THIS SECTION (KVA): 38.2

SECTION 2 OF A TWO SECTION PANELBOARD.
-- SUBSCRIPT "ST" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A SHUNT TRIP TYPE CIRCUIT BREAKER.
-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : M4 | BUS AMPS : 400A
SYSTEM : NORMAL | MAIN : MAIN LUGS ONLY
TYPE : SQUARE [illegible] | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K A | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
	[illegible]	4	1	11.3	60		A		45	5.84	1	6	HP-8A	2
3	HP-9	4	1 1/4	11.3	60			B					HP-8A	4
5							A		45	5.22	1	6	HP-9A	6
7	HP-10 (1)	4	1 1/4	11.9	60			B					HP-9A	8
9							A		50	6.68	1	6	HP-10A	10
11	HP-10 (2)	10	1	5.2	25			B					HP-10A	12
13							A		50	6.68	1	6	HP-11A	14
15	HP-11 (1)	4	1 1/4	11.9	60			B					HP-11A	16
17							A						PREPARED SPACE	18
19	HP-11 (2)	10	1	5.2	25			B					PREPARED SPACE	20
21							A						PREPARED SPACE	22
23	PREPARED SPACE							B					PREPARED SPACE	24
25	PREPARED SPACE						A						PREPARED SPACE	26
27	PREPARED SPACE							B					PREPARED SPACE	28
29	PREPARED SPACE						A						PREPARED SPACE	30
31	PREPARED SPACE							B					PREPARED SPACE	32
33	PREPARED SPACE						A						PREPARED SPACE	34
35	PREPARED SPACE							B					PREPARED SPACE	36
37	PREPARED SPACE						A						PREPARED SPACE	38
39	PREPARED SPACE							B					PREPARED SPACE	40
41	PREPARED SPACE						A						PREPARED SPACE	42

CONNECTED LOAD, THIS SECTION (KVA): 81.22

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : GP4 | BUS AMPS : 600A | SECTION 2
SYSTEM : STANDBY | MAIN : MAIN LUGS ONLY
TYPE : SQUARE D NQOD | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 25K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	GENERATOR - BATT CHARGER	10	3/4	1.0	20**		A		20	1.0	1/2	12	RECEPTACLES	2
3	GENERATOR - JACKET HEATER	8	3/4	2.0	30**			B	20	0.6	1/2	12	RECEPTACLES	4
5							A		20	0.6	1/2	12	WATER HEATER (CTRLS)	6
7	CEILING HEATER (CH-1)	8	3/4	5.0	30			B	20	0.6	1/2	12	RECEPTACLES	8
9							A		20				SPARE	10
11	CEILING HEATER (CH-2)	8	3/4	5.0	30			B	20				SPARE	12
13							A		20				SPARE	14
15	WALL HEATER (WH-1)	8	3/4	5.0	30			B	20				SPARE	16
17							A		20				SPARE	18
19	SPARE				20			B	20				SPARE	20
21	SPARE				20		A		20				SPARE	22
23	SPARE				20			B						24
25	SPARE				20		A		45	9.2	1	6	HP-1	26
27	SPARE				20			B						28
29	SPARE				20		A		20	2.5	3/4	12	HP-1A	30
31	PREPARED SPACE							B	20	0.2	1/2	12	RP-1	32
33	PREPARED SPACE						A						PREPARED SPACE	34
35	PREPARED SPACE							B					PREPARED SPACE	36
37	PREPARED SPACE						A						PREPARED SPACE	38
39	PREPARED SPACE							B						40
41	PREPARED SPACE						A		30		3/4	10	SPD2	42
SUB FEED	PANEL GP5	SEE RISER		26.2	150			B						

CONNECTED LOAD, THIS SECTION (KVA): 32.7
SECTION 2 OF A TWO SECTION PANELBOARD.

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

NAME : GP5 | BUS AMPS : 225A
SYSTEM : STANDBY | MAIN : 150A MAIN CIRCUIT BREAKER
TYPE : SQUARE D NQOD | VOLTAGE : 120-240V/1Φ/3W/SN
INTERRUPTING RATING : 42K | MOUNTING : SURFACE

CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	RECEPTACLES	12	1/2	0.6	20		A		20***	0.4	1/2	12	FACP	2
3	RECEPTACLES	12	1/2	0.6	20			B	20	0.6	1/2	12	RECEPTACLES	4
5	RECEPTACLES	12	1/2	0.4	20		A		20	0.8	1/2	12	RECEPTACLES	6
7	RECEPTACLES	12	1/2	0.4	20			B	20	0.8	1/2	12	RECEPTACLES	8
9	RECEPTACLES	12	1/2	0.4	20		A		20	1.0	1/2	12	RECEPTACLES	10
11	RECEPTACLES	12	1/2	0.4	20			B	20				SPARE	12
13	SPARE				20		A		20				SPARE	14
15	SPARE				20			B	20				SPARE	16
17	SPARE				20		A		20				SPARE	18
19	SPARE				20			B	20				SPARE	20
21	SHP-1	6	1	7.5	60		A		60	12.5	1	6	AHU-1	22
23								B						24

CONNECTED LOAD, THIS SECTION (KVA): 26.2

-- SUBSCRIPT "GF" ADJACENT TO CIRCUIT BREAKER SHALL DESIGNATE A GROUND-FAULT TYPE CIRCUIT BREAKER.
* VERIFY WITH OWNER PROVIDED EQUIPMENT REQUIREMENTS
** OR AS REQUIRED BY EQUIPMENT BEING INSTALLED

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION ETI ENGINEERING, LLC No. C02936

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 23558 TRAYTON D. TUCKER
07/15/19

REV.	DATE	DESCRIPTION
	08.21.20	BID SET

LUGOFF FACILITY EXPANSION
SANDHILLS MEDICAL FOUNDATION
28 BALDWIN AVENUE
LUGOFF, SOUTH CAROLINA 29078

JOB #:18-039-1 07.15.2019

POWER RISER AND PANEL SCHEDULES

E0.2

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