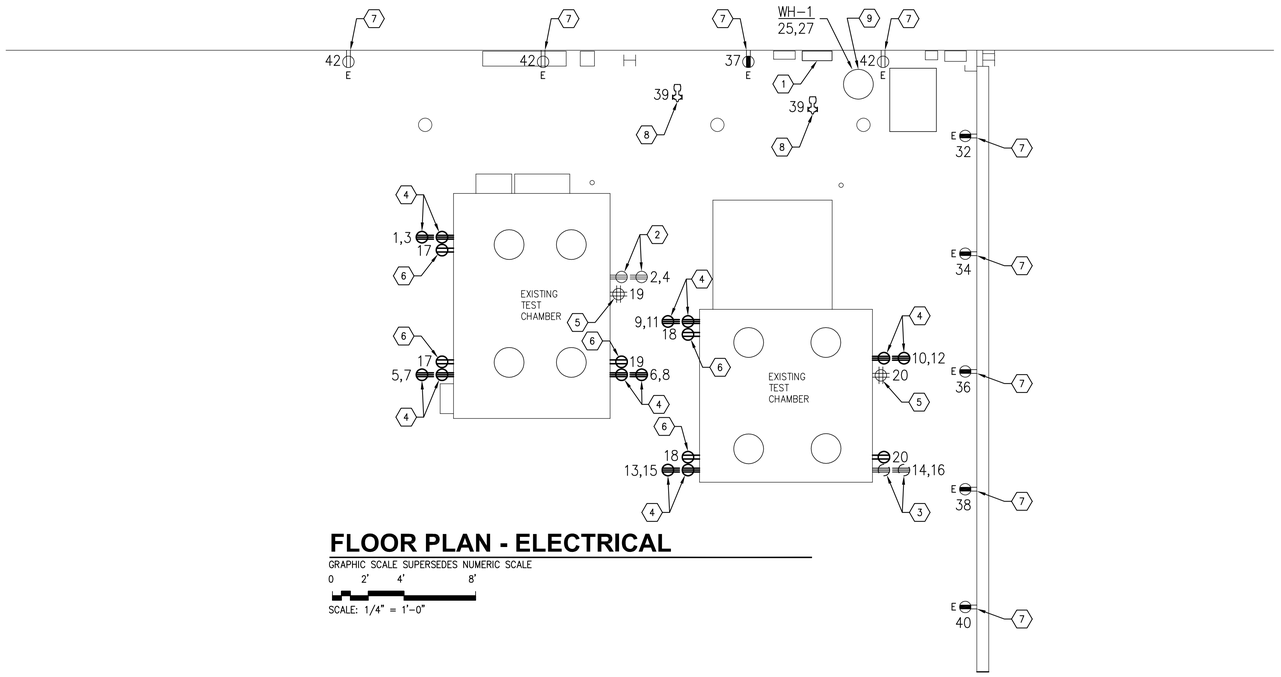

FLOOR PLAN - ELECTRICAL

GRAPHIC SCALE SUPERSEDES NUMERIC SCALE

0 2' 4' 8'

SCALE: 1/4" = 1'-0"

KEYNOTES

1. EXISTING PANEL RP.BDG19.G19, 225A MCB, 42 CIRCUIT, 120/240V TO BE REMAIN AND BE REUSED. ALL CIRCUIT NUMBERS ON THIS DRAWING REFER TO CIRCUITS IN THIS PANEL.
2. EXISTING NEMA 14–50 RECEPTACLES TO REMAIN AND BE REUSED. REMOVE EXISTING CONDUCTORS AND RE–WIRE BOTH RECEPTACLES TO INDICATED CIRCUIT.
3. EXISTING NEMA 14–30 RECEPTACLES TO BE REMOVED AND REPLACED WITH NEW NEMA 14–50 RECEPTACLES AND WIRED TO THE INDICATED CIRCUITS.
4. PROVIDE NEW NEMA 14–50 RECEPTACLES AND WIRE TO INDICATED CIRCUIT.
5. EXISTING QUAD RECEPTACLE TO REMAIN AND BE REUSED. REMOVE EXISTING CONDUCTORS AND RE–WIRE TO INDICATED CIRCUIT.
6. PROVIDE NEW DUPLEX RECEPTACLE IN SINGLE SHEET METAL GANG BOX AND WIRE TO INDICATED CIRCUIT.
7. EXISTING DUPLEX RECEPTACLE. DO NOT REMOVE OR RE–WIRE. INDICATED CIRCUIT IS FOR REFERENCE ONLY.
8. PROVIDE POWER TO 1/40 HORSEPOWER RECIRCULATION PUMPS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
9. PROVIDE POWER FOR NEW HOT WATER HEATER, WH–1. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE – 20 AMP,125V,2P,3W, MOUNT AT 18" AFF TO BOTTOM
	DEDICATED 20 AMP DUPLEX RECEPTACLE
	FOUR–PLEX RECEPTACLE
	NEMA 14–50 RECEPTACLE – 50 AMP, 250V, 4W
	SURFACE MOUNTED PANELBOARD

PANEL RP.BDG19.G19

LOCATION: COL. LINE G19 — VOLTAGE: 120/240V — TRIM: SURFACE — MAIN: 225A MCB — SYSTEM: 1ø, 3W — BUS RATING 225A — CONN. LOAD: 50 KVA — FEED: BOTTOM — GROUND BUS: YES

CKT	LOAD SERVED	COND	PHASE	NEUT	GND	BKR	DMD	L1	L2	DMD	BKR	COND	PHASE	NEUT	GND	LOAD SERVED	CKT
1	NEMA 14–50 RECEPTACLE	3/4"	#6	#6	#10	50/2	W	2250		W	50/2	3/4"	#6	#6	#10	NEMA 14–50 RECEPTACLE	2
3	EAST CHAMBER–NE SIDE		#6				W		2250	W			#6			EAST CHAMBER–NW SIDE	4
5	NEMA 14–50 RECEPTACLE	3/4"	#6	#6	#10	50/2	W	2250		W	50/2	3/4"	#6	#6	#10	NEMA 14–50 RECEPTACLE	6
7	EAST CHAMBER–SE SIDE		#6				W		2250	W			#6			EAST CHAMBER–SW SIDE	8
9	NEMA 14–50 RECEPTACLE	3/4"	#6	#6	#10	50/2	W	2250		W	50/2	3/4"	#6	#6	#10	NEMA 14–50 RECEPTACLE	10
11	WEST CHAMBER–NE SIDE		#6				W		2250	W			#6			WEST CHAMBER–NW SIDE	12
13	NEMA 14–50 RECEPTACLE	3/4"	#6	#6	#10	50/2	W	2250		W	50/2	3/4"	#6	#6	#10	NEMA 14–50 RECEPTACLE	14
15	WEST CHAMBER–SE SIDE		#6				W		2250	W			#6			WEST CHAMBER–SW SIDE	16
17	DUPLEXES ON EAST CHAMBER	1/2"	#12	#12	#12	20/1	R	720		R	20/1	1/2"	#12	#12	#12	DUPLEXES ON WEST CHAMBER	18
19	DUPLEXES ON EAST CHAMBER	1/2"	#12	#12	#12	20/1	R		720	R	20/1	1/2"	#12	#12	#12	DUPLEXES ON WEST CHAMBER	20
21	SPARE	–	–	–	–	20/1	–	–		–	20/1	–	–	–	–	SPARE	22
23	SPARE	–	–	–	–	20/1	–		–	–	20/1	–	–	–	–	SPARE	24
25	WATER HEATER WH–1	3/4"	#6	#6	#10	50/2	W	4500		–	20/1	–	–	–	–	SPARE	26
27	TESTING SUPPLY WATER		#6				W		4500	–	20/1	–	–	–	–	SPARE	28
29	SPARE	–	–	–	–	20/1	–	–		–	20/1	–	–	–	–	SPARE	30
31	SPARE	–	–	–	–	20/1	–		1000	R	20/1	1/2"	#12	#12	#12	DEDICATED RECEPTACLE ON WALL	32
33	SPARE	–	–	–	–	20/1	–	1000		R	20/1	1/2"	#12	#12	#12	DEDICATED RECEPTACLE ON WALL	34
35	SPARE	–	–	–	–	20/1	–		1000	R	20/1	1/2"	#12	#12	#12	DEDICATED RECEPTACLE ON WALL	36
37	DEDICATED RECEPTACLE ON WALL	1/2"	#12	#12	#12	20/1	R	1000		R	20/1	1/2"	#12	#12	#12	DEDICATED RECEPTACLE ON WALL	38
39	RECIRC PUMPS	1/2"	#12	#12	#12	20/1	M	1000	1000	R	20/1	1/2"	#12	#12	#12	DEDICATED RECEPTACLE ON WALL	40
41	SPARE	–	–	–	–	20/1	–	540		R	20/1	1/2"	#12	#12	#12	RECEPTACLES ON WALL	42

INTERRUPT RATING: 10,000 AIC — 25230 | 24793 — FROM: 37.5 KVA UTILITY TRANSFORMER

LOADS (IN VA)	CONNECTED	DEMAND FACTOR	MINIMUM FEEDER
LIGHTING	0	1.25	0
RECEPTS TO 10 KVA	9420	1.0	9420
RECEPTS REMAINING	0	0.5	0
SPACE HEATING	0	0.0	0
AIR CONDITIONING	0	1.0	0

LOADS	CONNECTED	DEMAND FACTOR	MINIMUM FEEDER
NON–SEASONAL MOTORS	103	1.0	103
LARGEST MOTOR	52	0.25	13
WATER HEATING	40500	1.0	40500
KITCHEN EQUIP.	0	1.0	0

REMAINING CONTINUOUS LOADS	0	1.25	0
REMAINING NON–CONTINUOUS LOADS	0	1.0	0
SUB FEED LOADS	0	1.0	0
TOTAL CONNECTED LOAD	50	KVA	208.4 AMPS
MIN. FEEDER/PANEL CAP.	50	KVA	208.5 AMPS
OVERALL DEMAND FACTOR	1.00		

Note 1. Feeder size: (3)#4/0 AWG, 2" CONDUIT

GENERAL NOTES

A. THE TERM "PROVIDE" SHALL MEAN CONTRACTOR SHALL FURNISH AND INSTALL ITEMS AND CONNECT AS REQUIRED TO OBTAIN A COMPLETE WORKING SYSTEM.

B. RECEPTACLES SHALL BE CIRCUITED WITH A SEPARATE GROUND WIRE. RECEPTACLES PROTECTED BY GROUND FAULT CIRCUIT INTERRUPTER DEVICES SHALL EACH HAVE A SEPARATE NEUTRAL WIRE PULLED FOR THAT CIRCUIT.

C. RECEPTACLES SHALL NOT BE INSTALLED BACK TO BACK ON A COMMON WALL WHERE CONDITION EXISTS FOR ADJACENT OFFICE ROOMS OR ROOMS WHERE SOUND TRANSMISSION IS NOT PERMITTED.

D. RUN EXPOSED CONDUIT HIGH AS POSSIBLE. ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO NEARBY SURFACE OR STRUCTURAL MEMBERS AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL.

E. ELECTRICAL DRAWINGS SHALL BE COORDINATED WITH EXISTING CONDITIONS AND ASSOCIATED MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR FOR FOR MOTORS, DEVICES, FIXTURES, ETC. FOR EXACT LOCATIONS BEFORE ROUGH–IN OF CONDUIT SYSTEM.

F. NO MORE THAN THREE CIRCUITS (4–1/C CABLES PLUS GROUND) SHALL BE PULLED IN SINGLE CONDUIT, (EXCEPTION: SEPARATE NEUTRALS FOR GROUND FAULT CIRCUITS). WIRE (EXCEPT GROUND) MUST BE OF SAME SIZE AND MUST BE ON OPPOSITE PHASES IF USING COMMON NEUTRAL.

G. MINIMUM CONDUIT SIZE IS 3/4 INCH, MINIMUM WIRE SIZE IS #12 AWG, UNLESS OTHERWISE NOTED ON PLANS OR IN CIRCUIT REVIEWS.

H. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING HIS BID. CONTRACTOR SHALL CONTACT OWNER FOR AN APPOINTMENT TO VISIT THE SITE. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS NOT KNOWN BY THE CONTRACTOR.

I. PROVIDE NEW UPDATED, TYPED PANEL LEDGERS FOR ALL PANELS ALTERED DURING PROJECT WITH ALL CHANGES/ADDITIONS INDICATED.

J. A CODE SIZE INSULATED GROUND CONDUCTOR SHALL BE PROVIDED IN ALL FEEDER AND BRANCH CIRCUIT CONDUITS.

K. ALL THHN/THWN/THHW/THW/XHHW CONDUCTORS ARE SIZED BASED ON 75°C TEMPERATURE RATING. ALL TERMINATIONS FOR ALL EQUIPMENT AND DEVICES SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75°C CONDUCTORS. IF CONTRACTOR PROVIDES TERMINATIONS OF LESS THAN 75°C, THE ASSOCIATED CONDUCTOR SIZES SHALL BE INCREASED DUE TO THE DERATING AMPACITY PER NEC TABLE 310–16. CONTRACTOR SHALL MAKE ALL CHANGES (i.e. CONDUIT SIZES, ETC.) AS NECESSARY AND SHALL MAKE ALL REVISIONS ON "AS–BUILT" DRAWINGS.

ELECTRICAL SPECIFICATIONS

A. ELECTRICAL GENERAL PROVISIONS:
ALL WORK SHALL BE FABRICATED, TESTED AND INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE PORTIONS OF THE FOLLOWING STANDARDS:
NATIONAL ELECTRICAL CODE
AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
UNDERWRITERS LABORATORIES (UL)
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
ALL WORK SHALL ALSO BE INSTALLED IN ACCORDANCE WITH APPLICABLE PORTIONS OF LOCAL CODES AND REGULATIONS.

B. RACEWAYS:
WIRE AND CABLE SHALL BE RUN IN CONDUIT.
ALL CONDUITS ROUTED ABOVE THE CEILING ARE TO BE RIGID STEEL CONDUIT.
CONDUIT ROUTED INSIDE WALLS TO BE GREENFIELD OR EQUAL. MINIMUM SIZE CONDUIT SHALL BE 3/4". ALL CONDUIT SHALL BE RUN PARALLEL OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.

C. WIRES AND CABLES:
THE ELECTRICAL SYSTEMS SHALL BE DESIGNED WITH COPPER CONDUCTORS THROUGHOUT.
WIRE AND CABLE SHALL HAVE A MINIMUM 600 VOLTS, 75°C, TYPE THHN OR THWN INSULATION UNLESS A HIGHER TEMPERATURE RATING IS REQUIRED BY CODE OR ENVIRONMENT. CONDUCTOR AMPACITY SHALL BE SIZED ON THE BASIS OF THE 2008 EDITION OF THE NATIONAL ELECTRICAL CODE.
MINIMUM SIZE CONDUCTOR FOR POWER AND LIGHTING CIRCUITS SHALL BE #12.

D. ELECTRICAL BOXES AND FITTINGS:
OUTLET AND DEVICE BOXES SHALL BE GALVANIZED COATED FLAT ROLLED SHEET STEEL.
JUNCTION AND PULL BOXES SHALL BE GALVANIZED CODE–GAUGE SHEET STEEL.

E. ELECTRICAL CONNECTIONS FOR EQUIPMENT
ELECTRICAL POWER SUPPLY CONDUCTORS TO EQUIPMENT CONDUCTORS SHALL BE CONNECTED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WIRING DIAGRAMS. PROVIDE SEAL–TIGHT FLEXIBLE CONDUIT FOR CONNECTION OF MOTORS AND FOR OTHER ELECTRICAL EQUIPMENT WHERE SUBJECT TO MOVEMENT AND VIBRATION.

F. WIRING DEVICES:
WIRING DEVICES SHALL BE HEAVY DUTY. SWITCHES SHALL BE 20 – AMPERES.
WIRING DEVICES SHALL BE MANUFACTURED BY BRYANT, HUBBELL, LEVITON, COOPER OR PASS AND SEYMOUR.

G. ELECTRICAL IDENTIFICATION:
ALL CIRCUITS AND EQUIPMENT SHALL BE LABELED.
NEW COMPLETE TYPED SCHEDULES SHALL BE PROVIDED FOR EACH PANELBOARD.

H. GROUNDING:
INCLUDE A COPPER GROUND CONDUCTOR IN THE CONDUIT WITH THE PHASE CONDUCTOR FOR ALL CIRCUITS.
GROUND PANELBOARDS PER NEC 250.

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HYBRID WATER HEATER TESTING SYSTEM - BLDG. 35
APPLIANCE PARK
LOUISVILLE, KENTUCKY

REVISIONS	DATE
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COMM. NO. 2010.055
MADE BY DPW — CHECKED
DATE 06/07/10

ELECTRICAL PLANS AND SCHEDULES

DRAWING NO. E1.1 — BID PKG.