ELECTRICAL NOTES:

PART 1 – GENERAL:

1.– THE GENERAL AND SPECIAL CONDITION AND REQUIREMENTS OF THE CONTRACT AND SPECIFICATION AS WELL AS PLANS AND SPECIFICATIONS OF OTHER DISCIPLINES AND TRADES SHALL APPLY AND BE PART OF THE WORK HEREBY SPECIFIED. THESE SPECIFICATION AND THE ACCOMPANYING PLANS ARE INTENDED TO PROVIDE FOR THE COMPLETE FURNISHING AND INSTALLATION OF THE ELECTRICAL SYSTEMS.

2.– COMPLIANCE: WORKMANSHIP, MATERIALS AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF 2017NEC (IN SPECIAL SEC. 680), 2020FBC (SEVENTH EDITION), NFPA, NEMA, IEEE; OTHER APPLICABLE NATIONAL STATE & LOCAL CODES AND PERTAINING REGULATIONS ESTABLISHED BY AUTHORITIES HAVING JURISDICTION, AND SHALL MEET THE REQUIREMENTS OF OTHER RECOGNIZED STANDARDS WHERE "PART 1 – GENERAL" THE REQUIREMENTS ARE MORE STRINGENT THAN THOSE CITED ABOVE.

3.– WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS MANNER AND SHALL BE COMPLETED AND FULLY OPERATIVE TO THE ACCEPTANCE OF THE ARCHITECT/ENGINEER.

4.– MATERIALS: CONTRACTOR SHALL PROVIDE ALL NEW MATERIALS, BEARING THE UNDER-WRITER'S LABORATORY (UL) LABEL AS APPLICABLE. MATERIALS SHALL BE ACCEPTABLE AND ABOVE STANDARD QUALITY NORMALLY USED FOR THE PURPOSE AS CALLED FOR ON PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE DELIVERY SCHEDULES OF MATERIALS.

5.– DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE EQUIPMENT LOCATIONS AND ARRANGEMENTS, NOT TO SHOW EVERY MINOR DETAIL; PLANS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION AND DIMENSIONS. PROVIDE ALL OFFSETS, FITTINGS AND ACCESSORIES REQUIRED FOR A COMPLETE, ACCEPTABLE, WORKING INSTALLATION.

6.– SUPPLEMENTAL MATERIALS OR MANUFACTURED PRODUCTS NECESSARY TO COMPLY WITH THE INTENT OF THE CONTRACT DRAWINGS OR SPECIFICATIONS, BUT NOT NOTED OR SPECIFIED ON THESE SECTIONS, SHALL BE PROVIDED AS REQUIRED TO COMPLETE THE INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.

7 – EXISTING CONDITION: CONTRACTOR SHALL VISIT THE JOB SITE AND ASCERTAIN ALL EXISTING CONDITIONS, WHICH WILL AFFECT HIS WORK. FAILURE TO DO SO WILL NOT BE ACCEPTED AS A REASON FOR REQUESTING EXTRA PAY WHERE THE EXISTING CONDITIONS RESULT IN EXTRA MATERIAL OR LABOR. ANY EXISTING CONDITION FOUND BY THE CONTRACTOR WHICH WILL ADVERSELY AFFECT THE WORK SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENTS OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

8 – PERMITS: CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES. TAXES, INSPECTION, TESTS, FINES AND OTHER ITEMS AS REQUIRED FOR THE INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM AS OUTLINED HERE IN AND SHOWN ON PLANS. PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

9 – INTERFERENCE: PLANS ARE GENERALLY DIAGRAMMATIC AND THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER TRADES, SO THAT INTERFERENCES WITH EXISTING CONDITIONS, CONDUITS, PIPING, EQUIPMENT, ARCHITECTURAL, STRUCTURAL AND WORK WITH OTHER TRADES ARE AVOIDED.

10 – THIS CONTRACTOR SHALL EXAMINE THESE PLANS (CONSTRUCTION DOCUMENTS) TO UNDERSTAND THE SCOPE. IN THE EVENT OF ANY DISCREPANCIES, CONTRADICTION, INFORMATION NOT PROVIDED ON THIS CONSTRUCTION DOCUMENTS, THIS CONTRACTOR SHALL STOP WORKS AND NOTIFY THIS OFFICE FOR CLARIFICATION AND PROCEED WORKS AFTER THIS OFFICE HAVE CLARIFIED THOSE DISCREPANCIES.

PART 2 – PRODUCTS:

1 – DISCONNECT SWITCHES FOR POOL AREA SHALL BE QUICK–MADE, QUICK–BRAKE ACTION, LOCKABLE TYPE PER "NEC 680–12".

2 – CONDUCTORS SHALL BE THW/THWN SOFT–DRAWN 98% CONDUCTIVITY COPPER INSTALLED IN CONDUIT, COLOR CODED PER "NEC" AND TRADE STANDARDS. MINIMUM SIZE SHALL BE #12 FOR POWER WIRING AND #14 FOR CONTROL CIRCUITS. PROVIDE #10 WIRES FOR 120V POWER CIRCUIT HOMERUNS LONGER THAN 100 FEET. ASIDE FROM THE PANELBOARD GUTTER, CONDUCTORS ON THE LOAD SIDE OF A GFCI MUST NOT BE USED IN ANY RACEWAY OR OTHER ENCLOSURE CONTAINING CONDUCTORS THAT ARE NOT GFCI–PROTECTED.

3 – CONDUIT SHALL BE "RGS" OR "IMC" HOT–DIPPED GALVANIZED FOR ALL EXTERIOR LOCATIONS, WHERE EXPOSED TO PHYSICAL DAMAGE. ALL FITTING SHALL BE STEEL. "PVC" SCHEDULE 40 SHALL BE USED WHERE CONDUIT IS RUN IN CONCRETE SLABS; "PVC" MAY BE RUN UNDERGROUND WHERE BURIED 18" BELOW FINISHED GRADE, 24" UNDER VEHICULAR TRAFFIC AREAS. GREENFIELD TYPE FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR MOTORS AND VIBRATING EQUIPMENT CONNECTIONS, NOT TO EXCEED 18"; PROVIDE "PVC" JACKETED TYPE FOR EXTERIOR AND/OR MOISTURE EXPOSED LOCATIONS. FOR UNDERWATER LIGHTING FIXTURES AS PER "NEC 680–20.

4 – THIS CONTRACTOR SHALL COORDINATE WITH FP&L THE CONNECTION FOR THIS SERVICE AND REVISE INTERRUPTING CAPACITY AVAILABLE PRIOR INSTALLATION OF ALL DISCONNECTING DEVISES, AND INCREASE THE INTERRUPTING CAPACITY IN PANELS AND DISCONNECTING DEVISES IF REQUIRED.

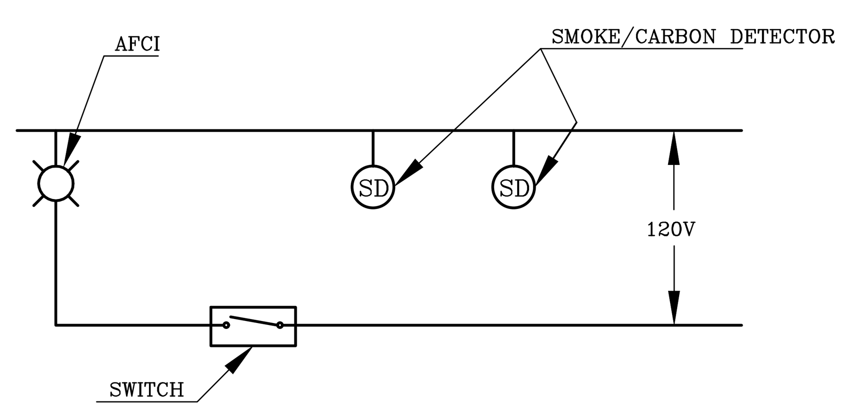
PART 3 – EXECUTION:

1 – CONDUIT RUNS, RACEWAYS AND PIPING SHALL BE CONCEALED IN WALLS, CEILINGS, SLABS AND PARTITIONS; NO RACEWAYS SHALL BE EXPOSED WITHIN INTERIOR SPACES EXCEPT FOR OPEN CEILING AREAS.

2 – GROUNDING AND BONDING SHALL COMPLY WITH "NEC 250, SPECIALLY 250–22, 250–24, 250–50/52/53, TABLE 250–66, 250–104, 680–24 & 25". ALL METALLIC RACEWAYS SHALL BE GROUNDED AND BONDED PER "NEC 250". NON–METALLIC RACEWAYS SHALL BE PROVIDED WITH A GROUNDING CONDUCTOR SIZED PER "NEC 250–94/96".

3 – MOTORS, TRANSFORMERS AND MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH GREENFIELD FLEXIBLE CONNECTIONS, WATERTIGHT WHERE EXPOSED TO MOISTURE AND WEATHER CONDITIONS.

4 – KAIC NOTE: THIS CONTRACTOR SHALL COORDINATE WITH FPL THE KAIC AVAILABLE AND INCREASE OR DECREASE THE KAIC ACCORDINGLY. ALL PANELS AND DISCONNECTS SHALL BE SERIES RATED WITH MAIN SERVICE.

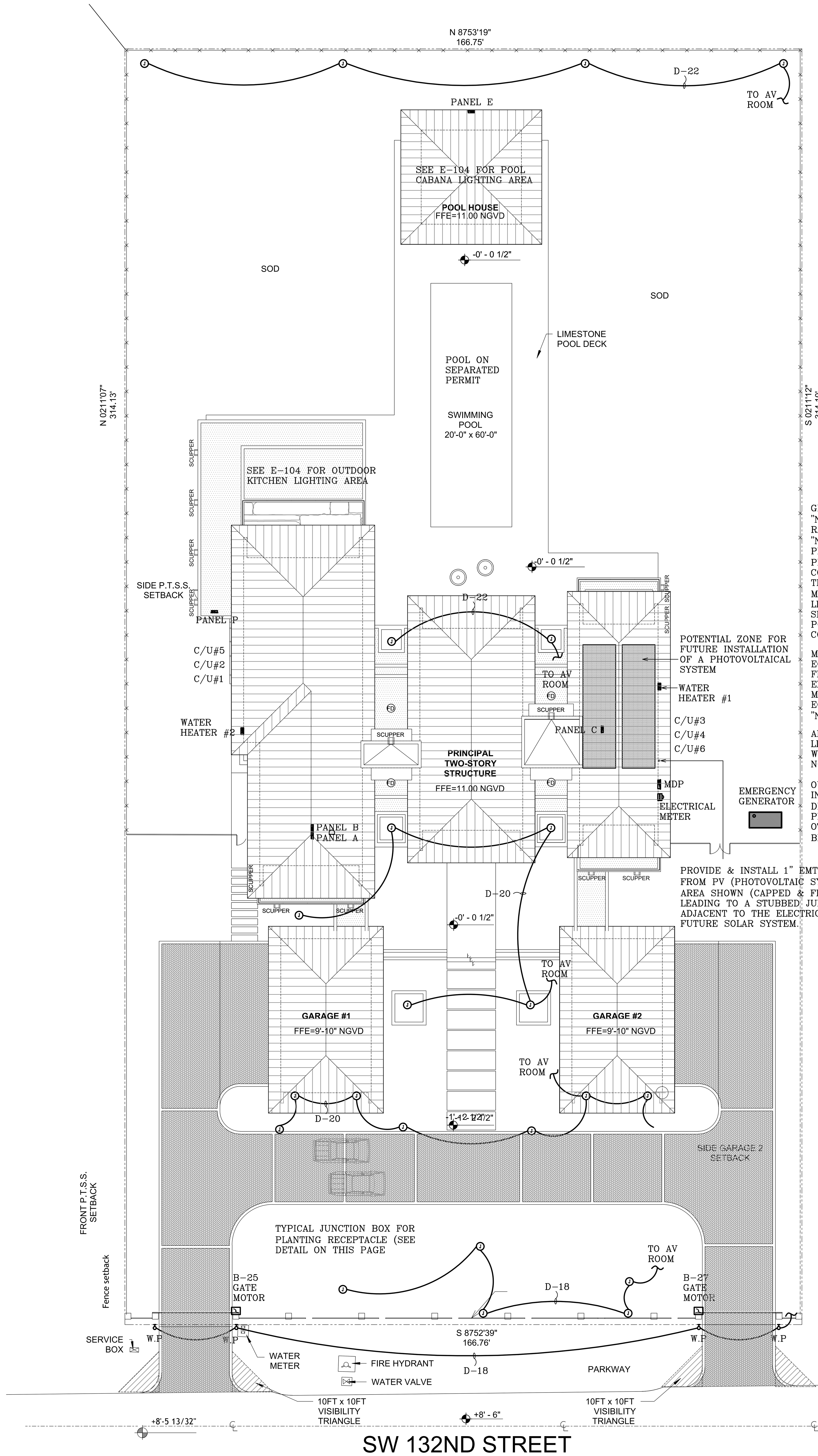


NOTE :
SMOKE/CARBON MONOXIDE DETECTOR SHALL BE HARDWIRE (110 VOLT TYPE) TO A NON–SWITCHABLE AFCI (ARC FAULT) CIRCUIT WITH BATTERY BACK–UP AND SHALL NOT BE CONNECTED ONTO THE LOAD SIDE OF GROUND FAULT CIRCUIT INTERRUPTER. ALL SMOKE DETECTORS WITHIN EACH UNIT SHALL BE INTERCONNECTED AS SHOWN IN PARALLEL.

SMOKE CARBON MONOXIDE DETECTOR CONNECTION DETAIL
SCALE : N.T.S.

SMOKE DETECTORS NOTE:

THIS CONTRACTOR SHALL INSTALL ALL SMOKE/CARBON DETECTORS AS PER NFPA 29.5.1.3.1
(ALL POINTS ON THE CEILING SHALL HAVE A SD WITHIN A DISTANCE OF 30ft TRAVEL DISTANCE (FAMILY AND LIVING ROOM AREAS INCLUDED)



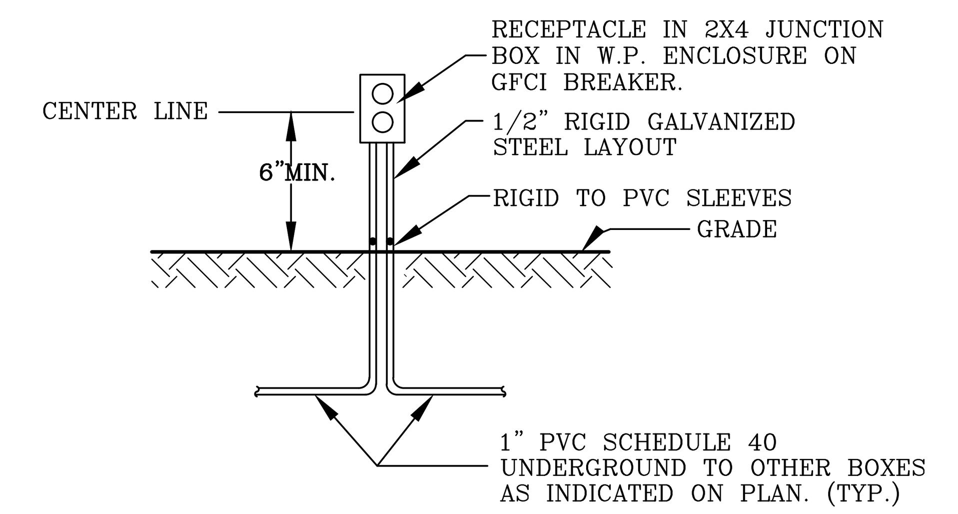
GROUNDING AND BONDING SHALL COMPLY WITH "NEC 250, 680–24 & 25". ALL METALLIC RACEWAYS SHALL BE GROUNDED AND BONDED PER "NEC 250". NON–METALLIC RACEWAYS SHALL BE PROVIDED WITH A GROUNDING CONDUCTOR SIZED PER "NEC 250–95". PROVIDE 1#8 SOLID BOUNDING CONDUCTOR TO CONNECT ALL METAL PARTS AT THE POOL SUCH AS POOL REINFORCE STEEL, METAL JB'S, PUMP MOTORS, METAL CONDUITS, LIGHTING FIXTURES, METAL SHIELD PRIMARY AND SECONDARY WINDING OF POOL TRANSFORMERS, POOL STAIRS, ETC. TO COMPLY WITH 2020 NEC CODE SECTION 680–22.

MOTORS, TRANSFORMERS AND MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH GREENFIELD FLEXIBLE CONNECTIONS, WATERLIGHT WHERE EXPOSED TO MOISTURE AND WEATHER CONDITIONS. MOTORS, TRANSFORMERS AND MECHANICAL EQUIPMENT FOR THE POOL AND JACUZZI PER "NEC 680–42".

ALL EXTERIOR LIGHTS SHALL BE EQUIPPED WITH LIGHT SHIELD IN A WAY THAT THE ILLUMINATION WILL BE CONTAINED INSIDE THE PROPERTY AND NOT SPREAD TO THE NEIGHBORS.

OUTLETS AND ANY OTHER EQUIPMENT INSTALLED IN POOL AREA SHALL BE INSTALL AT A MINIMUM DISTANCE OF 10'–0" FROM POOL'S EDGE OR AS PER 2020 NEC CODE SECTION 680. RECEPTACLES OTHER THAN REQUIERED OUTLETS FOR POOL WILL BE IN COMPLIANCE WITH NEC 680.26(A)(3).

ELECTRICAL SITE PLAN
SCALE: 1/16"=1'-0"



TYPICAL SUPPORT FOR RECEPTACLE AT PLANTING AREA–NIC
NO SCALE

HERRERA RESIDENCE

6825 SW 132nd St,
Pinecrest, FL 33156.

SEAL

DANIEL F. GUTIERREZ LICENSE No. 49086 STATE OF FLORIDA PROFESSIONAL ENGINEER

05-14-25
DANIEL F. GUTIERREZ, P.E.
ELECTRICAL ENGINEER LIC. #049086

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ELECTRICAL SITE PLAN

Daniel F Gutierrez Digitally signed by Daniel F Gutierrez DN: CN=Daniel F Gutierrez, dnQualifier=A01410C0000019571A387C50014606D, O=Unaffiliated, C=US Date: 2025.05.16 12:01:40-04'00'

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DG CONSULTING ENGINEERS, LLC
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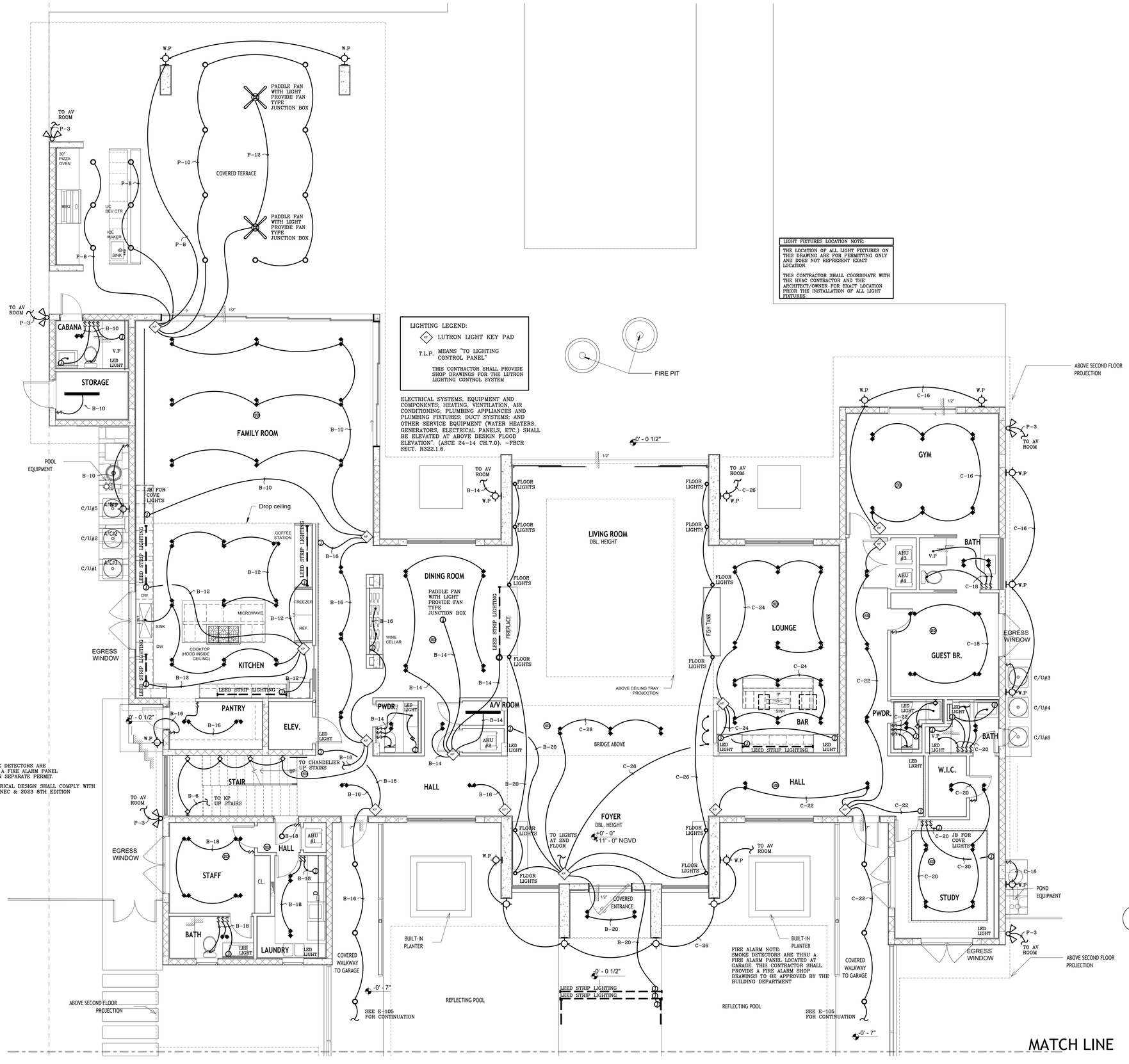

ELECTRICAL LIGHTING 1ST FLOOR PLAN
SCALE: 3/16"=1'-0"

HERRERA RESIDENCE

6825 SW 132nd St,
Pinecrest, FL 33156.

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ELECTRICAL LIGHTING 1ST FLOOR PLAN

SHEET NUMBER

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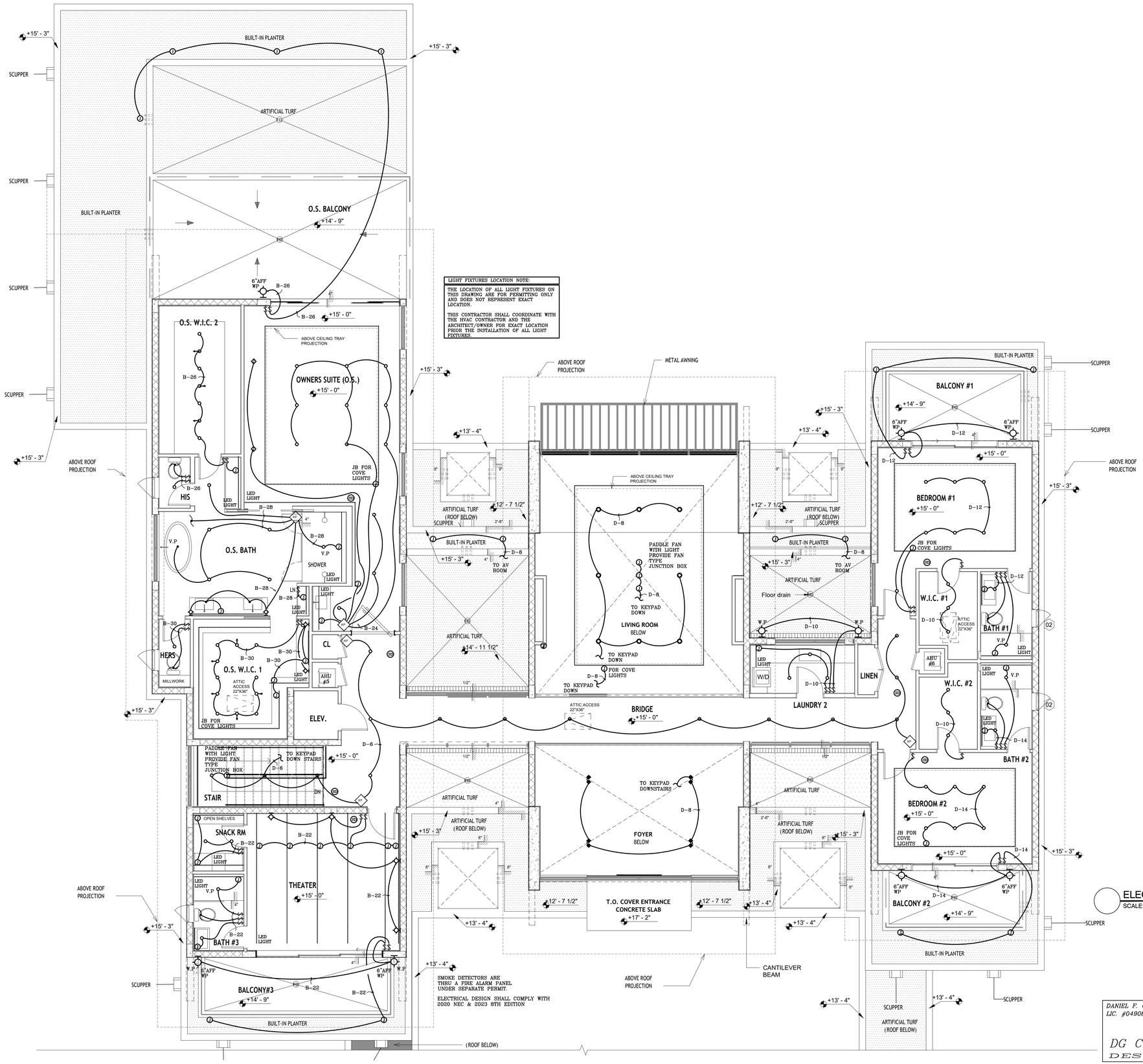

ELECTRICAL LIGHTING 2ND FLOOR PLAN
SCALE: 3/16"=1'-0"

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ELECTRICAL LIGHTING 2ND FLOOR PLAN

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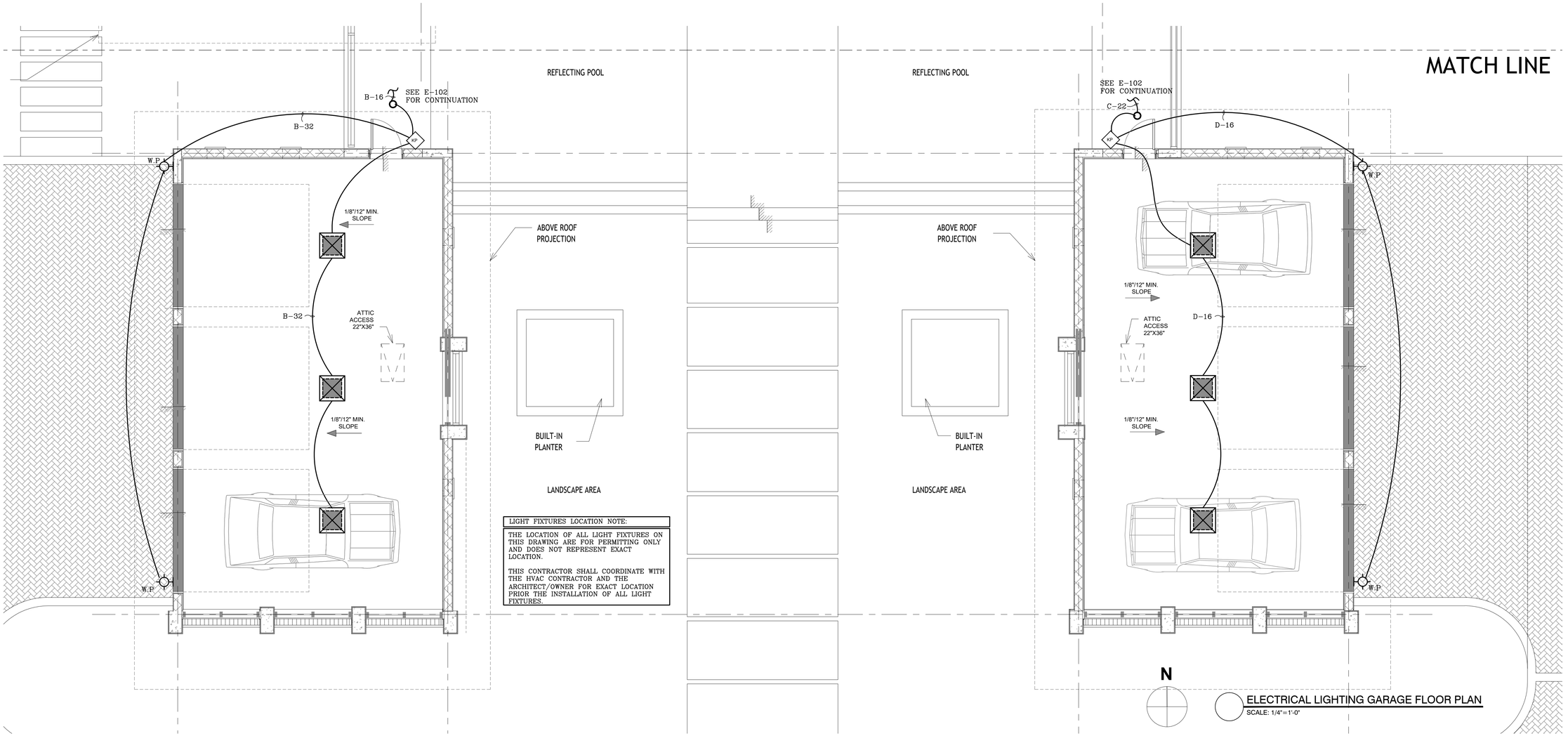

LIGHT FIXTURES LOCATION NOTE:

THE LOCATION OF ALL LIGHT FIXTURES ON THIS DRAWING ARE FOR PERMITTING ONLY AND DOES NOT REPRESENT EXACT LOCATION.

THIS CONTRACTOR SHALL COORDINATE WITH THE HVAC CONTRACTOR AND THE ARCHITECT/OWNER FOR EXACT LOCATION PRIOR THE INSTALLATION OF ALL LIGHT FIXTURES.

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ELECTRICAL LIGHTING GARAGE FLOOR PLAN

SHEET NUMBER

E-104

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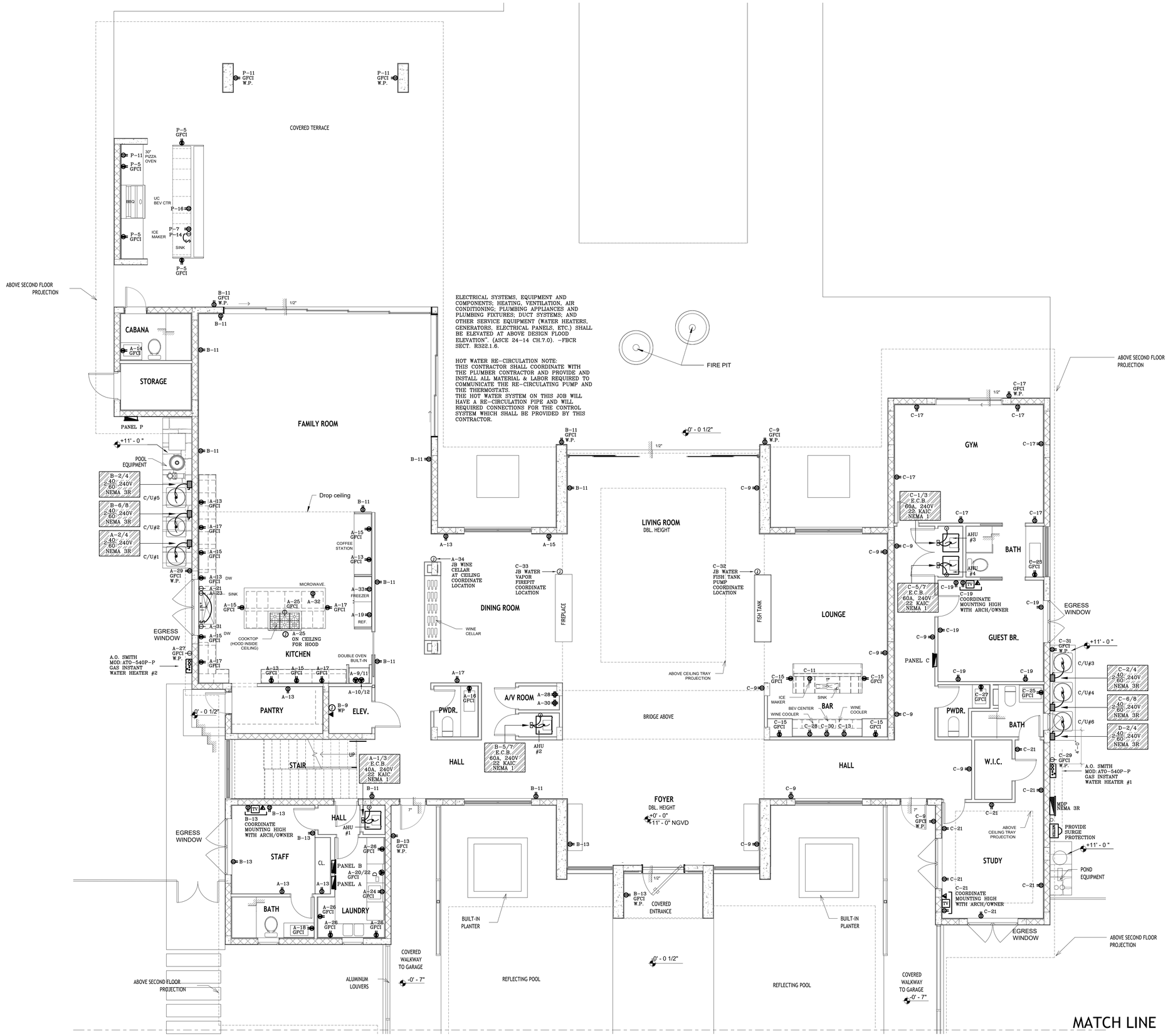

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ELECTRICAL POWER 1ST FLOOR PLAN
SCALE: 3/16"=1'-0"

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ELECTRICAL POWER 1ST FLOOR PLAN

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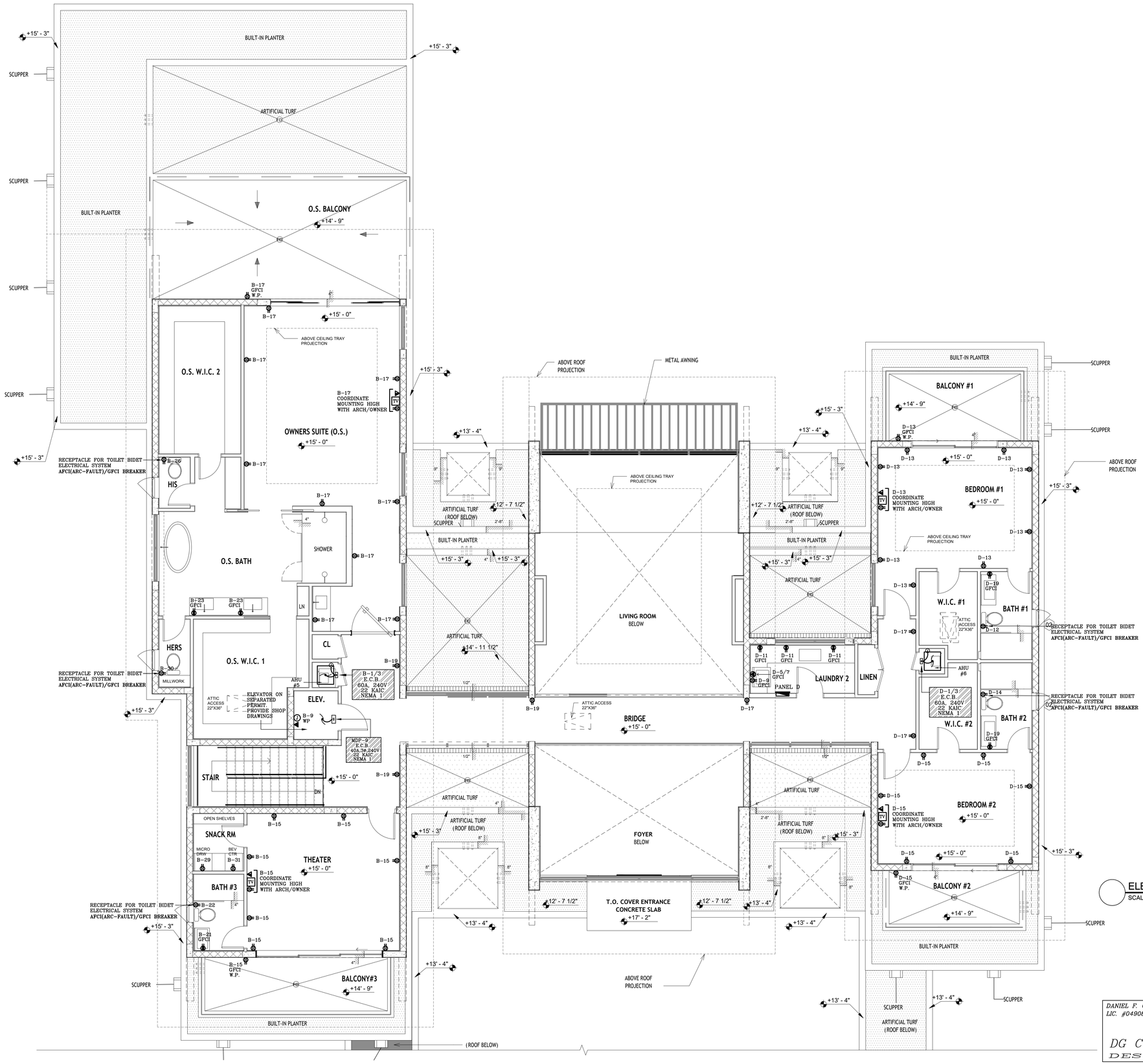

ELECTRICAL POWER 2ND FLOOR PLAN
SCALE: 3/16"=1'-0"

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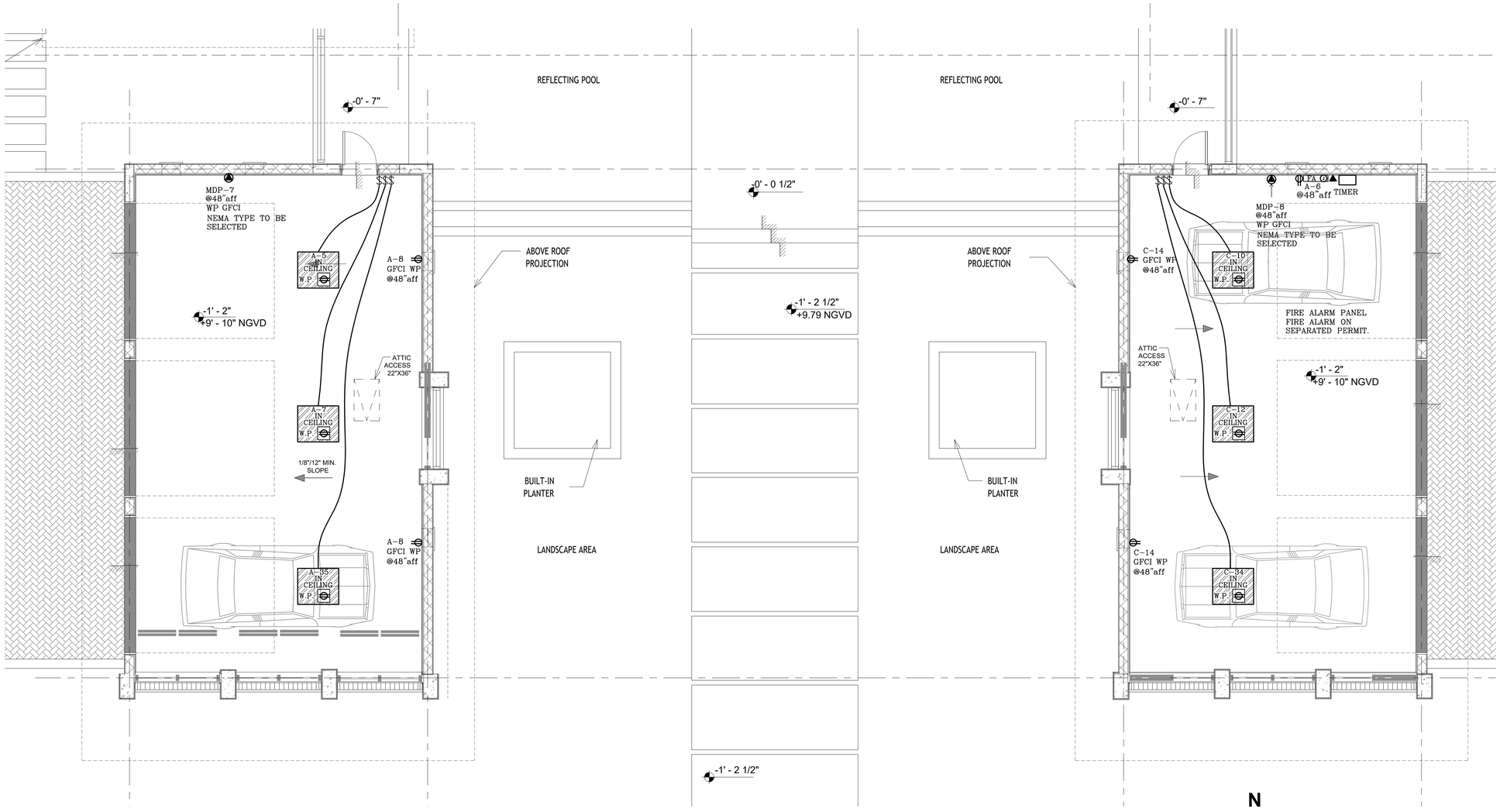

ELECTRICAL POWER GARAGE FLOOR PLAN

SCALE: 3/16"=1'-0"

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ELECTRICAL POWER GARAGE FLOOR PLAN

SHEET NUMBER

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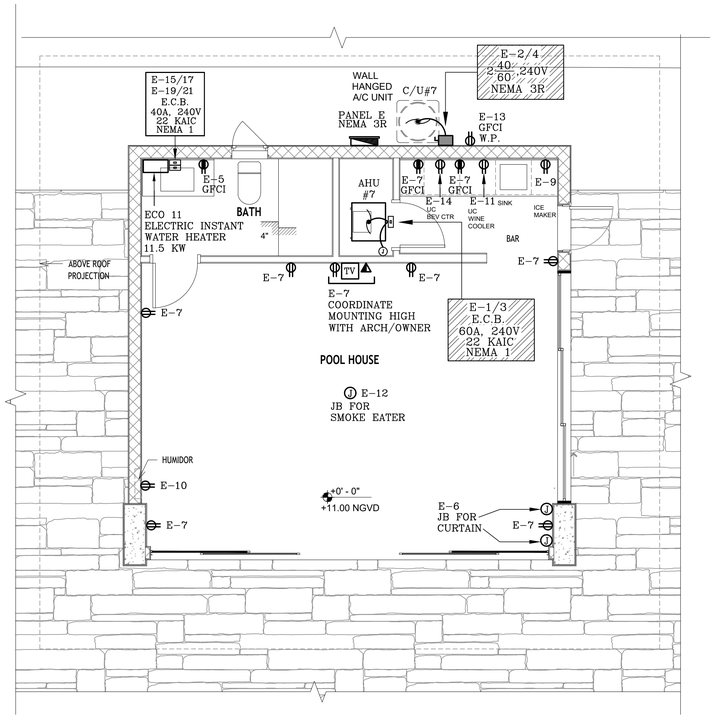


N

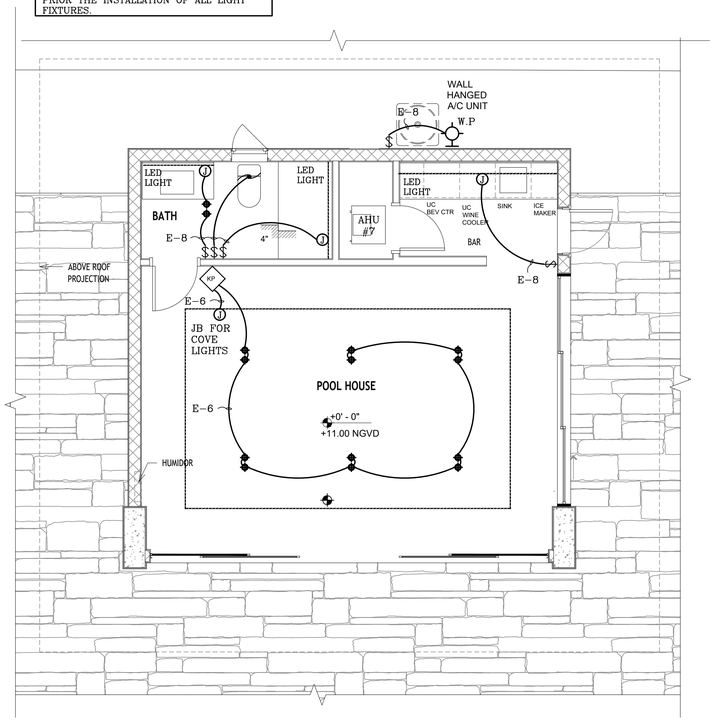
ELECTRICAL POWER POOL CABANA FLOOR PLAN

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

LIGHT FIXTURES LOCATION NOTE:

THE LOCATION OF ALL LIGHT FIXTURES ON THIS DRAWING ARE FOR PERMITTING ONLY AND DOES NOT REPRESENT EXACT LOCATION.

THIS CONTRACTOR SHALL COORDINATE WITH THE HVAC CONTRACTOR AND THE ARCHITECT/OWNER FOR EXACT LOCATION PRIOR THE INSTALLATION OF ALL LIGHT FIXTURES.



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ELECTRICAL LIGHTING POOL CABANA FLOOR PLAN

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

HERRERA RESIDENCE

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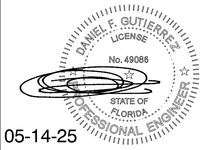
Pinecrest, FL 33156.

SEAL



05-14-25

DANIEL F. GUTIERREZ, P.E.
ELECTRICAL ENGINEER LIC. #049086

REVISIONS

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ARCHITECTURE INTERIORS CONSTRUCTION

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CHECKED BY:	GB
ISSUE DATE:	04/25/2025
SCALE:	AS NOTED

SHEET TITLE

ELECTRICAL POWER & LIGHTING POOL HOUSE FLOOR PLAN

SHEET NUMBER

E-108

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1533 SUNSET DRIVE SUITE 101, CORAL GABLES, FL 33143

TYPE: SIEMENS ITE
SERVICE: 1Ø, 3W
VOLTAGE: 120/240 V.
MOUNTING: FLUSH

MAIN BUS: 225 AMPS
NEUTRAL: F/N
MAIN: M.L.O.
LOCATION: WALL

PANEL A

22 KAIC (SERIES RATED WITH MDP)
NEMA 1

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
5.50	2	40	3/4"	#8	AHU#1 W/5KW HEATER	1		2	CU#1	#8	3/4"	40	2	6.25
						3		4						
1.50	1	20	3/4"	#12	* GARAGE DOOR MOTOR	5		6	* FIRE ALARM	#12	3/4"	20	1	1.00
1.50	1	20	3/4"	#12	* GARAGE DOOR MOTOR	7		8	* GARAGE RECEPTACLES	#12	3/4"	20	1	0.30
6.00	2	20	3/4"	#12	* OVEN GFCI MUST CUMPLY WITH NEC 250.140	9		10	* OVEN GFCI MUST CUMPLY WITH NEC 250.140	#12	3/4"	20	2	6.00
						11		12						
1.50	1	20	3/4"	#12	* SMALL APPLIANCES	13		14	* BATH GFCI	#12	3/4"	20	1	0.30
1.50	1	20	3/4"	#12	* SMALL APPLIANCES	15		16	* BATH GFCI	#12	3/4"	20	1	0.30
1.50	1	20	3/4"	#12	* SMALL APPLIANCES	17		18	* BATH GFCI	#12	3/4"	20	1	0.30
1.50	1	20	3/4"	#12	* REFRIGERATOR GFCI	19		20	DRYER GFCI MUST CUMPLY WITH NEC 250.140	#6	1"	60	2	5.00
1.20	1	20	3/4"	#12	* DISHWASHER GFCI	21		22						
1.20	1	20	3/4"	#12	* GARBAGE DISPOSAL GFCI	23		24	* WASHER (GFCI)	#12	3/4"	20	1	1.50
1.00	1	20	3/4"	#12	* HOOD/COOKTOP IGNITION	25		26	* GFCI LAUNDRY RECEPTACLES	#12	3/4"	20	1	0.30
1.00	1	20	3/4"	#12	* WATER HEATER IGNITER	27		28	* A.V. ROOM RECEPTACLES	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* SERVICE RECEPTACLE	29		30	* A.V. ROOM RECEPTACLES	#12	3/4"	20	1	1.00
1.20	1	20	3/4"	#12	* DISHWASHER GFCI	31		32	* MICROWAVE GFCI	#12	3/4"	20	1	1.50
1.20	1	20	3/4"	#12	* FREEZER GFCI	33		34	* WINE CELLAR GFCI	#12	3/4"	20	1	1.50
1.50	1	20	3/4"	#12	* GARAGE DOOR MOTOR	35		36	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	37		38	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	39		40	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	41		42	SPACE	--	--	--	1	---
27.40														23.25

TOTAL CONNECTED LOAD: 50.65 KVA
TOTAL CONNECTED LOAD WITHOUT CU: 44.40 KVA
TOTAL CONNECTED AMPS: 185 amps

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 42KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

TYPE: SIEMENS ITE
SERVICE: 1Ø, 3W
VOLTAGE: 120/240 V.
MOUNTING: FLUSH

MAIN BUS: 225 AMPS
NEUTRAL: F/N
MAIN: M.L.O.
LOCATION: WALL

PANEL B

22 KAIC (SERIES RATED WITH MDP)
NEMA 1

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
10.50	2	60	1"	#6	AHU#5 W/10KW HEATER	1		2	CU#5	#8	3/4"	40	2	6.25
						3		4						
10.50	2	60	1"	#6	AHU#2 W/10KW HEATER	5		6	CU#2	#8	3/4"	40	2	6.25
						7		8						
1.00	1	20	3/4"	#12	* ELEVATOR LIGHT/RECEPTACLE	9		10	* FAMILY LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* GENERAL RECEPTACLES	11		12	* KITCHEN LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* STAFF RECEPTACLES	13		14	* DINING LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* THEATER RECEPTACLES	15		16	* HALL LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* MASTER BED RM RECEPTACLES	17		18	* STAFF/LAUNDRY LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* GENERAL RECEPTACLES	19		20	* LIVING LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	21		22	* BEDROOM #3 LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	23		24	* MASTER BEDROOM LIGHTS	#12	3/4"	20	1	1.00
1.20	1	20	3/4"	#12	* GATE MOTOR GFCI	25		26	* MASTER BEDROOM LIGHTS	#12	3/4"	20	1	1.00
1.20	1	20	3/4"	#12	* GATE MOTOR GFCI	27		28	* MASTER BATHROOM LIGHTS	#12	3/4"	20	1	1.00
1.50	1	20	3/4"	#12	* MICROWAVE GFCI	29		30	* MASTER BATHROOM LIGHTS	#12	3/4"	20	1	1.00
1.20	1	20	3/4"	#12	* BEVERAGE CENTER GFCI	31		32	* GARAGE LIGHTS	#12	3/4"	20	1	1.00
---	1	--	--	--	SPACE	33		34	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	35		36	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	37		38	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	39		40	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	41		42	SPACE	--	--	--	1	---
31.20														24.50

TOTAL CONNECTED LOAD: 55.70 KVA
TOTAL CONNECTED LOAD WITHOUT CU: 43.20 KVA
TOTAL CONNECTED AMPS: 180 amps

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 65KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

TYPE: SIEMENS ITE
SERVICE: 1Ø, 3W
VOLTAGE: 120/240 V.
MOUNTING: FLUSH

MAIN BUS: 225 AMPS
NEUTRAL: F/N
MAIN: M.L.O.
LOCATION: WALL

PANEL C

22 KAIC (SERIES RATED WITH MDP)
NEMA 1

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
10.50	2	60	1"	#6	AHU#3 W/10KW HEATER	1		2	CU#3	#8	3/4"	40	2	6.25
						3		4						
8.50	2	50	3/4"	#6	AHU#4 W/8KW HEATER	5		6	CU#4	#8	3/4"	40	2	6.25
						7		8						
1.00	1	20	3/4"	#12	* GENERAL RECEPTACLES	9		10	* GARAGE DOOR MOTOR	#12	3/4"	20	1	1.50
1.20	1	20	3/4"	#12	* BAR ICE MAKER GFCI	11		12	* GARAGE DOOR MOTOR	#12	3/4"	20	1	1.50
1.50	1	20	3/4"	#12	* BAR WINE COOLER GFCI	13		14	* GARAGE RECEPTACLES	#12	3/4"	20	1	0.30
1.50	1	20	3/4"	#12	* BAR SMALL APPLIANCES	15		16	* GYM LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* GYM RECEPTACLES	17		18	* GUEST BEDROOM LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* GUEST BED RM RECEPTACLES	19		20	* STUDY LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* STUDY RECEPTACLES	21		22	* HALL LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	23		24	* LOUNGE/BAR LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	25		26	* LIVING LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	27		28	* BAR WINE COOLER GFCI	#12	3/4"	20	1	1.20
1.00	1	20	3/4"	#12	* WATER HEATER IGNITER	29		30	* BAR BEVERAGE CENTER GFCI	#12	3/4"	20	1	1.20
1.00	1	20	3/4"	#12	* SERVICE RECEPTACLE	31		32	* FISH TANK PUMP	#12	3/4"	20	1	1.20
1.00	1	20	3/4"	#12	* FIRE PLACE	33		34	* GARAGE DOOR MOTOR	#12	3/4"	20	1	1.50
---	1	--	--	--	SPACE	35		36	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	37		38	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	39		40	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	41		42	SPACE	--	--	--	1	---
31.10														24.50

TOTAL CONNECTED LOAD: 55.60 KVA
TOTAL CONNECTED LOAD WITHOUT CU: 43.10 KVA
TOTAL CONNECTED AMPS: 180 amps

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 65KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

ALL BATHROOMS TO COMPLY WITH GFCI PROTECTION AS PER NEC 210.52(D)

2023 NEC 210.8(D) - SPECIFIC APPLIANCES O NEW: A NEWLY-EXPANDED LIST OF "SPECIFIC APPLIANCES" WAS ADDED THAT WILL REQUIRE GFCI PROTECTION, REGARDLESS OF WHETHER THEY ARE HARDWIRED OR CORD-AND-PLUG CONNECTED (NEW ADDITIONS INCLUDE ELECTRIC RANGE, WALL-MOUNTED OVEN, COUNTER-MOUNTED COOKING UNIT, CLOTHES DRYER, AND MICROWAVE).

TYPE: SIEMENS ITE
SERVICE: 1Ø, 3W
VOLTAGE: 120/240 V.
MOUNTING: FLUSH

MAIN BUS: 125 AMPS
NEUTRAL: F/N
MAIN: M.L.O.
LOCATION: WALL

PANEL D

22 KAIC (SERIES RATED WITH MDP)
NEMA 1

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
8.50	2	50	3/4"	#6	AHU#6 W/8KW HEATER	1		2	CU#6	#8	3/4"	40	2	6.25
						3		4						
5.00	2	60	1"	#6	DRYER GFCI MUST CUMPLY WITH NEC 250.140	5		6	* HALL LIGHTS	#12	3/4"	20	1	1.00
						7		8	* LIVING/FOYER LIGHTS	#12	3/4"	20	1	1.00
1.50	1	20	3/4"	#12	* WASHER GFCI	9		10	* LAUNDRY LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* GFCI LAUNDRY RECEPTACLES	11		12	* BEDROOM #1 LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* BEDROOM #1 RECEPTACLES	13		14	* BEDROOM #2 LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* BEDROOM #2 RECEPTACLES	15		16	* GARAGE LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* GENERAL RECEPTACLES	17		18	* LANDSCAPE LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	19		20	* LANDSCAPE LIGHTS	#12	3/4"	20	1	1.00
0.30	1	20	3/4"	#12	* BATH GFCI	21		22	* LANDSCAPE LIGHTS	#12	3/4"	20	1	1.00
---	1	--	--	--	SPACE	23		24	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	25		26	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	27		28	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	29		30	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	31		32	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	33		34	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	35		36	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	37		38	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	39		40	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	41		42	SPACE	--	--	--	1	---
18.90														15.25

TOTAL CONNECTED LOAD: 34.15 KVA
TOTAL CONNECTED LOAD WITHOUT CU: 27.90 KVA
TOTAL CONNECTED AMPS: 116 amps

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 65KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

HERRERA RESIDENCE

6825 SW 132nd St,
Pinecrest, FL 33156.

SEAL

DANIEL F. GUTIERREZ LICENSE No. 49086 STATE OF FLORIDA PROFESSIONAL ENGINEER

05-14-25

DANIEL F. GUTIERREZ, P.E.
ELECTRICAL ENGINEER LIC. #049086

REVISIONS

NO.	DESC	DATE

PERMIT SET

BALLI - TRAUTMAN
ARCHITECTURE INTERIORS CONSTRUCTION

JOB NUMBER:	HERRERA
CHECKED BY:	GB
ISSUE DATE:	04/25/2025
SCALE:	AS NOTED

SHEET TITLE

ELECTRICAL PANELS

SHEET NUMBER

E-109

"This item has been digitally signed and sealed by Daniel F. Gutierrez on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies"

DANIEL F. GUTIERREZ, P.E.
LIC. #049086

29111 KINSINGTON COURT
WESLEY CHAPEL
PH: (786)499-4167
Email: danny@dfgengineers.com

DG CONSULTING ENGINEERS, LLC
DESIGN — INSPECTIONS

COPYRIGHT BALLI-TRAUTMAN ARCHITECTS, LLC
1533 SUNSET DRIVE SUITE 101, CORAL GABLES, FL 33143

TYPE: SIEMENS ITE | MAIN BUS: 150 AMPS

SERVICE: 1ø, 3W | NEUTRAL: F/N

VOLTAGE: 120/240 V. | MAIN: M.L.O.

MOUNTING: FLUSH | LOCATION: WALL

PANEL P

22 KAIC (SERIES RATED WITH MDP)
NEMA 3R

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
1.50	1	20	1"	#10	* SPRINKLER PUMP (GFCI)	1		2	POOL LIGHT GFCI (BY OTHERS)	--	--	--	1	1.50
1.00	1	20	3/4"	#12	**FLOOD LIGHTS (GFCI)	3		4	POOL MOTOR GFCI (BY OTHERS)	--	---	--	2	3.00
1.50	1	20	3/4"	#12	* BBQ SMALL APPLIANCES	5		6						
1.20	1	20	3/4"	#12	* BBQ ICE MAKER GFCI	7		8	* BBQ GENERAL LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* BBQ RECEPTACLES	9		10	* BBQ GENERAL LIGHTS	#12	3/4"	20	1	1.00
1.50	1	20	3/4"	#12	* PIZZA OVEN GFCI	11		12	* BBQ GENERAL LIGHTS	#12	3/4"	20	1	1.00
---	1	--	--	--	SPACE	13		14	* GARBAGE DISPOSAL GFCI	#12	3/4"	20	1	1.20
---	1	--	--	--	SPACE	15		16	* UC BEVERAGE CENTER GFCI	#12	3/4"	20	1	1.20
---	1	--	--	--	SPACE	17		18	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	19		20	SPACE	--	--	--	1	---
7.70														9.90

TOTAL CONNECTED LOAD: 17.60 KVA
TOTAL CONNECTED AMPS: 73 AMPS

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 42KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

TYPE: SIEMENS ITE | MAIN BUS: 125 AMPS

SERVICE: 1ø, 3W | NEUTRAL: F/N

VOLTAGE: 120/240 V. | MAIN: 125 amps

MOUNTING: FLUSH | LOCATION: WALL

PANEL E

22 KAIC (SERIES RATED WITH MDP)
NEMA 3R

K/VOLT AMP	POLE	TRIP	CONDUIT	WIRE	REMARKS	CKT. NO.		CKT. NO.	REMARKS	WIRE	CONDUIT	TRIP	POLE	K/VOLT AMPS.
5.50	2	40	3/4"	#8	AHU#7 W/5KW HEATER	1		2	CU#7	#8	3/4"	40	2	6.25
						3		4						
0.30	1	20	3/4"	#12	* BATH GFCI	5		6	* POOL CABANA LIGHTS	#12	3/4"	20	1	1.00
1.00	1	20	3/4"	#12	* POOL CABANA RECEPTACLES	7		8	* POOL CABANA LIGHTS	#12	3/4"	20	1	1.00
1.20	1	20	3/4"	#12	* ICE MAKER GFCI	9		10	* HUMIDOR GFCI	#12	3/4"	20	1	1.20
1.20	1	20	3/4"	#12	* WINE COOLER GFCI	11		12	* SMOKE EATER	#12	3/4"	20	1	1.50
1.00	1	20	3/4"	#12	* SERVICE RECEPTACLE	13		14	* UC BEVERAGE CENTER GFCI	#12	3/4"	20	1	1.20
5.50	2	40	1"	#8	WATER HEATER (5.5kw) PROVIDE INTERLOCK	15		16	SPACE	--	--	--	1	---
						17		18	SPACE	--	--	--	1	---
5.50	2	40	1"	#8	WATER HEATER (5.5kw) PROVIDE INTERLOCK	19		20	SPACE	--	--	--	1	---
						21		22	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	23		24	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	25		26	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	27		28	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	29		30	SPACE	--	--	--	1	---
---	1	--	--	--	SPACE	31		32	SPACE	--	--	--	1	---
10.20														12.15

TOTAL CONNECTED LOAD: 22.35 KVA
TOTAL CONNECTED LOAD WITHOUT CU: 16.10 KVA
TOTAL CONNECTED AMPS: 67 amps

ROMEX CABLE WILL BE PERMITTED WERE ALLOWED BY THE 2020NEC

THIS CONTRACTOR SHALL PROVIDE #10 WIRE FOR HOMERUNS OVER 100FT (SEE NOTE 2 OF PART 2)

ALL PANELS AND DISCONNECTS SHALL BE 22KAIC SERIES RATED WITH MAIN AT 42KAIC.

* PROVIDE AFCI(ARC-FAULT)/GFCI BREAKER AS PER 2020NEC 210.12(B) AND 406.4(D)(4).
** PROVIDE TIMER/CLOCK

PANEL	AMPS	PHASE	VOLTAGE	MAIN/AIC	MOUNTING	LOCATION	NEMA TYPE	CATALOG NUMBER
MDP	600	1	120/240	600A/42KAIC	SURFACE	WALL	3R	SIEMENS

CIRCUIT NUMBER	BREAKER			SERVING	WIRE THWN CU	CONDUIT INCH	CONNECTED LOAD AMPS		
	POLE	AMPS RATING	TYPE				L1	L2	NEUTRAL
1	2	225	PLUG IN	PANEL A	3#4/0	2 1/2"	185	185	185
2	2	225	PLUG IN	PANEL B	3#4/0	2 1/2"	180	180	180
3	2	125	PLUG IN	PANEL C	3#4/0	2 1/2"	180	180	180
4	2	150	PLUG IN	PANEL D	3#4/0	2 1/2"	116	116	116
5	2	125	PLUG IN	PANEL P	3#1	1 1/2"	73	73	73
6	2	125	PLUG IN	PANEL E	3#1	1 1/2"	67	67	67
7	2	50	PLUG IN	CAR CHARGER	3#6	1"	50	50	50
8	2	50	PLUG IN	CAR CHARGER	3#6	1"	50	50	50
9	2	40	PLUG IN	ELEVATOR	3#1	1 1/2"	60	60	60
10	---	---	---	SPACE (FOR FUTURE)	---	---	---	---	---
11	---	---	---	SPACE (FOR FUTURE)	---	---	---	---	---
12	---	---	---	SPACE (FOR FUTURE)	---	---	---	---	---
SEE DEMAND LOAD CALCULATIONS									
THIS PANEL IS RATED TO 42KAIC SERIES RATED WITH PANELS A,B,C,P (SEE ELECTRICAL NOTE 4 OF PART 3 ON E-1)									

SERVICE LOAD CALCULATIONS

TOTAL HOUSE AREA: 9,171 SF

DESCRIPTION	LOAD
AS PER NEC PART III (220.42/220.52) GENERAL LIGHTING (9,171 x 3) ---------- SMALL APPLIANCE SUB-TOTAL FIRST 3KVA @ 100% REMAINDER @ 35% TOTAL:	 27.50 KVA 4.50 KVA 32.00 KVA 3.00 KVA 10.15 KVA 13.15 KVA
OVEN(2)	12.00 KVA
DRYER	5.00 KVA
HOOD & IGNITION REFRIGERATOR(3) WASHER DISHWASHER MICROWAVE GARBAGE DISPOSAL(2) ELEVATOR WINE COOLER(3) BEVERAGE CENTER(2) INSTANT WATER HEATER ICE MAKER(2)	1.00 KVA 4.50 KVA 1.50 KVA 1.20 KVA 1.20 KVA 2.40 KVA 10.00 KVA 3.60 KVA 2.40 KVA 11.00 KVA 2.40 KVA
NEC 220.53 total fastened-in-place ----- total @ 75% ----------	 41.20 KVA 30.90 KVA
A/C UNITS (7)	54.20 KVA
POOL/IRRIGATION EQUIPMENT	3.00 KVA
CAR CHARGER(2)	20.00 KVA
NET COMPUTED LOAD	138.60 KVA
TOTAL AMPS. SERVICE LOAD (1ø, 240V)	578 AMPS.

HERRERA RESIDENCE

6825 SW 132nd St,
Pinecrest, FL 33156.

SEAL

DANIEL F. GUTIERREZ LICENSE No. 49086 STATE OF FLORIDA PROFESSIONAL ENGINEER

05-14-25

DANIEL F. GUTIERREZ, P.E.
ELECTRICAL ENGINEER LIC. #049086

REVISIONS

NO.	DESC	DATE

PERMIT SET

BALLI - TRAUTMAN
ARCHITECTURE INTERIORS CONSTRUCTION

JOB NUMBER:	HERRERA
CHECKED BY:	GB
ISSUE DATE:	04/25/2025
SCALE:	AS NOTED

SHEET TITLE

ELECTRICAL MDP PANEL & LOAD CALCULATIONS

SHEET NUMBER

E-110

"This item has been digitally signed and sealed by Daniel F. Gutierrez on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies"

DANIEL F. GUTIERREZ, P.E.
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DG CONSULTING ENGINEERS, LLC
DESIGN — INSPECTIONS

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1533 SUNSET DRIVE SUITE 101, CORAL GABLES, FL 33143

ELECTRICAL LEGEND

$_{MS}$ 120 V THREE WAY TOGGLE SWITCH, SINGLE POLE. (+48" AFF UNLESS OTHERWISE NOTED). VOLTAGE AS PER CIRCUIT DESIGNATION. "MS" MEANS MOTION SENSORS. PROVIDE NEUTRAL AS PER 2017 NEC 404.2(C).

$_{SW}$ 120 V THREE WAY TOGGLE SWITCH, SINGLE POLE. (+48" AFF UNLESS OTHERWISE NOTED). VOLTAGE AS PER CIRCUIT DESIGNATION.

GROUNDED TYPE DUPLEX RECEPTACLE, WALL. (+18" AFF UNLESS OTHERWISE NOTED.) LETTER "F" DESIGNATION MEANS FLOOR MOUNTED.

GROUNDED TYPE DUPLEX RECEPTACLE, WALL. (+4" ABOVE COUNTER UNLESS OTHERWISE NOTED.) LETTER "D" DESIGNATION MEANS DEDICATED; LATTER "I" DESIGNATION MEANS ISOLATED GROUND.

GROUNDED TYPE DUPLEX RECEPTACLE HALF SWITCHED, WALL. (+18" AFF UNLESS OTHERWISE NOTED.)

GROUNDED TYPE SINGLE RECEPTACLE, WALL. (+4" ABOVE COUNTER UNLESS OTHERWISE NOTED.)

GROUNDED TYPE SINGLE RECEPTACLE FLOOR MOUNTED.

GROUNDED TYPE 30AMPS, 120/240V RECEPTACLE, WALL.

JUNCTION BOX. INSTALL FAN TYPE JUNCTION BOX (FOR 50 LBS) IN ALL FANS.

TELEPHONE OUTLET, WALL. (+18" AFF)

T.V. OUTLET CABLE

CONDUIT CONCEALED IN OR UNDER FLOOR SLABS.

CONDUIT CONCEALED ABOVE CEILING OR IN WALL.

PANEL

DISCONNECT SWITCH.

ENCLOSED CIRCUIT BREAKER

GROUND CONNECTION.

ELECTRIC MOTOR CONNECTION.

CEILING MOUNTED LIGHT FIXTURE (TO BE SELECTED)

SMOKE/CARBON MONOXIDE DETECTOR COMBO

TYPE IC LIGHT FIXTURES NOTE

THIS CONTRACTOR SHALL PROVIDE AND INSTALL IC LIGHT FIXTURE IF REQUIRED AS PER 2017NEC 410.116(2), ASTM E 283, R402 4.1.1, C402.5.8

GROUNDING

THIS CONTRACTOR SHALL PROVIDE GROUNDING AS PER NEC 250. SEE ELECTRICAL NOTE 2 OF PART 3.

TAMPER RESISTANT NOTE:

THIS CONTRACTOR SHALL PROVIDE AND INSTALL TAMPER RESISTANT FOR ALL RECEPTACLES (EXISTING & NEW)AS PER NEC 406.12

BATH EXHAUST FANS NOTE:

ALL BATH EXHAUST FANS SHALL BE CONNECTED THRU THE LIGHT SWITCH WITH A SEPARATE SWITCH. THE J.B. AND FAN ATTACHMENTS SHALL BE RATED FOR CEILING FAN.

LIGHT FIXTURES LOCATION NOTE:

THE LOCATION OF ALL LIGHT FIXTURES ON THIS DRAWING ARE FOR PERMITTING ONLY AND DOES NOT REFRESENT EXACT LOCATION.

THIS CONTRACTOR SHALL COORDINATE WITH THE HVAC CONTRACTOR AND THE ARCHITECT/OWNER FOR EXACT LOCATION PRIOR THE INSTALLATION OF ALL LIGHT FIXTURES.

NEUTRAL WIRE AT SWITCHED

PROVIDE NEUTRAL WIRE AT BATHROOMS, HALLWAYS, STAIRWAYS, OR ROOMS THAT ARE SUITABLE FOR HUMAN HABITATION OR OCCUPANCT AS PER 2017 NEC 404.2(C).

OUTDOOR RECEPTACLES NOTE:

RECEPTACLES LOCATED OUTDOOR IN WET LOCATION SHALL BE PROVIDED WITH IN USE COVER LISTED "EXTRA DUTY" AS PER NEC 406.9(B)(1) & 406.2

USE PVC SCH-40 FOR UNDERGROUND CONDUITS

ALL EXTERIOR LIGHTS SHALL BE RATED FOR WET LOCATION

A GROUNDED CONDUCTOR (NEUTRAL) MUST BE PROVIDED AT ALL LIGHTING OUTLETS UNLESS THE WITING IS IN METAL RACEWAY (NEC 404.2(C))

PROVIDE MINIMUM OF 1 FOOT CANDLE INSIDE AND OUTSIDE STAIRS AS PER 2020 7th edition FBC R303.6

PROVIDE GFCI AS PER NEC 210.8 FOR ALL 125V, 15 OR 20 AMPS RECEPTACLES AT ALL BATHROOMS

GFCI RECEPTACLES MUST BE READILY ACCESSIBLE (NEC 210.8)

PROVIDE MIN OF 1FC AT ALL EGRESS AS PER 2020FBC 7th edition 1006.

ARC FAULT (AFCI) & GFCI CIRCUIT BREAKERS NOTE

THIS CONTRACTOR SHALL PROVIDE AND INSTALL ARC FAULT CIRCUIT BREAKERS IN ALL NEW 15 & 20 AMPS CIRCUITS AND/OR NEW/REPLACED LIGHTS AND RECEPTACLES. PROVIDE GFCI AT ALL BATHROOM RECEPTACLES. AFCI/GFCI WITHIN 3 FT FROM SINK.

PROVIDE AND INSTALL A MINIMUM OF 90% HIGH EFFICIENCY LAMPS AS PER 2020FBC 7th edition 404.1, E C 405. LUMINARIES SHALL HAVE AN EFFICIENCY OF AT LEAST 45 LUMENS-PER-WATT OR SHALL UTILIZE LAMPS WITH AN EFFICACY OF NOT LESS THAN 65 LUMENS-PER-WATT.

SMOKE/CARBON MONOXIDE DETECTOR NOTE:

ALL SMOKE/CARBON MONOXIDE DETECTORS SHALL BE 110V WITH BATTETY BACK UP AND INTERCONNECTED FROM A AFCI (ARC FAULT) LIGHTING CIRCUIT AHEAD OF SWITCH.

SMOKE/CARBON MONOXIDE DETECTORS MAY NOT BE WITHIN 20FT OF A COOKING APPLIANCE AND NOT CLOSER THAN 3FT FROM THE DOOR TO BATHROOM, WASHER/DRYER, KITCHEN AND A/C.

THE ACTIVATION OF ANY SMOKE DETECTOR SHALL ACTIVATE THE OTHERS.

SMOKE/CARBON DETECTORS NOTE: THIS CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL SMOKE/CARBON DETECTOR AND INSTALL THEM 3'-0" AWAY OF ANY A/C DIFFUSER OR EXHAUST.

KAIC NOTE: THIS CONTRACTOR SHALL COORDINATE WITH FPL THE KAIC AVAILABLE AND INCREASE OR DECREASE THE KAIC ACCORDINGLY.

ARCH FLASH HAZARD WARNING. THIS CONTRACTOR SHALL PROVIDE PERMANENT SIGN AT METER, DISCONNECTS, PANELS, ETC AS PER NEC 110.16.

ELECTRICAL MAIN GROUND SHALL BE BOUNDED TO MAIN GAS PIPE 1#4 CU AS PER NEC 250.52, 250.52(B) AND 250.104(3)(B)

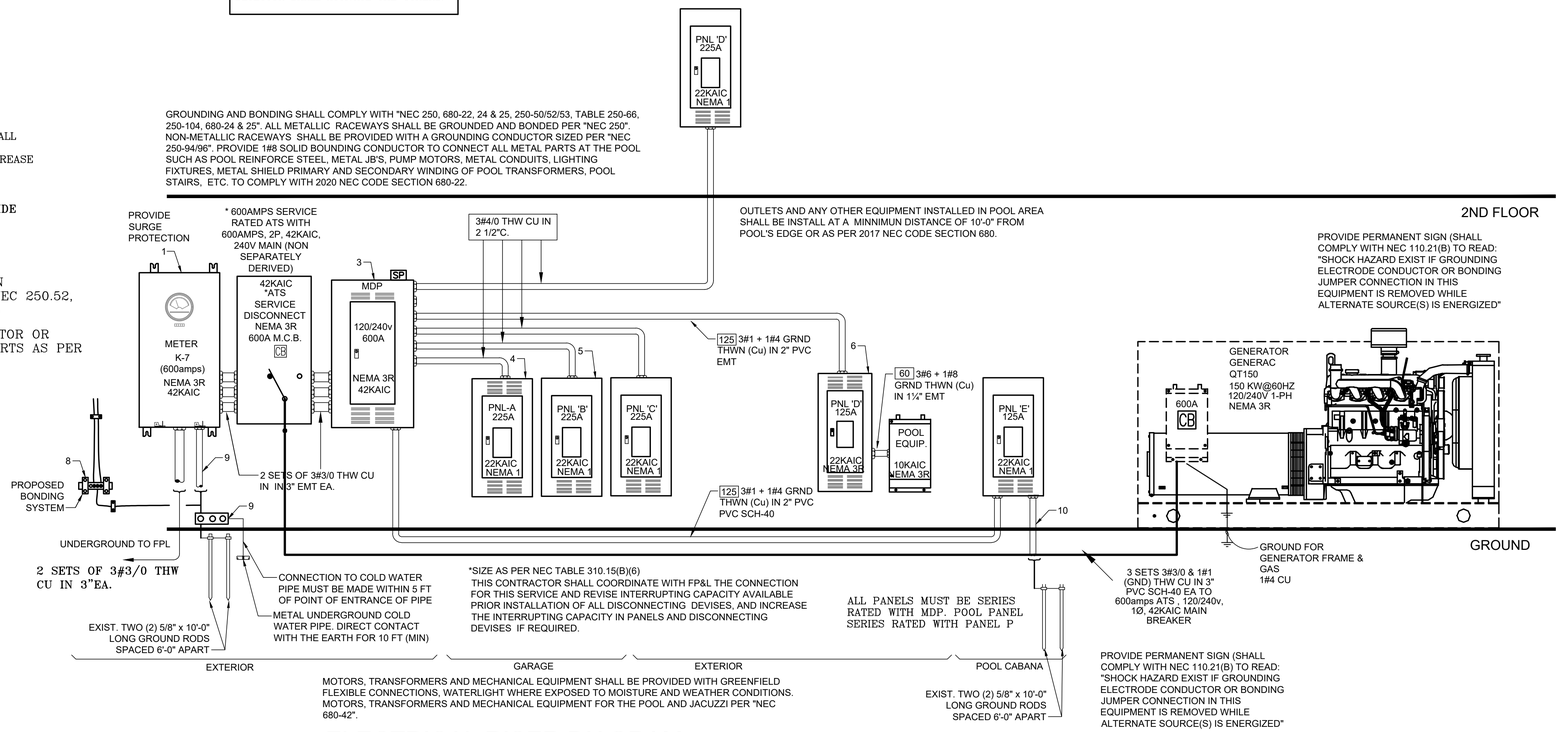
PROVIDE BOUNDING CONDUCTOR OR JUMPER BETWEEN METAL PARTS AS PER 2020NEC EXHIBIT 110.4

PROVIDE BOUNDING CONDUCTOR OR JUMPER BETWEEN METAL PARTS AS PER 2020NEC EXHIBIT 110.4, 250.2 & 250.4

THIS CONTRACTOR SHALL PROVIDE 1#3 THW CU GROUNDING BOUNDING TO METALLIC GAS PIPE

KAIC NOTE: THIS CONTRACTOR SHALL PROCEED AS PER ELECTRICAL NOTE 4 OF PART 3 ON E-5.

PROVIDE INTERSYSTEM BOUNDING BAR AT MAIN DISCONNECT FOR TELEPHONE AND CABLE (COMMUNICATION SYSTEM) SERVICE BOUNDED TO THE ELECTRICAL SERVICE MAIN GROUNDING ELECTRODE SYSTEM (2020NEC SECTION 100)



ELECTRICAL RISER DIAGRAM

N.T.S.

TESLA HOME GEN 3 WALL CONNECTOR
ELECTRICAL VEHICLE CHARGING STATION

THE MOST PRACTICAL CHARGING SOLUTION FOR HOUSES, APARTMENTS, LODGING FACILITIES, AND WORKPLACES IS THE TESLA GEN 3 WALL CONNECTOR.
MULITPLE POWER SETTINGS, UP TO 71 KM OF RANGE ADDED PER HOUR OF CHARGING CHARGE AT HOME, ANYTIME.
TESLA GEN 3 WALL CONNECTOR PROVIDES A FULL CHARGE OVERNIGHT FOR EVERY HOMEOWNER.
MONITOR YOUR CHARGE WITH THE TESLA APP AND RECEIVE NOTIFICATIONS WHEN COMPLETE.
WI-FI CONNECTIVITY ENABLES OVER-THE-AIR FIRMWARE UPDATES AND REMOTE SERVICE IF NECESSARY.
TESLA WALL CONNECTOR OFFERS THE BEST HOME CHARGING EXPERIENCE FOR ANY TESLA OWNER.
LIGHTWEIGHT 18' OR 8.5' CABLE LENGTHS ARE AVAILABLE. SEE THE "CHOOSING LOCATION" CABLE LENGTH THAT WORKS BEST FOR YOUR NEEDS.

FEATURES

UP TO 11.5 KW / 48 AMP OUTPUT
CUSTOMIZABLE POWER LEVELS ON A RANGE OF CIRCUIT BREAKERS
COMPATIBLE WITH ANY HOME ELECTRICAL SYSTEM
COMPATIBLE FOR POWER SHARING WITH OTHER GEN 3 WALL CONNECTORS ONLY
WI-FI CONNECTIVITY (2.4 GHZ 802.11 B/G/N)
APPROVED FOR INDOOR AND OUTDOOR INSTALLATION
LIGHTWEIGHT 8.5", 18' OR 24" CABLE LENGTHS
TEMPERED WHITE GLASS FACEPLATE SAFETY:

THE TESLA GEN 3 WALL CONNECTOR IS DESIGNED WITH SAFETY IN MIND. IT HAS BUILT-IN OVERCURRENT AND OVERHEATING PROTECTION, ENSURING THAT YOUR CAR IS CHARGED SAFELY AND EFFICIENTLY. THE CONNECTOR IS ALSO EQUIPPED WITH AN AUTOMATIC SHUT-OFF FEATURE THAT KICKS IN IF THE CABLE IS DISCONNECTED OR IF THERE IS AN ISSUE WITH THE CHARGING PROCESS.

RISER NOTES:

1. PROPOSED METER CAN DEVICE (NEMA3R) ENCLOSURE TYPE: "SIEMENS" RATED FOR 600A, 1 PHASE, 3 WIRE. COORDINATE REQUIREMENTS WITH LOCAL UTILITY.
2. NOT USED
3. MAIN DISTRIBUTION PANEL 600A RATED (MDP). WITH MAIN BREAKERS & 24 SPACE INCLUDED.
4. PANEL 'A' FOR CHARACTERISTICS SEE SCHEDULE.
5. PANEL 'B', 'C' & 'G'. FOR CHARACTERISTICS SEE SCHEDULE.
6. PANEL "P" FOR POOL USE. SEE POOL CONTRACTOR DWGS
7. PROVIDE A UL LISTED INTERSYSTEM BONDING TERMINATION FOR CONFECTING INTERSYSTEM BONDING AND GROUNDING CONDUCTORS. PROVIDE ONE AT THE SERVICE ENTRANCE EQUIPMENT (METER). THE INTERSYSTEM SHALL BE ABLE TO CONNECT NOT LESS THAN 3 INTERSYSTEM BONDING CONDUCTORS. INSTALL AS REQUIRED IN NEC250.94
8. BUILDING GROUNDING SYSTEM. REFER TO DETAIL SHEET.
9. 1#3/0 BARE (CU) GROUND WIRE TO BLDG. STEEL & COLD WATER PIPE
10. 1#4 BARE (CU) GROUND WIRE TO BUDG. STEEL & CWP

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SHEET TITLE

ELECTRICAL NOTES & DETAILS

SHEET NUMBER

E-111

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1533 SUNSET DRIVE SUITE 101, CORAL GABLES, FL 33143

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GENERAC

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1 of 9

INCLUDES:

- Two Line LCD Tri-Lingual Digital Nexus™ Controller
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Natural Gas or LP Operation
- 2 Year Limited Warranty
- UL 2200 Listed

Standby Power Rating

Model QT070 (Aluminum - Bisque) - 70 kW 60 Hz
Model QT080 (Aluminum - Bisque) - 80 kW 60 Hz
Model QT100 (Aluminum - Bisque) - 100 kW 60 Hz
Model QT130 (Aluminum - Bisque) - 130 kW 60 Hz
Model QT150 (Aluminum - Bisque) - 150 kW 60 Hz

QUIET TEST

Meets EPA Emission Regulations
70, 100, 130 & 150 kW meet CA/MA emissions requirement with optional catalyst
80 kW not for sale in CA/MA

FEATU E

INNOVATIVE E I N OTOT E TE TIN are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.

TE T C ITE IA:

- √ OTOT E TE TE
- √ TEM TO IONAL TE TE
- √ NEMA M 1-22 EVALUATION
- √ MOTO TA TIN ABILIT

OLI - TATE_F EQUENC COM EN ATE VOLTA E E ULATION. This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at ±1%.

IN LE OU CE E VICE E ON E from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.

ENE AC T AN FE WITCHE . Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

GENERAC ISO 9001:2008

Standby Generators

2 of 9

GENERAC

70 • 80 • 100 • 130 • 150 kW

application & engineering data

GENERATOR SPECIFICATIONS

Type	Synchronous
Rotor Insulation Class	H
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	4 wire
Alternator Output Leads 3-Phase	6 wire (70, 80 & 150 kW) or 12 wire (100 & 130 kW)
Bearings	Sealed Ball
Coupling	Flexible Disc (70, 80 & 150 kW) or Gear Drive (100 & 130 kW)
Excitation System	Brushless

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%

GOVERNOR SPECIFICATIONS

Type	Electronic
Frequency Regulation	Isochronous
Steady State Regulation	± 0,25%

ELECTRICAL SYSTEM

Battery Charger Alternator	12 Volt 30 Amp
Static Battery Charger	2 Amp
Recommended Battery (battery not included)	Group 24F, 525 CCA (70, 80 & 150 kW) or Group 27F, 700 CCA (100 & 130 kW)
System Voltage	12 Volts

GENERATOR FEATURES

Revolving field heavy duty generator
Directly connected to the engine
Operating temperature rise 120 °C above a 40 °C ambient
Class H insulation is NEMA rated
All models fully prototyped tested

ENCLOSURE FEATURES

Aluminum weather protective enclosure	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

ENGINE SPECIFICATIONS: 80 kW

Make	Generac
Model	V-Type
Cylinders	8
Displacement (Liters)	5,4
Bore (in/mm)	3,55/90,2
Stroke (in/mm)	4,17/105,9
Compression Ratio	9:1
Intake Air System	Naturally Aspirated
Lifter Type	Hydraulic

ENGINE SPECIFICATIONS: 70, 100, 130 & 150 kW

Make	Generac
Model	V-Type
Cylinders	10
Displacement (Liters)	6,8
Bore (in/mm)	3,55/90,2
Stroke (in/mm)	4,17/105,9
Compression Ratio	9:1
Intake Air System	Naturally Aspirated
Lifter Type	Hydraulic

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on cartridge
Crankcase Capacity (qt/l)	5/4,7 (70, 100, 130 & 150 kW) or 6/5,7 (80 kW)

ENGINE COOLING SYSTEM

Type	Closed
Water Pump	Belt driven
Fan Speed (rpm)	2300 ~ 70 kW 2174 ~ 80 kW 1670 ~ 100 kW 1950 ~ 130 kW 2200 ~ 150 kW
Fan Diameter (in/mm)	22/558,8 (70 kW) or 26/660,4 (80, 100, 130 & 150 kW)
Fan Mode	Pusher (70 kW) or Puller (80, 100, 130 & 150 kW)

FUEL SYSTEM

Fuel Type	Natural gas, propane vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	11-14" water column/21-26 mm HG

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)

Standby Generators

3 of 9

GENERAC

70 • 80 • 100 • 130 • 150 kW

operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW LPG	Amp LPG	kW Nat. Gas	Amp Nat. Gas	CB Size (Both)
QT070	120/240 V. 1Ø, 1,0 pf	67	292	64	267	300
	120/208 V. 3Ø, 0,8 pf	70	243	67	232	300
	120/240 V. 3Ø, 0,8 pf	70	211	67	201	250
	277/480 V. 3Ø, 0,8 pf	70	105	67	101	125
QT080	120/240 V. 1Ø, 1,0 pf	77	333	77	333	400
	120/208 V. 3Ø, 0,8 pf	80	278	80	278	300
	120/240 V. 3Ø, 0,8 pf	80	241	80	240	300
	277/480 V. 3Ø, 0,8 pf	80	120	80	120	150
QT100	120/240 V. 1Ø, 1,0 pf	100	417	89	371	450
	120/208 V. 3Ø, 0,8 pf	100	347	94	326	400
	120/240 V. 3Ø, 0,8 pf	100	301	94	283	350
	277/480 V. 3Ø, 0,8 pf	100	150	94	141	175
QT130	120/240 V. 1Ø, 1,0 pf	130	542	117	488	600
	120/208 V. 3Ø, 0,8 pf	130	451	122	423	500
	120/240 V. 3Ø, 0,8 pf	130	391	122	367	450
	277/480 V. 3Ø, 0,8 pf	130	195	122	183	225
QT150	120/240 V. 1Ø, 1,0 pf	144	625	138	567	700
	120/208 V. 3Ø, 0,8 pf	150	520	142	493	600
	120/240 V. 3Ø, 0,8 pf	150	451	142	427	500
	277/480 V. 3Ø, 0,8 pf	150	225	142	214	250

SURGE CAPACITY IN AMPS

	Voltage Dip @ < .4 pf	
	15%	30%
QT070		
120/240 V. 1Ø	179	356
120/208 V. 3Ø	194	471
120/240 V. 3Ø	168	408
277/480 V. 3Ø	83	201
QT080		
120/240 V. 1Ø	174	435
120/208 V. 3Ø	186	466
120/240 V. 3Ø	161	404
277/480 V. 3Ø	70	175
QT100		
120/240 V. 1Ø	150	413
120/208 V. 3Ø	186	452
120/240 V. 3Ø	161	392
277/480 V. 3Ø	107	261
QT130		
120/240 V. 1Ø	236	648
120/208 V. 3Ø	364	885
120/240 V. 3Ø	315	767
277/480 V. 3Ø	161	390
QT150		
120/240 V. 1Ø	486	1214
120/208 V. 3Ø	534	1334
120/240 V. 3Ø	463	1156
277/480 V. 3Ø	250	624

ENGINE FUEL CONSUMPTION

		Natural Gas (ft³/hr)	Natural Gas (m³/hr)	Propane (gal/hr)	Propane (l/hr)	Propane (ft³/hr)
QT070	Exercise cycle	110	3,1	1,2	4,6	44
	25% of rated load	260	7,4	2,65	10,8	104
	50% of rated load	500	14,2	5,46	20,8	200
	75% of rated load	696	19,8	7,62	29,1	280
	100% of rated load	1020	29	11,17	42,6	411
QT080	Exercise cycle	95	2,7	1,4	5,51	53
	25% of rated load	549,5	15,6	3,46	13,11	126
	50% of rated load	784,4	22,2	6,62	25,1	241
	75% of rated load	1024,8	29,0	9,24	34,96	336
	100% of rated load	1252,2	35,5	12,78	48,38	465
QT100	Exercise cycle	130	3,7	1,4	5,4	52
	25% of rated load	371	10,5	4,1	15,5	149
	50% of rated load	713	20,3	7,9	29,8	287
	75% of rated load	991	28,2	11	41,5	400
	100% of rated load	1260	35,8	13,9	52,6	507
QT130	Exercise cycle	135	3,8	1,4	5,7	55
	25% of rated load	482	13,7	5,3	20	193
	50% of rated load	927	26,3	10,3	38,7	373
	75% of rated load	1292	36,7	14,3	54	520
	100% of rated load	1786	50,8	19,8	74,6	719
QT150	Exercise cycle	155	4,4	1,7	6,5	63
	25% of rated load	556	15,8	6,09	23,2	224
	50% of rated load	1070	30,4	11,72	44,7	431
	75% of rated load	1491	42,4	16,33	62,3	600
	100% of rated load	2061	58,6	22,57	86,1	830

Note: **Fuel pipe must be sized for full load.**

For Btu content, multiply gal/hr x 90950 (LP) or ft³/hr x 1000 (NG).

For megajoule content, multiply l/hr x 25,26 (LP) or m³/hr x 37,26 (NG).

Refer to 'Emissions Data Sheets' for maximum fuel flow for EPA and SCAQMD permitting purposes.

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271. Design and specifications are subject to change without notice.

600-800 Amps

GENERAC

Non-Service Rated
Automatic Transfer Switches

600-800 Amps
600-800 Amps

1 of 2 2 of 2

600 - 800 Amps, 1 and 3-phase

cULus LISTED USA

DESCRIPTION

Generac 600-800 amp non-service rated switches are compatible with the full 22-150kW line of liquid-cooled generators. The switches are open transition and are available in 120/240 1ø, 120/208 3ø, 120/240 3ø, and 277/480 3ø.

STANDARD FEATURES

600-800 amp non-service rated transfer switches are housed in a rugged steel NEMA/UL Type 3R enclosure, with electrostatically applied and baked powder paint. The Heavy Duty Generac Contactor is a UL recognized device, designed for years of service. The controller at the generator handles all the timing, sensing, exercising functions, and transfer commands.

DPM TECHNOLOGY (single-phase switches only)

Through the use of Digital Power Management technology (DPM), each of these switches has the capability to truly manage two air conditioning loads with no additional hardware. When used in tandem with the individual Power Management Modules (PMM), up to four more additional loads can be intelligently managed.

GENERAC ISO 9001:2008

GENERAC

600-800 Amps

Non-Service Rated Transfer Switches

Functions

All timing and sensing functions originate in the generator controller

Utility voltage drop-out	<60%
Timer to generator start	10 second factory set, adjustable between 2-1500 seconds by a qualified dealer*
Engine warm up delay	5 seconds
Standby voltage sensor	60% for 5 seconds
Utility voltage pickup	>80%
Re-transfer time delay	15 seconds
Engine cool-down timer	60 seconds
Exerciser	12 minutes every 7 days

The transfer switch can be operated manually without power applied.

*When used in conjunction with units utilizing Evolution™ controls

Specifications

Model	RTSR600A3	RTSN600G3	RTSN600J3	RTSN600K3	RTSR800A3	RTSN800G3	RTSN800J3	RTSN800K3
Amps		600			800			
Voltage	120/240 1Ø	120/208 3Ø	120/240 3Ø	277/480 3Ø	120/240 1Ø	120/208 3Ø	120/240 3Ø	277/480 3Ø
Load Transition Type (Automatic)	Open Transition							
Enclosure Type	NEMA/UL 3R							
Withstand Rating (Amps)	42,000				65,000			
Lug Range	1/0 - 500 MCM				4/0 - 500 MCM			

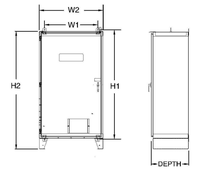
Features

- Electrically operated, mechanically-held contacts for fast, positive connections.
- Rated for all classes of load, 100% equipment rated, both inductive and resistive.
- 160 millisecond transfer time.
- Single coil design.
- Main contacts are silver plated or silver alloy to resist welding and sticking.
- NEMA/UL 3R (indoor/outdoor rated) rugged steel enclosure is standard.
- Limited 5 Year Warranty.

Dimensions

Volteges*	Height (in./mm) H1	Height (in./mm) H2	Width (in./mm) W1	Width (in./mm) W2	Depth (in./mm)	Weight (lbs/Nilos)
120/240 1Ø, 120/208 3Ø, 120/240 3Ø	61.4/1559.6	66/1676.4	30/762	36/914.4	21/533.4	337.5/153.09
277/480 3Ø	61.4/1559.6	66/1676.4	30/762	36/914.4	21/533.4	353.5/160.34

*Includes 600 & 800 amp switches.



GENERAC

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HERRERA RESIDENCE

6825 SW 132nd St,
Pinecrest, FL 33156.

SEAL

DANIEL F. GUTIERREZ LICENSE No. 49086 STATE OF FLORIDA PROFESSIONAL ENGINEER

05-14-25

DANIEL F. GUTIERREZ, P.E.
ELECTRICAL ENGINEER LIC. #049086

REVISIONS

NO.	DESC	DATE

PERMIT SET

BALLI - TRAUTMAN
ARCHITECTURE INTERIORS CONSTRUCTION

JOB NUMBER:	HERRERA
CHECKED BY:	GB
ISSUE DATE:	04/25/2025
SCALE:	AS NOTED

SHEET TITLE

GENERATOR SPECS & TRANSFER SWITCH

SHEET NUMBER

E-112

"This item has been digitally signed and sealed by Daniel F. Gutierrez on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies"

DANIEL F. GUTIERREZ, P.E.
LIC. #049086

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DG CONSULTING ENGINEERS, LLC
DESIGN — INSPECTIONS

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