

1- PROVIDE NEW DESIGN POWER & LIGHTING ELECTRICAL DISTRIBUTION FOR A NEW RESIDENCE.

ELECTRICAL DIVISION 16

- THE WORK SHALL COMPLY WITH THE LATEST APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE 2020, FLORIDA BUILDING CODE 2023 8TH EDITION, O.S.H.A. (LOCAL) REQUIREMENTS AND ALL OTHER LOCAL CODES AND ORDINANCES GOVERNING THIS INSTALLATIONS, AS A MINIMUM STANDARD. UNLESS SPECIFICATIONS LISTED HEREIN OR SHOWN ON PLANS REQUIRE A HIGHER STANDARD, ALL ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 2020 ART. 110-26 THE WORK INCLUDED CONSISTS OF ALL SUPERVISION, LABOR, MATERIAL, EQUIPMENT FACILITIES AND INSTALLATION REQUIRED FOR THE COMPLETE SATISFACTORY AND APPROVED ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND LISTED FOR IN THIS SPECIFICATION OR AS MAY BE REASONABLY IMPLIED BY EITHER. ALL NOTES ON THE DRAWINGS PERTAINING TO THE WORK OF THIS TRADE SHALL BE CONSIDERED AS PART OF THIS SPECIFICATIONS AND CONTRACT. THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLIANCE WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN. THE CONTRACTOR IS REFERRED TO THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL SPECIFICATIONS. SUCH PLANS AND SPECIFICATIONS ARE TO BE CONSIDERED PART OF THE ELECTRICAL CONTRACT DOCUMENTS. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS AND ARRANGEMENTS ONLY. THE CONTRACTOR SHALL PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATIONS OF THOSE ITEMS. COORDINATE THE INSTALLATIONS OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED, ALL SLAB AND FIREWALL PENETRATIONS MUST BE FIRE RATED AND MUST CONFORM TO OWNER'S APPROVAL AS TO LOCATION AND CONSTRUCTION DETAILS.

 2. MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
 3. GROUNDINGS: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250 NEC. PROVIDE GROUND WIRES IN ALL CONDUITS UNLESS OTHERWISE NOTED.
 4. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN TEMPORARY ELECTRIC POWER AND LIGHTING FOR ALL TRADES.
 5. ALL EXPOSED CONDUITS SHALL BE RUN AS NEAT AND INCONSPICUOUS AS POSSIBLE AND PAINTED TO MATCH COLOR OR SURROUNDINGS. PROVIDE FIRE STOP IN ALL ELECTRICAL CONDUITS CROSSING FIRE RATED WALLS.
 6. FLEXIBLE CONDUITS SHALL BE USED FOR CONNECTION TO ALL VIBRATING EQUIPMENT SUCH AS MOTORS, LIGHTING FIXTURES, ETC. FLEXIBLE CONDUIT SHALL BE "LIQUID TIGHT" WHEN EXPOSED TO WEATHER.
 7. CONDUCTORS SIZE #8 AND LARGER SHALL BE TYPE THWN STRANDED, COPPER. CONDUCTORS SIZE #10 AND SMALLER SHALL BE COPPER, TYPE THHN SOLID, UNLESS NOTED OTHERWISE. CONDUCTORS SHALL BE MINIMUM OF 68K CONDUCTIVITY COPPER AS INDICATED. SIZE ARE AWG, ALL CONDUCTORS SHALL BE RUN IN CONDUIT EXCEPT AS NOTED ON PLANS. POWER, LIGHTING, AND GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN #12 AWG, EXCEPT WHERE OTHERWISE INDICATED. CONTROL CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET WITHOUT SPLICES OR EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS. CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONDUIT SPLICES. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TIGHT TERMINAL LUGS, OR INSULATED OR PRESSURE TIGHT COMPRESSION SPLICES SHALL BE INSULATED USING 3M #334 OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHGARD OR EQUAL POTTING COMPOUND.
 8. RECEPTACLES SHALL BE 15A, 125 V, 3 OR 2 POLE, 3 WIRE SINGLE OR DUPLEX GROUND TYPE EXCEPT WHERE SPECIFIC VOLTAGE, LOCKING OR HIGHER RATED RECEPTACLES ARE SHOWN ON THE DRAWINGS.
 9. ALL SWITCHES SHALL BE OF THE TOTALLY ENCLOSED TUMBLER TYPE WITH BODIES OF PHENOLIC COMPOUND. HANDLES SHALL BE IVORY COLORED.
 10. CONTRACTOR SHALL VERIFY ALL EQUIPMENT NAMEPLATE DATA FOR WIRING AND OVERCURRENT PROTECTION REQUIREMENTS BEFORE PERFORMING ROUGH-IN WORK. NEC 110-16A, 215-5, 220-2, 240-3, 240-6 AND 384-2 SHALL APPLY.
 11. PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR A REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
 12. FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST. ALL RECESSED LIGHTING FIXTURES SHALL CONFORM TO NEC 410-64.
 13. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY CONTROL WIRING FOR ALL EQUIPMENT, ELECTRICAL POWER AND CONTROL WIRING FOR HVAC, POOL EQUIPMENT AND MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE MECHANICAL DRAWINGS AND SPECIFICATIONS FOR WIRING DIAGRAMS AND REQUIREMENTS.
 14. PANEL, DIRECTORIES SHALL BE TYPED ACCURATELY TO SHOW AS BUILT CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BALANCING ALL BRANCH CIRCUITS THROUGH THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
 15. ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ARCHITECT BEFORE ROUGH INSTALLATIONS OF LIGHTS, RECEPTABLES AND SWITCHES FOR EXACT LOCATION.
 16. THE ENTIRE INSTALLATIONS SHALL BE PERFORMED IN A FIRST-CLASS WORK MANNER. THE CONTRACTOR SHALL TOUCH-UP OR REFINISH THE FACTORY FINISH OF EQUIPMENT MARRED DURING SHIPMENT OR INSTALLATION.
 17. TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE. ALL WORK SHALL BE GUARANTEED FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL RUBBISH CAUSED BY HIS WORK AND SHALL THOROUGHLY CLEAN ALL ELECTRICAL EQUIPMENT.
 18. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATIONS, AN ATTEMPT HA BEEN MADE TO SEPARATE AND COMPLETELY DEFINE THE WORK IN SEPARATE SECTIONS OF THE SPECIFICATIONS; HOWEVER, SUCH SEPARATIONS SHALL BE MADE BY THE CONTRACTOR FROM FULL RESPONSIBILITY OF THE CONTRACTOR WITH THE WORK OF HIS/HER TRADE WHICH MAY BE INDICATED ON ANY OF THE DRAWINGS AND OTHER SECTIONS OF THE SPECIFICATIONS.
 19. THE CONTRACTOR SHALL CAREFULLY REVIEW AND VERIFY THE ARCHITECTURAL, STRUCTURAL, POOL EQUIPMENT, MECHANICAL DRAWINGS AND SPECIFICATIONS IN ADDITION TO THE ELECTRICAL AND OTHER RELATED TRADES AND SECTIONS. SHOULD ANY DISCREPANCIES BE FOUND THE ARCHITECT/ENGINEER MUST BE NOTIFIED. THIS COORDINATION SHALL BE DONE PRIOR TO SUBMITTING THE BID.
 20. THE ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE ELECTRICAL DRAWINGS WITH REFERENCE TO BUILDING CONSTRUCTION AND DIMENSIONS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC BUT ARE TO BE FOLLOWED AS CLOSELY AS THE ACTUAL CONSTRUCTION OF THE BUILDING AND THE WORK OF THE OTHER TRADES WILL PERMIT.
 21. ALL JUNCTION BOXES SHALL BE ACCESSIBLE AS PER NEC
 22. ALL PANELBOARDS MAIN BUS BARS SHALL BE COPPER, SIZED IN ACCORDANCE WITH STANDARDS TO LIMIT THE TEMPERATURE RISE ON ANY CURRENT CARRYING PART TO A MAXIMUM OF 50 DEGREES C. ABOVE AN AMBIENT OF 40 DEGREE C. THE CONTRACTOR SHALL PROVIDE MAIN CIRCUIT CIRCUIT BREAKERS, MAIN LUGS OR SUB-FEED LUGS AS REQUIRED, ALL NEW PANELBOARDS 400A OR ABOVE SHALL BE "S-D," I-LINE, SIEMENS P2, ALL OTHERS MANUFACTURER SHALL BE EQUIVALENT TO THIS
 23. NOT LESS THAN 90% OF THE LAMPS IN PERMANENTLY INSTALLED LUMINAIRES SHALL HAVE AN EFFICACY OF AT LEAST 45 LUMENS-PER-WATT OR SHALL UTILIZE LAMPS WITH AN EFFICIENCY OF NOT LESS THAN 65 LUMENS-PER-WATT AS PER RA04.1 AND C405.1 2023 FBC EC.
 24. SAFETY SWITCHES/CIRCUIT BREAKER DISCONNECTS: SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE KD, FUSIBLE OR NON-FUSIBLE WITH POLES, AMPERAGE, VOLTAGE, HORSEPOWER AND AIC RATINGS INDICATED AND SHALL HAVE SOLID NEUTRALS. LUGS SHALL BE U.L. LISTED FOR COPPER-ALUMINUM. ENCLOSURES FOR SAFETY SWITCHES SHALL BE NEMA-1, GENERAL PURPOSE, EXCEPT THAT SWITCHES INDICATED (WP) WEATHERPROOF, SHALL BE NEMA-3R ENCLOSURES WITH SUITABLE GASKETS AND BONDING MEANS. SWITCHES AND DISCONNECT SHALL BE AS MANUFACTURED BY SQUARE "D" OR APPROVED EQUAL. CIRCUIT BREAKER DISCONNECTS MAY BE USED IN LIEU OF SAFETY SWITCHES PROVIDING THEY COMPLY WITH THE SAFETY SWITCH REQUIREMENTS AND ARE SUPPLIED WITH THEIR RATINGS AND A SCHEDULE IS SUBMITTED FOR APPROVAL.

VOLTAGE DROP: FEEDERS: ALL FEEDER CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2.0% AT DESIGN LOAD. BRANCH CIRCUITS: ALL BRANCH CIRCUITS CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3.0% AT DESIGN LOAD.
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FEEDERS:
ALL FEEDER CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2.0% AT DESIGN LOAD

ALL BRANCH CIRCUITS CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3.0% AT DESIGN LOAD.

Using SpecSeal® Putty

UL System No. CAJ-1090
2 Hour Rated Firestop
Using SpecSeal® Putty

NOTE: THE PRODUCTS USED IN THIS DESIGN SYSTEM HAVE BEEN TESTED AS FOLLOWS:
ASTM E814 (ASTM), REFER TO SYSTEM NO. BA-1000
(FURNACE EXPOSED AND COOLING)
(CUTTER SHEAR METHOD)
ANGLULAR SPACE REQUIREMENT:

- Concrete or concrete block wall.
- Steel, iron, copper or rigid PVC conduit.
- SpecSeal® Putty installed to a 3/4\" depth with additional material used to form a 1/4\" crown.
- Fiberglass forming material packed into wall cavity.

* Note: Forming material is optional with steel and iron penetrations when the putty is installed to a full 1\" depth, recessed 1/2\" into both sides of the wall.

Metallic or PVC Pipe Through Concrete Walls

STI Drawing No. DS1023
Refer to UL Fire Resistance Directory
For Complete Installation Requirements.

NOT TO SCALE

Using SpecSeal® Putty

UL System No. DL-1049
1 or 2 Hour Rated Firestop
Using SpecSeal® Series 100 Sealant

NOTE: THE PRODUCTS USED IN THIS DESIGN SYSTEM HAVE BEEN TESTED AS FOLLOWS:
ASTM E814 (ASTM), REFER TO SYSTEM NO. WL-1000
NEW TYPE III (FURNACE EXPOSED AND COOLING)
(CUTTER SHEAR METHOD)
ANGLULAR SPACE REQUIREMENT:

- Rated gypsum wall board assembly.
- Steel, iron, pipe, or rigid PVC conduit (flexible or rigid) or EMT.
- SpecSeal® Series 100 Sealant.
Product details:
• One hour rated assemblies, 3/8\" depth with 1/4\" crown.
• Two hour rated assemblies, 1/2\" depth with 1/4\" crown.
• Annulus ranging from point contact to 1/4\" maximum.

Metallic or PVC Pipe or Rigid PVC Through Gypsum Board Walls

STI Drawing No. DS1032
Refer to UL Fire Resistance Directory
For Complete Installation Requirements.

NOT TO SCALE

- 1- ALL LIGHT FIXTURE TYPES SHALL BE SELECTED BY OWNER/ARCHITECT.
- 2- ALL CEILING RECESSED LIGHT FIXTURES IN DIRECT CONTACT WITH INSULATION SHALL BE 'IC' TYPE AS REQUIRED BY N.E.C. AIR TIGHT AND HOUSING SHALL BE SEALED WITH A GASKET OR CAULK TO CEILING OR WALL. R402.4
- 3- ALL LIGHTING, EXIT SIGN & EMERGENCY LIGHT TO BE SELECTED BY OWNER.
- 4- VERIFY EQUIPMENT LOCATIONS WITH ARCHITECTURAL DRAWINGS.
- 5- NOT USED.
- 6- CONTRACTOR SHALL COORDINATE WITH OWNER/ARCHITECT PROPER INSTALLATION AND FINAL LOCATION OF ALL HVAC DIFFUSERS AND LIGHTS PRIOR TO ROUGH-INS AND INSTALLATIONS.
- 7- VERIFY EQUIPMENT ELECTRICAL LOADS WITH EQUIPMENT "CUT SHEETS" AND NAMEPLATE OF EQUIPMENT BEFORE INSTALLATION OF POWER CONDUCTORS.
- 8- REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF MECH. EQUIPMENT.
- 9- PROVIDE AND INSTALL ALL NEEDED RELAYS, STARTERS AND CONTROL WIRING NOT SHOWN ON THESE PLANS FOR COMPLETE INSTALLATION OF A/C SYSTEMS SHOWN.
- 10- ALL NEW INTERIOR AND EXTERIOR LIGHT FIXTURES SHALL BE SELECTED BY THE OWNER OR OWNER'S INTERIOR DESIGNER.
- 11- NOT USED.
- 12- ALL LED LIGHT FIXTURES SHALL BE FULL SPECTRUM WITH WARM WHITE LIGHT
- 13- 90% OF ALL FIXTURES/LAMPS SHALL BE ENERGY EFFICIENT.
- 14- INTERSYSTEM BONDING REQUIRED TELEPHONE AND LOW VOLTAGE SYSTEM AS PER NEC ARTICLE 250.94

COMPLETION REQUIREMENTS: (TO COMPLY WITH CHAPTER 13-413.1 ABC.2 FBC 2023 8TH EDITION)
DRAWINGS.

CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER, INCLUDING:

1. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND
2. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.

CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE ESTABLISHMENT OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRE ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY

	CEILING LIGHT / FAN		EXTERIOR WALL PACKS		TELEPHONE/DATA JUNCTION BOX ● 18" AFF
	FLAT LENS 2' x 4' FLUORESCENT FIXTURE		CEILING MOUNTED CORD RECEPTACLES		T.V. CABLE OR ANTENNA OUTLET
	PARABOLIC 2' x 4' FLUORESCENT LIGHT FIXTURE		20AMP, 115V, SINGLE RECEPT. ● 18" AFF		FLOOR MOUNTED RECEPT. AND VOICE/DATA
	2' x 4' FLUORESCENT LIGHT FIXTURE W/ EMERG. BALLAST.		20AMP, 115V, DUPLEX RECEPT. ● 18" AFF		MOTOR OR FAN
	RECESSED INCANDESCENT OR FLUORESCENT DOWNLIGHT		20AMP, 115V, DUPLEX RECEPT. W/ G.F.C.I.		CEILING MOUNT OCCUPANCY SENSOR
	RECESSED INCANDESCENT DOWNLIGHT		20AMP, 115V, DUPLEX RECEPT. 6" ABOVE COUNTER		WALL MOUNTED EMERGENCY LIGHT W/ BATTERY BACK-UP
	OPEN EGG CRATE 2' x 2' FLUORESCENT LIGHT FIXTURE		20AMP, 115V, FLOOR RECEPTACLE		LIGHTING FIXTURE TYPE. LETTER REFERS TO SCH.
	LUMAX 3PG32224-C09L18---FX1-L941-AH04		SPECIAL RECEPTACLE 36" AFF U.N.O.		WATER HEATER
	TRACK LIGHTING		TELEPHONE JUNCTION BOX ● 18" AFF		JUNCTION BOX
	WALL MOUNTED EXIT SIGN W/ BATT. BACK-UP		DATA OUTLET BOX ● 18" AFF		GROUND FAULT CIRCUIT INTERRUPTER
			MOTORIZED SWITCH		

* NOT ALL SYMBOLS SHOWN HERE MAY APPLY FOR THIS PROJECT

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1 ELECTRICAL NOTE AND DETAILS

Scale: N.T.S.

Fine Line Engineers Inc.
*Electrical, Mechanical, Plumbing, Fire Protection
Construction Administration Services*
89 WEST 76TH STREET, HIALEAH, FLORIDA, 33016

FLE DESIGN BY:
FINE LINE ENGINEERS

[illegible][illegible]

HUBER RESIDENCE
12020 SW 77th Ave
Pinecrest, FL 33156

E-1

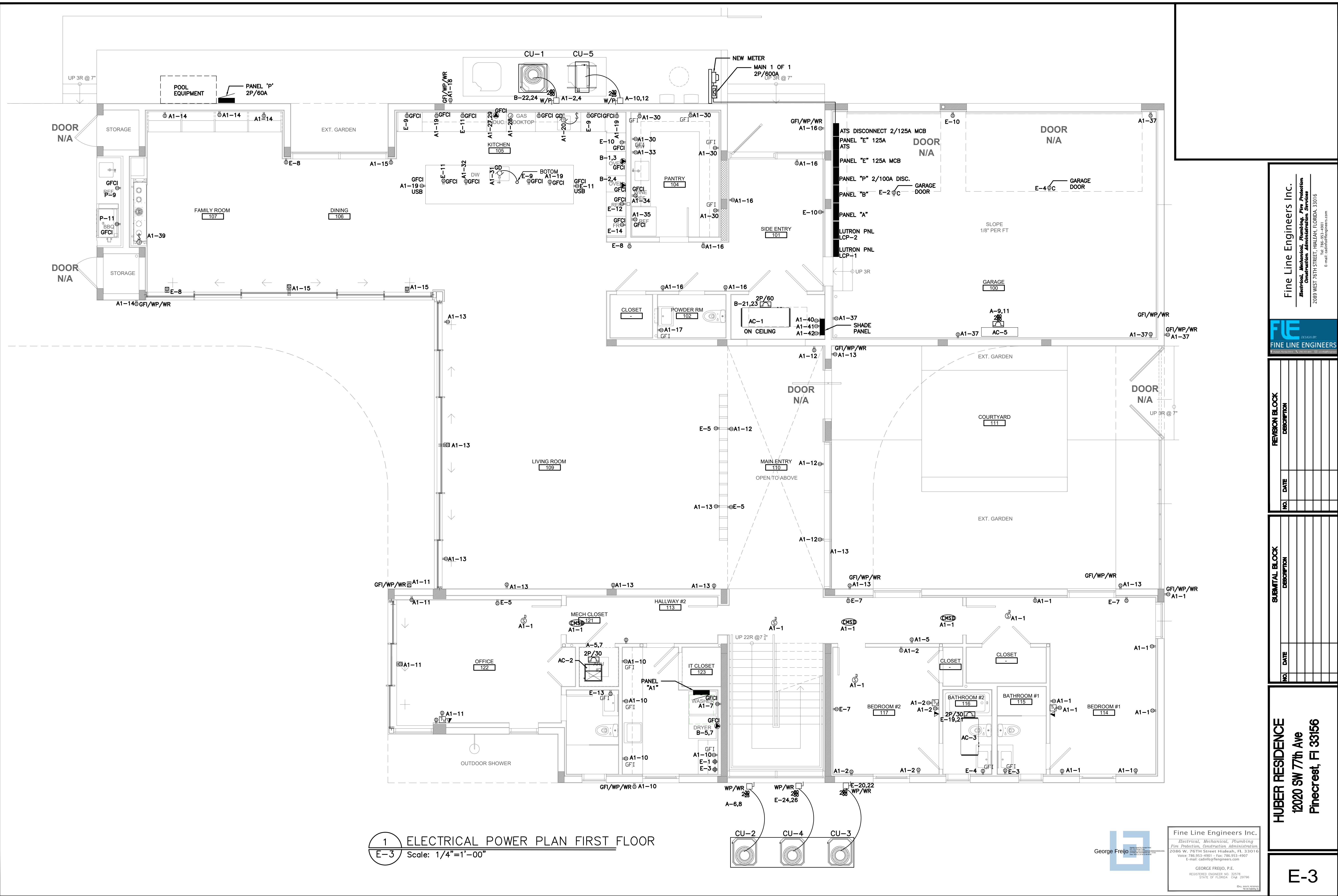
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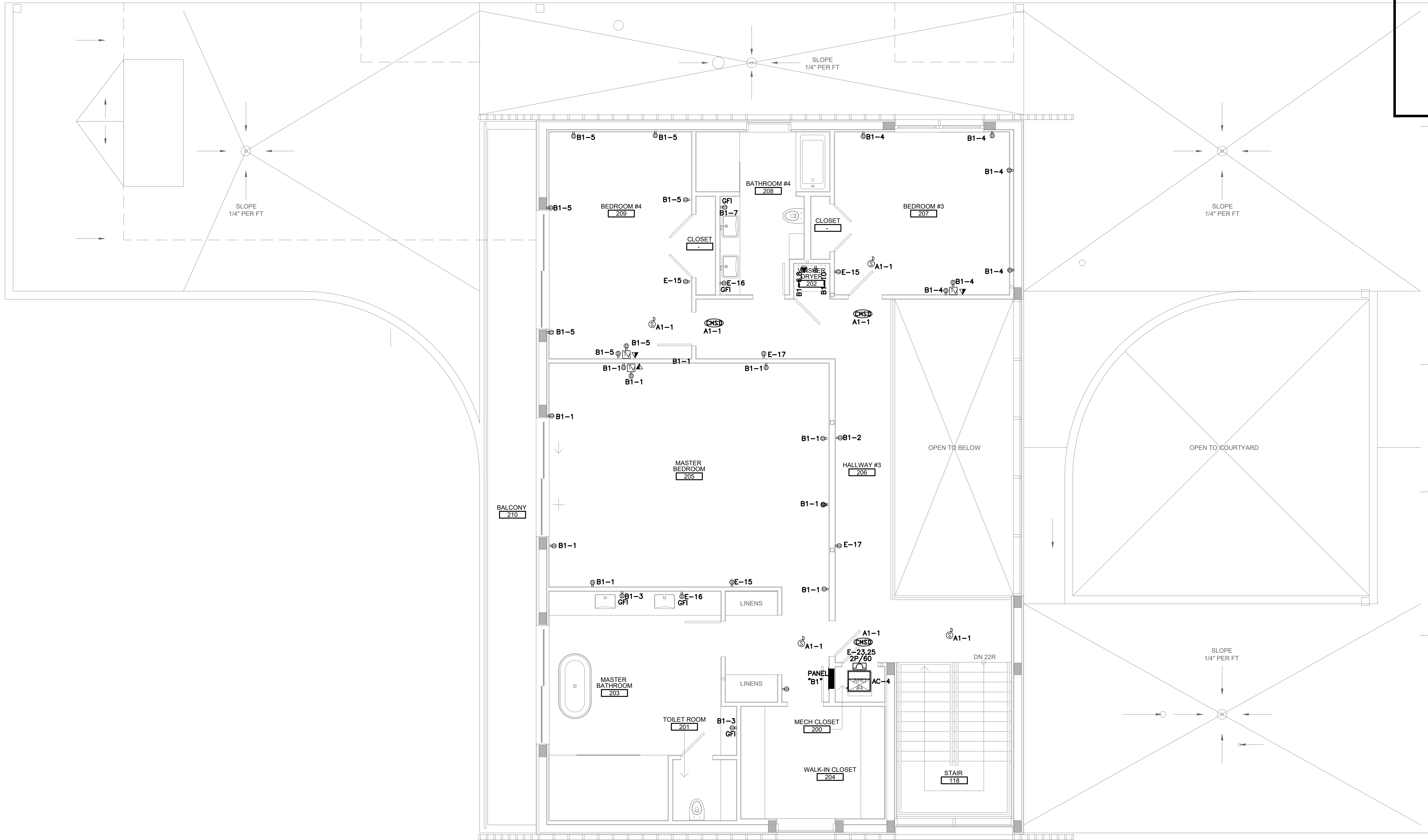
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GEORGE FREIJO, P.E.
REGISTERED ENGINEER NO. 32578
STATE OF FLORIDA CA#: 29796

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On the September







1 ELECTRICAL POWER PLAN SECOND FLOOR
E-4 Scale: 1/4"=1'-00"



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STATE OF FLORIDA C.E. 29796

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HUBER RESIDENCE
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Pinecrest, FL 33156

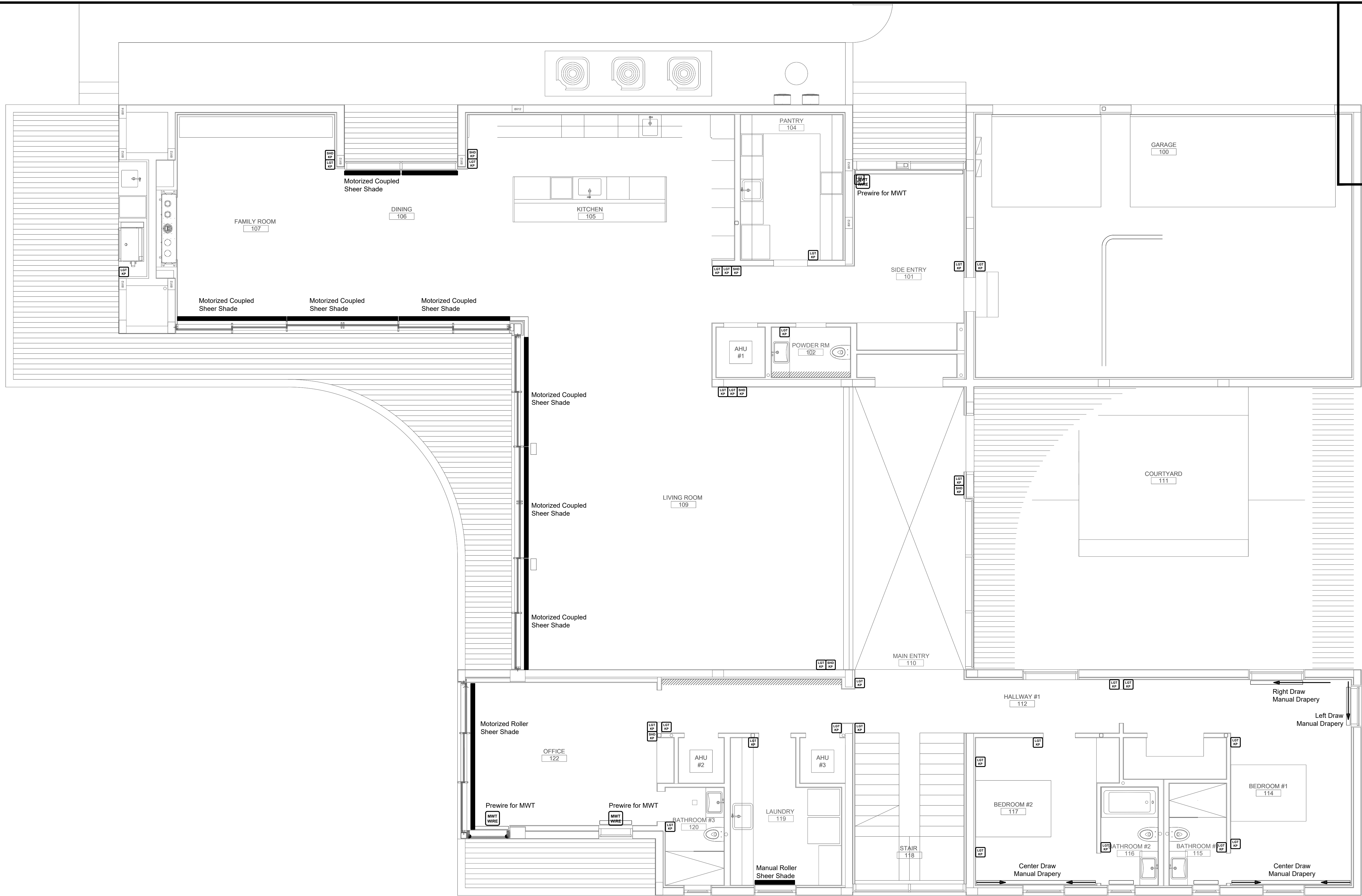
E-4

REVISION BLOCK	
NO.	DESCRIPTION

SUBMITAL BLOCK	
NO.	DESCRIPTION

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1 ELECTRICAL KP PLAN FIRST FLOOR
E-7 Scale: 1/4"=1'-00"



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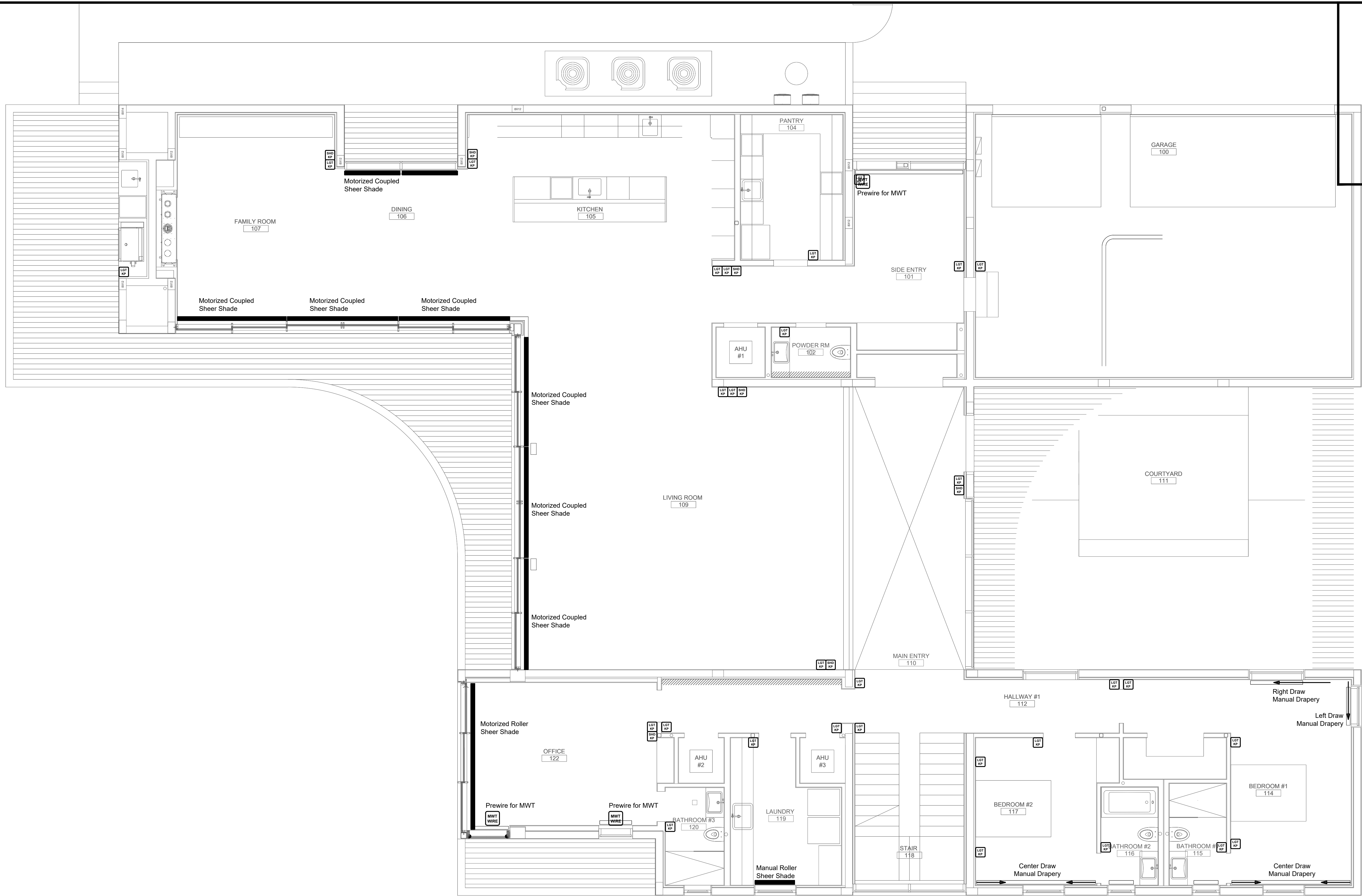
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REVISION BLOCK	
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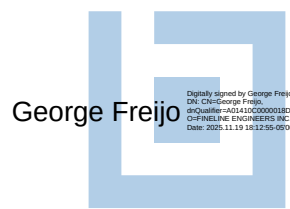
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1 ELECTRICAL KP PLAN SECOND FLOOR
E-8 Scale: 1/4"=1'-00"



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E-8

REVISION BLOCK	
NO.	DESCRIPTION

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TYPE: SIEMENS SERVICE: 120/240 V 1Ø 3W MOUNTING: FLUSH POLES: 42										NEW MAIN BUS: 225 AMP NEUTRAL: FULL MAINS: M.L.D. A.I.C. 10K SERIES RATED									
PANEL "A"																			
DEM. K.V.A.	NO DEM. K.V.A.	TRIP POLE	CON-DUIT	WIRE	REMARKS	CKT. NO.	CKT. NO.	REMARKS	WIRE	CON-DUIT	TRIP POLE	NO DEM. K.V.A.	DEM. K.V.A.						
	3.50	2	1/2"	12	INDUCTION	1	2	PANEL 'A1'	3	1-1/2"	2	11.88							
		20				3	4												
1	5.95	2	3/4"	10	AC-2	5	6	CU-2	12	1/2"	2	2.99	1						
		30				7	8				25								
1	11.36	2	1"	6	AC-5	9	10	CU-5	12	1/2"	2	5.89	1						
		60				11	12				25								
4 5	-	1-20	1/2"	12	HALWAYS LTS	13	14	TERRACE & CLOSET LTS	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	CLOSET LTS	15	16	LOPI MOD 3 DL9 THRU DL12	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	LOPI MOD 1 DL1 THRU DL4	17	18	LOPI MOD 6.1 THRU 28	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	LOPI MOD 2 DL5 THRU DL8	19	20	LOPI MOD 6.29 THRU 49	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	MID#2 CONTROL ASSEMBLY	21	22	LOPI MOD 7.1 THRU 20	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	LOPI MOD 8.1 THRU 24	23	24	LOPI MOD 7.21 THRU 39	12	1/2"	1-20	-	4 5						
4 5	-	1-20	1/2"	12	LOPI MOD 8.25 THRU 49	25	26	TWO IGNITER GAS HEATER	12	1/2"	1-20	0.30							
						27	28												
						29	30												
						31	32												
						33	34												
						35	36												
						37	38												
						39	40												
						41	42												
TOTAL DEMAND LOAD 30.96										KVA = 129.01 AMPS									
1 HEATING AND COOLING ARE NON-CONCURRENT LOADS. HIGHEST LOAD SHOWN AS PER N.E.C.										FEED: SEE ELECTRICAL RISER DIAGRAM									

TYPE: SIEMENS SERVICE: 120/240 V 1 Ø 3W MOUNTING: FLUSH POLES: 42										NEW MAIN BUS: 225 AMP NEUTRAL: FULL MAINS: M.L.D. A.I.C. 10K SERIES RATED									
PANEL "B"																			
DEM. K.V.A.	NO DEM. K.V.A.	TRIP POLE	CON- DUIT	WIRE	REMARKS	CKT. NO.	CKT. NO.	REMARKS	WIRE	CON- DUIT	TRIP POLE	NO DEM. K.V.A.	DEM. K.V.A.						
	8.00	2	1"	8	OVEN	1	2	OVEN	8	1"	2	8.00							
		50				3	4												
	5.00	2	3/4"	10	DRYER	5	6	SPACE	12	1/2"	1-20	-							
		30				7	8	REC/LTS	12	1/2"	1-20	11.30							
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 1 DL1 THRU DL4	9	10	LOP2 MOD 4 DL12 THRU DL16	12	1/2"	1-20	-	(4) (5)						
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 2 DL5 THRU DL8	11	12	LOP2 MOD 5 DL17 THRU DL19	12	1/2"	1-20	-	(4) (5)						
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 3 DL9	13	14	LOP2 MOD 9 DL35 THRU DL36	12	1/2"	1-20	-	(4) (5)						
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 6 DL21 THRU DL24	15	16	CLOSET LTS	12	1/2"	1-20	-	(4) (5)						
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 7 DL25 THRU DL28	17	18	PANEL 'B1'	3	1-1/2"	2	9.90							
(4) (5)	-	1-20	1/2"	12	LOP2 MOD 10.1 THRU 4	19	20												
1	11.36	2	1"	6	AC-1	21	22	CU-1	8	3/4"	2	5.89	1						
		60				23	24												
						25	26												
						27	28												
						29	30												
						31	32												
						33	34												
						35	36												
						37	38												
						39	40												
						41	42												
TOTAL DEMAND LOAD 45.10 KVA = 187.92 AMPS																			
FEED: SEE ELECTRICAL RISER DIAGRAM																			

NEW

TYPE: SIEMENS										MAIN BUS: 60 AMP									
SERVICE: 120/240 V 1 Ø 3W										NEUTRAL: FULL									
MDUNTING: FLUSH										MAINS: 60 M.L.D.									
POLES: 30										A.I.C. 10K SERIES RATED									
PANEL "P"																			
DEM. K.V.A.	NO DEM. K.V.A.	TRIP POLE	CON-DUIT	WIRE	REMARKS	CKT. NO.	CKT. NO.	REMARKS	WIRE	CON-DUIT	TRIP POLE	NO DEM. K.V.A.	DEM. K.V.A.						
	2.88	2	3/4"	12	BLOWER (2HP)	1	2	POOL PUMP	10	1"	2	3.67							
		25				3	4												
	3.67	2	1"	10	SPA PUMP	5	6	IGNITER GAS HEATER	12	1/2"	1-20	0.20							
		30				7	8	SPA LTS	12	1/2"	1-20	0.05							
	0.05	1-20	1/2"	12	POOL LTS	9	10	BOARD	12	1/2"	1-20	0.10							
	0.10	1-20	1/2"	12	SALT CHLOR	11	12												
						13	14												
						15	16												
						17	18												
						19	20												
						21	22												
						23	24												
						25	26												
						27	28												
						29	30												
6.70										4.02									
TOTAL CONNECTED LOAD 10.72										KVA = 44.66 AMPS									
										FEED: SEE ELECTRICAL RISER DIAGRAM									

NEW

TYPE: SIEMENS
SERVICE: 120/240 V 1Ø 3W
MOUNTING: FLUSH
POLES: 42

PANEL "A1"
(FIRST FLOOR)

MAIN BUS: 100 AMP
NEUTRAL: FULL
MAINS: 100 M.L.D.
A.I.C. 10K SERIES RATED

DEM. K.V.A.	NO DEM. K.V.A.	TRIP POLE	CON-DUIT	WIRE	REMARKS	CKT. NO.	CKT. NO.	REMARKS	WIRE	CON-DUIT	TRIP POLE	NO DEM. K.V.A.	DEM. K.V.A.
(4)(5)	11.30	1-20	1/2"	12	REC/LTS	1	2	BEDROOM #2 REC.	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	BEDROOM #1 REC.	3	4	BATHROOM #2 REC.	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	HALLWAY #1 REC.	5	6	SPACE	12	1/2"	1-20	-	-
	1.50	1-20	1/2"	12	WASHER REC.	7	8	SPACE	12	1/2"	1-20	-	-
(4)(5)	-	1-20	1/2"	12	BATHROOM #3 REC.	9	10	LAUNDRY REC.	12	1/2"	1-20	1.50	-
(4)(5)	-	1-20	1/2"	12	OFFICE/HALLWAY #2 REC.	11	12	MAIN ENTRY REC.	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	LIVING ROOM REC.	13	14	FAMILY ROOM REC.	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	DINING ROOM REC.	15	16	SIDE ENTRY REC.	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	POWDER ROOM REC.	17	18	TERRACE & CLOSET LTS	12	1/2"	1-20	-	(4)(5)
	1.50	1-20	1/2"	12	APPLIANCE OUTLET	19	20	SPACE	12	1/2"	1-20	-	-
	-	1-20	1/2"	12	SPACE	21	22	SPACE	12	1/2"	1-20	-	-
	-	1-20	1/2"	12	SPACE	23	24	SPACE	12	1/2"	1-20	-	-
	1.00	1-20	1/2"	12	REFRIGERATOR	25	26	SPACE	12	1/2"	1-20	-	-
	-	1-20	1/2"	12	SPACE	27	28	KITCHEN HOOD	12	1/2"	1-20	0.20	-
	-	1-20	1/2"	12	SPACE	29	30	PANTRY APPLIANCE REC.	12	1/2"	1-20	-	(4)(5)
	0.80	1-20	1/2"	12	GARBAGE DISPOSAL	31	32	DISHWASHER	12	1/2"	1-20	1.20	-
	0.80	1-20	1/2"	12	PANTRY DISHWASHER	33	34	PANTRY VINE REFRIG.	12	1/2"	1-20	1.20	-
	0.80	1-20	1/2"	12	PANTRY REFRIG.	35	36	SPACE	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	GARAGE REC.	37	38	SPACE	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	FIREPLACE IGNITION	39	40	SHADE PANEL	12	1/2"	1-20	-	(4)(5)
(4)(5)	-	1-20	1/2"	12	SHADE PANEL	41	42	SHADE PANEL	12	1/2"	1-20	-	(4)(5)

TOTAL DEMAND LOAD 11.88 KVA = 49.51 AMPS

[1] EXISTING CIRCUIT EXTEND AS NEEDED IN KITCHEN RENOVATION

FEED: SEE ELECTRICAL RISER DIAGRAM

FineLine Engineers Inc. DESIGN CALCULATIONS									
JOB NAME:	HUBER RES	1	1 OR 3 PHASE?						
VOLTAGE: 120 /	240 , 1 PHASE, 3W		PANEL -	"A1"					
LIGHTING LOAD 3 WSQFT (NEC 220.12)		3.768	SQFT		11.30	KVA			
SMALL APPLIANCE @ 1.5 KVA EA.(NEC 220.52)					1.50	KVA			
WASHER					1.50	KVA			
GENERAL LIGHTING LOAD				SUB-TOTAL	14.30	KVA			
FIRST 3 KVA @ 100% ---					3.00	KVA			
REMAINDER KVA	11.30 KVA	AT 35 %			3.96	KVA			
NET LOAD					6.96	KVA			
FASTENED IN PLACE APPLIANCES									
REFRIGERATOR					2.00	KVA			
DISHWASHER					2.00	KVA			
LAUNDRY REC.					1.50	KVA			
DISPOSAL					0.80	KVA			
MICROWAVE					0.00	KVA			
NET LOAD				SUB-TOTAL	6.30	KVA			
					4.73	KVA			
CLOTHES DRYER					0.00	KVA			
COOKING EQUIPMENT					0.00	KVA			
NON COINCEDENT HEAT (A/C)					0.00	KVA			
25% OF LARGEST MOTOR	0.00 AMP X	240V X 25%			0.00	KVA			
OTHER LOADS									
WATER HEATER					0.00	KVA			
POOL EQUIPMENT					0.00	KVA			
SPRINKLER PUMP					0.00	KVA			
EXTRACTOR HOOD					0.20	KVA			
GATE MOTOR					0.00	KVA			
				SUBTOTAL	0.20	KVA			
				TOTAL	11.88				
PER N.E.C.									
TOTAL CALCULATED LOAD	11.88 KVA =	49.61	AMPS						

FineLine Engineers Inc. DESIGN CALCULATIONS									
JOB NAME:	HUBER RES	1	1 OR 3 PHASE?						
VOLTAGE: 120 /	240 , 1 PHASE, 3W		PANEL -	"A"					
SEE PANEL A1									
LIGHTING LOAD 3 WSQFT (NEC 220.12)		0	SQFT		0.00	KVA			
SMALL APPLIANCE @ 1.5 KVA EA.(NEC 220.52)					0.00	KVA			
WASHER					0.00	KVA			
GENERAL LIGHTING LOAD				SUB-TOTAL	0.00	KVA			
FIRST 3 KVA @ 100% ---					0.00	KVA			
REMAINDER KVA	0.00 KVA	AT 35 %			0.00	KVA			
NET LOAD					0.00	KVA			
FASTENED IN PLACE APPLIANCES									
REFRIGERATOR					0.00	KVA			
DISHWASHER					0.00	KVA			
RANGE					0.00	KVA			
DISPOSAL					0.00	KVA			
MICROWAVE					0.00	KVA			
NET LOAD				SUB-TOTAL	0.00	KVA			
					0.00	KVA			
CLOTHES DRYER					0.00	KVA			
COOKING EQUIPMENT					0.00	KVA			
NON COINCEDENT HEAT (A/C)					17.31	KVA			
25% OF LARGEST MOTOR	24.54 AMP X	240V X 25%			1.47	KVA			
OTHER LOADS									
WATER HEATER					0.30	KVA			
POOL EQUIPMENT					0.00	KVA			
SPRINKLER PUMP					0.00	KVA			
EXTRACTOR HOOD					0.00	KVA			
PANEL A1					11.88	KVA			
				SUBTOTAL	12.18	KVA			
				TOTAL	30.96				
PER N.E.C.									
TOTAL CALCULATED LOAD	30.96 KVA =	129.01	AMPS						

FineLine Engineers Inc. DESIGN CALCULATIONS									
JOB NAME:	HUBER RES	1	1 OR 3 PHASE?						
VOLTAGE: 120 /	240 , 1 PHASE, 3W		PANEL -	"B1"					
LIGHTING LOAD 3 WSQFT (NEC 220.12)		2.306	SQFT		6.92	KVA			
SMALL APPLIANCE @ 1.5 KVA EA.(NEC 220.52)					0.00	KVA			
WASHER					1.50	KVA			
GENERAL LIGHTING LOAD				SUB-TOTAL	8.42	KVA			
FIRST 3 KVA @ 100% ---					3.00	KVA			
REMAINDER KVA	5.42 KVA	AT 35 %			1.90	KVA			
NET LOAD					4.90	KVA			
FASTENED IN PLACE APPLIANCES									
REFRIGERATOR					0.00	KVA			
DISHWASHER					0.00	KVA			
RANGE					0.00	KVA			
DISPOSAL					0.00	KVA			
MICROWAVE					0.00	KVA			
NET LOAD				SUB-TOTAL	0.00	KVA			
					5.00	KVA			
CLOTHES DRYER					0.00	KVA			
COOKING EQUIPMENT					0.00	KVA			
NON COINCEDENT HEAT (A/C)					0.00	KVA			
25% OF LARGEST MOTOR	0.00 AMP X	240V X 25%			0.00	KVA			
OTHER LOADS									
WATER HEATER					0.00	KVA			
POOL EQUIPMENT					0.00	KVA			
SPRINKLER PUMP					0.00	KVA			
EXTRACTOR HOOD					0.00	KVA			
GATE MOTOR					0.00	KVA			
				SUBTOTAL	0.00	KVA			
				TOTAL	9.90				
PER N.E.C.									
TOTAL CALCULATED LOAD	9.90 KVA =	41.23	AMPS						

FineLine Engineers Inc. DESIGN CALCULATIONS									
JOB NAME:	HUBER RES	1	1 OR 3 PHASE?						
VOLTAGE: 120 /	240 , 1 PHASE, 3W		PANEL -	"B"					
SEE PANEL B1									
LIGHTING LOAD 3 WSQFT (NEC 220.12)		0	SQFT		0.00	KVA			
SMALL APPLIANCE @ 1.5 KVA EA.(NEC 220.52)					0.00	KVA			
WASHER					0.00	KVA			
GENERAL LIGHTING LOAD				SUB-TOTAL	0.00	KVA			
FIRST 3 KVA @ 100% ---					0.00	KVA			
REMAINDER KVA	0.00 KVA	AT 35 %			0.00	KVA			
NET LOAD					0.00	KVA			
FASTENED IN PLACE APPLIANCES									
REFRIGERATOR					0.00	KVA			
DISHWASHER					0.00	KVA			
OVEN					16.00	KVA			
DISPOSAL					0.00	KVA			
MICROWAVE					0.00	KVA			
NET LOAD				SUB-TOTAL	16.00	KVA			
					5.00	KVA			
CLOTHES DRYER					0.00	KVA			
COOKING EQUIPMENT					0.00	KVA			
NON COINCEDENT HEAT (A/C)					11.36	KVA			
25% OF LARGEST MOTOR	47.33 AMP X	240V X 25%			2.84	KVA			
OTHER LOADS									
WATER HEATER					0.00	KVA			
POOL EQUIPMENT					0.00	KVA			
SPRINKLER PUMP					0.00	KVA			
EXTRACTOR HOOD					0.00	KVA			
PANEL B1					9.90	KVA			
				SUBTOTAL	9.90	KVA			
				TOTAL	45.10				
PER N.E.C.									
TOTAL CALCULATED LOAD	45.10 KVA =	187.92	AMPS						

Engineering Corporation DESIGN CALCULATIONS									
JOB NAME:	HUBER RES	1	1 OR 3 PHASE?						
VOLTAGE: 120 /	240 , 1 PHASE, 3W		PANEL -	"MDP"					
LIGHTING LOAD 3 WSQFT (NEC 220.12)		6.074	SQFT		18.22	KVA			
SMALL APPLIANCE @ 1.5 KVA EA.(NEC 220.52)					4.50	KVA			
RANGE					0.00	KVA			
REFRIGERATOR					3.00	KVA			
DISHWASHER (2)					3.00	KVA			
WASHER (2)					3.00	KVA			
DRYER (2)					10.00	KVA			
WATER HEATER					18.00	KVA			
MICROWAVE OVEN					0.80	KVA			
OVEN (2)					16.00	KVA			
DISPOSAL (2)					1.80	KVA			
UC REF'S					0.00	KVA			
LOAD					0.00	KVA			
LOAD					0.00	KVA			
LOAD					0.00	KVA			
LOAD					0.00	KVA			
LOAD					0.00	KVA			
LOAD					0.00	KVA			
PANEL 'P'					10.72	KVA			
PANEL 'E'					28.47	KVA			
PER N.E.C. 220.82				SUB-TOTAL	117.51	KVA			
FIRST 8 KVA @ 100% -					8.00	KVA			
REMAINDER KVA	109.51 KVA	AT 40 %			43.80	KVA			
AC LOAD- COOLING @ 100% =	23.65 KVA				23.65	KVA			
- 4 A/C OR MORE @ 40% =	45.98 KVA x 40% =	29.89			29.89	KVA			
WHICHEVER GREATER					81.69	KVA			
					81.69	KVA			
PER N.E.C.				TOTAL	81.69	KVA			
TOTAL DEMAND LOAD	81.69 KVA =	340.38	AMPS						

Fine Line Engineers Inc.
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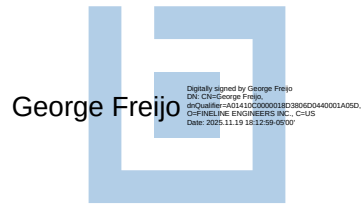


REVISION BLOCK		DESCRIPTION	
NO.	DATE		

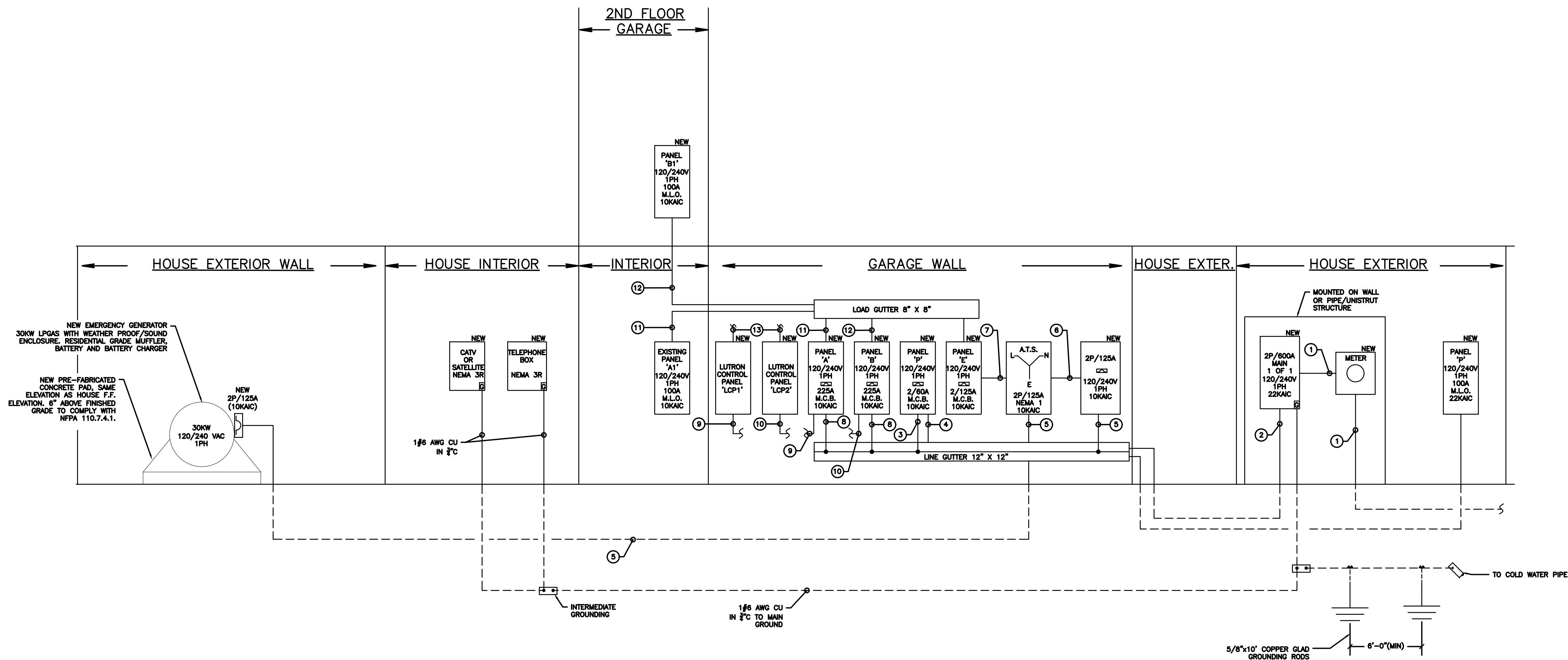
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HUBER RESIDENCE
12020 SW 77th Ave
Pinecrest, Fl 33156

E-10



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REVISION BLOCK	
NO.	DESCRIPTION

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NO.	DESCRIPTION

