

Standard Method Load Calculation for One-Family Dwellings					
UNIT DESIGNATION: UNIT A		LOAD CENTER DESIGNATION: 209A		VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W TOTAL AREA: 1018	
1 General Lighting and Receptacle Loads 220.12 <i>Do not include open porches, garages, and unused or unfinished spaces not adaptable for future use.</i>					
		3 x $\frac{1,018}{(sq\ ft\ using\ outside\ dimensions)}$		= 1 3,054	
2 Small Appliance Branch-Circuits 220.52(A) <i>At least two small appliance branch-circuits must be included. 210.11(C)(1)</i>					
		1,500 x $\frac{2}{(minimum\ of\ two)}$		= 2 3,000	
3 Laundry Branch Circuit 220.52(B) <i>At least one laundry branch-circuit must be included. 210.11(C)(2)</i>					
		1,500 x $\frac{1}{(minimum\ of\ one)}$		= 3 1,500	
4		7,554		Lines 5 through 8 utilize the demand factors found in Table 220.42.	
5 $\frac{7,554}{(line\ 4)}$		- 3,000 = 6 $\frac{4,554}{(if\ 120,000\ or\ less,\ skip\ to\ line\ 8)}$		6 $\frac{4,554}{(line\ 5,\ if\ more\ than\ 120,000)}$ - 120,000 = 6 -	
7 $\frac{4,554}{(line\ 6)}$ x 25% = 7 -		8 $\frac{4,554}{(smaller\ of\ line\ 5\ or\ 120,000)}$ x 35% = 8 1,594		8 $\frac{1,594}{(line\ 7)}$ + $\frac{1,594}{(line\ 8)}$ = 9 4,594	
9 Total General Lighting and Receptacle Load					
10 Fastened-In-Place Appliances 220.53 Use the nameplate rating. Do not include electric ranges, clothes dryers, space-heating equipment, or air-conditioning equipment. If fewer than four units, put total volt-amperes on line 10. If four or more units, multiply total volt-amperes by 75% (volt-amps of four or more) x 100% = 10 0					
11 Clothes Dryers 220.54 <i>(If present, otherwise skip to line 12.) Use 5,000 watts or the nameplate rating, whichever is larger.</i>					
12 Ranges, Ovens, Cooktops, and Other Household Cooking Appliances Over 1750 Watts 220.55 <i>(If present, otherwise skip to line 13.) Use Table 220.55 and all of the applicable notes.</i>					
13 Heating or Air-Conditioning System (Compare the heat and A/C, and omit the smaller.) 220.60 <i>Include the air handler when using either one. For heat pumps, include the compressor and the maximum amount of electric heat that can be energized while the compressor is running.</i>					
14 Largest Motor (one motor only) 220.50 and 430.24 Multiply the volt-amperes of the largest motor by 25% $\frac{1,176}{(volt-amps\ of\ largest\ motor)}$ x 25% = 14 294					
15 Total Volt-Ampere Demand Load: Add lines 9 through 14 to find the minimum required volt-amperes. = 15 23,264					
16 Minimum Amperes Divide the total volt-amperes by the voltage $\frac{23,264}{(line\ 15)}$ / $\frac{240}{(voltage)}$ = 16 97					
17 Minimum Size Service and/or Feeder (240.6(A)) = 17 125					

Standard Method Load Calculation for One-Family Dwellings					
UNIT DESIGNATION: UNIT B		LOAD CENTER DESIGNATION: 209B		VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W TOTAL AREA: 1345	
1 General Lighting and Receptacle Loads 220.12 <i>Do not include open porches, garages, and unused or unfinished spaces not adaptable for future use.</i>					
		3 x $\frac{1,345}{(sq\ ft\ using\ outside\ dimensions)}$		= 1 4,035	
2 Small Appliance Branch-Circuits 220.52(A) <i>At least two small appliance branch-circuits must be included. 210.11(C)(1)</i>					
		1,500 x $\frac{2}{(minimum\ of\ two)}$		= 2 3,000	
3 Laundry Branch Circuit 220.52(B) <i>At least one laundry branch-circuit must be included. 210.11(C)(2)</i>					
		1,500 x $\frac{1}{(minimum\ of\ one)}$		= 3 1,500	
4		8,535		Lines 5 through 8 utilize the demand factors found in Table 220.42.	
5 $\frac{8,535}{(line\ 4)}$		- 3,000 = 6 $\frac{5,535}{(if\ 120,000\ or\ less,\ skip\ to\ line\ 8)}$		6 $\frac{5,535}{(line\ 5,\ if\ more\ than\ 120,000)}$ - 120,000 = 6 -	
7 $\frac{5,535}{(line\ 6)}$ x 25% = 7 -		8 $\frac{5,535}{(smaller\ of\ line\ 5\ or\ 120,000)}$ x 35% = 8 1,937		8 $\frac{1,937}{(line\ 7)}$ + $\frac{1,937}{(line\ 8)}$ = 9 4,937	
9 Total General Lighting and Receptacle Load					
10 Fastened-In-Place Appliances 220.53 Use the nameplate rating. Do not include electric ranges, clothes dryers, space-heating equipment, or air-conditioning equipment. If fewer than four units, put total volt-amperes on line 10. If four or more units, multiply total volt-amperes by 75% (volt-amps of four or more) x 100% = 10 0					
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14 Largest Motor (one motor only) 220.50 and 430.24 Multiply the volt-amperes of the largest motor by 25% $\frac{1,176}{(volt-amps\ of\ largest\ motor)}$ x 25% = 14 294					
15 Total Volt-Ampere Demand Load: Add lines 9 through 14 to find the minimum required volt-amperes. = 15 24,663					
16 Minimum Amperes Divide the total volt-amperes by the voltage $\frac{24,663}{(line\ 15)}$ / $\frac{240}{(voltage)}$ = 16 103					
17 Minimum Size Service and/or Feeder (240.6(A)) = 17 125					

LOAD CENTER SCHEDULE					
LOAD CENTER DESIGNATION: 209A		MOUNTING: RECESSED LOCATION: KITCHEN		MAIN LUG AMPS: 125 MAIN BREAKER: 125 VOLTAGE: 120/240V PHASE/WIRE: 1PH/3W	
DESCRIPTION	TRIP	C/B		C/B	
		POLE	TRIP	POLE	TRIP
KITCHEN RECEPTACLE	20	1	1	2	
KITCHEN RECEPTACLE	20	1	3	4	CONDENSING UNIT
DISPOSER	20	1	5	6	FUTURE RANGE
REFRIGERATOR	20	1	7	8	
VANITY RECEPTACLE	20	1	9	10	MINI-SPLIT DSS-1
MAIN LEVEL RECEP.TS.	20	1	11	12	
MAIN LEVEL LIGHTS	20	1	13	14	FURNACE F-1
MAIN LEVEL OUTDOOR RECEP.TS.	20	1	15	16	WATER HEATER
2ND LEVEL RECEP.TS.	20	1	17	18	SPARE
2ND LEVEL LIGHTS	20	1	19	20	SPARE
BASEMENT LTS./RECEP.TS.	20	1	21	22	SPACE
SPARE	20	1	23	24	SPACE
SPARE	20	1	25	26	SPACE
SPACE	-	1	27	28	SPACE
SPACE	-	1	29	30	SPACE

REMARKS:
1. ALL BREAKERS FOR CIRCUITS SERVING LIVING SPACES SHALL BE ARC-FAULT PROTECTED.
2. 10,000 AIC RATED.
3. TURN SPARES TO THE OFF POSITION.
4. PANEL 209B IS SIMILAR EXCEPT THE CIRCUIT BREAKER FOR DSS-2 IS A 40 AMP, 2 POLE.

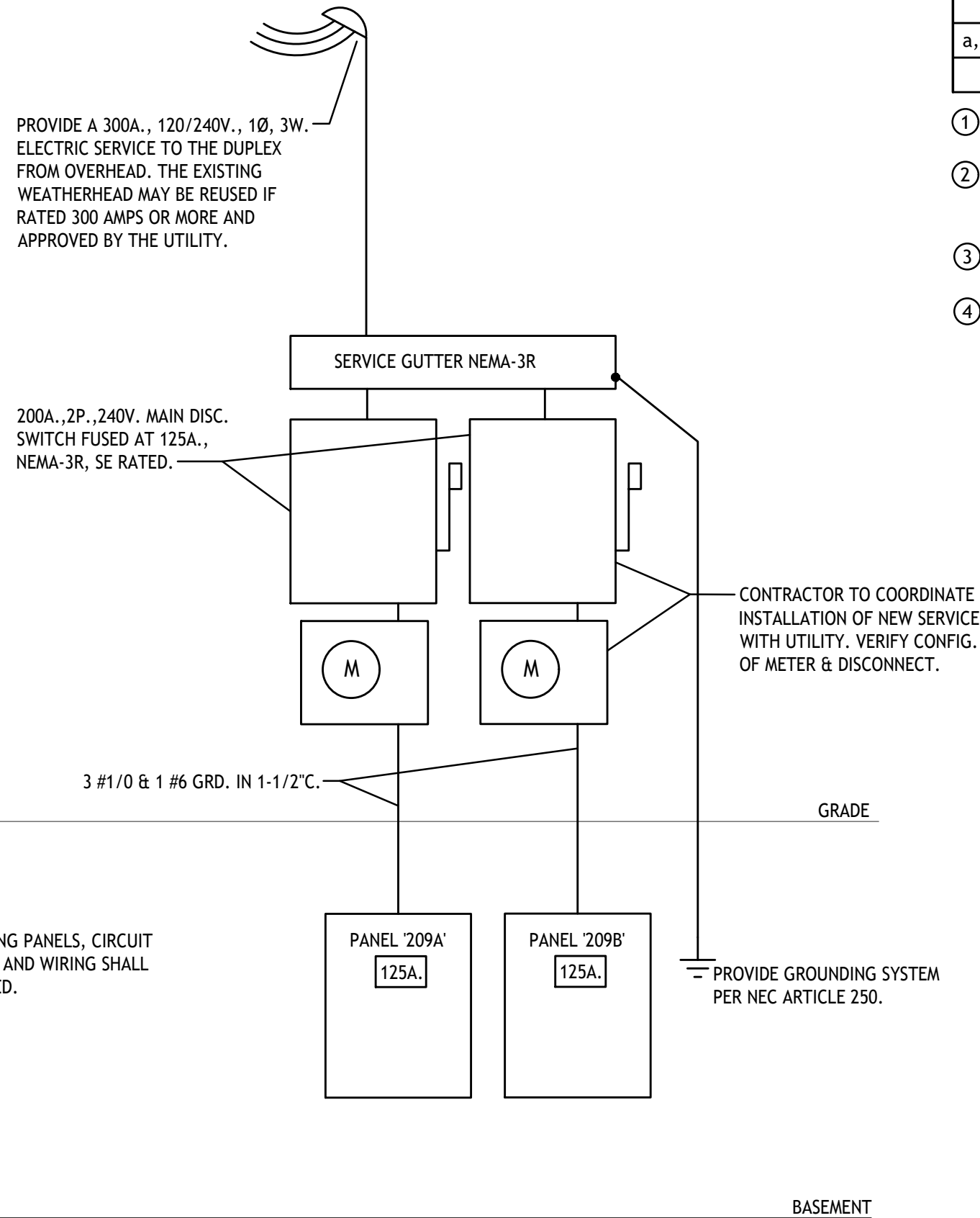
GENERAL NOTES:

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC), THE AMERICANS WITH DISABILITIES ACT (ADA), AND ALL STATE AND LOCAL REQUIREMENTS AND CODES.
- REFER TO RELATED ARCHITECTURAL, MECHANICAL, AND STRUCTURAL DRAWINGS FOR RELATED INFORMATION.
- THE OWNER OR EQUIPMENT SUPPLIER MAY SUBSTITUTE EQUIPMENT OR THE EQUIPMENT MAY VARY FROM WHAT IS SHOWN. THEREFORE, THE CONTRACTOR SHALL VERIFY ALL DEVICE LOCATIONS WITH THE OWNER PRIOR TO ROUGH-IN. FAILURE OF THE CONTRACTOR TO COORDINATE THIS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATION DIRECTLY UPON THE CONTRACTOR.
- SEPARATE GREEN GROUND CONDUCTOR SHALL BE ROUTED IN ALL CONDUITS WITH ALL PHASE CONDUCTORS.
- ISOLATED GROUND FOR P.O.S. SYSTEM SHALL BE CONTINUOUS FROM LAST OUTLET TO PANEL. DEDICATED CIRCUIT WITH SEPARATE ISOLATED GROUND WITH LESS THAN 0.5 OHM IMPEDANCE. TERMINATE AT NEUTRAL TO GROUND BUS BAR INSIDE THE MAIN SOURCE PANEL.
- ALL MECHANICAL EQUIPMENT SHALL BE COMPLETELY CONNECTED BY ELECTRICAL CONTRACTOR INCLUDING BOTH POWER AND CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.
- BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS FOR CLARITY ONLY. ELECTRICAL CONTRACTOR MAY GROUP SINGLE POLE BRANCH CIRCUITS IN MULTIPLE CIRCUIT HOME RUNS. (3 CIRCUITS MAX @ 120/208V 3Ø, 2 CIRCUITS MAX @ 120/240V. 3Ø & 1Ø). A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL POWER, RECEPTACLE, AND LIGHTING CONDUITS. SHARED NEUTRALS ARE NOT PERMITTED.
- ALL EXTERIOR CONDUIT FOR ROOF MOUNTED EQUIPMENT AND WIRING SHALL BE MINIMIZED BY ROUTING IN CEILING SPACE. NO EXTERIOR CONDUIT WILL BE ACCEPTED.
- ALL CONDUITS SHALL BE CONCEALED IN WALL SPACE, CEILING SPACE OR UNDER FLOOR, NO EXPOSED CONDUIT PERMITTED.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 3/4" CONDUIT FOR LOW VOLTAGE WIRING. LABEL CONDUIT TO IDENTIFY ITS INTENDED USE (I.E.: CONTROL, SECURITY SYSTEM, PHONE, DATA, ETC.).
- WHEN ALUMINUM CONDUCTORS ARE PRESENT, E.C. SHALL VERIFY ALL CONNECTIONS AND REPAIR OR REPLACE AS REQUIRED. USE OXIDE INHIBITING GEL AT ALL CONNECTIONS.
- COMPLETE SYSTEM SHALL BE GROUNDED PER N.E.C. ARTICLE 250.
- FINAL CONNECTIONS TO ALL DIRECT CONNECTED EQUIPMENT SHALL BE WITH U.L. APPROVED LIQUIDTIGHT CONDUIT. PROVIDE WITH GROUND WIRE SIZED PER N.E.C. ARTICLE 250.
- ALL RECEPTACLES SHALL BE TAMPER RESISTANT.
- TYPE NM CABLE (ROMEX) MAY BE USED FOR BRANCH CIRCUITING IF APPROVED BY THE AUTHORITY HAVING JURISDICTION.

SYMBOL LIST

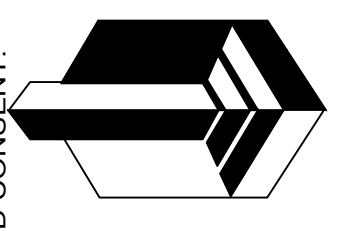
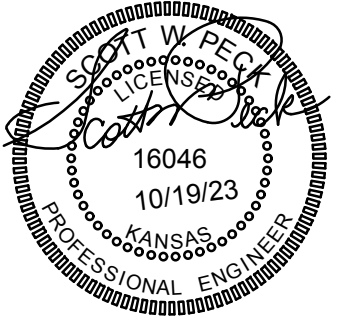
SYMB.	DESCRIPTION	MOUNTING OR AS INDICATED
Ⓜ	2x4 LIGHT FIXTURE	LAY-IN OR SURFACE
Ⓜ	2x2 LIGHT FIXTURE	LAY-IN OR SURFACE
Ⓜ	INCANDESCENT OR COMPACT FL.	RECESSED
Ⓜ	WALL SCONCE	WALL - VERIFY MTG. HEIGHT
Ⓜ	EXIT LIGHT	WALL OR CEILING
Ⓜ	SINGLE POLE SWITCH	48" AFF
Ⓜ	TWO POLE SINGLE THROW SWITCH	48" AFF
Ⓜ	THREE WAY SWITCH	48" AFF
Ⓜ	PILOT SWITCH	48" AFF
Ⓜ	OCCUPANCY SENSOR	48" AFF
Ⓜ	DIMMER SWITCH	WALL - 54" AFF
Ⓜ	EXTERIOR REMOTE EMERGENCY LIGHT FIXTURE	8'-0" AFF
Ⓜ	EMERGENCY LIGHT FIXTURE	8'-0" AFF
Ⓜ	FAN CONTROLLER	48" AFF
Ⓜ	FUSTAT W/ FUSES PER 125% OF MOTOR RATING	AT EQUIPMENT
Ⓜ	DUPLEX RECEPTACLE (20 AMP, SPEC. GRADE)	WALL - 18" AFF UON
Ⓜ	DUPLEX RECEPTACLE (20 AMP, HOSPITAL GRADE)	WALL - 18" AFF UON
Ⓜ	DOUBLE DUPLEX RECEPTACLE (20 AMP)	WALL - 18" AFF UON
Ⓜ	GFI DUPLEX RECEPTACLE (20 AMP)	WALL - 18" AFF UON
Ⓜ	ISOLATED GROUND DUPLEX RECEPTACLE (20 AMP)	WALL - 18" AFF UON
Ⓜ	JUNCTION BOX	WALL
Ⓜ	FUSED SAFETY SWITCH	AT UNIT
Ⓜ	PANELBOARD	WALL
Ⓜ	COMBINATIONS TELEPHONE/DATA OUTLET	WALL - 18" AFF UON
Ⓜ	TELEPHONE OUTLET	WALL - 18" AFF UON
Ⓜ	DATA OUTLET	WALL - 18" AFF UON
Ⓜ	SPECIAL OUTLET	AS NOTED
Ⓜ	COMB. SMOKE / CARBON MONOXIDE DETECTOR (120V.)	CEILING (INTERCONNECTED)
Ⓜ	HOME RUN W/ (2) CONDUCTORS AND (1) GROUND #12 AWG	WALL OR CEILING
Ⓜ	HOME RUN W/ (2) CONDUCTORS AND (1) GROUND #12 AWG	FLOOR OR EARTH
Ⓜ	HOME RUN W/ (2) HOT'S, (1) NEUTRAL AND (1) GROUND #12 AWG	WALL OR CEILING
Ⓜ	HOME RUN W/ (2) HOT'S, (1) NEUTRAL AND (1) GROUND #12 AWG	FLOOR OR EARTH
ELECTRICAL ABBREVIATIONS		
CT	MOUNT DEVICE 8" ABOVE COUNTERTOP TO Ⓜ	
GFI	GROUND FAULT CIRCUIT INTERRUPTER	
EF	EXHAUST FAN	
EXG	EXISTING TO REMAIN	
EXR	EXISTING TO BE RELOCATED	
WP	WEATHERPROOF	
UON	UNLESS OTHERWISE NOTED	
NF	NON FUSED	
NL	NIGHT LIGHT	
a,b,c, etc.	DENOTES SWITCHING SCHEME	
AFF	ABOVE FINISHED FLOOR	

- CONDUCTOR SIZES INDICATED AT 'HOME RUN' ARE TO BE CARRIED THROUGHOUT ENTIRE CIRCUIT. MINIMUM No. 12 AWG CONDUCTORS AND 1/2" CONDUIT.
- VERIFY LOCATION OF OUTLETS WITH TELE./DATA VENDOR PRIOR TO ROUGH-IN. PROVIDE AND INSTALL J-BOXES AND ROUTE A 3/4". WITH PULLWIRE UP TO ABOVE ACCESSIBLE CEILING. COORDINATE THE INSTALLATION OF CABLE AND DEVICES WITH OWNER.
- PROVIDE SPECIAL OUTLET THAT MATCHES THE PLUG RATING AND NEMA CONFIGURATION. COORDINATE WITH OWNER.
- PROVIDE AND INSTALL A DECORA SERIES DIMMER COMPATIBLE WITH THE LED DIMMING DRIVER USED IN THE FIXTURES.



A ELECTRICAL RISER DIAGRAM

NOT TO SCALE



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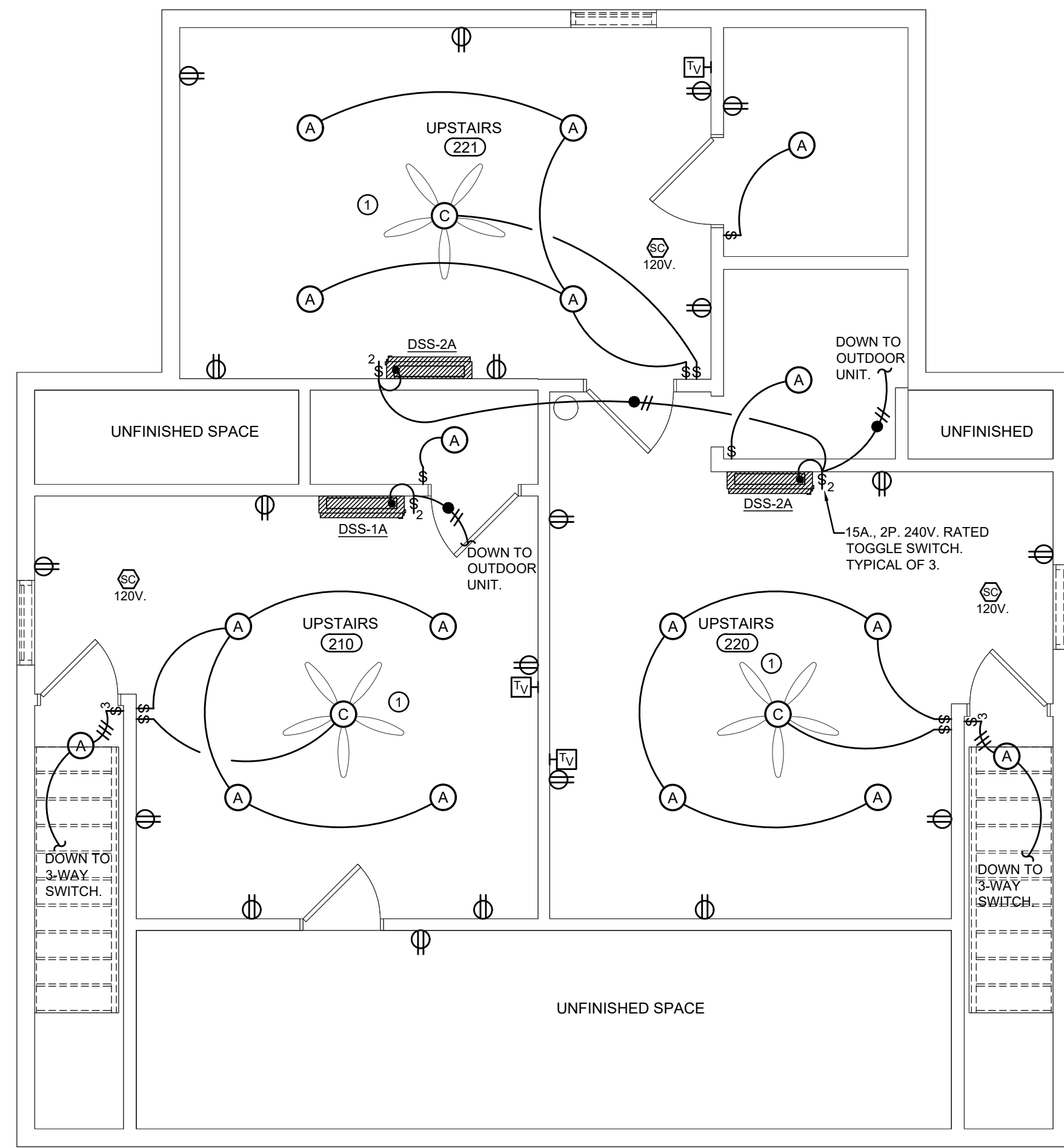
RENOVATIONS TO EXISTING STRUCTURE FOR PROPOSED DAYCARE FACILITY
209 S ASH ST, PRETTY PRAIRIE, KANSAS 67570

COMM. NO.: 2903-23
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ISS: 10/19/2023

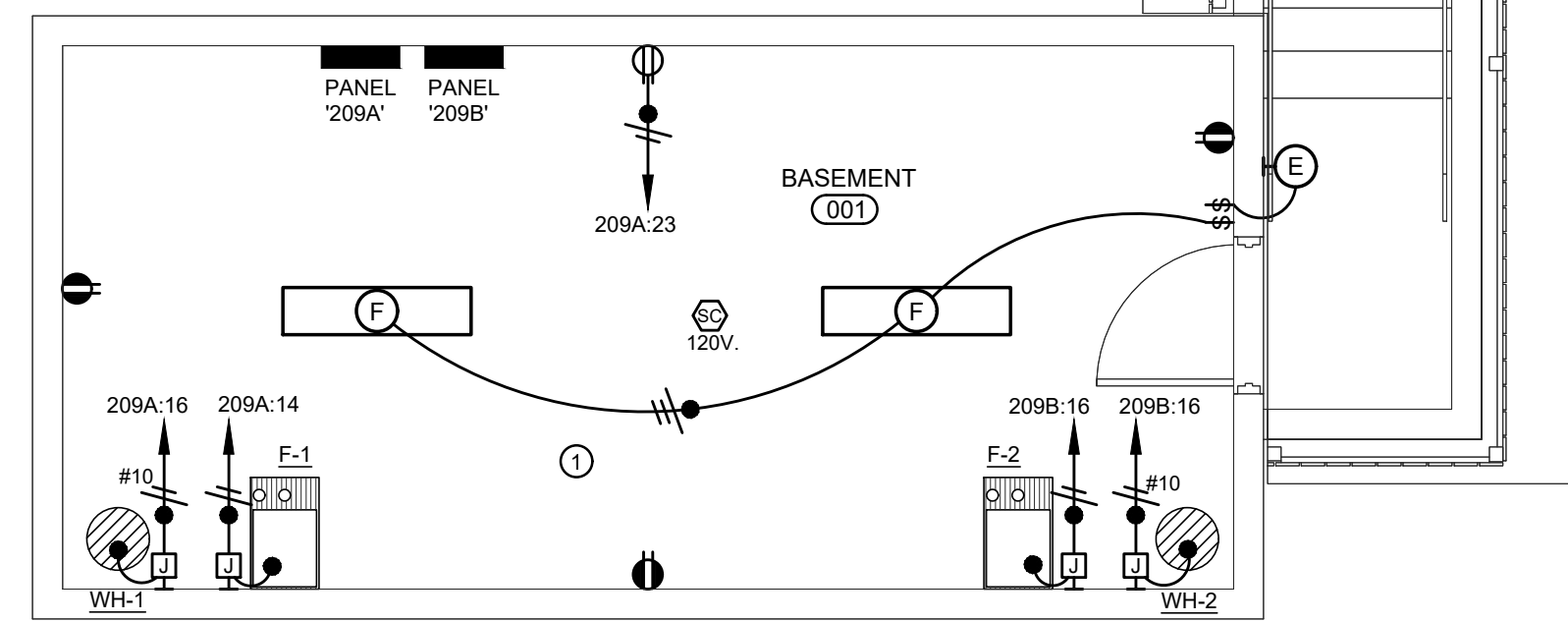
E0.1

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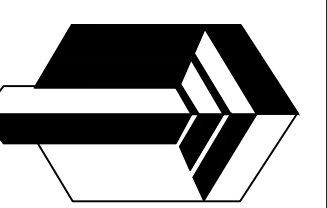
A UPSTAIRS ELEC PLAN
 SCALE - 1/4"=1'-0"
 NORTH



B BASEMENT ELEC PLAN
 SCALE - 1/4"=1'-0"
 NORTH

PLAN NOTES:

- ① NOT ALL CIRCUITING IS SHOWN. REFER TO PANEL SCHEDULES ON SHEET E0.1.



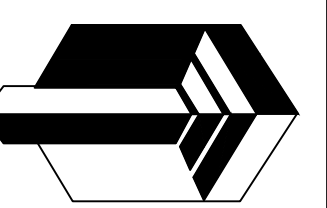
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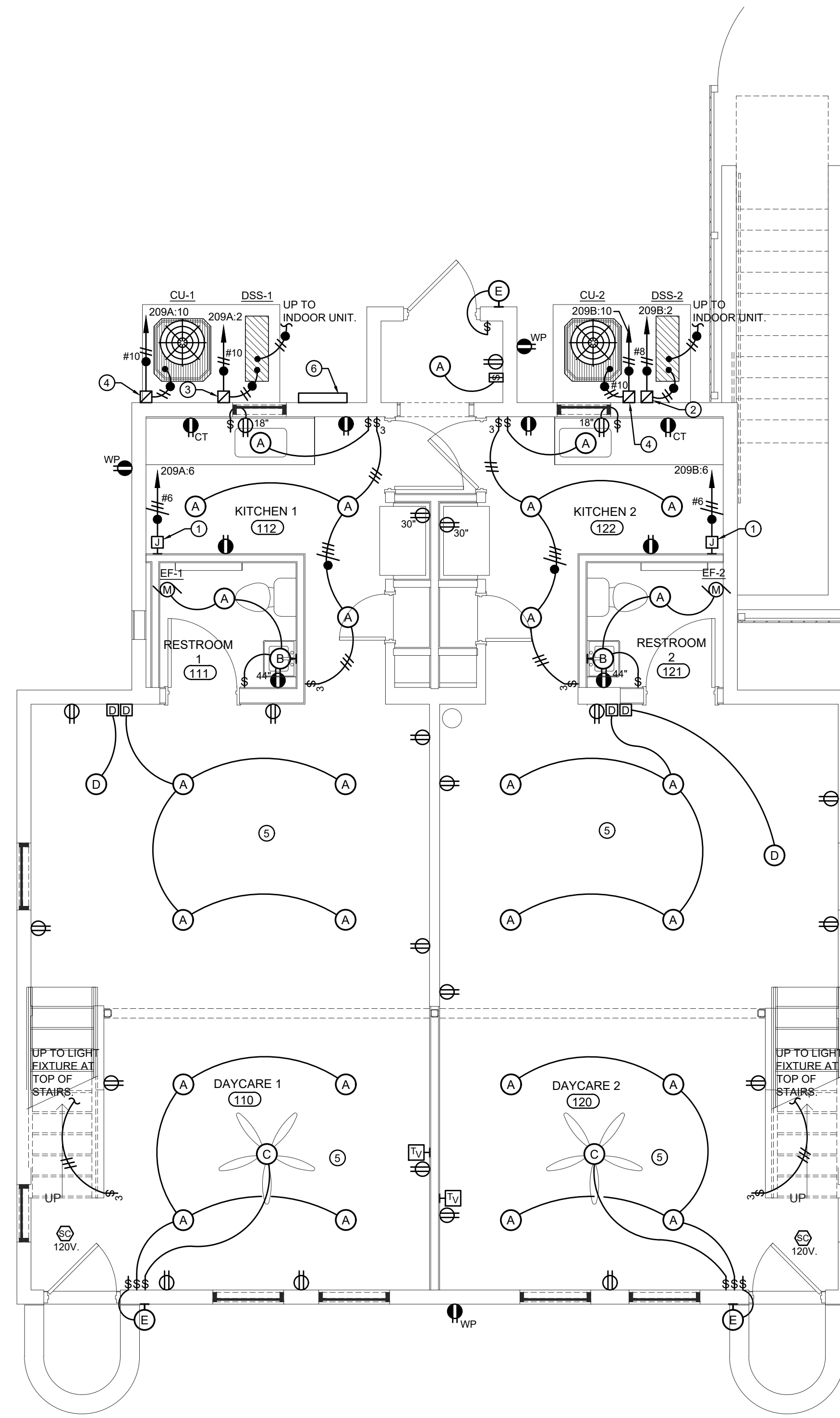
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PLAN NOTES:

- ① PROVIDE A 50A, 2P, CIRCUIT FOR FUTURE OVEN. COIL UP AN EXTRA 12" OF WIRE AND INSTALL A BLANK COVERPLATE.
- ② 60A, 2P, 240V, DISC. SWITCH FUSED AT 40A, NEMA-3R, PULL-OUT FUSE TYPE.
- ③ 30A, 2P, 240V, DISC. SWITCH FUSED AT 20A, NEMA-3R, PULL-OUT FUSE TYPE.
- ④ 30A, 2P, 240V, DISC. SWITCH FUSED AT 30A, NEMA-3R, PULL-OUT FUSE TYPE.
- ⑤ NOT ALL CIRCUITING IS SHOWN. REFER TO PANEL SCHEDULES ON SHEET E0.1.
- ⑥ PROVIDE NEW ELECTRIC SERVICE TO THE BUILDING. REFER TO RISER DIAGRAM ON SHEET E0.1.

LIGHTING LEGEND

- A - SURFACE MOUNTED LED DISK LIGHT BY HALO OR EQUAL.
- B - DECORATIVE VANITY LIGHT WITH LED MEDIUM BASE LAMP.
- C - CEILING FAN WITH NO LIGHT KIT.
- D - DECORATIVE PENDANT LED LIGHT OVER TABLE.
- E - DECORATIVE EXTERIOR LED WALL SCONCE.
- F - 4 WRAPAROUND LED LIGHT WITH LENS.

A MAIN FLOOR ELEC PLAN
 SCALE - 1/4" = 1'-0"
 NORTH

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**RENOVATIONS TO EXISTING STRUCTURE FOR
 PROPOSED DAYCARE FACILITY
 209 S ASH ST, PRETTY PRAIRIE, KANSAS 67570**

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