## ELECTRICAL SYMBOL LIST

**POWER SYMBOLS** 

RECEPTACLE, DUPLEX +18" A.F.F.

RECEPTACLE, DUPLEX +6" ABV COUNTER

RECEPTACLE, DUPLEX, PEDESTAL MOUNT

RECEPTACLE, DUPLEX, FLUSH FLOOR MOUNT

RECEPTACLE, DUPLEX +18" A.F.F. (ONE OUTLET SWITCHED)

RECEPTACLE, DUPLEX +18" A.F.F. (BOTH OUTLETS SWITCHED)

RECEPTACLE, SPECIAL (COORDINATE WITH EQUIPMENT SERVED)

RECEPTACLE, QUAD +18" A.F.F.

TIME CLOCK CONTROL
PUSHBUTTON STATION

DISCONNECT, NON-FUSED

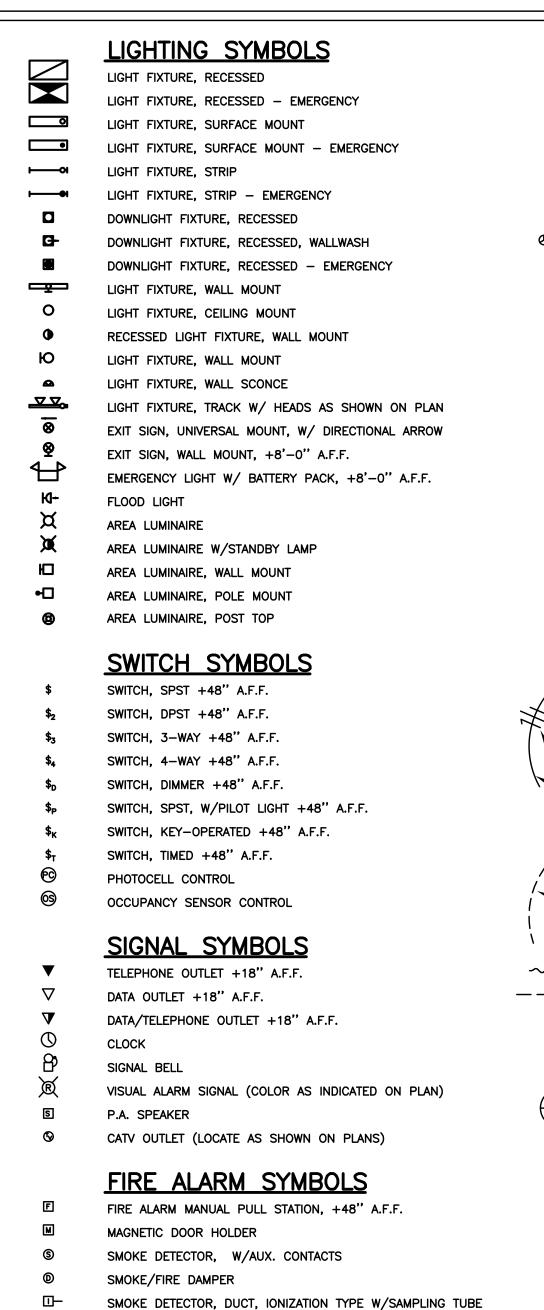
DISCONNECT, FUSED

ELECTRICAL CONNECTION

JUNCTION BOX

THERMOSTAT

TRANSFORMER



SMOKE DETECTOR, IONIZATION TYPE

FIRE MAIN FLOW DETECTION SWITCH

FIRE MAIN TAMPER DETECTION SWITCH

FIRE ALARM HORN/STROBE, +80" A.F.F.

HEAT DETECTOR, RATE-OF-RISE OR FIXED TEMP.

SMOKE DETECTOR, PHOTO TYPE

FIRE ALARM BELL, +80" A.F.F.

FIRE ALARM HORN, +80" A.F.F.

FIRE ALARM STROBE, +80" A.F.F.

F OR F

>	ELECTRICAL CONNECTION, SINGLE MOTOR	
<b>&gt;</b>	ELECTRICAL CONNECTION, MULTI-MOTOR	
_	ELECTRICAL DISTRIBUTION PANEL, RECESSED	
_	ELECTRICAL DISTRIBUTION PANEL, SURFACE	
<del>_</del>	MISCELLANEOUS PANEL, RECESSED	
=	MISCELLANEOUS PANEL, SURFACE	
= 	FLUSH FLOOR BOX (W/ DEVICES AS SHOWN ON PLAN)	
		20 R
2A-9	WIRING SYMBOLS	
	PANEL & CIRCUIT NUMBER	=
	HOMERUN TO PANEL	
1	CONDUCTOR SIZE (IF OTHER THAN #12)	6
	PHASE CONDUCTOR	O
	NEUTRAL CONDUCTOR	
	GROUND CONDUCTOR	
_	CONCEALED CONDUIT	
, े] −1/4"C		
-1740		
\	CONDUIT SIZE	
	CONDUIT (UNDER SLAB OR FLOOR)	
~~	FLEXIBLE CONNECTION	
— —3	CONDUIT, STUBBED & CAPPED	
	NOTATIONS	
1	DRAWING NOTE	
_	DRAWING NOTE	
$\frac{2}{3}$	DETAIL REFERENCE: TOP=DETAIL NO., BOTTOM=SHEET NO.	
<del>F</del> 2	MECHANICAL EQUIPMENT MARK NO. (SEE EQUIPMENT SCHEDULE)	

EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)

PANEL 'A'	ONE—LINE DIAGRAM SYM - ELECTRICAL DISTRIBUTION PANELBOARD (MLO)	BOLS	
400 <sup>1</sup> )			
PANEL 'A' <sub>100</sub>	- ELECTRICAL DISTRIBUTION PANELBOARD (MCB) - SUB-FEED CIRCUIT BREAKER		
200/3	CIRCUIT BREAKER (TRIP RATING & POLES AS IN	IDICATED	ON PLAN)
200A 20 3P R	•	ON PLAN)	
		1)	
• EMERG   200/3	TRANSFER SWITCH (MANUAL OR AUTOMATIC)		
GEN	GENERATOR (RATING AS INDICATED ON PLAN)		
<u></u>	TRANSFORMER (RATING AS INDICATED ON PLAN)		
200A RK1	FUSE (RATING & CLASS AS INDICATED ON PLAN	ı)	
GROUND	GROUND SYSTEM (SIZE AS INDICATED ON PLAN)	)	
	WATER PIPE GROUND ELECTRODE		
$\otimes$	TRANSIENT VOLTAGE SURGE SUPPRESSOR		
M	UTILITY METER & METER BASE		
<b>&gt;</b> с.т.	UTILITY METER CURRENT TRANSFORMER		
1	FEEDER NO. (SEE FEEDER SCHEDULE)		
	ABBREVIATIONS		
	·	I.G.	ISOLATED GROUND
A.F.F.	ABOVE FINISHED FLOOR	LCP	LIGHTING CONTROL PANEL
		MCB	MAIN CIRCUIT BREAKER
A.F.I.	ARC FAULT INTERRUPTER	MLO	MAIN LUGS ONLY
A.T.S.	TRANSFER SWITCH, AUTOMATIC	N.I.C.	NOT IN CONTRACT
С	CONDUIT	N.L.	NIGHT LIGHT
C.O.	CONDUIT ONLY	P	POLE
			PARTIAL CIRCUIT
СВ	CIRCUIT BREAKER	PH	PHASE
	200/3 200/3 EMERG 200/3 GEN  A.F.F. A.F.G. A.F.G. A.T.S. C	CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED OF PUSE (RATING & CLASS AS INDICATED OF PUSE (RATING & CLASS AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  TRANSFORMER (RATING AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  WATER PIPE GROUND ELECTRODE  TRANSIENT VOLTAGE SURGE SUPPRESSOR  WITHITY METER & METER BASE  C.T. UTILITY METER CURRENT TRANSFORMER  TEEDER NO. (SEE FEEDER SCHEDULE)  ABBREVIATIONS  LIGHT FIXTURE TYPE (SEE FIXTURE LIST)  A.F.F. ABOVE FINISHED FLOOR  A.F.G. ABOVE FINAL GRADE  A.F.I. ARC FAULT INTERRUPTER  A.T.S. TRANSFER SWITCH, AUTOMATIC  C. CONDUIT  C.O. CONDUIT ONLY  CATV. CABLE TELEVISION	CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED  MAIN SWITCH (RATING & POLES AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  TRANSFORMER (RATING AS INDICATED ON PLAN)  TRANSFORMER (RATING AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  FUSE (RATING & CLASS AS INDICATED ON PLAN)  WATER PIPE GROUND ELECTRODE  TRANSIENT VOLTAGE SURGE SUPPRESSOR  THE PROPERTY OF THE PROPERTY OF THE PLANSFORMER  THE PROPERTY OF T

R.T.U. REMOTE TELEMETRY UNIT

U.O.N. UNLESS OTHERWISE NOTED

WIRE GUARD

WEATHERPROOF

U.G. UNDERGROUND

T.V.S.S. TRANSIENT VOLTAGE SURGE SUPPRESSOR

VARIABLE FREQUENCY DRIVE

NOTE: SOME OF THE SYMBOLS AND ABBREVIATIONS ON THIS LIST MAY NOT APPLY TO THIS PROJECT.

CLOSED CIRCUIT TELEVISION

FIRE ALARM CONTROL PANEL

CURRENT TRANSFORMER

**EXISTING** 

HORSEPOWER

			LIGHTING FIXTUI		
TYPE	LAMP	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	OPTIONS
A1	LED 3000K 2300LM	NEO RAY LIGHTING (OR APROVED OTHER)	S124DWC575D SERIES	TYPE :4FT WALL BRACKET MOUNTING :SURFACE (+7'-0" MIN) HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT A1E SHALL HAVE BATTERY BACKUP EQUIP, & STORAGE ROOMS
A2	LED 3000K 3000LM	LITHONIA LIGHTING (OR APROVED OTHER)	ZL1N-L46 SERIES	TYPE :4FT GENERAL PURPOSE STRIP MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	STAIRWELLS
A3	LED 3000K 2850LM	NEO RAY LIGHTING (OR APROVED OTHER)	S124RD1P SERIES	TYPE :4FT DIRECT/INDIRECT MOUNTING :SUSPENDED HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT MOUNTING HEIGHT PER ARCHITECT  AMENITY SPACES
A4	LED 4000K 3000LM	LITHONIA LIGHTING (OR APROVED OTHER)	FEML48 SERIES	TYPE :4FT ENCLOSED STRIP MOUNTING :SURFACE HOUSING :FIBERGLASS LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	ELEVATOR PIT, TOP OF SHAFT
B1	LED 3000K 1000LM	ALCON LIGHTING (OR APROVED OTHER)	11235 DIR-15 SERIES	TYPE :5" DIA EXTERIOR CYLINDER MOUNTING :SURFACE HOUSING :ALUMINUM LENS/REFL :CLEAR TEMPERED GLASS VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT 60 DEGREE WIDE FLOOD  UL LISTED WET LOCATION ENTRY CANOPY
B2	LED 3000K 2130LM	STONCO LIGHTING (OR APROVED OTHER)	LPW16 SERIES	TYPE :EXTERIOR WALL PACK MOUNTING :SURFACE (ABOVE DOOR) HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	TYPE III DISTRIBUTION  BUILDING SERVICE ENTRANCE
C1	LED 3000K 1075LM	USAI LIGHTING (OR APROVED OTHER)	P4RDF SERIES	TYPE :4.5" DIA DOWNLIGHT MOUNTING :RECESSED HOUSING :STEEL LENS/REFL :NA VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT C1E SHALL HAVE BATTERY BACKUP LOBBY, CORRIDORS
C2 C2E	LED 3000K 1175LM	USAI LIGHTING (OR APROVED OTHER)	P3RD SERIES	TYPE :3" DIA DOWNLIGHT MOUNTING :RECESSED HOUSING :STEEL LENS/REFL :NA VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT C2E SHALL HAVE BATTERY BACKUP LOBBIES
U1	LED 2700K 1000LM	DESIGN CLASSICS (OR APPROVED OTHER)	DFR615-H-927-WH	TYPE :6" DIA CEILING LIGHT MOUNTING :SURFACE HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	UL LISTED WET LOCATION UNIT KITCHEN, BATH, HALL
U2	LED 3000K 1600LM	KUZCO LIGHTING (OR APPROVED OTHER)	FM3511 SERIES	TYPE :11" DIA CEILING LIGHT MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :FROSTED GLASS VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	FINISH PER ARCHITECT  UNIT BEDROOM
U3	LED 3000K 1600LM	KUZCO LIGHTING (OR APPROVED OTHER)	VL62220 SERIES	TYPE :20" VANITY BAR MOUNTING :SURFACE (=6" ABOVE MIRROR) HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	FINISH PER ARCHITECT  UNIT BATHROOM
X1 X2	LED (GREEN LETTERS)	LITHONIA DMF LIGHTING (OR APROVED OTHER)	LE EL N SERIES DLED500EM—G	TYPE :EXIT SIGN MOUNTING :UNIVERSAL HOUSING :DIE—CAST ALUMINUM LENS/REFL :SINGLE FACE/DUAL FACE VOLTAGE :MVOLT BALLAST :NICKLE CADMIUM BATTERY	X1=SINGLE SIDE X2=DOUBLE SIDE

#### GENERAL LIGHTING NOTES:

- A. WHEREVER POSSIBLE, SELECTED LIGHT FIXTURES SHALL HAVE ENERGY EFFICIENT LAMPS, BALLASTS & DRIVERS AND/OR HAVE ENERGY COMPLIANT RATINGS SUCH AS DLC, ENERGY STAR, ETC.
- AND/OR HAVE ENERGY COMPLIANT RATINGS SUCH AS DLC, ENERGY STAR, ETC
- B. VERIFY ALL FIXTURE FINISHES WITH ARCHITECT PRIOR TO BID.
- C. VERIFY ALL FIXTURE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO ROUGH IN.
- D. ALL LIGHTING SHALL BE 3000 KELVIN UNLESS OTHERWISE NOTED.
- E. ALL PRODUCT SUBSTITUTIONS AND VALUE ENGINEERING SHALL BE SUBMITTED DURING BID PHASE, SHALL MEET DESIGN INTENT AND ARE SUBJECT TO OWNER APPROVAL.
- F. EGRESS LIGHTING SHALL BE PROVIDED TO MEET MINIMUM LIGHT LEVELS AS DESCRIBED PER OREGON STRUCTURAL SPECIALTY CODE 1006.3.
- PUBLISHED EXTERIOR & SITE LICHTING SHALL RE CONTROLLED VIA RHOTOGELL SITHER INTEGRAL OR REMOTE OR
- G. BUILDING EXTERIOR & SITE LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL, EITHER INTEGRAL OR REMOTE, OR BY TIME CLOCK FOR DUSK-TILL-DAWN OPERATION.
- H. LIGHTING FIXTURES DESIGNATED AS NIGHT LIGHTS (N.L.) AND STAIRWELL LIGHTS SHALL BE ON 24/7.
- J. STAIRWELL LIGHTS SHALL BE PROVIDED WITH OCCUPANCY SENSOR(S), EITHER INTEGRAL OR REMOTE, TO PROVIDE 50% LIGHT REDUCTION DURING PERIODS OF INACTIVITY. ONCE ACTIVATED, LIGHTS ARE TO REMAIN AT 100% OUTPUT FOR A MINIMUM OF 20 MINUTES.
- I. DESIGN INTENT FOR CORRIDOR LIGHT FIXTURES TO BE CONTROLLED SUCH THAT THE FIXTURES DIM BY 50% DURING PERIODS OF LOW ACTIVITY. UPON DETECTION, LIGHTS SHALL RETURN TO 100% AND REMAIN AT FULL OUTPUT FOR A MINIMUM OF 30 MINUTES BEFORE RETURNING TO THE DIMMED STATE. FIXTURES ON EMERGENCY POWER CIRCUITS SHALL REMAIN 'ON' 24/7.



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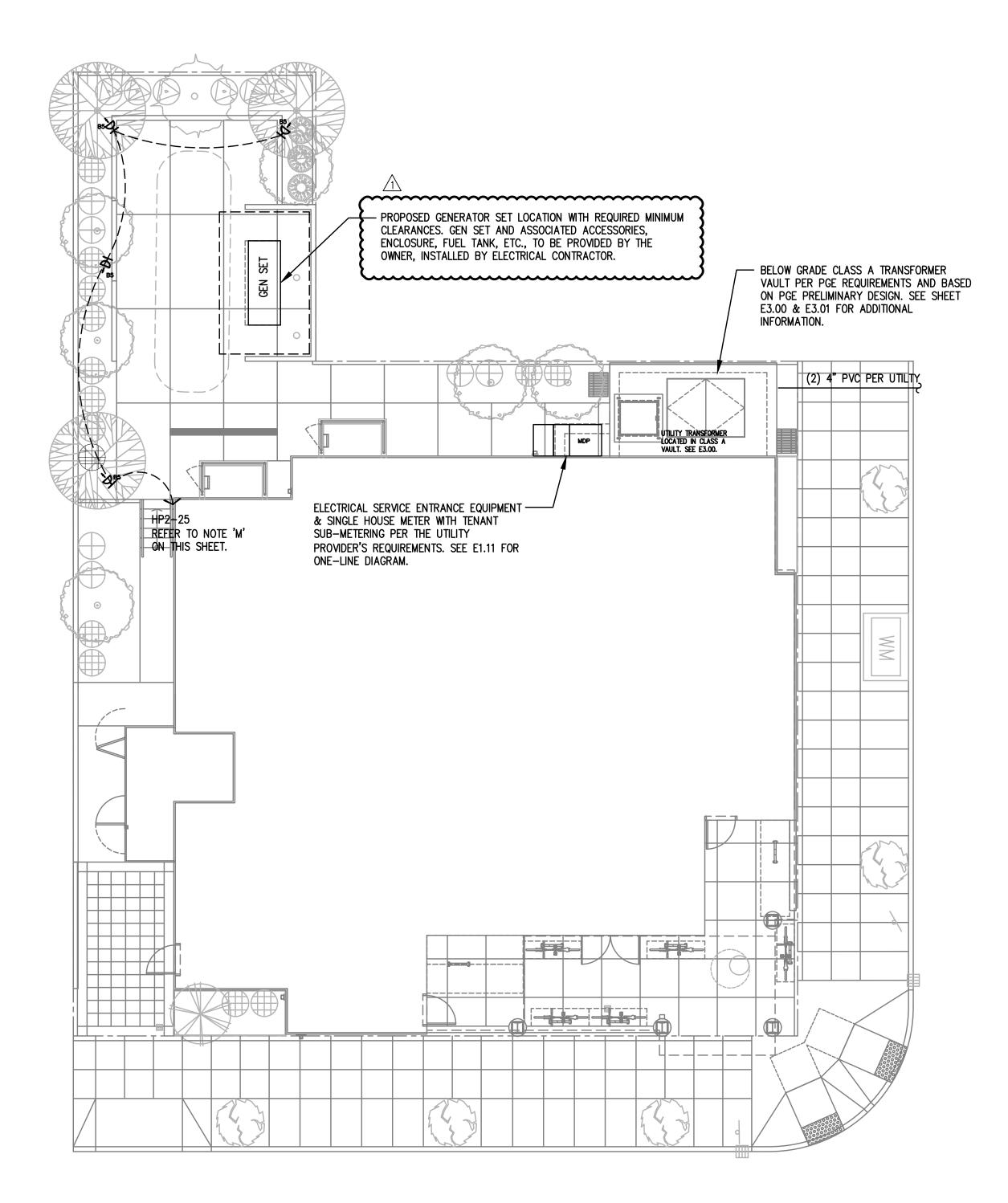
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SHEET

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#### GENERAL NOTES:

- A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- B. ELECTRICAL PLANS ARE DIAGRAMMATIC AND MAY OR MAY NOT REFLECT ACTUAL FIELD CONDITIONS.
- C. REFER TO LIGHTING PLANS FOR BUILDING MOUNTED LIGHT FIXTURE LOCATIONS.
- D. COORDINATE WITH LOCAL UTILITY PROVIDER FOR EXACT SERVICE CONDUIT AND CONDUCTORS REQUIREMENTS.
- E. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH CLARK PUBLIC UTILITIES ELECTRICAL SERVICE REQUIREMENTS.
- F. U.G. PRIMARY FEEDER SHALL HAVE A MINIMUM 48 INCH BURY.
- G. U.G. SECONDARY FEEDER SHALL HAVE A MINIMUM 36 INCH BURY.
- H. REFER TO SHEET E1.11 FOR ONE-LINE DIAGRAM, LOAD SUMMARY INFORMATION AND TYPICAL FEEDER SCHEDULE.
- I. SECONDARY CONDUIT SWEEPS SHALL BE MINIMUM 60 INCH RADIUS WITH A MINIMUM OF 7'-0" STRAIGHT CONDUIT RUN BETWEEN SWEEPS.
- J. CONTRACTOR SHALL REVIEW THE UTILITY PROVIDER'S ELECTRICAL SERVICE REQUIREMENTS PRIOR TO THE START OF ANY WORK.
- K. LOCATION AND INSTALLATION OF THE PRIMARY AND SECONDARY CONDUITS, TRANSFORMER, ETC. SHALL BE PROVIDED PER UTILITY PROVIDER'S ELECTRICAL SERVICE REQUIREMENTS.
- L. CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS AND SPECIFICATIONS IN DETAIL AND REFER TO THE DOCUMENTS THROUGHOUT THE CONSTRUCTION.
- M. VERIFY LOW VOLTAGE LANDSCAPE LIGHTING FIXTURES & LOCATIONS AND PROVIDE POWER CONNECTIONS AS REQUIRED PER THE LANDSCAPE PLAN SET.

### UTILITY REQUIREMENTS

1. CUSTOMER TO PROVIDE ALL TRENCHING AND BACKFILLING. TRENCH TO BE 36 INCHES DEEP AND 30 INCHES WIDE, MEASURED FROM FINAL GRADE.

2. ALL UTILITY CONDUCTORS TO BE INSTALLED IN GRAY SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN 500 LBS. TEST). CLARK PUBLIC UTILITIES TO DETERMINE THE SIZE AND NUMBER OF CONDUITS REQUIRED. ALL ELBOWS TO BE 36 INCH (MIN) RADIUS. ALL BENDS MAY BE FACTORY MADE. IF MORE THAN 270 DEGREES OF BENDS OR IF RUN IS LONGER THAN 150 FEET, BENDS MUST BE RIGID STEEL.

3. CONSULT WITH UTILITY REPRESENTATIVE 2 WEEKS BEFORE STARTING MAIN POWER TRENCHING FOR A PRE-CONSTRUCTION CONFERENCE. INCLUDED IN THIS CONFERENCE WILL BE EXCAVATOR, CPU, TELCO, CATV, AND GAS.

4. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING.

# CLASS A TRANSFORMER VAULT ROOM GENERAL NOTES:

- 1. ALL MATERIALS AND PRODUCTS USED WITHIN THE CLASS A VAULT IS SUBJECT TO THE UTILITY PROVIDER'S APPROVAL.
- 2. PRIMARY SERVICE CONDUCTORS FROM THE PROPERTY LINE TO THE VAULT SHALL BE IN SCHEDULE 40 PVC PER THE UTILITY PROVIDER'S DIRECTION. ALL CONDUIT PENETRATIONS MUST BE SEALED WITH A FLEXIBLE NON-SHRINK HYDROPHOBIC GROUT TO PREVENT WATER INTRUSION.
- 3. NON-METALIC SEISMIC-APPROVED CABLE TRAY WITH GALVANIZED HARDWARE SHALL BE INSTALLED IN VAULT ROOMS WITH CEILING GREATER THAN 10 FEET HIGH.
- 4. VAULT ROOM DOORS SHALL BE BLAST-RATED METAL DOORS. DOORS AND VENT SHUTTERS MUST HAVE A THREE HOUR BLAST & FIRE RATING PER NFPA 450.43.
- 5. ALL OPENING, GAPS & CRACKS MUST BE SEALED WITH THREE—HOUR RATED FIRE CAULKING. CONSULT UTILITY PROVIDER FOR APPROVED PRODUCTS.
- 6. PROVIDE TWO "RATE TO RISE" HEAT DETECTORS PER THE UTILITY PROVIDER'S REQUIREMENTS. LOCATE ONE ABOVE THE TRANSFORMER AND ONE OTHER WITHIN THE ROOM.
- 7. VAULT VENTS MUST HAVE SHUTTERS THAT ARE AUTOMATICALLY CLOSED BY THE HEAT DETECTOR IN THE FIRE SUPPRESSION SYSTEM HEAT DETECTORS SHALL MEET NFPA 72 REQUIREMENTS.
- 8. REFER TO SHEETS E3.00 & E3.01 FOR MORE INFORMATION REGARDING THE CLASS 'A' TRANSFORMER VAULT ROOM.



EXPIRES 12-31-2021

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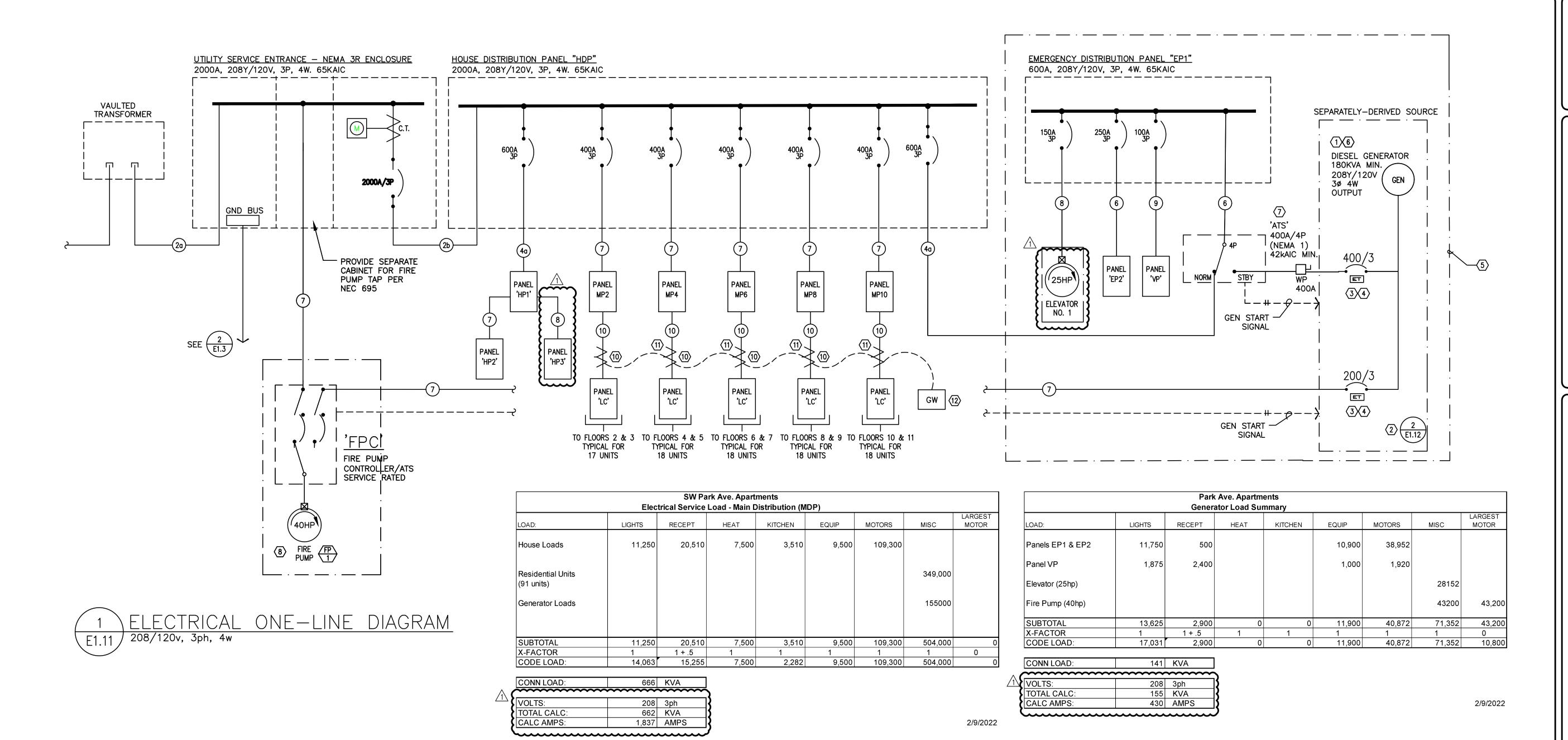
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	FE	EDER S	SCHEDULE (C		PPER	)
NO.	AMPS	CONDUIT	CONDUCTOR			
1		PRIMARY	BY UTILITY CO.	&		GND
20		*(12) 5"	BY UTILITY CO.	&		GND
<b>2b</b> )	2500A	*(6) 4"	ea w/ (4) #600Kcm	&	(1) #350k	(GND
3	1200A	*(3) 4"	ea w/ (4) #600Kcm	&	(1) #3/0	GND
4	800A	*(2) 4"	ea w/ (4) #600Kcm	&	(1) #1/0	GND
40	600A	*(2) 3"	ea w/ (4) #350Kcm	&	(1) #1	GND
5	400A	3 1/2"	(4) #500Kcm	&	(1) #3	GND
6	250A	2 1/2"	(4) #250Kcm	&	(1) #4	GND
7	200A	2"	(4) #3/0	&	(1) #6	GND
8	150A	2"	(4) #1/0	&	(1) #6	GND
9	100A	1 1/2"	(4) #1	&	(1) #8	GND
10	100A	1 1/2"	(3) #1	&	(1) #8	GND

\* PARALLEL FEEDER

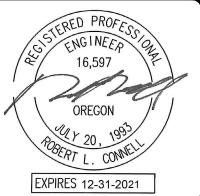
### ONE-LINE GENERAL NOTES:

- A. COORDINATE ALL WORK ASSOCIATED WITH ELECTRIC SERVICE WITH LOCAL UTILITY PROVIDER. PROVIDE ALL CONDUIT, GROUNDING, TRANSFORMER VAULT/PAD, ETC., IN ACCORDANCE WITH SERVING UTILITY REQUIREMENTS.
- B. COORDINATE METERING REQUIREMENTS WITH UTILITY.
- C. FOR LOAD CENTER FEEDER LENGTHS GREATER THAN 145'-0" FROM METER CENTER, INCREASE WIRE SIZE ONE SIZE UP FOR VOLTAGE DROP.
- D. PER NEC 240.87, THE ELECTRICAL CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR ARC ENERGY REDUCTION DEVICE(S) FOR CIRCUIT BREAKERS 1200A OR GREATER. CONTRACTOR SHALL PROVIDE AN ENERGY-REDUCING ACTIVE FLASH MITIGATION SYSTEM OR OTHER METHOD APPROVED BY THE NEC.
- E. USE OF ALUMINUM CONDUCTORS, AS ALLOWED BY CODE, MAY BE SUBSTITUTED FOR COPPER. CONTRACTOR SHALL PROVIDE WRITTEN SUBSTITUTION REQUEST DEMONSTRATING THE THAT THE PROPOSED PRODUCT IS EQUIVALENT TO COPPER IN ALL
- F. ACCEPTABLE POWER MONITORING SYSTEM MANUFACTURERS ARE: SIEMENS SEM3 E-MON D-MON SQUARE D POWERLOGIC OR AS APPROVED BY SUBMITTAL PROCESS.

### O ONE-LINE NOTES:

- 1. ESTIMATED GENERATOR STARTING LOAD IS BASED ON THE ELEVATOR & FIRE PUMP MOTORS BEING PROVIDED WITH REDUCED STARTING.
- 2. PROVIDE GROUND FOR SEPARATELY DERIVED SYSTEM PER NEC.
- 3. PROVIDE ELECTRONIC TRIP CIRCUIT BREAKER. EXACT BREAKER TYPE, SETTINGS, ETC. TO BE VERIFIED AND AS DETERMINED BY SELECTIVE COORDINATION STUDY AS PERFORMED BY THE ELECTRICAL DISTRIBUTION EQUIPMENT MANUFACTURER.
- 4. COORDINATE INSTALLATION OF OUTPUT BREAKERS WITH GENERATOR MANUFACTURER TO SELECTIVELY COORDINATE WITH POWER STUDY RECOMMENDATIONS.
- 5. 'LIFE SAFETY' BRANCH TO MEET ALL REQUIREMENTS OF NEC 700. CONTRACTOR SHALL BE AWARE THAT MFIA HAS ATTEMPTED TO INDICATE EQUIPMENT AND SIZES THAT WILL SELECTIVELY COORDINATE, BUT WILL NOT BE KNOWN UNTIL ELECTRICAL EQUIPMENT MANUFACTURER PERFORMS THE REQUIRED POWER STUDIES AS SPECIFIED IN 26 05 73. CHANGES MAY BE NECESSARY AFTER THE BID.
- 6. GENERATOR IS SIZED TO OPERATE ONLY ONE ELEVATOR AT A TIME. COORDINATE WITH ELEVATOR & GENERATOR PROVIDERS FOR AUTOMATIC SEQUENTIAL OPERATION AS REQUIRED UNDER ASME A17.1, SECTION 2.27.2.1 THROUGH 2.27.2.5.
- 7. THE AUTOMATIC TRANSFER SWITCH FOR THE EMERGENCY PANEL "EDP" SHALL OPERATE SUCH THAT THE EGRESS LOADS ARE SWITCHED TO GENERATOR POWER WITHIN 10 SECONDS AND THE ELEVATOR(S) SWITCHED WITHIN 60 SECONDS OF A POWER FAILURE.

- 8. CONSULT MECHANICAL, PLUMBING AND/OR FIRE ALARM PLANS AND VERIFY EXACT POWER REQUIREMENTS FOR THE FIRE PUMP.
- 9. CONSULT ELEVATOR PROVIDER FOR INSTALLATION AND POWER REQUIREMENTS PRIOR TO ROUGH IN.
- 10. PROVIDE CIRCUIT BREAKER WITH INTEGRAL LOAD MONITORING MODULE COMPATIBLE WITH POWER MONITORING SYSTEM. SEE MANUFACTURER SPECIFICATIONS FOR WEB BASED POWER MONITORING SYSTEM REQUIREMENTS.
- 11. SERIAL COMMUNICATIONS CABLE, 18 AWG MINIMUM. BELDEN 9463 OR APPROVED. 12. PROVIDE LOAD MONITORING NETWORK GATEWAY COMPATIBLE WITH POWER MONITORING SYSTEM.
- ▶13. GENERATOR SET AND ALL ASSOCIATED COMPONENTS AND ACCESSORIES TO BE PROVIDED BY OWNER. THE ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION, POWER CONNECTIONS, COORDINATION AND TESTING AS REQUIRED FOR A COMPLETE INSTALLATION. CONSULT MANUFACTURER'S DOCUMENTATION AND DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.



GRAM

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**ARTMENT** 

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SHEET

		MFIA P	PANELS	CHEDU	LE					
par	el	mountir	ng		location	า		connected load amps	<u> </u>	
EP	1	SURFA	CE		ELECT	ROOM			305	j
volta	ge	phase		bus & main				calculated load amps	3	
120/208V (SC		3		400A			MLO		335	
C serv		a/p	no.	abc	no.	a/p	va	service		С
6 ELEVATOR	14400		1	*	2	250/3		PANEL EP2		7
6 *	14400		3	*	4	*	20992	*		7
6 *	14400	*	5	*	6	*	18468	*		7
SPARE		20/1	7	*	8	100/3	2700	PANEL VP		7
SPARE		20/1	9	*	10	*	3620	*		7
SPARE		20/1	11	*	12	*	500	*		7
BLANK			13	*	14			BLANK		
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BLANK			37	*	38			BLANK		$\top$
BLANK			39	*	40			BLANK		T
BLANK			41	*	42			BLANK		$\vdash$
Phase A	37392	VA			NOTES	:		line-line voltage		
Phase B	39012	2 VA							208	}
Phase C	33368	3 VA						largest motor (va)		
Total Connected	109772	2 VA							43200	)
load code:	ph. A	ph. B		ph. C		total	factor	calculated load (va)		
1. LIGHTS=	C	0	ı	0	VA	0	1.25		0	)
2. RECEPT.=		o	ı	0	VA	0	1 + 0.5		0	)
3. HEATING=		o	ı	0	VA	О	1.00		0	)
4. KITCHEN=		o	ı	0	VA	О	1.00		0	)
5. EQUIP.=		o	ı	0	VA	О	1.00		0	)
6. MOTORS=	14400	14400	ı	14400	VA	43200	*		54000	)
7. MISC=	22992	24612	!	18968	VA	66572	1.00		66572	<u>'</u>
	est motor + 100% of the b						TOTAL =		120572	

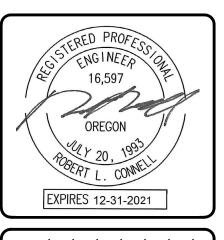
	panel		mountin	ıg		location	1		connected load amps		
	EP2		SURFA	CE		ELECT.	ROOM		166		
	voltage		phase		b	us & ma	in		calculated load amps		
	120/208V (SCCR: 42KAIC)		3		250A			MLO	173		
С	service	va	a/p	no.	abc	no.	a/p	va	service	(	
1	LIGHTS - BLDG EXTERIOR	500	20/1	1	*	2	20/1	1200	ELEV. CONTROL PANEL		
1	LIGHTS - STAIR #1	1200	20/1	3	*	4	20/1	1200	ELEV. CAB LIGHTS		
1	LIGHTS - STAIR #2	1200	20/1	5	*	6	20/1	1500	GENERATOR BLOCK HEATER		
1	ELEV PITS & LTS (PIT & SHAFT)	500	20/1	7	*	8	20/1	1500	GENERATOR BATTERY CHARGER		
1	LIGHTS - BSMNT, FLR 1 & 2	1500	20/1	9	*	10	20/1	500	FACP/VOICE EVAC	;	
1	LIGHTS - FLRS 3,4,5	1500	20/1	11	*	12	20/1	1176	SP-1 (ELEV PIT)	(	
1	LIGHTS - FLRS 6,7,8	1500	20/1	13	*	14	20/1	500	RECEPT - ELEV MACH RM	:	
1	LIGHTS - FLRS 9,10,11	1500	20/1	15	*	16	20/1	500	GENERATOR REMOTE ANNUNC.	;	
	SPARE	0	20/1	17	*	18	20/1	0	SPARE		
5	SMOKE CURTAINS	1500	20/1	19	*	20	50/3	3864	SF-2 ELEV PRESSURIZATION FAN	1	
5	SMOKE CURTAINS	1500	20/1	21	*	22	*	3864	*	1	
5	SMOKE CURTAINS	1500	20/1	23	*	24	*	3864	*	1	
	SPARE	0	20/1	25	*	26	50/3	3864	SF-3 STAIR PRESSURIZATION FAN	,	
	SPARE	0	20/1	27	*	28	*	3864	*	1	
	SPARE	0	20/1	29	*	30	*	3864	*	1	
6	IAC/OAC-3	1500	30/2	31	*	32	50/3	3864	SF-4 STAIR PRESSURIZATION FAN	1	
6	*	1500	*	33	*	34	*	3864	*	1	
	BLANK			35	*	36	*	3864	*	-	
	BLANK			37	*	38			BLANK		
	BLANK			39	*	40			BLANK		
	BLANK			41	*	42			BLANK		
	Phase A	20292	VA		1	NOTES:			line-line voltage		
	Phase B	20992	VA						208		
	Phase C	18468	VA						largest motor (va)		
	Total Connected	59752	VA						o		
	load code:	ph. A	ph. B		ph. C		total	factor	calculated load (va)		
	1. LIGHTS=	2500	4200		2700	VA	9400	1.25	11750		
	2. RECEPT.=	500	0		0	VA	500	1 + 0.5	500		
	3. HEATING=	0	0		0	VA	o	1.00	o		
	4. KITCHEN=	0	0		0	VA	o	1.00	o		
	5. EQUIP.=	4200	3700		3000	VA	10900	1.00	10900		
	6. MOTORS=	13092	13092		12768	VA	38952	*	38952		
	7. MISC=	0	0		0	VA	o	1.00	o		
_	(* 125% of the largest motor + 100%	of the b	alance)				_	TOTAL =	62102		

	1				CHEDU					
	panel		mountin	-		location		_	connected load amps	
	VP		SURFA	CE			A VAUL	<u>-</u> T		19
	voltage		phase			us & ma			calculated load amps	
	120/208V (SCCR: 42 KAIC)		3		100A			MLO		20
၁ —	service	va	a/p	no.	abc	no.	a/p	va	service	
1	LIGHTS	1000		1	*	2	20/1		RECEPTACLES	
1	LIGHTS - EGRESS	500		3	*	4	20/1	1200	RECEPT - SUMP PUMP SP-X	
5_	SMOKE DAMPERS	500		5	*	6	30/2		IAC/OAC-X	
5	SMOKE DAMPERS	500		7	*	8	*		*	
3	EF-5	1920	30/1	9	*	10	20/1	0	SPARE	
	SPARE	0	20/1	11	*	12	20/1	0	SPARE	
	BLANK			13	*	14			BLANK	
	BLANK			15	*	16			BLANK	
	BLANK			17	*	18			BLANK	
	BLANK			19	*	20			BLANK	
	BLANK			21	*	22			BLANK	
	BLANK			23	*	24			BLANK	
				25	*	26				
				27	*	28				
				29	*	30				
				31	*	32				
				33	*	34				
				35	*	36				
				37	*	38				
				39	*	40				
				41	*	42				
	Phase A	2700	VA			NOTES			line-line voltage	
	Phase B	3620	VA							208
	Phase C	500	VA						largest motor (va)	
	Total Connected	6820	VA							0
	load code:	ph. A	ph. B		ph. C		total	factor	calculated load (va)	
	1. LIGHTS=	1000	<u> </u>		0	VA	1500	1.25	1	875
	2. RECEPT.=	1200	1200		0	VA	2400	1 + 0.5	2	400
	3. HEATING=	0			0	VA	o	1.00		0
	4. KITCHEN=	0	0		0	VA	o	1.00		0
	5. EQUIP.=	500	0		500	VA	1000	1.00	1	000
	6. MOTORS=	0	1920		0	VA	1920	*		920
	7. MISC=	0			0		0	1.00	·	0
	(* 125% of the largest motor + 100%		•			•••		TOTAL =	<u></u>	195

			MFIA P	ANEL S	CHEDU	LE	<u> </u>			
	panel		mountin	g		location	1		connected load amps	
	HP1		SURFA	CE		ELECT.	. ROOM		413	3
	voltage		phase		b	us & ma	in		calculated load amps	
	120/208V (SCCR: 42KAIC)		3		600A			MLO	444	4
)	service	va	a/p	no.	abc	no.	a/p	va	service	
1	LIGHTS - BLDG EXTERIOR	1500	20/1	1	*	2	20/1	1080	RECEPT - 1ST FLR	T
1	LIGHTS - BSMNT, FLR 1 & 2	1500	20/1	3	*	4	20/1	1080	RECEPT - 1ST FLR	T
1	LIGHTS - FLR 1	1500	20/1	5	*	6	20/1	1080	RECEPT - 1ST FLR	T
1	LIGHTS - FLRS 3,4,5	1500	20/1	7	*	8	20/1	1500	REFRIGERATOR	T
1	LIGHTS - FLRS 6,7,8	1500	20/1	9	*	10	20/1	500	RECEPT - KITCHEN	T
1	LIGHTS - FLRS 9,10,11	1500	20/1	11	*	12	20/1	900	DISPOSAL	T
	LIGHTS - LANDSCAPING	0	20/1	13	*	14	20/1	500	RECEPT - KITCHEN	T
3	LIGHTS - ROOF	150	20/1	15	*	16	20/1	1500	DISHWASHER	T
5	TELECOM PANEL	500	20/1	17	*	18	20/1	1080	RECEPT - 1ST FLR	T
5	TELECOM PANEL	500	20/1	19	*	20	20/1	500	SF-1 (x10)	T
5	TLELCOM PANEL	500	20/1	21	*	22	20/1	500	RECEPT - ELEV MACHINE RM	T
5	LANDSCAPE	500	20/1	23	*	24	20/1	1440	RECEPT - FLRS 2,3	T
5	IRRIGATION	500	20/1	25	*	26	20/1	1440	RECEPT - FLRS 4,5	T
	SPARE	0	20/1	27	*	28	20/1	1440	RECEPT - FLRS 6,7	1
ŝ	IA/OAC-1	1500	30/2	29	*	30	20/1	1440	RECEPT - FLRS 8,9	T
ŝ	*	1500	*	31	*	32	20/1	1440	RECEPT - FLRS 10,11	T
ŝ	IAC/OA-2	1500	30/2	33	*	34	20/1	0	SPARE	T
ŝ	*	1500	*	35	*	36	20/1	0	SPARE	T
7	PANEL HP2	21124	200/3	37	*	38	150/3	12320	PANEL HP3	T
7	*	19104	*	39	*	40	*	23100	*	T
7	*	20012	*	41	*	42	*	17780	*	T
	Phase A	45404	VA		•	NOTES			line-line voltage	
	Phase B	52374	VA						208	3
	Phase C	50732	VA						largest motor (va)	
	Total Connected	148510	VA						43200	)
	load code:	ph. A	ph. B		ph. C		total	factor	calculated load (va)	
	1. LIGHTS=	3000	3000		3000	VA	9000		11250	ົ
	2. RECEPT.=	4460	3520		5040	VA	13020	1 + 0.5	11510	)
	3. HEATING=	0	0		0	VA	0	1.00	C	)
	4. KITCHEN=	1500	1500		900	VA	3900	0.90	3510	)
	5. EQUIP.=	1000	500		1000	VA	2500	1.00	2500	)
	6. MOTORS=	2000	1650		3000	VA	6650	*	17450	)
	7. MISC=	33444	42204		37792	VA	113440	1.00	113440	)

		MFIA P	ANEL S	SCHEDU	LE							MFIA P	ANEL SCHED	JLE			
panel		mountin	ıg		location	1		connected load amps		panel		mountin	g	location	า	connected load amps	
HP2		SURFA	CE		ELECT	. ROOM		166		HP3		SURFA	CE	ELECT	. ROOM		148
voltage		phase		b	us & ma	iin		calculated load amps		voltage		phase		bus & ma	ain	calculated load amps	
120/208V (SCCR: 42KAIC)		3		200A			MLO	166		120/208V (SCCR: 42KAIC)	)	3	150A		MLO		148
service	va	a/p	no.	abc	no.	a/p	va	service	С	C service	va	a/p	no. abc	no.	a/p va	service	
EH-1 STAIRWELL	1500	20/1	1	*	2	20/1	1500	RECEPT - BASEMENT, EF-4	2	2 WASHER	1500	20/1	1 *	2	20/1 150	00 WASHER	
EH-1 STAIRWELL	1500	20/1	3	*	4	20/1	1500	RECEPT- BASEMENT	2	6 DRYER	4320	30/2	3 *	4	30/2 432	O DRYER	
TRACH COMPACTOR	2100	30/3	5	*	6	20/1	1500	B-1, B-2, B-3 GAS BOILERS	5	6 *	4320	*	5	* 6	* 432	20 *	
*	2100	*	7	*	8	20/1	1500	WH-1, WH-2 GAS WATER HTRS	5	2 WASHER	1500	20/1	7 *	8	20/1 150	00 WASHER	
*	2100	*	9	*	10	20/1	1176	RP-1	6	6 DRYER	4320	30/2	9 *	10	30/2 432	O DRYER	
SPARE	0	20/1	11	*	12	30/3	828	SP-2 (SANITARY)	6	6 *	4320	*	11	* 12	* 432	20 *	
EH-2 SANITATION	500	20/1	13	*	14	*	828	*	6	6 DRYER	4320	30/2	13 *	14	20/1 150	00 EH-1 (LAUNDRY)	
VAC PUMP CONTROLS	1500	20/1	15	*	16	*	828	*	6	6 *	4320	*	15 *	16		00 EH-1 (BIKE RM)	
VAC PUMP 5HP	2100	30/3	17	*	18	20/1	2088	P-3, P-4, P-5	6	SPARE	0	20/1	17	* 18	20/1 50	00 EH-2 (RISER RM)	
*	2100	*	19	*	20	20/1	200	EF-3 (TRASH ROOMS)	6	SPARE	0	20/1	19 *	20	20/1 50	00 EH-2 (STORAGE RM)	
*	2100	*	21	*	22	20/1	0	SPARE		BLANK			21 *	22		BLANK	
VAC PUMP 5HP	2100	30/3	23	*	24	30/3	2100	DISCHARGE PUMP	6	BLANK			23	* 24		BLANK	
*	2100	*	25	*	26	*	2100	*	6	BLANK			25 *	26		BLANK	
*	2100	*	27	*	28	*	2100	*	6	BLANK			27 *	28		BLANK	
VAC PUMP 5HP	2100	30/3	29	*	30	30/3	2100	DISCHARGE PUMP	6	BLANK			29	* 30		BLANK	
*	2100	*	31	*	32	*	2100	*	6	BLANK			31 *	32		BLANK	
*	2100	*	33	*	34	*	2100	*	6	BLANK			33 *	34		BLANK	
P-1 (2HP)	1248	30/2	35	*	36	30/2	1248	P-2 (2HP)	6	BLANK			35	* 36		BLANK	
*	1248	*	37	*	38	*	1248	*	6	BLANK			37 *	38		BLANK	
SPARE	0	20/1	39	*	40	20/1	0	SPARE		BLANK			39 *	40		BLANK	
SPARE	0	20/1	41	*	42	20/1	0	SPARE		BLANK			41	* 42		BLANK	
Phase A	21124	VA		•	NOTES	:		line-line voltage		Phase A	12320	VA		NOTES	:	line-line voltage	
Phase B	19104	VA						208		Phase B	23100	VA					208
Phase C	19512	VA						largest motor (va)		Phase C	17780	VA				largest motor (va)	
Total Connected	59740	VA								Total Connected	53200	VA					
load code:	ph. A	ph. B		ph. C		total	factor	calculated load (va)		load code:	ph. A	ph. B	ph. C		total facto	r calculated load (va)	
1. LIGHTS=	0	0		0	VA	0	1.25	0		1. LIGHTS=	0	0		AV C	0 1.25	5	0
2. RECEPT.=	1500	1500		0	VA	3000	1 + 0.5	3000		2. RECEPT.=	6000	0		AV C	6000 1 + 0.	5	6000
3. HEATING=	2000	1500		0	VA	3500	1.00	3500		3. HEATING=	2000	1500	50	AV C	4000 1.00	o	4000
4. KITCHEN=		0		0	VA	o	1.00	0		4. KITCHEN=	о	0		AV C	0 1.00	o	0
5. EQUIP.=	1500	1500		1500	VA	4500	1.00	4500		5. EQUIP.=	о	0		AV C	0 1.00	o	0
6. MOTORS=	16124	14604		18012	VA	48740	*	48740		6. MOTORS=	4320	21600	1728	AV C	43200 *		43200
7. MISC=		0		0	VA	ol	1.00	0		7. MISC=	o	0		O VA	0 1.00	o l	0

		N	MFIA P	ANELS	CHEDUI	LE				
pa	nel	r	mountin	g		location	1		connected load amps	
Н	P3	5	SURFA	CE		ELECT.	ROOM		14	8
vol	age	F	phase		bı	us & ma	in		calculated load amps	
120/208V (S	CCR: 42KAIC)		3		150A			MLO	14	8
C ser	vice va		a/p	no.	abc	no.	a/p	va	service	С
2 WASHER	15	00	20/1	1	*	2	20/1	1500	WASHER	2
6 DRYER	43	20	30/2	3	*	4	30/2	4320	DRYER	6
6 *	43	20	*	5	*	6	*	4320	*	6
2 WASHER	15	00	20/1	7	*	8	20/1	1500	WASHER	2
6 DRYER	43	20	30/2	9	*	10	30/2	4320	DRYER	6
6 *	43	20	*	11	*	12	*	4320	*	6
6 DRYER	43	20	30/2	13	*	14	20/1	1500	EH-1 (LAUNDRY)	3
6 *	43	20	*	15	*	16	20/1	1500	EH-1 (BIKE RM)	3
SPARE		0	20/1	17	*	18	20/1	500	EH-2 (RISER RM)	3
SPARE		0	20/1	19	*	20	20/1	500	EH-2 (STORAGE RM)	3
BLANK				21	*	22			BLANK	
BLANK				23	*	24			BLANK	
BLANK				25	*	26			BLANK	
BLANK				27	*	28			BLANK	
BLANK				29	*	30			BLANK	
BLANK				31	*	32			BLANK	
BLANK				33	*	34			BLANK	
BLANK				35	*	36			BLANK	
BLANK				37	*	38			BLANK	
BLANK				39	*	40			BLANK	
BLANK				41	*	42			BLANK	
Phase A	123	20 \	VA			NOTES:		•	line-line voltage	
Phase B	231	٥٥ ١	VA						20	8
Phase C	177	80 \	VA						largest motor (va)	
Total Connected	532	۱ 00	VA							
load code:	ph.	Α	ph. B		ph. C		total	factor	calculated load (va)	
1. LIGHTS=		0	0		0	VA	0	1.25		0
2. RECEPT.=	60	00	0		0	VA	6000	1 + 0.5	600	0
3. HEATING=	20	00	1500		500	VA	4000	1.00	400	0
4. KITCHEN=		0	0		0	VA	0	1.00		0
5. EQUIP.=		0	0		0	VA	0	1.00		0
6. MOTORS=	43	20	21600		17280	VA	43200	*	4320	0
7. MISC=		0	0		0	VA	0	1.00		0
(* 125% of the lar	gest motor + 100% of the	e ba	lance)					TOTAL =	5320	0



מי	Date: 11-06-2020	<b>∕</b> 1 <b>⟩</b> 02.09.2022 PLAN REVIEW	PLAN REVIEW
)	Proj No: 10105		
	Drawn By: DMT		
	Chkd By: RLC		
OREGON	DSGN By: DMT		
SCHFDUI FS	Acad File:		
)  - 			

APARTMENTS
YSTADT
W PARK AVE. ARK RYS 2057

 $\approx$ 

SUMMARY

LOAD

CTRICAL

Consulting Engineers 2007 S.E. Ash St. Portland, OR 97214 PHN: (503) 234-0548 FAX: (503) 234-0677 WWW.MFIA-ENG.COM

SHEET

		MECHAI	VICAL	EQU	IPMENT S	SCHEDU	ILE		
NO.	EQUIPMENT NAME	HP/KW	VOLTS	PH	AMPS	CONDUIT	WIRE	GND	CIRCUIT
EF-1	EXHAUST FAN NO.1	11.0W	120	1		1/2"	#12	#12	SEE TYP. UNIT PLANS
EF-2	EXHAUST FAN NO.2	11.0W	120	1		1/2"	#12	#12	
EF-3	EXHAUST FAN NO.3	11.0W	120	1		1/2"	#12	#12	HP2-27
EF-4	EXHAUST FAN NO.4	11.0W	120	1		1/2"	#12	#12	HP2-33
EF-5	EXHAUST FAN NO.5	1HP	120	1		1/2"	#12	#12	VP-9
EH-1	WALL HEATER NO.1	1.5KW	208	1		1/2"	#12	#12	SEE POWER PLANS
EH-2	WALL HEATER NO.2	500W	120	1		1/2"	#12	#12	SEE POWER PLANS
EH-3	WALL HEATER NO.3	4.0KW	208	1		1/2"	#12	#12	SEE POWER PLANS
IAC-1	SPLIT SYST NO.1 (BOILER RM)					· ·			INTERCONNECT W/ O
	SPLIT SYST NO.1 (OUTDOOR)		208	1	18.0 MCA	1/2"	#10	#10	HP1-29,31
	SPLIT SYST NO.2 (IT RM)								INTERCONNECT W/ O
	SPLIT SYST NO.2 (OUTDOOR)		208	1_1_	18.0 MCA	1/2'	<i>#</i> 10	#10	HP1-33,35
	SPLIT SYST NO.3 (RISER RM)						~~~~	*****	INTERCONNECT W/ O
	SPLIT SYST NO.3 (OUTDOOR)		208	1	18.0 MCA	1/2'	#10	#10	EP2-31,33
X A A A	SPLIT SYST NO.3 (CLASS A VAL	ILT)	<del>~~~</del>	<del>~~~</del>	<del>~~~~</del>	<del></del>	سست	ستس	INTERCONNECT W/ O
OAC-X	SPLIT SYST NO.X (OUTDOOR)		208	1	12.0 MCA	1/2'	#12	#12	VP-6,8
B-1	BOILER NO.1 (GAS)		120	1		1/2"	#12	#12	HP2-6 (PC)
B-2	BOILER NO.2 (GAS)		120	1		1/2"	#12	#12	HP2-6 (PC)
B-3	BOILER NO.3 (GAS)		120	1		1/2"	#12	#12	HP2-6 (PC)
P-1	PUMP NO. 1	2HP	208	1	·····	1/2"	<del>"</del> 10	#10	HP2-35,37
P-2	PUMP NO. 2	2HP	208	1		1/2"	#10	#10	HP2-36,38
P-3	PUMP NO. 3	1/4HP	120	1		1/2"	#12	#12	HP2-18 (PC)
P-4	PUMP NO. 4	1/4HP	120	1		1/2"	#12	#12	HP2-18 (PC)
P-5	PUMP NO. 5	1/4HP	120	1		1/2"	#12	#12	HP2-18 (PC)
RP-1	RECIRC PUMP NO.1	1/2HP	120			1/2	#12	#12	HP2-10
SF-2	SUPPLY FAN NO.2	10HP	208	3		1"	<b>#</b> 6	<b>#</b> 10	EP2-20,22,24
SF-3	SUPPLY FAN NO.3	10HP	208	3		1"	#6	#10	EP2-26,28,30
SF-4	SUPPLY FAN NO.4	10HP	208	3		1"	#6	#10	EP2-32,34,36
39-1	SUMP PUMP NO.1	172HP	<del>~120~</del>	<del>~~~</del>	·····	47/2 ····	<del>#12~~</del>	~#12~	<del></del>
SP-2	SUMP PUMP NO.2	2x 3/4HP	208	3		1/2"	<b>#</b> 10	#10	HP2-12,14,16
WH-1	WATER HEATER NO.1 (GAS)		120	1		1/2"	<b>#</b> 12	#12	HP2-20 (PC)
WH-2	WATER HEATER NO.2 (GAS)		120	1		1/2"	#12	#12	HP2-20 (PC)

### GENERAL EQUIPMENT NOTES:

- A. CONTRACTOR/DESIGNER SHALL VERIFY ALL MECHANICAL EQUIPMENT CONNECTION LOAD REQUIREMENTS WITH THE MECHANICAL EQUIPMENT PROVIDER PRIOR TO ROUGH IN.
- B. MECHANICAL EQUIPMENT SIZES SHOWN IN THE MECHANICAL SCHEDULE ABOVE ARE FOR REFERENCE ONLY AND MAY NOT REFLECT THE ACTUAL EQUIPMENT TO BE INSTALLED.
- C. INDOOR & OUTDOOR COMPONENTS OF THE MINI-SPLIT SYSTEMS ARE INTERCONNECTED. CONSULT WITH AND COORDINATE THE ELECTRICAL REQUIREMENTS AND EXACT LOCATIONS WITH THE HVAC EQUIPMENT INSTALLER PRIOR TO ROUGH IN.
- D. REFER TO TYPICAL UNIT PLAN LOAD CENTER SCHEDULES ON THIS SHEET FOR CIRCUITING INFORMATION.

					Ave. Apartm				
	QTY		AREA	LTG	SM	СООК ТОР	MICRO/HOOD	MOTORS	LARGEST OF
UNIT TYPE:	PER FLOOR	TOTAL	(SF)	RECEPT	APPL	(NO OVEN)		(CONNECTED)	AC/HEATING (CONNECTED)
	Studio			(3VA / SF)	(1500VA X 2)	(CONNECTED)	(CONNECTED)		
Level 1	2	2	325	975	3000	8000	1700	0	3000
Level 2	8	8	325	975	3000	8000	1700	0	3000
Level 3	9	9	325	975	3000	8000	1700	0	3000
Level 4	9	9	325	975	3000	8000	1700	0	3000
Level 5	9	9	325	975	3000	8000	1700	0	3000
Level 6	9	9	325	975	3000	8000	1700	0	3000
Level 7	9	9	325	975	3000	8000	1700	0	3000
Level 8	9	9	325	975	3000	8000	1700	0	3000
Level 9	9	9	325	975	3000	8000	1700	0	3000
Level 10	9	9	325	975	3000	8000	1700	0	3000
Level 11	9	9	325	975	3000	8000	1700	0	3000
TOTALS:	91	91	29575	88725	273000	728000	154700	0	273000

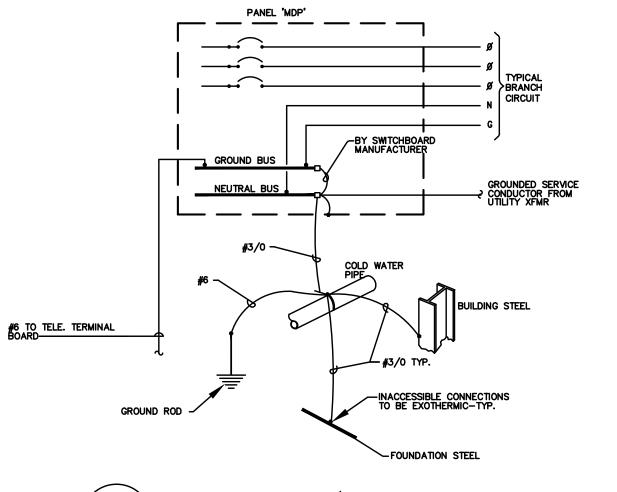
Connected amount of 8000w is the minimum connected load per NEC 220.55 for full diversity.

CALCULATED AMPS: 969 AMPS

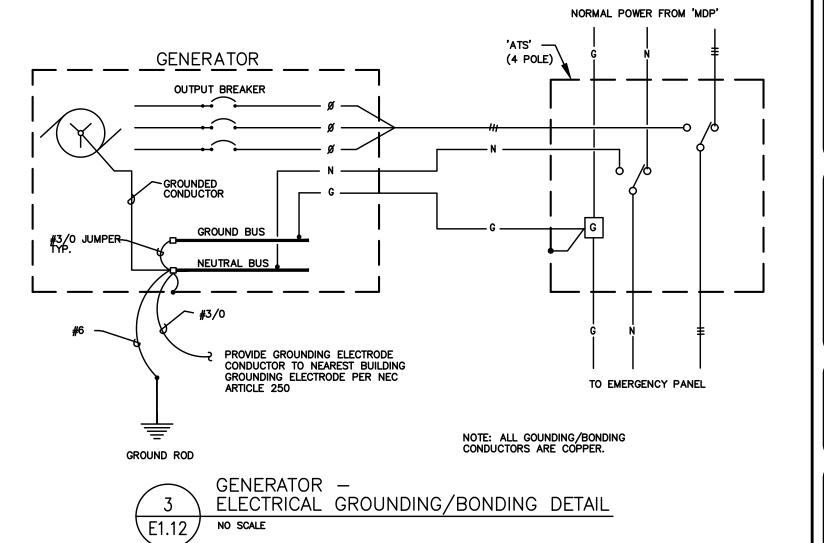
NOTE: Actual cooktop load is 3000w.

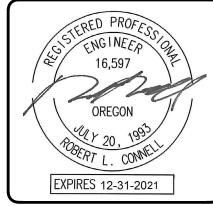
DWELLING UNIT LOAD CALCULATION		
Project: Park Ave Apartments		
Unit Type Studio		
Area: 325 square feet(average)		
mum Size Feeder (NEC 220.40):		
General lighting load at 3 VA / SF	975	VA
Small Appliance load (2 ckts at 1500VA each)	3,000	VA
Laundry Load (1 ckt at 1500VA)	_	VA
Elect Cook Top (No Range)		VA
Other Cooking Appliance Load (Microwave Oven)	1,700	VA
Dishwasher Load	0	VA
Electric Dryer Load		VA
Electric Water Heater Load		VA
Disposal load	900	
Other motor loads	0	VA
Total "General Loads"	14,575	VA
First 10 kVA of "general loads" at 100%	10,000	VA
Remainder of "general loads" at 40%	1,830	VA
Net "general load"	11,830	VA
gest of: 3,000 VA of electric space heating (less than 4) at 65%	1,950	VA
r- VA of electric space heating (4 or more) at 40%	0	VA
r- VA of air conditioning/cooling/heat pumps at 100%	0	VA
TOTAL LOAD	13,780	VA
120/208-volt, 3-wire, single-phase service or feeder,		
13,780 VA / 208 volts =	57	Amps

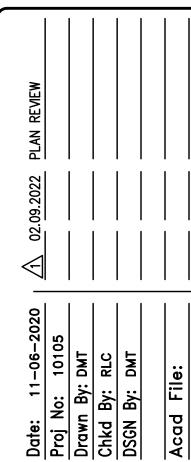
Loadcenter Name	MFIA CI mountin		<u> </u>		locatio		09-Feb-22
		- C E I					
LC-STUDIO (TYPICAL)		RECES	) O E I		0		
voltage	phase	1,00	bus & mai			00(4)	
120/208	1	100A MLO		(SCCR:			
service	a/p	no.		L2	no.	a/p	service
LIGHTS-KITCHEN/LIVING	20/1(A)	1	*		2	<u> </u>	APPLIANCE CIRCUIT
LTS & RECEPT - BATH	20/1	3		*	4	` '	APPLIANCE CIRCUIT
LTS & RECEPT - BEDROOM	20/1(A)	5	*		6		REFRIGERATOR
RECEPT - LIVING (OPTIONAL)	20/1(A)	7		*	8	20/1	MICRO/HOOD
SMART PANEL	20/1	9	*		10	30/2	2-BURNER COOKTOP
AC PORT (OPTIONAL)	20/1	11		*	12	*	*
HEAT	20/2	13	*		14	20/1	DISPOSAL (OPTIONAL)
*	*	15		*	16	20/1	SPARE
SPARE	20/1	17	*		18	20/1	SPARE
BLANK		19		*	20		BLANK
BLANK		21	*		22		BLANK
BLANK		23		*	24		BLANK
BLANK		25	*		26		BLANK
BLANK		27		*	28		BLANK
BLANK		29	*		30		BLANK
NOTES: 1. (A) DENOTES: ARC-FAULT INT 2. LOADS FOR THIS PANEL ARE							
3. BREAKER & WIRE SHALL BE	SIZED FOI	R EQUI	IPME	ENT	INSTAL	LED.	



1 GROUNDING/BONDING DIAGRAM E1.12 208Y/120V, 3ø, 4 WIRE







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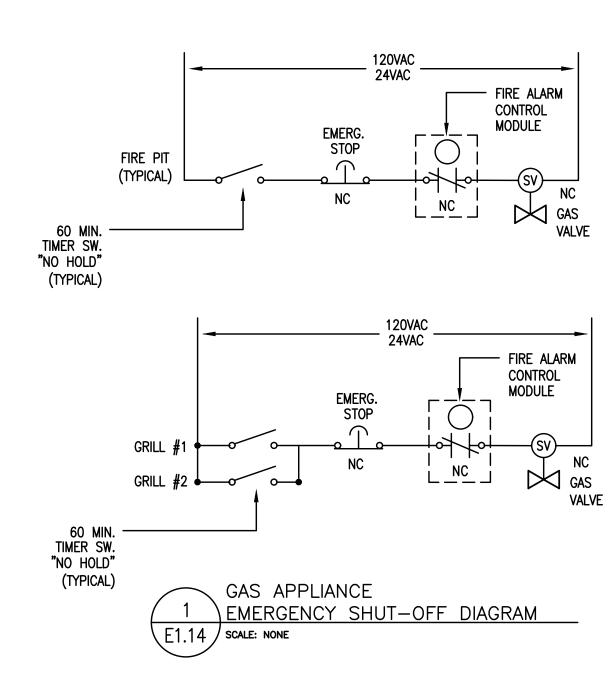
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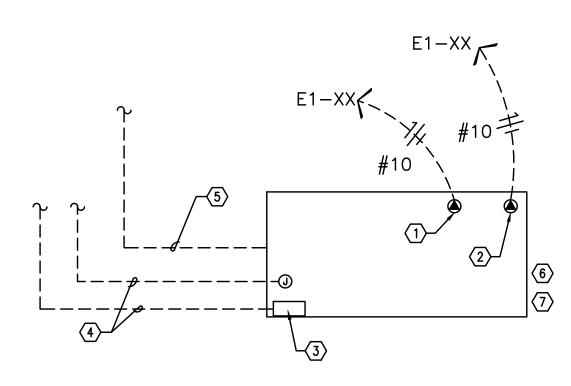
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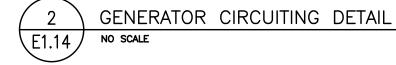


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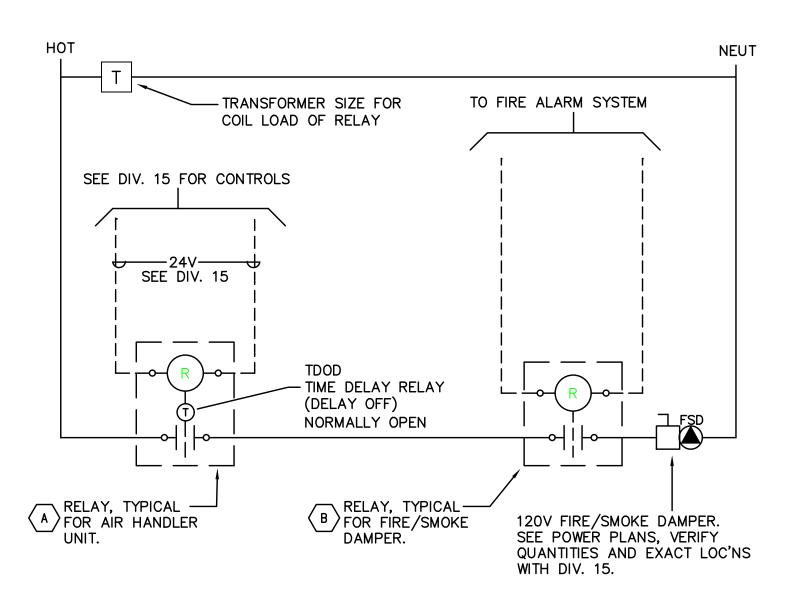






#### NOTES:

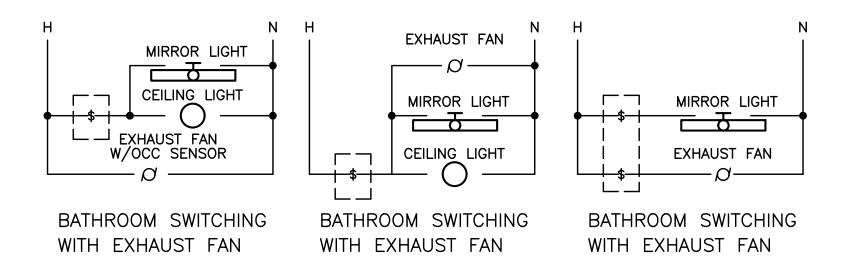
- 1. 120V GENERATOR BLOCK HEATER. SEE PANEL E1.
- 2. 120V GENERATOR BATTERY CHARGER. SEE PANEL E1.
- 3. GENERATOR OUTPUT BREAKER AND CONTROL SECTION. SEE PANEL E1.
- 4. POWER AND CONTROL TO TRANSFER SWITCH AND REMOTE ANNUNCIATOR. SEE ONE-LINE DIAGRAM ON SHEET E1.10.
- 5. TO AUTOMATIC TRANSFER SWITCH. SEE E1.10.
- 6. DIESEL GENERATOR TO BE PROVIDED WITH DOUBLE-WALL FUEL TANK AND SPILL CONTAINMENT PER CITY OF PORTLAND REQUIREMENTS.
- 7. DIESEL GENERATOR TANK SHALL DOUBLE WALLED AND BE EQUIPPED WITH OVERFILL PROTECTION (AUTO SHUTOFF), 5 GALLON INFILL SPILL BUCKET WITH DRAIN BACK, 12FT ABOVE GRADE TANK FUME VENTING AND ONSITE PRESSURE TESTING PER CITY REQUIREMENTS.



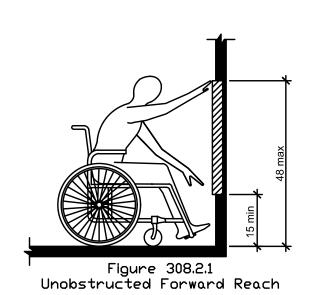
## SMOKE/FIRE DAMPER CONTROL DIAGRAM

#### ADDRESSABLE DETECTOR CONTROL

- (A) RELAY TO BE 'NORMALLY OPEN'. TDOD (TIME DELAY ON DE-ENERGY) SET FOR 15 SECONDS. RELAY TO CLOSE UPON SIGNAL FROM HVAC CONTROL SYSTEM (ALLOWS DAMPER TO OPEN); DAMPERS TO CLOSE ON DE-ENERGIZE AFTER 15 SEC. TIME-OUT. PROVIDE WITH 20A CONTACTS AND COIL VOLTAGE AS REQ'D BY HVAC CONTROL SYSTEM. MOUNT RELAY IN NEMA 1 ENCLOSURE ADJACENT TO HVAC CONTROL PANEL.
- B RELAY TO BE 'NORMALLY ENERGIZED'. RELAY TO BE DE-ENERGIZED UPON SIGNAL FROM FIRE ALARM SYSTEM (ALLOWS DAMPERS TO CLOSE). PROGRAM FIRE ALARM SYSTEM FOR 15 SECOND DELAY BETWEEN SMOKE DETECTOR ACTIVATION AND FIRE/SMOKE DAMPER SHUTDOWN. PROVIDE WITH 20A CONTACTS AND COIL VOLTAGE AS REQ'D BY FIRE ALARM SYSTEM. MOUNT RELAY IN NEMA 1 ENCLOSURE ADJACENT TO FIRE/SMOKE DAMPER.







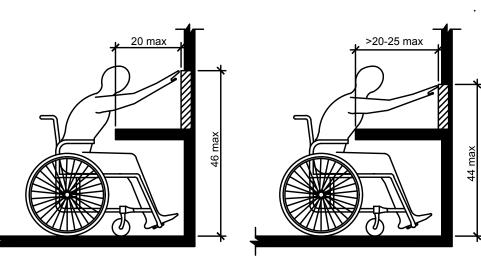
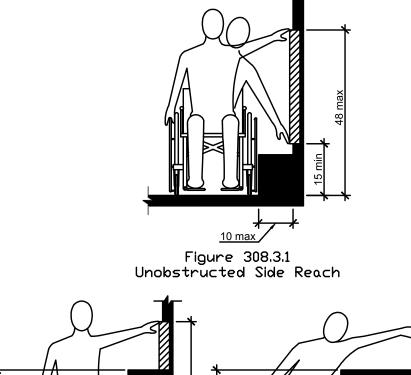
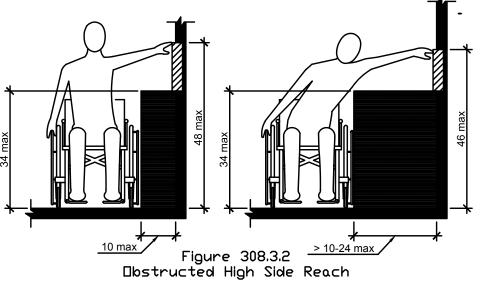


Figure 308.2.2 Obstructed High Forward Reach







### 308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward read be 48" maximum and the low forward reach shall be 15" minimum above the ground.

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, clear floor or ground space shall extend beneath the element for a distance no thank the required reach depth over the obstruction. The high forward reach s 48" maximum where the reach depth is 20" maximum. Where the reach depth 20", the high forward reach shall be 44" maximum and the reach depth shall t maximum.

#### 308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approa an element and the side reach is unobstructed, the high side reach shall be 48 maximum and the low side reach shall be 15" minimum above the floor or grou **Exception**: Existing elements shall be permitted at 54" maximum above the floor or ground.

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a paralle approach to an object and the high side reach is over an obstruction, the heigh the obstruction shall be 34" maximum and the depth of the obstruction shall 2 maximum. The high side reach shall be 48" maximum for a reach depth of 10" maximum. Where the reach depth exceeds 10", the high side reach shall be maximum for a reach depth of 24" maximum.



**ARTMENT** 

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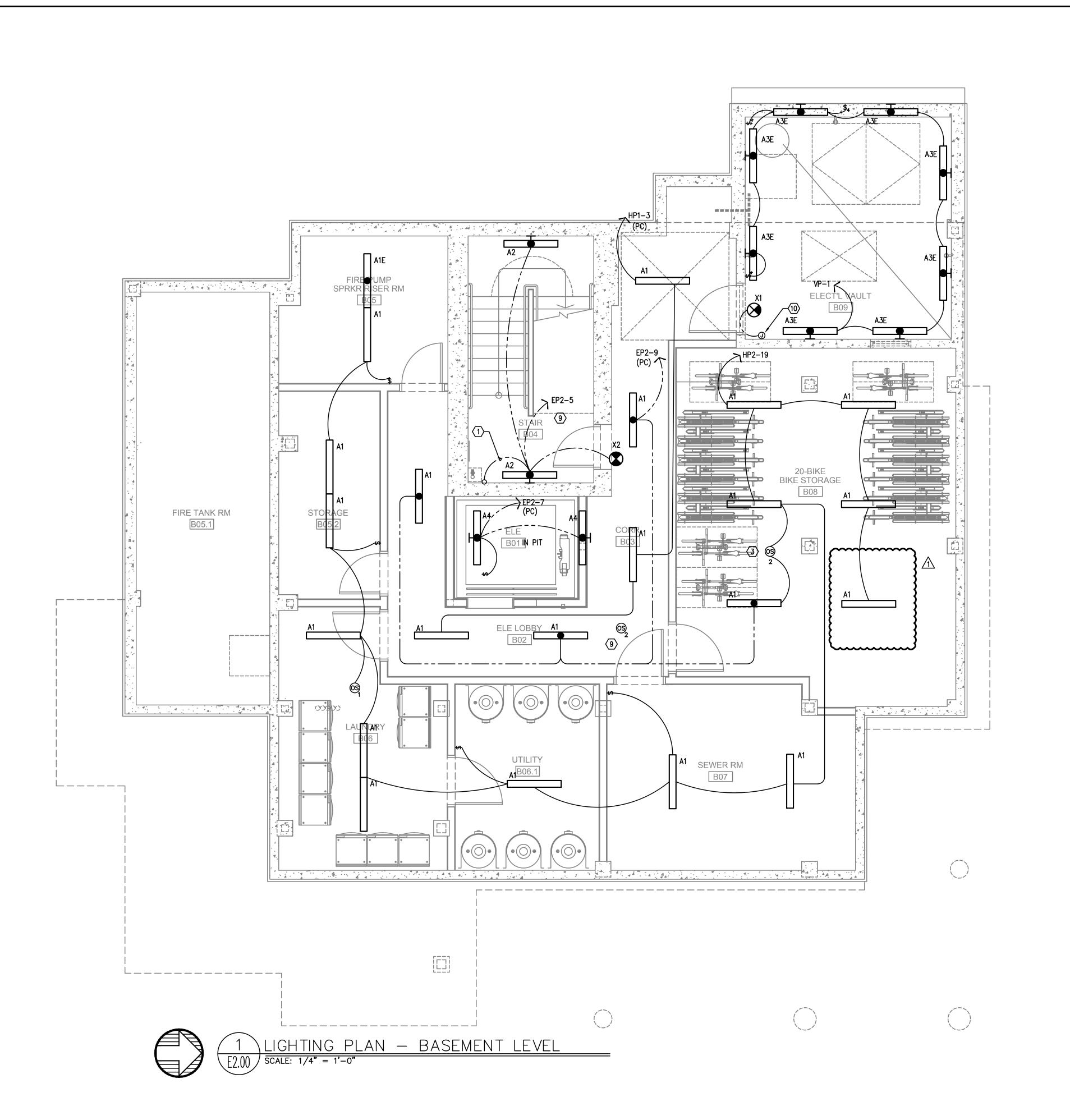
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- A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.
- B. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL & INTERIOR DESIGN DRAWINGS FOR EXACT LOCATIONS, MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.
- C. REFER TO ARCHITECTURAL INTERIOR ELEVATION PLANS FOR EXACT LOCATIONS OF FIXTURES AND DEVICES.
- D. REFER TO SHEET E1.21 FOR LIGHT FIXTURE SCHEDULE.
- E. REFER TO AVAILABLE ARCHITECTURAL AND/OR INTERIOR DESIGN DOCUMENTS & DRAWINGS FOR ADDITIONAL INFORMATION.
- F. OCCUPANCY SENSORS SHALL BE FIELD ADJUSTED TO ENSURE PROPER COVERAGE AND CONTROL.
- G. PROVIDE DIGITAL LIGHTING CONTROLS FOR EACH ROOM/SPACE, CONSISTING OF MULTI-BUTTON SWITCH(ES), OCC SENSORS, POWER PACKS, DAYLIGHT SENSORS, DIMMERS, INTERCONNECTING WIRING, ETC.
- H. CORRIDOR LIGHTING TO BE CONSTANT "ON" AND PROVIDED WITH LOCAL MANUAL OVERRIDE SWITCHES FOR MAINTENANCE. REFER TO SHEET E1.22 FOR SWITCH WIRING DIAGRAMS.
- I. ALL EGRESS FIXTURES SHALL BE WIRED SUCH THAT IN THE EVENT OF A POWER FAILURE, ALL LIGHTS WILL AUTOMATICALLY RETURN TO FULL POWER. REFER TO SWITCHING DETAILS ON SHEET E1.22.
- J. REFER TO SHEET E1.23 FOR LIGHTING CONTROL DIAGRAMS AND DESIGN INTENT. VERIFY LIGHTING CONTROLLABILITY WITH ARCHITECT AND/OR OWNER'S REPRESENTATIVE TO DETERMINE EXACT NEEDS FOR ALL PUBLIC/COMMON AREAS SUCH AS LOBBIES, OFFICES, LOUNGE AREAS, ETC., PRIOR TO THE START OF ANY WORK.
- K. THERE SHALL BE NO SURFACE MOUNTED FIXTURES OR PATHWAYS (CONDUIT, ETC.) IN ANY PUBLICLY ACCESSIBLE SPACES, INCLUDING STAIRWELLS AND EXIT PASSAGEWAYS WITHOUT PRIOR APPROVAL BY OWNER AND ARCHITECT. ROUTE ALL PATHWAYS WITHIN STUD CAVITIES OR ABOVE FINISHED CEILINGS.

## KEYED NOTES

- 1. CONTINUE CIRCUIT UP THROUGH THE STAIRWELL.
- 2. EXTERIOR BUILDING LIGHTS TO BE CONTROLLED VIA INTEGRAL AND/OR REMOTE PHOTOCELL FOR DUSK-TILL-DAWN OPERATION. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E1.21 FOR ADDITIONAL INFORMATION.
- 3. LIGHT FIXTURES IN THIS SPACE CONTROLLED BY CEILING MOUNT OCCUPANCY SENSOR.
- 4. PROVIDE PHOTOCELL FOR DAY-LIGHT REDUCTION OF LIGHT LEVELS.
- 5. CONTRACTOR TO COORDINATE WITH LANDSCAPE LIGHTING INSTALLER AND PROVIDE ROUGH—IN AND POWER CONNECTION(S) AS REQUIRED.
- 6. REFER TO SHEET E1.12 FOR TYPICAL DWELLING UNIT LOAD CENTER SCHEDULE FOR CIRCUITING INFORMATION.
- 7. REFER TO THE E3 SERIES SHEETS FOR TYPICAL DWELLING UNIT POWER DEVICE LAYOUT.
- 8. CORRIDOR LIGHTING CIRCUITS FOR THE UPPER FLOORS ARE AS FOLLOWS:
- NORMAL POWER

  FLOORS 3, 4, 5 = HP1-7

  FLOORS 6, 7, 8 = HP1-9

  FLOORS 9, 10, 11 = HP1-11

  FLOORS 9, 10, 11 = EP2-15
- 9. CORRIDOR AND STAIRWELL LIGHT FIXTURES TO BE CONTROLLED SUCH THAT THE FIXTURES DIM BY 50% DURING PERIODS OF LOW ACTIVITY. UPON DETECTION, LIGHTS SHALL RETURN TO 100% AND REMAIN AT FULL OUTPUT FOR A MINIMUM OF 30 MINUTES BEFORE RETURNING TO THE DIMMED STATE. FIXTURES ON EMERGENCY POWER CIRCUITS SHALL REMAIN 'ON' 24/7.
- 10. STROBE LIGHTS @ 24" AFF (BELOW SMOKE LING), AROUND PERIMETER FOR EGRESS. REFER TO 'T' SERIES SHEETS FOR MORE INFO. CIRCUIT TO PANEL 'VP'. SEE PANEL SCHEDULE ON SHEET E1.12.



09.2022 PLAN REVIEW

Drawn By: DMT
Chkd By: RLC
DSGN By: DMT
Acad File:

OREGON

SW PARK AVE.

PORTLAND
LIGHTING PLAN -

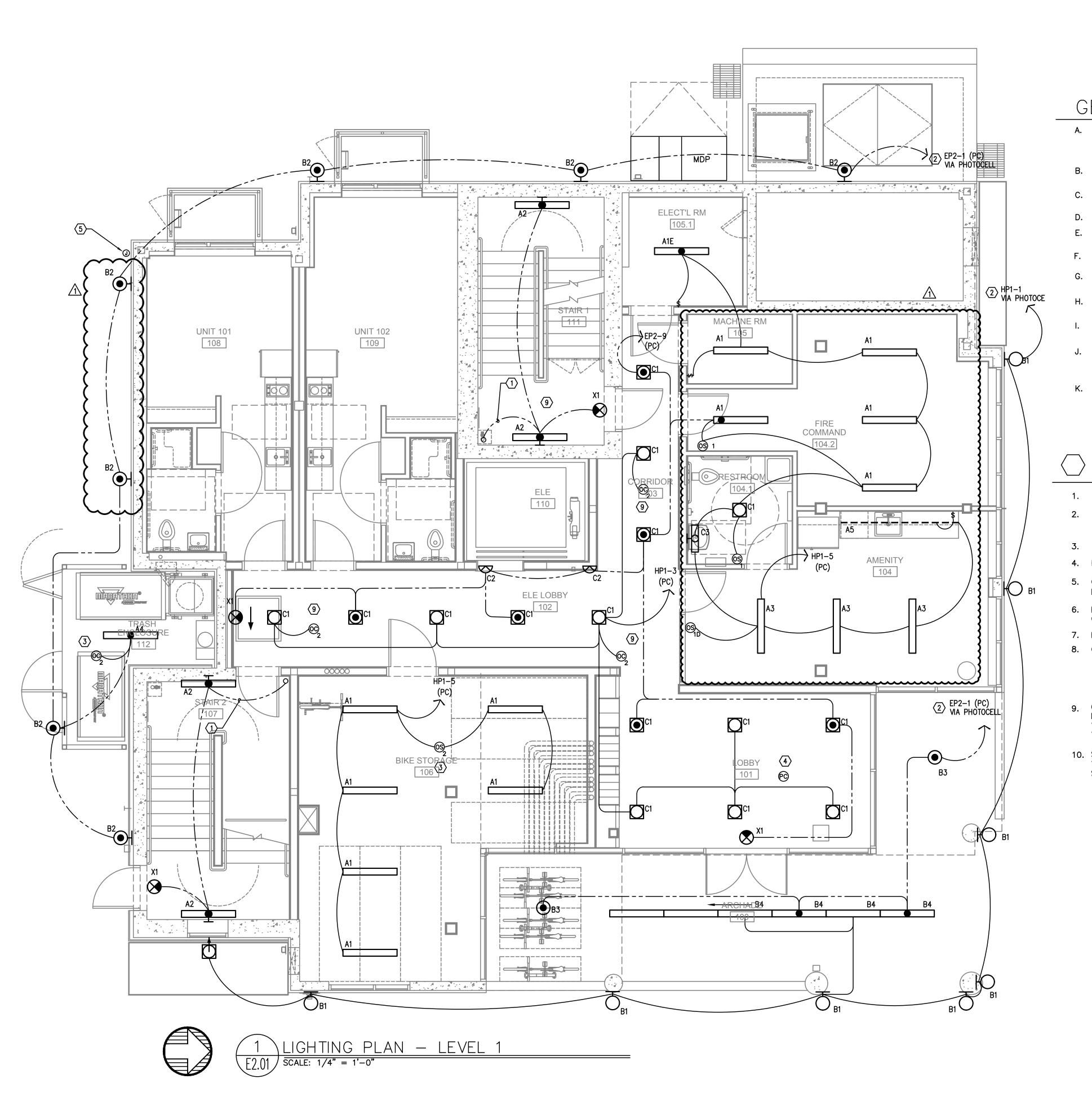
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E2.00



- A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.
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- F. OCCUPANCY SENSORS SHALL BE FIELD ADJUSTED TO ENSURE PROPER COVERAGE AND
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- REFER TO SHEET E1.23 FOR LIGHTING CONTROL DIAGRAMS AND DESIGN INTENT. VERIFY LIGHTING CONTROLLABILITY WITH ARCHITECT AND/OR OWNER'S REPRESENTATIVE TO DETERMINE EXACT NEEDS FOR ALL PUBLIC/COMMON AREAS SUCH AS LOBBIES, OFFICES, LOUNGE AREAS, ETC., PRIOR TO THE START OF ANY WORK.
- K. THERE SHALL BE NO SURFACE MOUNTED FIXTURES OR PATHWAYS (CONDUIT, ETC.) IN ANY PUBLICLY ACCESSIBLE SPACES, INCLUDING STAIRWELLS AND EXIT PASSAGEWAYS WITHOUT PRIOR APPROVAL BY OWNER AND ARCHITECT. ROUTE ALL PATHWAYS WITHIN STUD CAVITIES OR ABOVE FINISHED CEILINGS.

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- 8. CORRIDOR LIGHTING CIRCUITS FOR THE UPPER FLOORS ARE AS FOLLOWS:

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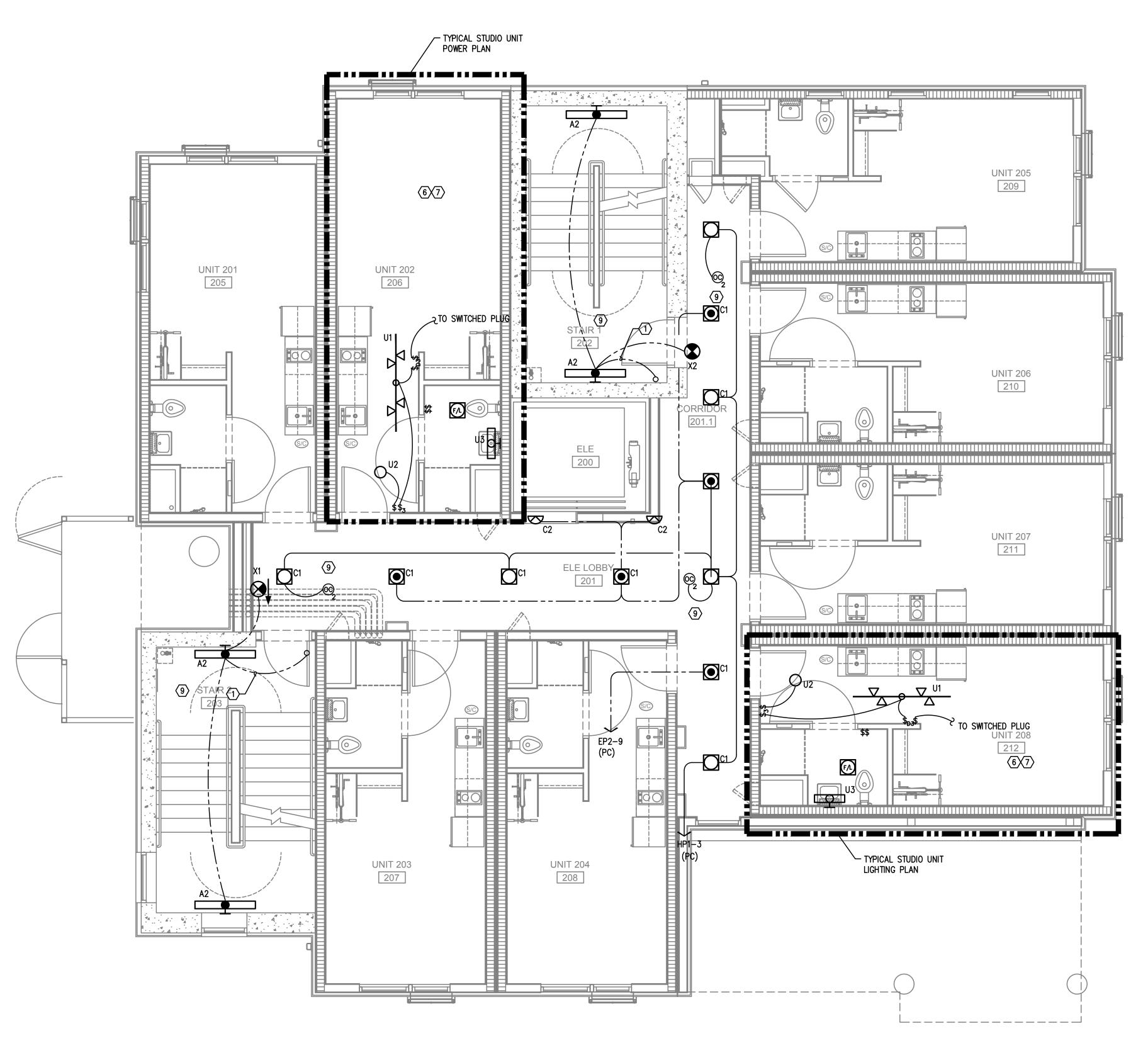
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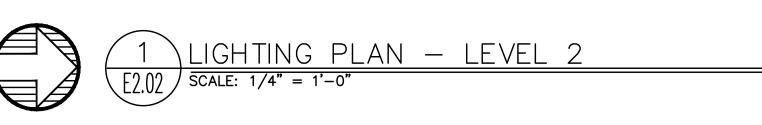
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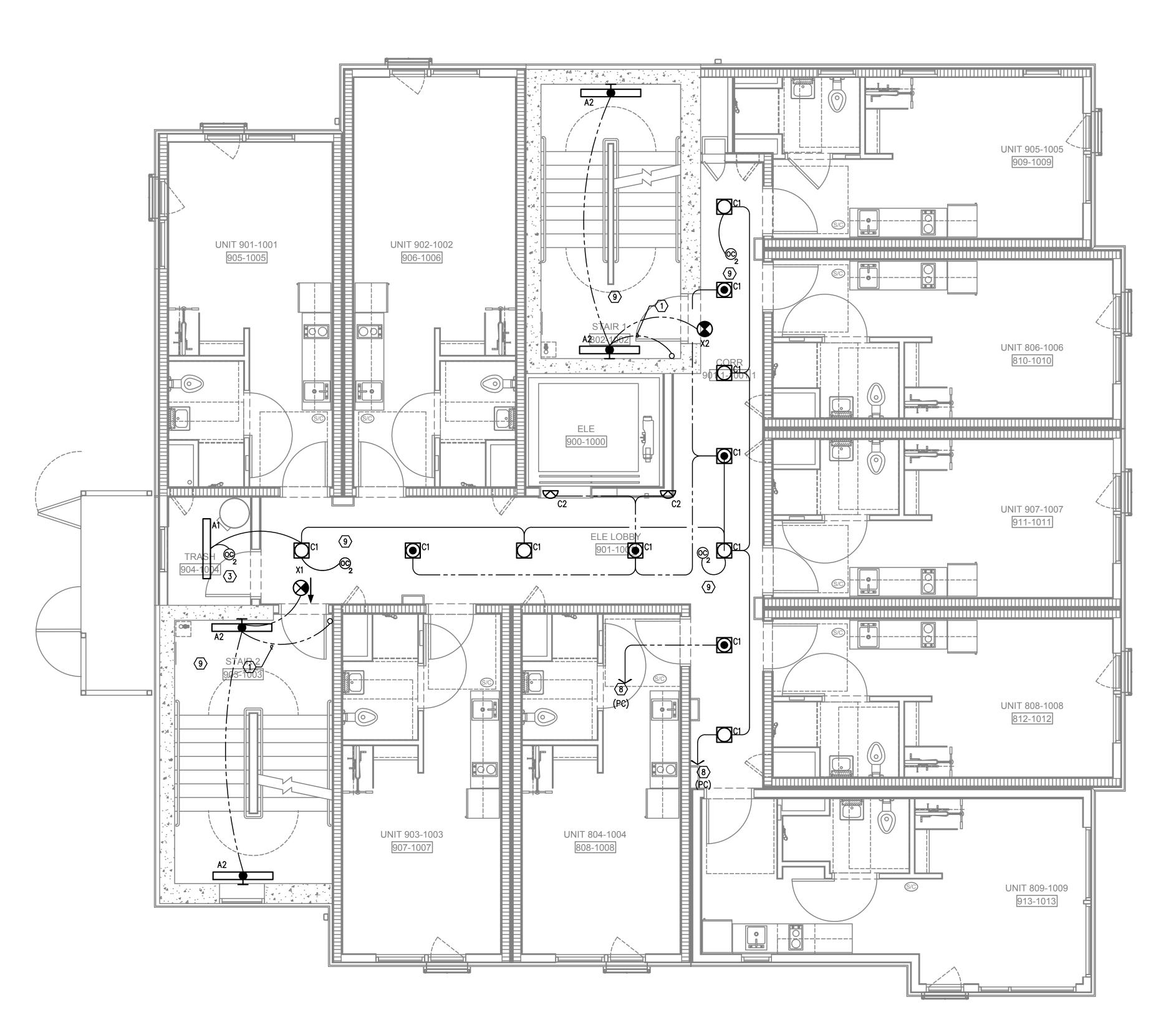


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19.2022 PLAN REVIEW

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Drawn By: DMT
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DSGN By: DMT
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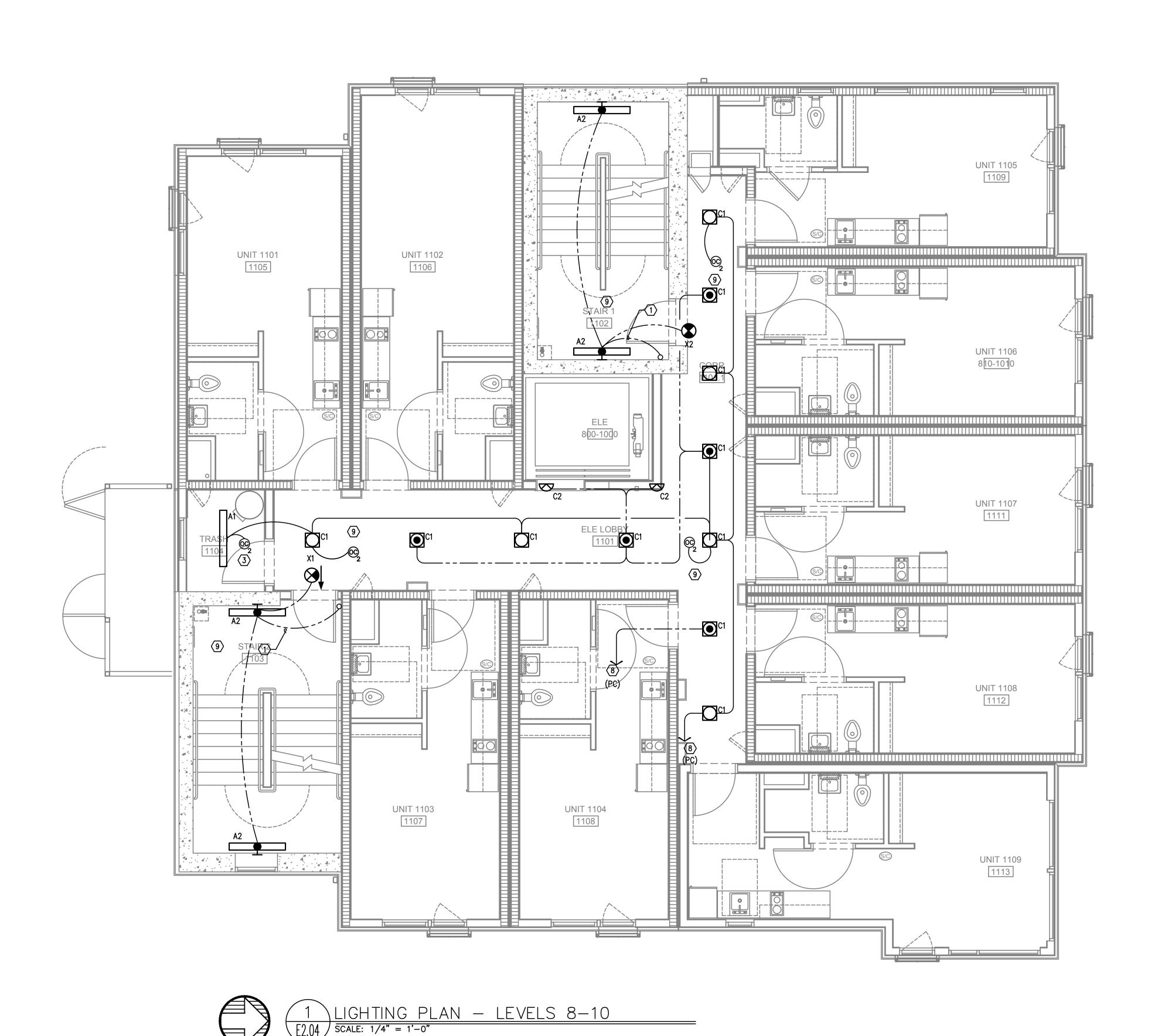


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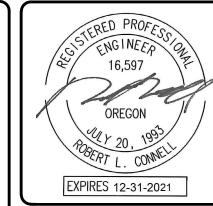
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09.2022 PLAN REVIEW

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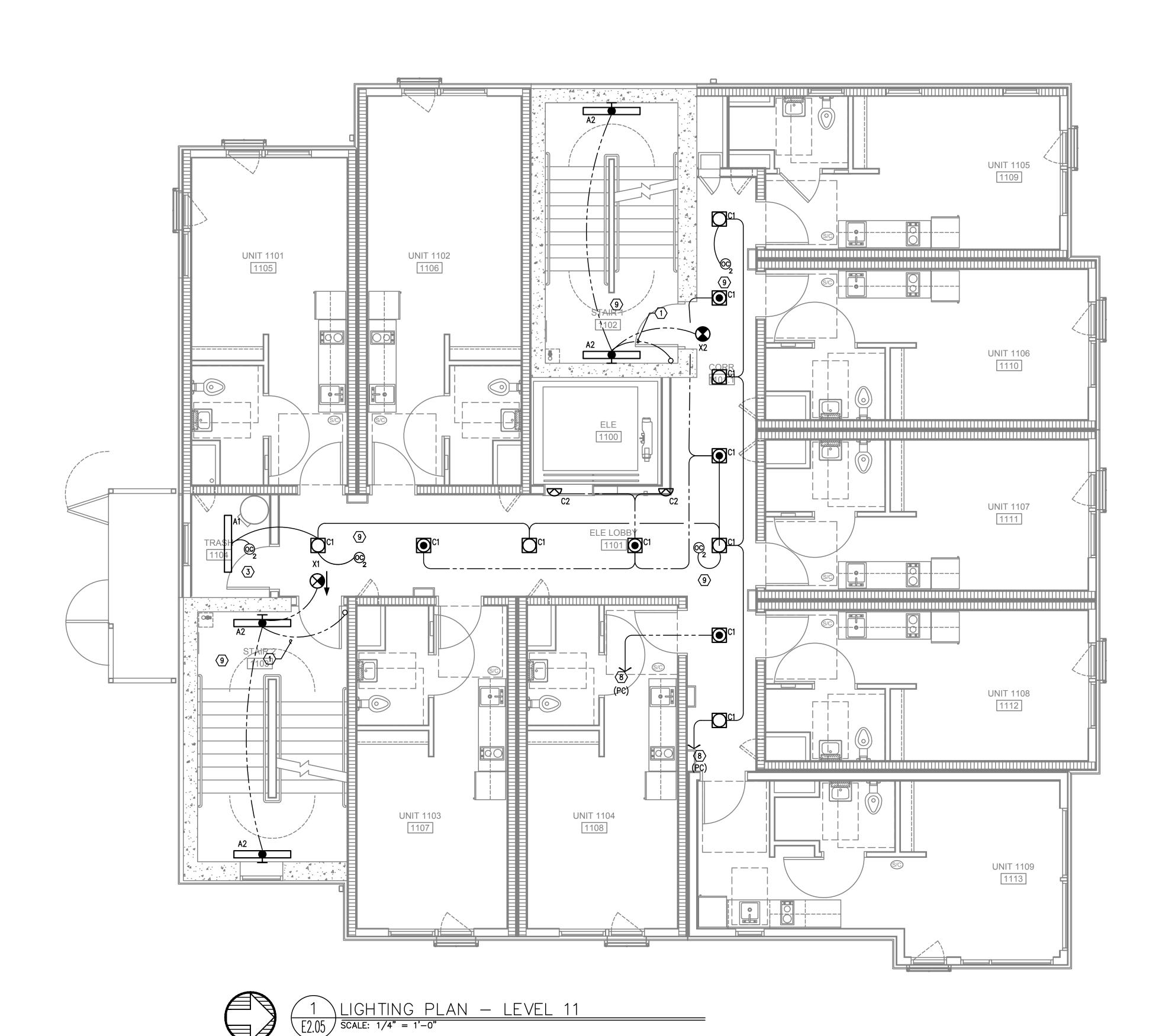
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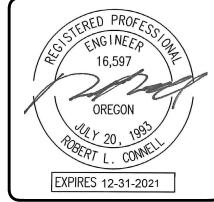
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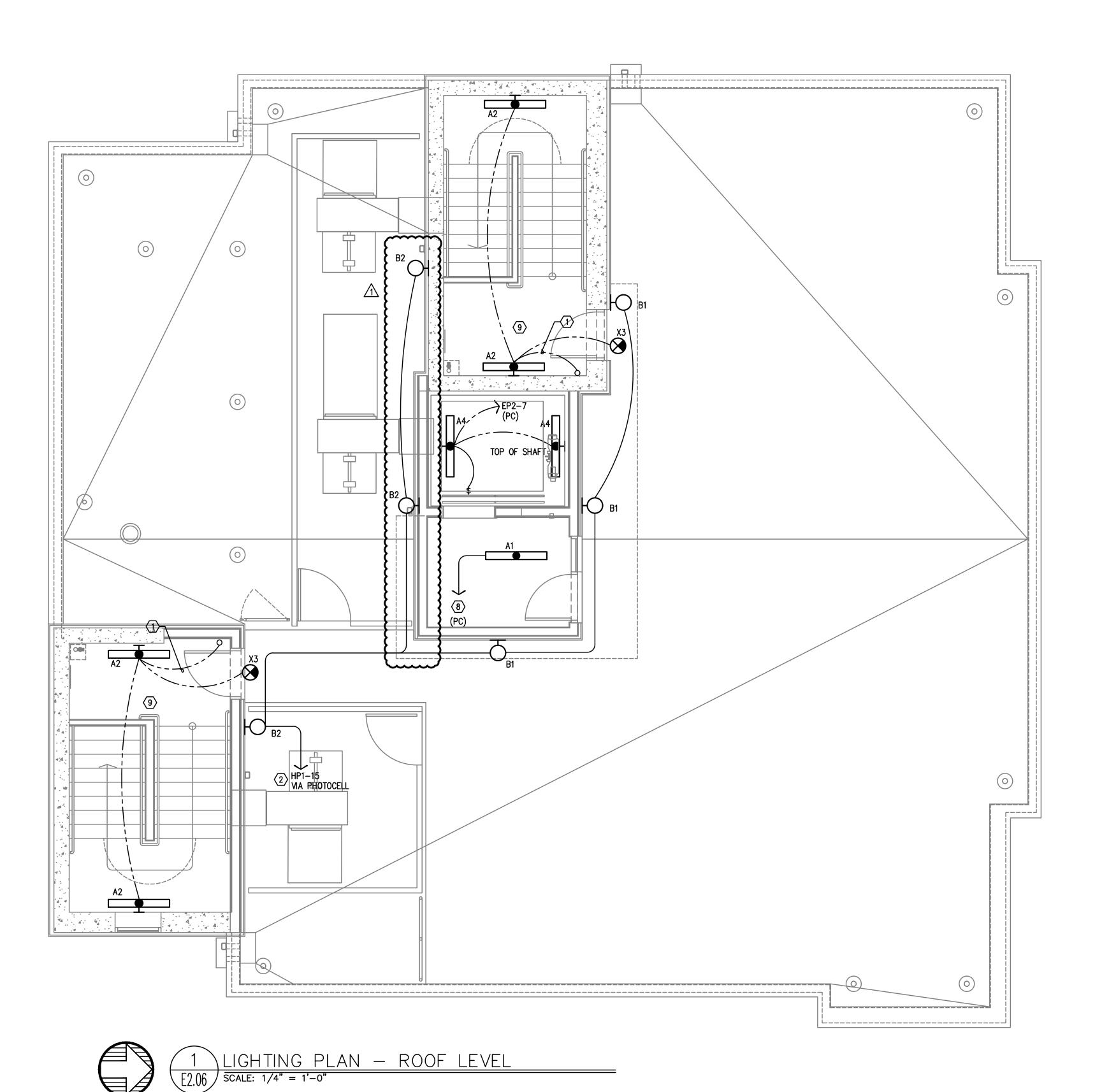
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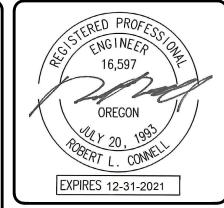
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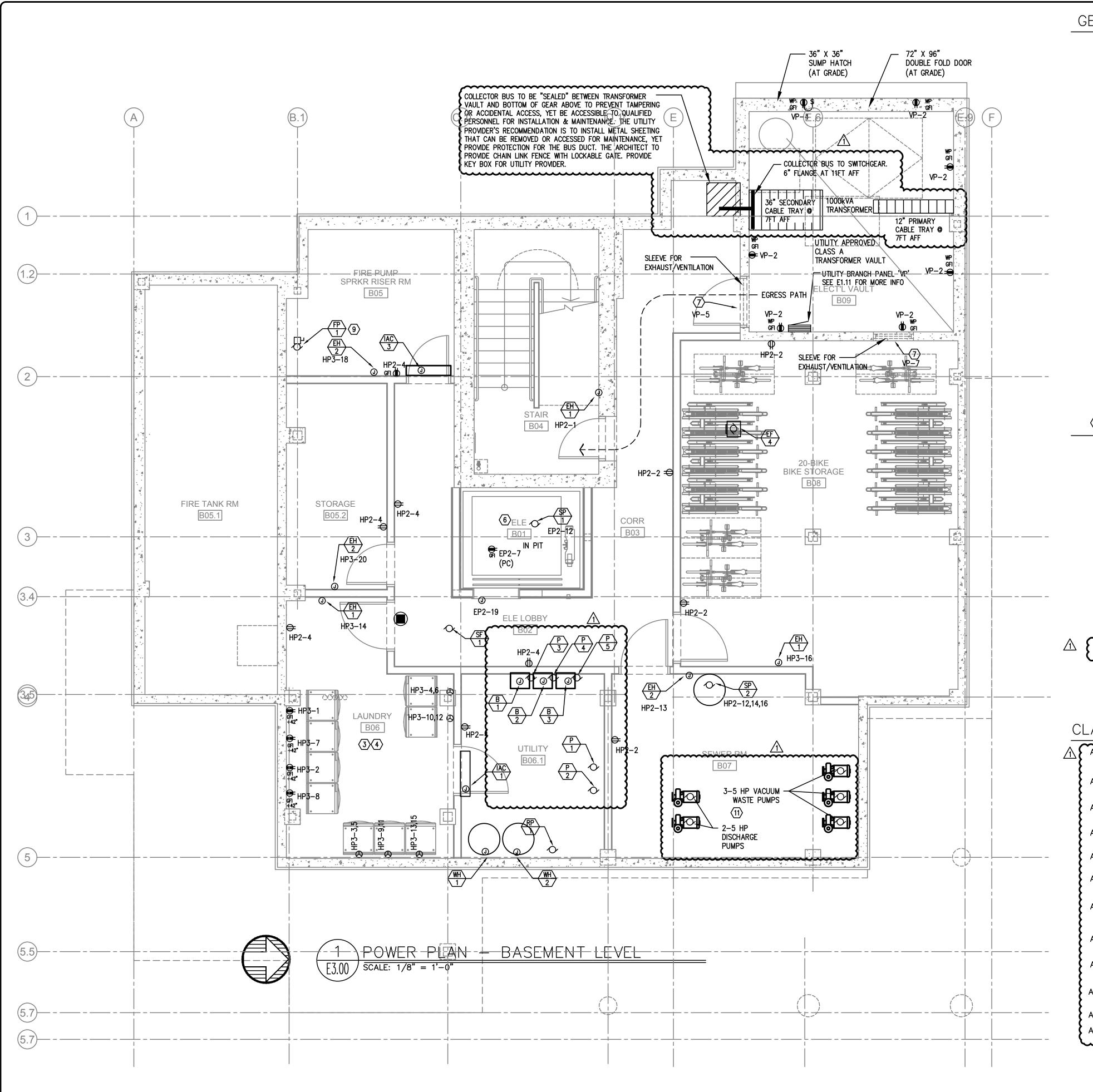
2057 SW PARI TLAND LIGHTING PLAN —



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- COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E1.13 FOR MECHANICAL EQUIPMENT SCHEDULE.
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- SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE, BASED ON SIEMENS PRODUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.
- THE CLASS 'A' TRANSFORMER VAULT SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS AS WELL AS THOSE OF THE UTILITY PROVIDER. MAN-DOOR SHALL BE EQUIPPED WITH PANIC HARDWARE AND AN OUTWARD SWING.
- J. PROVIDE A KEY BOX AT THE TRANSFORMER ROOM DOOR PER THE UTILITY PROVIDER'S REQUIREMENTS, FOR 24/7 ACCESS.
- TENANT ELECTRICAL METERING SHALL BE SUB-METERED BY THE OWNER PER THE UTILITY PROVIDER'S REQUIREMENTS. SUB-METERING EQUIPMENT IS BASED ON SIEMENS SEM3 PRODUCTS. REFER TO SHEET E1.11 FOR ADDITIONAL INFORMATION.
- REFER TO 'E4' SERIES SHEETS FOR TYPICAL DWELLING UNIT POWER PLANS.
- M. PROVIDE ROUGH IN AND WIRING FOR ACCESS CONTROL. REFER TO 'T' SERIES SHEETS FOR ADDITIONAL INFORMATION.
- LOW VOLTAGE/COMMUNICATIONS SYSTEM DEMARCATION BOARD(S). COORDINATE LOCATIONS AND ELECTRICAL POWER REQUIREMENTS WITH THE TELECOM PLANS ('T' SERIES SHEETS) AND LOW VOLTAGE SYSTEMS INSTALLERS. PROVIDE ROUGH IN AND/OR FINAL ELECTRICAL POWER CONNECTIONS & DEVICES. REFER PANEL 'HP2' SCHEDULE ON E1.12 FOR CIRCUITS.
- REFER TO SHEET E1.12 FOR TYPICAL DWELLING UNIT LOAD CENTER SCHEDULE FOR CIRCUITING INFORMATION.
- EACH UNIT LOAD CENTER TO BE FED VIA SUB-METERING SYSTEM. REFER TO ONE-LINE DIAGRAM ON SHEET E1.11 FOR CONDUCTOR

#### KEYED POWER NOTES:

- PROVIDE KEY BOX FOR PGE AT METER ROOM FOR 24/7 ACCESS.
- GENERATOR EMERGENCY DISCONNECT.
- LAUNDRY ROOM GFCI RECEPTACLES FOR WASHING MACHINES TO BE MOUNTED AT 42" A.F.F., OR UNLESS OTHERWISE DIRECTED BY THE ARCHITECT. LAUNDRY ROOM APPLIANCES CIRCUITED TO PANEL 'HP2'. REFER TO PANEL SCHEDULE ON SHEET E1.12.
- 40A, DEDICATED 14-40R DRYER RECEPTACLE (TYPICAL). VERIFY EXACT POWER RATING REQUIRED FOR THE COMMERCIAL DRYERS
- PRIOR TO ORDERING. LAUNDRY ROOM APPLIANCES CIRCUITED TO PANEL 'HP2'. REFER TO PANEL SCHEDULE ON SHEET E1.12.
- EXHAUST FAN IN THIS AREA TO BE TIED INTO THE LIGHTING CIRCUIT.
- CONSULT ELEVATOR PROVIDER FOR EXACT POWER REQUIREMENTS AND PROVIDE ALL ELECTRICAL WORK AS DIRECTED. VERIFY EXACT LOCATION FOR ELEVATOR EQUIPMENT WITH ARCHITECT AND COORDINATE WITH ELEVATOR INSTALLER.
- SMOKE DAMPER FOR VENTILATION LOUVER. COORDINATE WITH MECHANICAL EQUIPMENT INSTALLER AND CIRCUIT AS INDICATED
- PROVIDE POWER CONNECTION FOR IRRIGATION CONTROLS. COORDINATE WITH THE LANDSCAPER FOR EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH IN.
- CONSULT FIRE SPRINKLER SYSTEM PLAN SET AND COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR THE BUILDING FIRE PUMP.
- REFER TO THE HOUSE PANEL 'HP1' PANEL SCHEDULE FOR CORRIDOR RECEPTACLE CIRCUITS ON FLOOR 2 THROUGH 11.
- REFER TO PLUMBING PLAN SHEETS FOR ADDITIONAL INFORMATION ON THE PUMP SYSTEMS IN THIS SPACE. COORDINATE WITH INSTALLER AND PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED. PROVIDE CIRCUITS FROM PANEL HP2. SEE PANEL SCHEDULES.

### CLASS A TRANSFORMER VAULT GENERAL NOTES

VAULT ROOM DOORS SHALL BE BLAST-RATED METAL DOORS. DOORS AND VENT SHUTTERS MUST HAVE A THREE HOUR BLAST & FIRE RATING PER NFPA 450.43.

VAULT VENTS MUST HAVE SHUTTERS THAT ARE AUTOMATICALLY CLOSED BY THE HEAT DETECTOR IN THE FIRE SUPPRESSION SYSTEM HEAT DETECTORS SHALL MEET NFPA 72 REQUIREMENTS.

PROVIDE TWO "RATE TO RISE" HEAT DETECTORS PER THE UTILITY PROVIDER'S REQUIREMENTS. LOCATE ONE ABOVE THE TRANSFORMER AND ONE OTHER WITHIN THE ROOM.

ALL OPENING, GAPS & CRACKS MUST BE SEALED WITH THREE—HOUR RATED FIRE CAULKING. CONSULT UTILITY PROVIDER FOR APPROVED PRODUCTS.

NON-METALIC SEISMIC-APPROVED CABLE TRAY WITH GALVANIZED HARDWARE SHALL BE INSTALLED IN VAULT ROOMS WITH CEILING GREATER THAN 10 FEET HIGH.

ALL MATERIALS AND PRODUCTS USED WITHIN THE CLASS A VAULT IS SUBJECT TO THE UTILITY PROVIDER'S APPROVAL.

PRIMARY SERVICE CONDUCTORS FROM THE PROPERTY LINE TO THE VAULT SHALL BE IN SCHEDULE 40 PVC PER THE UTILITY PROVIDER'S DIRECTION. ALL CONDUIT PENETRATIONS MUST BE SEALED WITH A FLEXIBLE NON-SHRINK HYDROPHOBIC GROUT TO PREVENT WATER INTRUSION.

THE CLASS A VAULT SHALL BE PROVIDED WITH BOTH EQUIPMENT AND UFER GROUNDING PER THE UTILITY PROVIDER'S

PROVIDE TWO DIRECT UFER GROUND CONNECTIONS TO THE BUILDING FOOTER OR SOLDIER PILING. CONNECTIONS TO BE LOCATED AT OPPOSITE CORNERS OF THE VAULT FLOOR IN ACCORDANCE WITH NEC 250.

PROVIDE A CONTINUOUS LOOP OF 250MCM BARE COPPER AROUND THE ROOM AT 24 INCHES ABOVE THE FLOOR, WITH HUBS AT 5-FOOT INTERVALS.

REFER TO E2 SERIES SHEETS FOR LIGHTING WITHIN THE VAULT ROOM.

THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH THE UTILITY PROVIDER AND THE PROVIDER'S REQUIREMENTS FOR CLASS A TRANSFORMER VAULTS PRIOR TO THE START OF ANY WORK. THE UTILITY PROVIDER IS THE AUTHORITY REGARDING ALL ASPECS OF THE VAULT ROOM



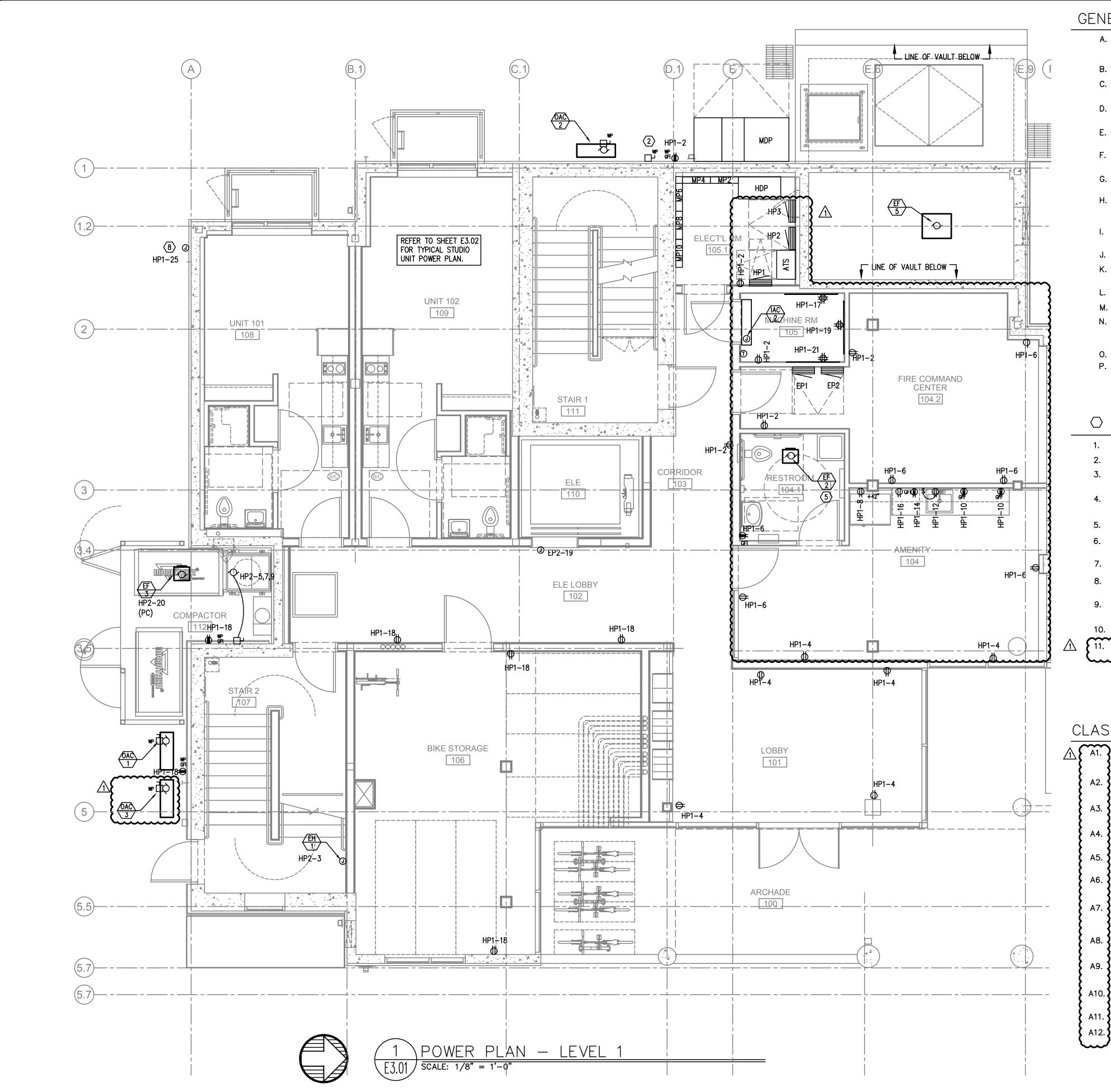
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- 9. CONSULT FIRE SPRINKLER SYSTEM PLAN SET AND COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR THE BUILDING FIRE PUMP.
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- REFER TO PLUMBING PLAN SHEETS FOR ADDITIONAL INFORMATION ON THE PUMP SYSTEMS IN THIS SPACE. COORDINATE WITH INSTALLER AND PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED. PROVIDE CIRCUITS FROM PANEL HP2, SEE PANEL SCHEDULES.

#### CLASS A TRANSFORMER VAULT GENERAL NOTES

- VAULT ROOM DOORS SHALL BE BLAST-RATED METAL DOORS. DOORS AND VENT SHUTTERS MUST HAVE A THREE HOUR BLAST & FIRE RATING PER NFPA 450.43.
  - VAULT VENTS MUST HAVE SHUTTERS THAT ARE AUTOMATICALLY CLOSED BY THE HEAT DETECTOR IN THE FIRE SUPPRESSION A2. SYSTEM HEAT DETECTORS SHALL MEET NFPA 72 REQUIREMENTS.
- PROVIDE TWO "RATE TO RISE" HEAT DETECTORS PER THE UTILITY PROVIDER'S REQUIREMENTS. LOCATE ONE ABOVE THE TRANSFORMER AND ONE OTHER WITHIN THE ROOM.
- A4. ALL OPENING, GAPS & CRACKS MUST BE SEALED WITH THREE—HOUR RATED FIRE CAULKING. CONSULT UTILITY PROVIDER FOR APPROVED PRODUCTS.

  NON—METALIC SEISMIC—APPROVED CABLE TRAY WITH GALVANIZED HARDWARE SHALL BE INSTALLED IN VAULT ROOMS WITH CEILING
- GREATER THAN 10 FEET HIGH.

  A6. ALL MATERIALS AND PRODUCTS USED WITHIN THE CLASS A VAULT IS SUBJECT TO THE UTILITY PROVIDER'S APPROVAL.
- PRIMARY SERVICE CONDUCTORS FROM THE PROPERTY LINE TO THE VAULT SHALL BE IN SCHEDULE 40 PVC PER THE UTILITY PROVIDER'S DIRECTION. ALL CONDUIT PENETRATIONS MUST BE SEALED WITH A FLEXIBLE NON-SHRINK HYDROPHOBIC GROUT TO PREVENT WATER INTRUSION.
- THE CLASS A VAULT SHALL BE PROVIDED WITH BOTH EQUIPMENT AND UFER GROUNDING PER THE UTILITY PROVIDER'S
- PROVIDE TWO DIRECT UFER GROUND CONNECTIONS TO THE BUILDING FOOTER OR SOLDIER PILING. CONNECTIONS TO BE LOCATED AT OPPOSITE CORNERS OF THE VAULT FLOOR IN ACCORDANCE WITH NEC 250.
- O. PROVIDE A CONTINUOUS LOOP OF 250MCM BARE COPPER AROUND THE ROOM AT 24 INCHES ABOVE THE FLOOR, WITH HUBS AT 5-FOOT INTERVALS.
- 1. REFER TO E2 SERIES SHEETS FOR LIGHTING WITHIN THE VAULT ROOM.
- THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH THE UTILITY PROVIDER AND THE PROVIDER'S REQUIREMENTS FOR CLASS A TRANSFORMER VAULTS PRIOR TO THE START OF ANY WORK. THE UTILITY PROVIDER IS THE AUTHORITY REGARDING ALL ASPECS OF THE VAULT ROOM



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R PLAN – FIRST FL

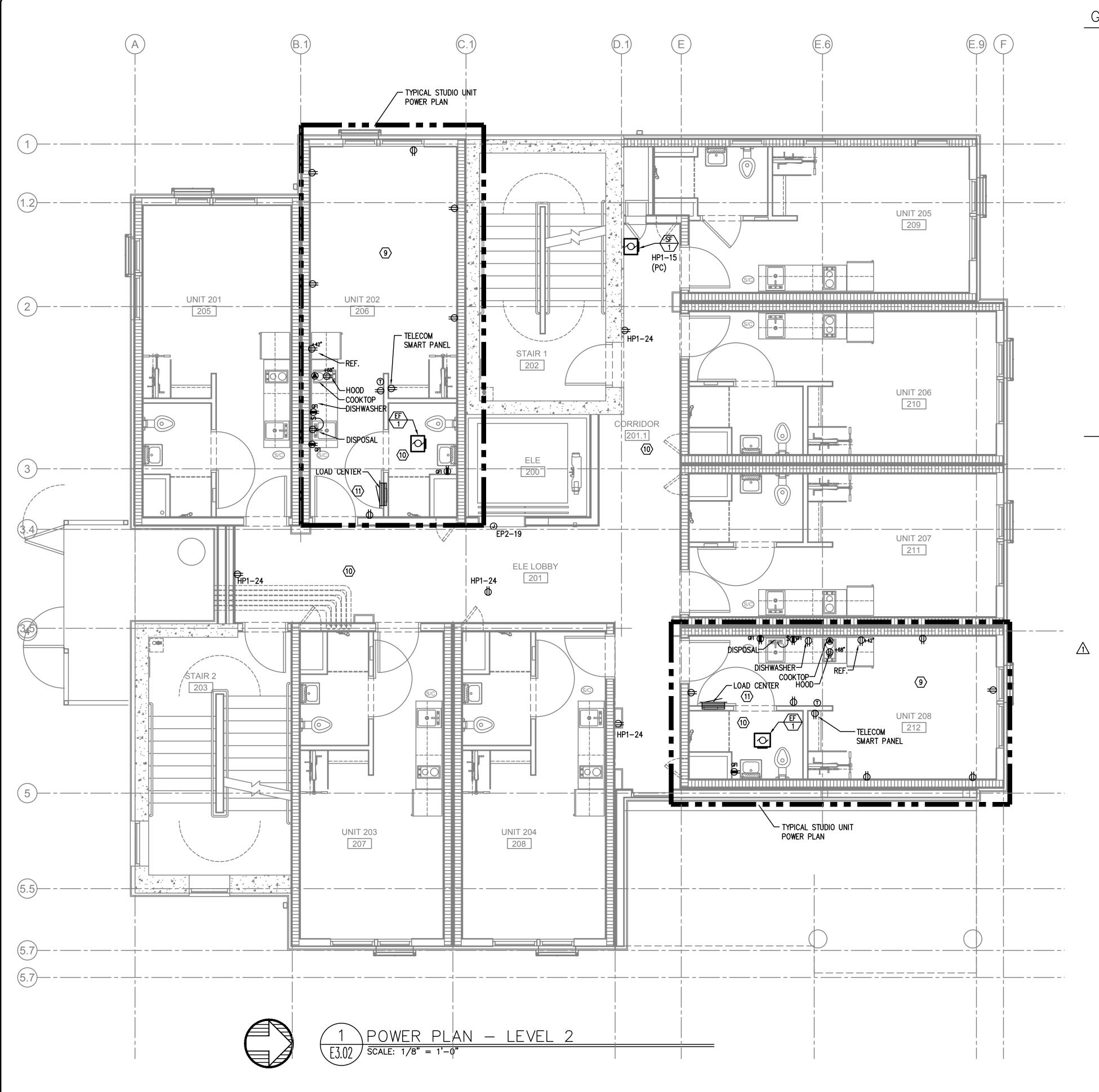
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DSGN By: DMT

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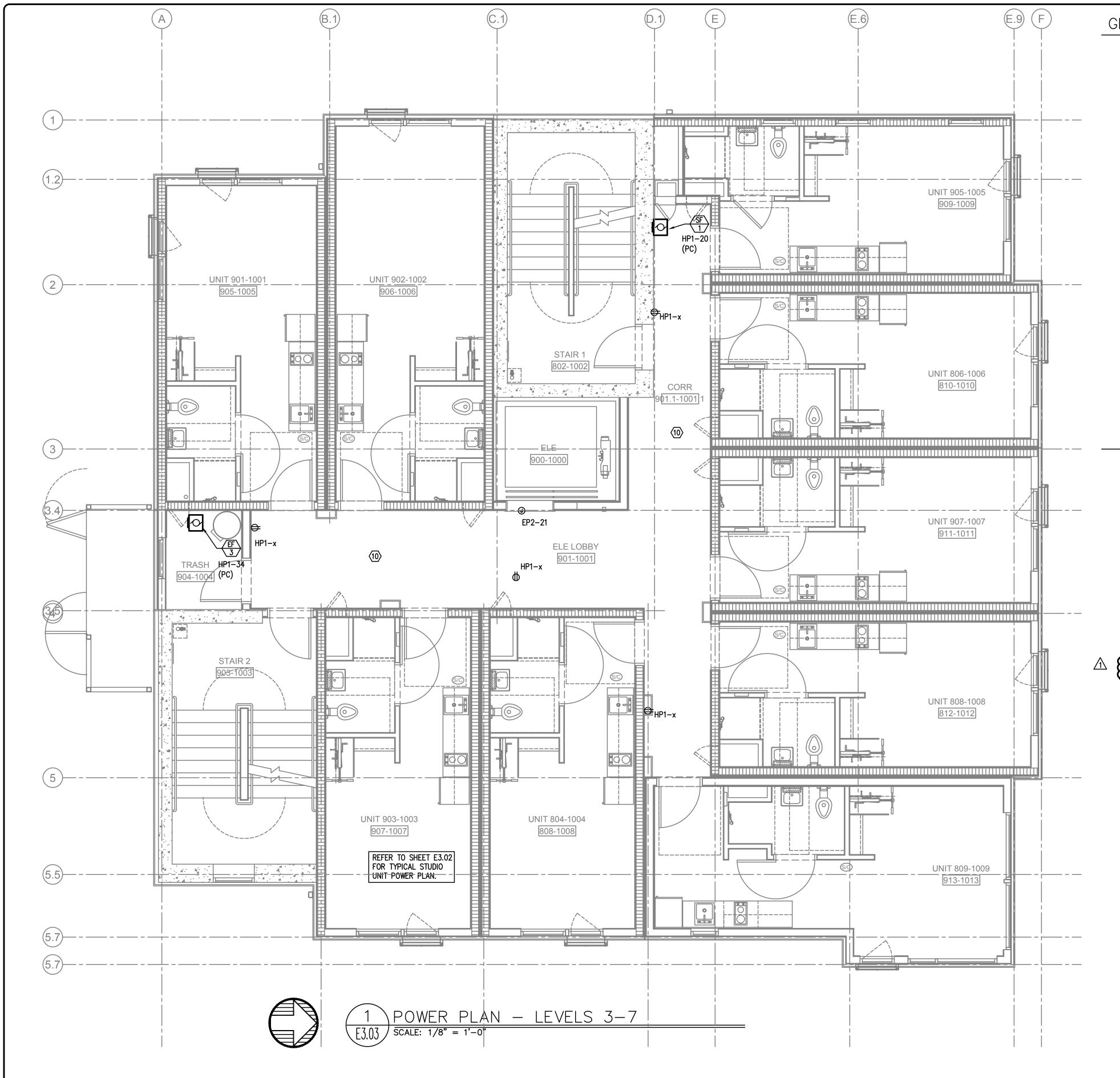
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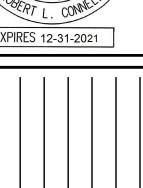


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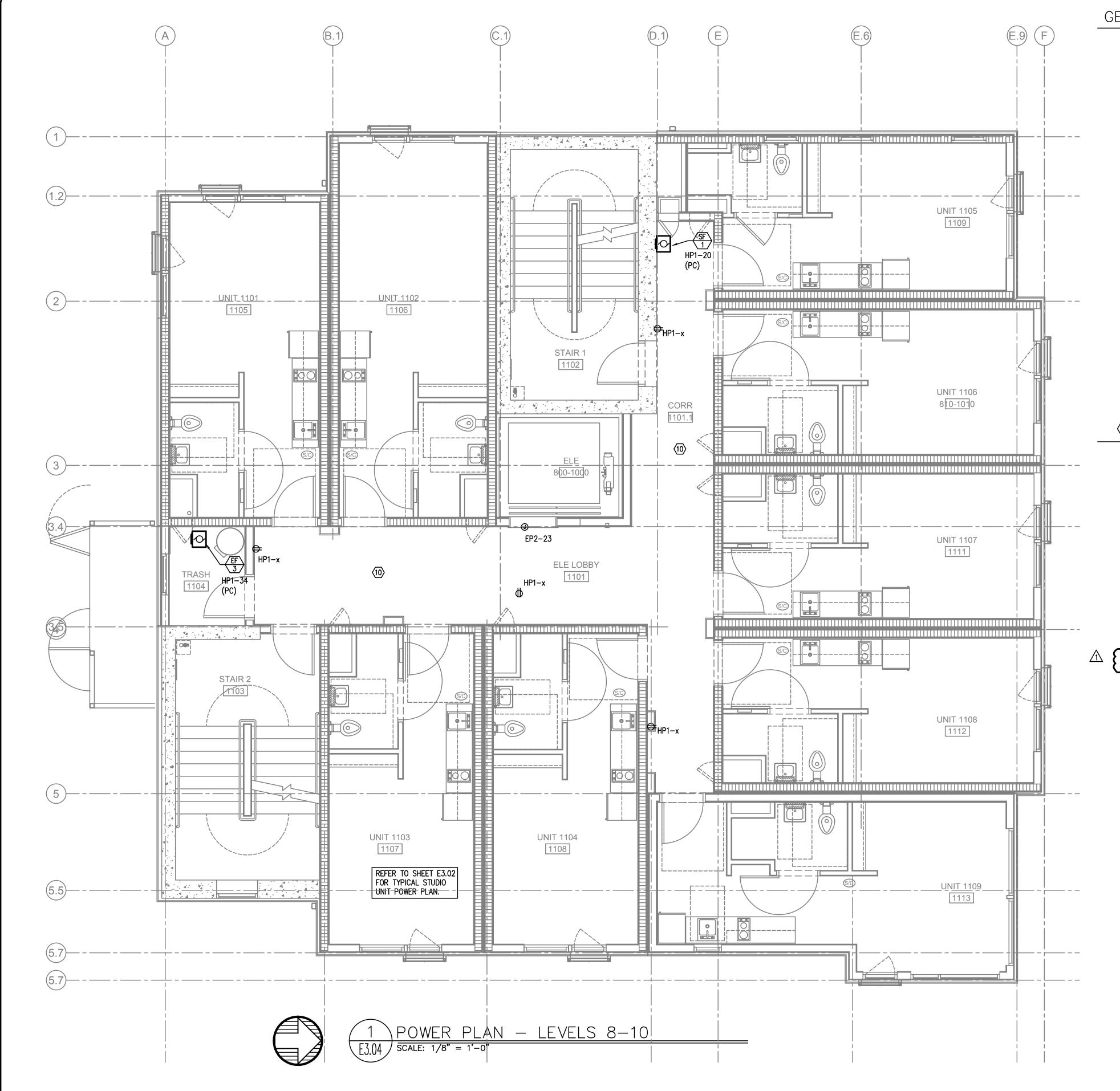
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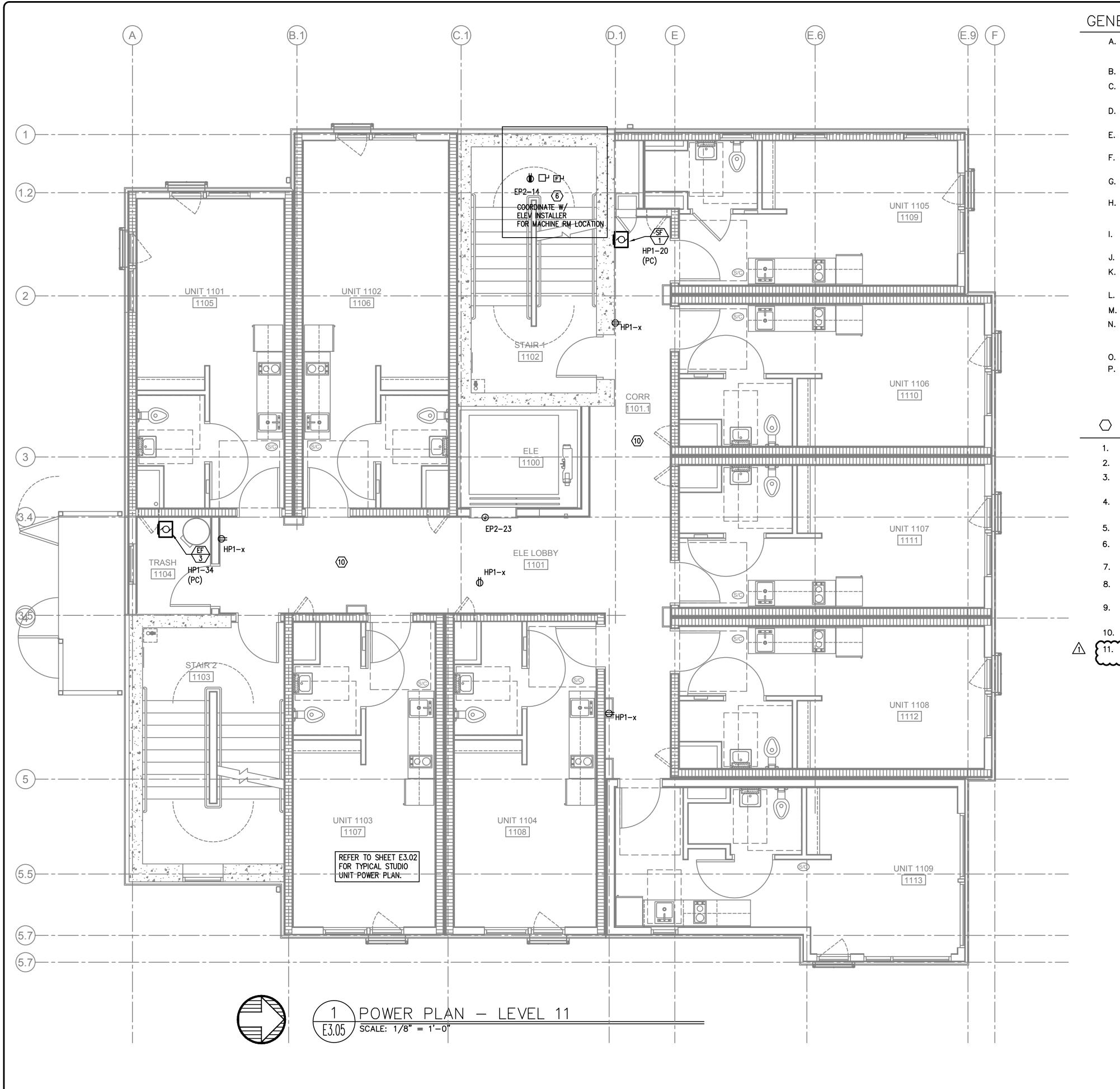
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- N. LOW VOLTAGE/COMMUNICATIONS SYSTEM DEMARCATION BOARD(S). COORDINATE LOCATIONS AND ELECTRICAL POWER REQUIREMENTS WITH THE TELECOM PLANS ('T' SERIES SHEETS) AND LOW VOLTAGE SYSTEMS INSTALLERS. PROVIDE ROUGH IN AND/OR FINAL ELECTRICAL POWER CONNECTIONS & DEVICES. REFER PANEL 'HP2' SCHEDULE ON E1.12 FOR CIRCUITS.
- O. REFER TO SHEET E1.12 FOR TYPICAL DWELLING UNIT LOAD CENTER SCHEDULE FOR CIRCUITING INFORMATION.
- P. EACH UNIT LOAD CENTER TO BE FED VIA SUB-METERING SYSTEM. REFER TO ONE-LINE DIAGRAM ON SHEET E1.11 FOR CONDUCTOR SIZE AND CABLING.

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- 1. PROVIDE KEY BOX FOR PGE AT METER ROOM FOR 24/7 ACCESS.
- GENERATOR EMERGENCY DISCONNECT.
- LAUNDRY ROOM GFCI RECEPTACLES FOR WASHING MACHINES TO BE MOUNTED AT 42" A.F.F., OR UNLESS OTHERWISE DIRECTED BY THE ARCHITECT. LAUNDRY ROOM APPLIANCES CIRCUITED TO PANEL 'HP2'. REFER TO PANEL SCHEDULE ON SHEET E1.12.
- 4. 40A, DEDICATED 14-40R DRYER RECEPTACLE (TYPICAL). VERIFY EXACT POWER RATING REQUIRED FOR THE COMMERCIAL DRYERS
- PRIOR TO ORDERING. LAUNDRY ROOM APPLIANCES CIRCUITED TO PANEL 'HP2'. REFER TO PANEL SCHEDULE ON SHEET E1.12.
- 5. EXHAUST FAN IN THIS AREA TO BE TIED INTO THE LIGHTING CIRCUIT.
- CONSULT ELEVATOR PROVIDER FOR EXACT POWER REQUIREMENTS AND PROVIDE ALL ELECTRICAL WORK AS DIRECTED. VERIFY EXACT LOCATION FOR ELEVATOR EQUIPMENT WITH ARCHITECT AND COORDINATE WITH ELEVATOR INSTALLER.
- SMOKE DAMPER FOR VENTILATION LOUVER. COORDINATE WITH MECHANICAL EQUIPMENT INSTALLER AND CIRCUIT AS INDICATED
- PROVIDE POWER CONNECTION FOR IRRIGATION CONTROLS. COORDINATE WITH THE LANDSCAPER FOR EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH IN.
- 9. CONSULT FIRE SPRINKLER SYSTEM PLAN SET AND COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR THE BUILDING FIRE PUMP.
- 4.0 DEFED TO THE HOUSE DANIEL 'HOL' DANIEL SCHEDULE FOR CORRUPOR RECEPTACLE CIRCULES ON ELOOP 2 THROUGH 14
- 10. REFER TO THE HOUSE PANEL 'HP1' PANEL SCHEDULE FOR CORRIDOR RECEPTACLE CIRCUITS ON FLOOR 2 THROUGH 11.
- REFER TO PLUMBING PLAN SHEETS FOR ADDITIONAL INFORMATION ON THE PUMP SYSTEMS IN THIS SPACE. COORDINATE WITH INSTALLER AND PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED. PROVIDE CIRCUITS FROM PANEL HP2, SEE PANEL SCHEDULES.



EXPIRES 12-31-2021

Drawn By: DMT
Chkd By: RLC
DSGN By: DMT
Acad File:

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OREGON 1 FLOOR

ER PLAN – 11TH

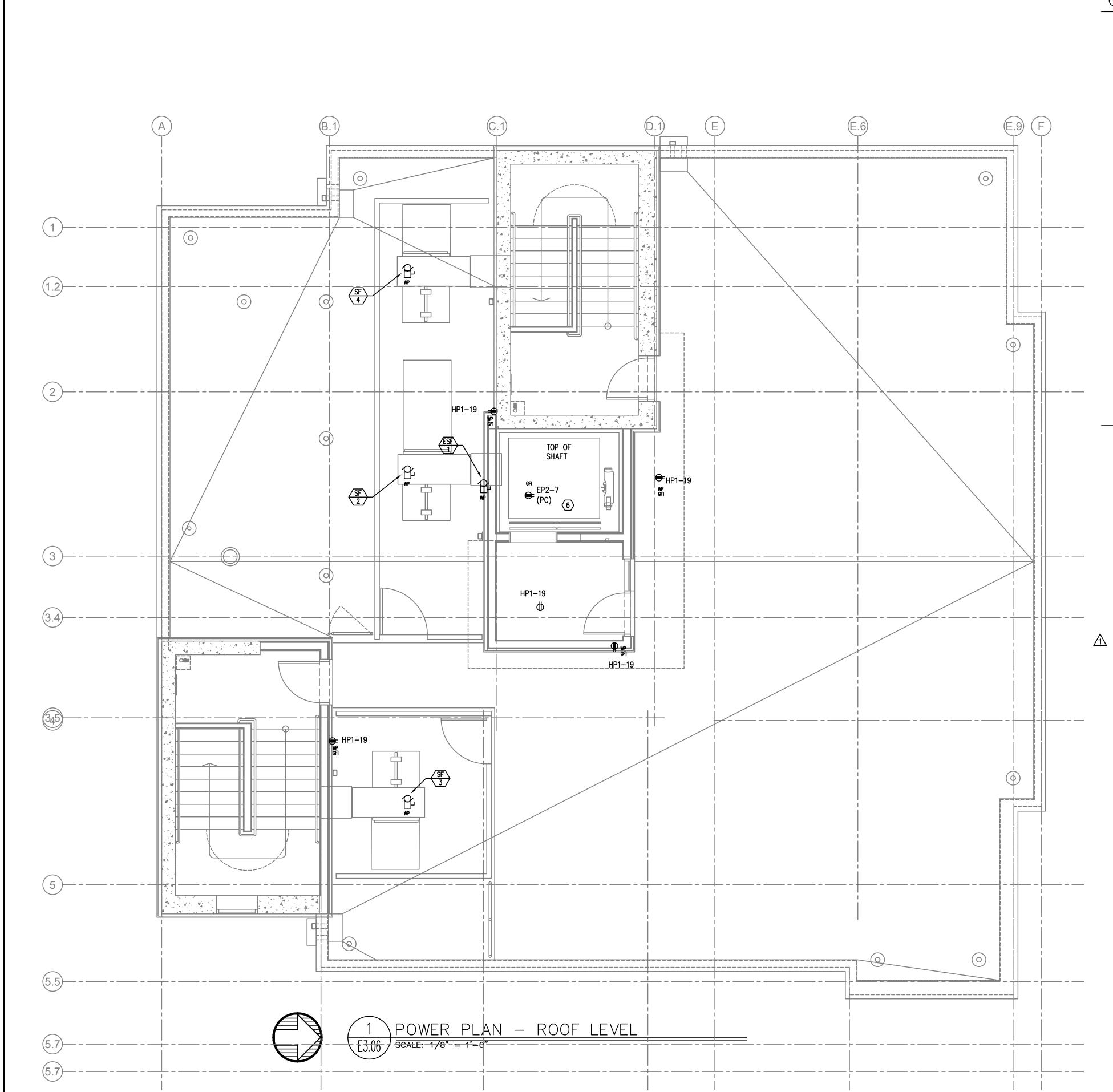
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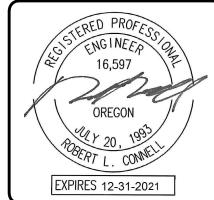


- A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.
- B. WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- C. ELECTRICAL CONTRACTOR TO PROVIDE THERMOSTATS NOT SUPPLIED BY MECHANICAL CONTRACTOR, AS REQUIRED. CONSULT MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- D. ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS AS REQUIRED. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN.
- COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E1.13 FOR MECHANICAL EQUIPMENT SCHEDULE.
- F. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.
- G. ELECTRICAL CONTRACTOR SHALL REFER TO THE 'T' SERIES SHEETS AND PROVIDE ROUGH IN FOR THE LOW VOLTAGE SYSTEMS/FIRE
- H. SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE, BASED ON SIEMENS PRODUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.
- 1. THE CLASS 'A' TRANSFORMER VAULT SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS AS WELL AS THOSE OF THE UTILITY PROVIDER. MAN-DOOR SHALL BE EQUIPPED WITH PANIC HARDWARE AND AN OUTWARD SWING.
- J. PROVIDE A KEY BOX AT THE TRANSFORMER ROOM DOOR PER THE UTILITY PROVIDER'S REQUIREMENTS, FOR 24/7 ACCESS.
- K. TENANT ELECTRICAL METERING SHALL BE SUB-METERED BY THE OWNER PER THE UTILITY PROVIDER'S REQUIREMENTS. SUB-METERING EQUIPMENT IS BASED ON SIEMENS SEM3 PRODUCTS. REFER TO SHEET E1.11 FOR ADDITIONAL INFORMATION.
- REFER TO 'E4' SERIES SHEETS FOR TYPICAL DWELLING UNIT POWER PLANS.
- M. PROVIDE ROUGH IN AND WIRING FOR ACCESS CONTROL. REFER TO 'T' SERIES SHEETS FOR ADDITIONAL INFORMATION.
- N. LOW VOLTAGE/COMMUNICATIONS SYSTEM DEMARCATION BOARD(S). COORDINATE LOCATIONS AND ELECTRICAL POWER REQUIREMENTS WITH THE TELECOM PLANS ('T' SERIES SHEETS) AND LOW VOLTAGE SYSTEMS INSTALLERS. PROVIDE ROUGH IN AND/OR FINAL ELECTRICAL POWER CONNECTIONS & DEVICES. REFER PANEL 'HP2' SCHEDULE ON E1.12 FOR CIRCUITS.
- O. REFER TO SHEET E1.12 FOR TYPICAL DWELLING UNIT LOAD CENTER SCHEDULE FOR CIRCUITING INFORMATION.
- P. EACH UNIT LOAD CENTER TO BE FED VIA SUB-METERING SYSTEM. REFER TO ONE-LINE DIAGRAM ON SHEET E1.11 FOR CONDUCTOR SIZE AND CABLING.

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- 1. PROVIDE KEY BOX FOR PGE AT METER ROOM FOR 24/7 ACCESS.
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- 8. PROVIDE POWER CONNECTION FOR IRRIGATION CONTROLS. COORDINATE WITH THE LANDSCAPER FOR EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH IN.
- 9. CONSULT FIRE SPRINKLER SYSTEM PLAN SET AND COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR THE
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- 10. REFER TO THE HOUSE PANEL 'HP1' PANEL SCHEDULE FOR CORRIDOR RECEPTACLE CIRCUITS ON FLOOR 2 THROUGH 11.

11. REFER TO PLUMBING PLAN SHEETS FOR ADDITIONAL INFORMATION ON THE PUMP SYSTEMS IN THIS SPACE. COORDINATE WITH INSTALLER AND PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED. PROVIDE CIRCUITS FROM PANEL HP2, SEE PANEL SCHEDULES.



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Chkd By: RLC
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