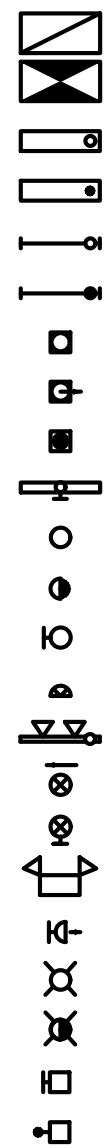


ELECTRICAL SYMBOL LIST



LIGHTING SYMBOLS

- LIGHT FIXTURE, RECESSED
- LIGHT FIXTURE, RECESSED – EMERGENCY
- LIGHT FIXTURE, SURFACE MOUNT
- LIGHT FIXTURE, SURFACE MOUNT – EMERGENCY
- LIGHT FIXTURE, STRIP
- LIGHT FIXTURE, STRIP – EMERGENCY
- DOWNLIGHT FIXTURE, RECESSED
- DOWNLIGHT FIXTURE, RECESSED, WALLWASH
- DOWNLIGHT FIXTURE, RECESSED – EMERGENCY
- LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, CEILING MOUNT
- RECESSED LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, WALL SCONCE
- LIGHT FIXTURE, TRACK W/ HEADS AS SHOWN ON PLAN
- EXIT SIGN, UNIVERSAL MOUNT, W/ DIRECTIONAL ARROW
- EXIT SIGN, WALL MOUNT, +8'-0" A.F.F.
- EMERGENCY LIGHT W/ BATTERY PACK, +8'-0" A.F.F.
- FLOOD LIGHT
- AREA LUMINAIRE
- AREA LUMINAIRE W/STANDBY LAMP
- AREA LUMINAIRE, WALL MOUNT
- AREA LUMINAIRE, POLE MOUNT

SWITCH SYMBOLS

- SWITCH, SPST +48" A.F.F.
- SWITCH, DPST +48" A.F.F.
- SWITCH, 3-WAY +48" A.F.F.
- SWITCH, 4-WAY +48" A.F.F.
- SWITCH, DIMMER +48" A.F.F.
- SWITCH, SPST, W/PILOT LIGHT +48" A.F.F.
- SWITCH, KEY-OPERATED +48" A.F.F.
- SWITCH, TIMED +48" A.F.F.
- PHOTOCELL CONTROL
- OCCUPANCY SENSOR CONTROL

SIGNAL SYMBOLS

- TELEPHONE OUTLET +18" A.F.F.
- DATA OUTLET +18" A.F.F.
- DATA/TELEPHONE OUTLET +18" A.F.F.
- CLOCK
- SIGNAL BELL
- VISUAL ALARM SIGNAL (COLOR AS INDICATED ON PLAN)
- P.A. SPEAKER
- CATV OUTLET (LOCATE AS SHOWN ON PLANS)

FIRE ALARM SYMBOLS

- FIRE ALARM MANUAL PULL STATION, +48" A.F.F.
- MAGNETIC DOOR HOLDER
- SMOKE DETECTOR, W/AUX. CONTACTS
- SMOKE/FIRE DAMPER
- SMOKE DETECTOR, DUCT, IONIZATION TYPE W/SAMPLING TUBE
- SMOKE DETECTOR, IONIZATION TYPE
- SMOKE DETECTOR, PHOTO TYPE
- HEAT DETECTOR, RATE-OF-RISE OR FIXED TEMP.
- FIRE MAIN FLOW DETECTION SWITCH
- FIRE MAIN TAMPER DETECTION SWITCH
- FIRE ALARM BELL, +80" A.F.F.
- FIRE ALARM HORN, +80" A.F.F.
- FIRE ALARM HORN/STROBE, +80" A.F.F.
- FIRE ALARM STROBE, +80" A.F.F.



POWER SYMBOLS

- RECEPTACLE, DUPLEX +18" A.F.F.
- RECEPTACLE, QUAD +18" A.F.F.
- RECEPTACLE, DUPLEX +6" ABV COUNTER
- RECEPTACLE, DUPLEX +18" A.F.F. (ONE OUTLET SWITCHED)
- RECEPTACLE, DUPLEX +18" A.F.F. (BOTH OUTLETS SWITCHED)
- RECEPTACLE, DUPLEX, PEDESTAL MOUNT
- RECEPTACLE, DUPLEX, FLUSH FLOOR MOUNT
- RECEPTACLE, SPECIAL (COORDINATE WITH EQUIPMENT SERVED)
- RELAY
- TIME CLOCK CONTROL
- PUSHBUTTON STATION
- JUNCTION BOX
- THERMOSTAT
- TRANSFORMER
- DISCONNECT, NON-FUSED
- DISCONNECT, FUSED
- ELECTRICAL CONNECTION
- ELECTRICAL CONNECTION, SINGLE MOTOR
- ELECTRICAL CONNECTION, MULTI-MOTOR
- ELECTRICAL DISTRIBUTION PANEL, RECESSED
- ELECTRICAL DISTRIBUTION PANEL, SURFACE
- MISCELLANEOUS PANEL, RECESSED
- MISCELLANEOUS PANEL, SURFACE
- FLUSH FLOOR BOX (W/ DEVICES AS SHOWN ON PLAN)

WIRING SYMBOLS

- PANEL & CIRCUIT NUMBER
- HOMERUN TO PANEL
- CONDUCTOR SIZE (IF OTHER THAN #12)
- PHASE CONDUCTOR
- NEUTRAL CONDUCTOR
- GROUND CONDUCTOR
- CONCEALED CONDUIT
- CONDUIT SIZE
- CONDUIT (UNDER SLAB OR FLOOR)
- FLEXIBLE CONNECTION
- CONDUIT, STUBBED & CAPPED

NOTATIONS

- DRAWING NOTE
- DETAIL REFERENCE: TOP=DETAIL NO., BOTTOM=SHEET NO.
- MECHANICAL EQUIPMENT MARK NO. (SEE EQUIPMENT SCHEDULE)
- EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)

ONE-LINE DIAGRAM SYMBOLS

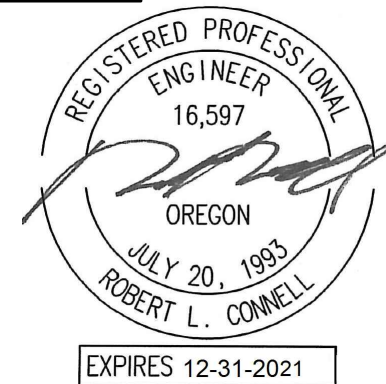
- ELECTRICAL DISTRIBUTION PANELBOARD (MLO)
- ELECTRICAL DISTRIBUTION PANELBOARD (MCB)
- SUB-FEED CIRCUIT BREAKER
- CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED ON PLAN)
- MAIN SWITCH (RATING & POLES AS INDICATED ON PLAN)
- FUSE (RATING & CLASS AS INDICATED ON PLAN)
- TRANSFER SWITCH (MANUAL OR AUTOMATIC)
- GENERATOR (RATING AS INDICATED ON PLAN)
- TRANSFORMER (RATING AS INDICATED ON PLAN)
- FUSE (RATING & CLASS AS INDICATED ON PLAN)
- GROUND SYSTEM (SIZE AS INDICATED ON PLAN)
- WATER PIPE GROUND ELECTRODE
- TRANSIENT VOLTAGE SURGE SUPPRESSOR
- UTILITY METER & METER BASE
- UTILITY METER CURRENT TRANSFORMER
- FEEDER NO. (SEE FEEDER SCHEDULE)

ABBREVIATIONS

'A'	LIGHT FIXTURE TYPE (SEE FIXTURE LIST)	I.G.	ISOLATED GROUND
A.F.F.	ABOVE FINISHED FLOOR	LCP	LIGHTING CONTROL PANEL
A.F.G.	ABOVE FINAL GRADE	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
C	CONDUIT	N.L.	NIGHT LIGHT
C.O.	CONDUIT ONLY	P	POLE
CATV	CABLE TELEVISION	PC	PARTIAL CIRCUIT
CB	CIRCUIT BREAKER	PH	PHASE
CCTV	CLOSED CIRCUIT TELEVISION	R.T.U.	REMOTE TELEMETRY UNIT
C.T.	CURRENT TRANSFORMER	T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSOR
(E)	EXISTING	U.G.	UNDERGROUND
FACP	FIRE ALARM CONTROL PANEL	U.O.N.	UNLESS OTHERWISE NOTED
G.F.I.	GROUND FAULT INTERRUPTER	VFD	VARIABLE FREQUENCY DRIVE
GND	GROUND	W	WIRE
HP	HORSEPOWER	W.G.	WIRE GUARD
		W.P.	WEATHERPROOF

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

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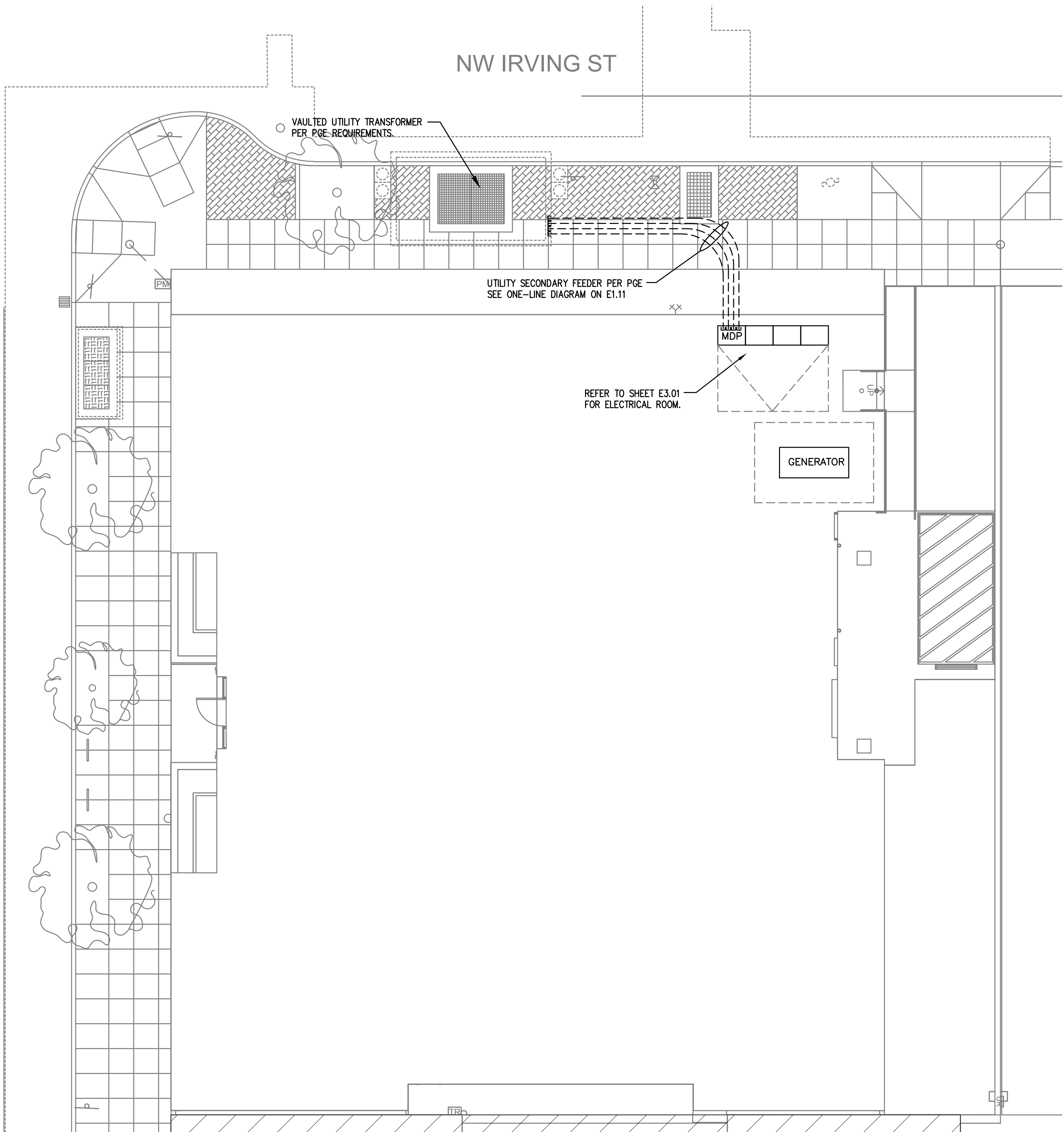
SUSAN EMMONS - NORTH BUILDING
680 NW 18TH AVENUE,
PORTLAND, OR
NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL LEGEND

PROJECT NO.
17004
03/12/2021

REVISIONS: A



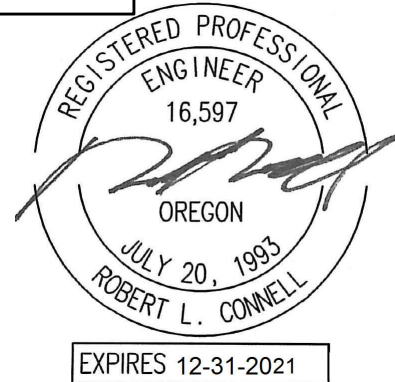
GENERAL POWER NOTES:

- A. ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.
- B. ELECTRICAL SERVICE ENTRANCE EQUIPMENT DESIGN IS BASED ON SIEMENS PRODUCTS. ACTUAL PRODUCTS USED MAY DIFFER IN SIZE AND CONFIGURATION AND SHALL BE NOTED IN FINAL PROJECT DOCUMENTS.
- C. COORDINATE WITH LOCAL UTILITY PROVIDER FOR EXACT SERVICE CONDUIT AND CONDUCTORS REQUIREMENTS.
- D. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH PGE ELECTRICAL SERVICE REQUIREMENTS.
- E. U.G. PRIMARY FEEDER SHALL HAVE A MINIMUM 48 INCH BURY.
- F. U.G. SECONDARY FEEDER SHALL HAVE A MINIMUM 36 INCH BURY.
- G. REFER TO SHEET E1.11 FOR TYPICAL FEEDER SCHEDULE.
- H. SECONDARY CONDUIT SWEEPS SHALL BE MINIMUM 60 INCH RADIUS WITH A MINIMUM OR 7'-0" STRAIGHT CONDUIT RUN BETWEEN SWEEPS.
- I. LOCATION AND INSTALLATION OF THE PRIMARY AND SECONDARY CONDUITS, TRANSFORMER, ETC. SHALL BE PROVIDED PER PGE ELECTRICAL SERVICE REQUIREMENTS.
- J. REFER TO SHEET E3.01 FOR ELECTRICAL ROOM EQUIPMENT LAYOUT.

PGE 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 PGE CONDUCTORS TO BE INSTALLED IN GREY SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN 500 LBS. TEST). PGE 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 PGE REPRESENTATIVE 2 WEEKS BEFORE STARTING MAIN POWER TRENCHING FOR A PRECONSTRUCTION CONFERENCE. INCLUDED IN THIS CONFERENCE WILL BE EXCAVATOR, PGE, TELCO, CATV, AND GAS.
4. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. COORDINATE WITH CIVIL.

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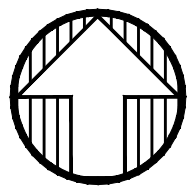
SUSAN EMMONS - NORTH BUILDING
680 NW 18TH AVENUE,
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NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL
SITE PLAN

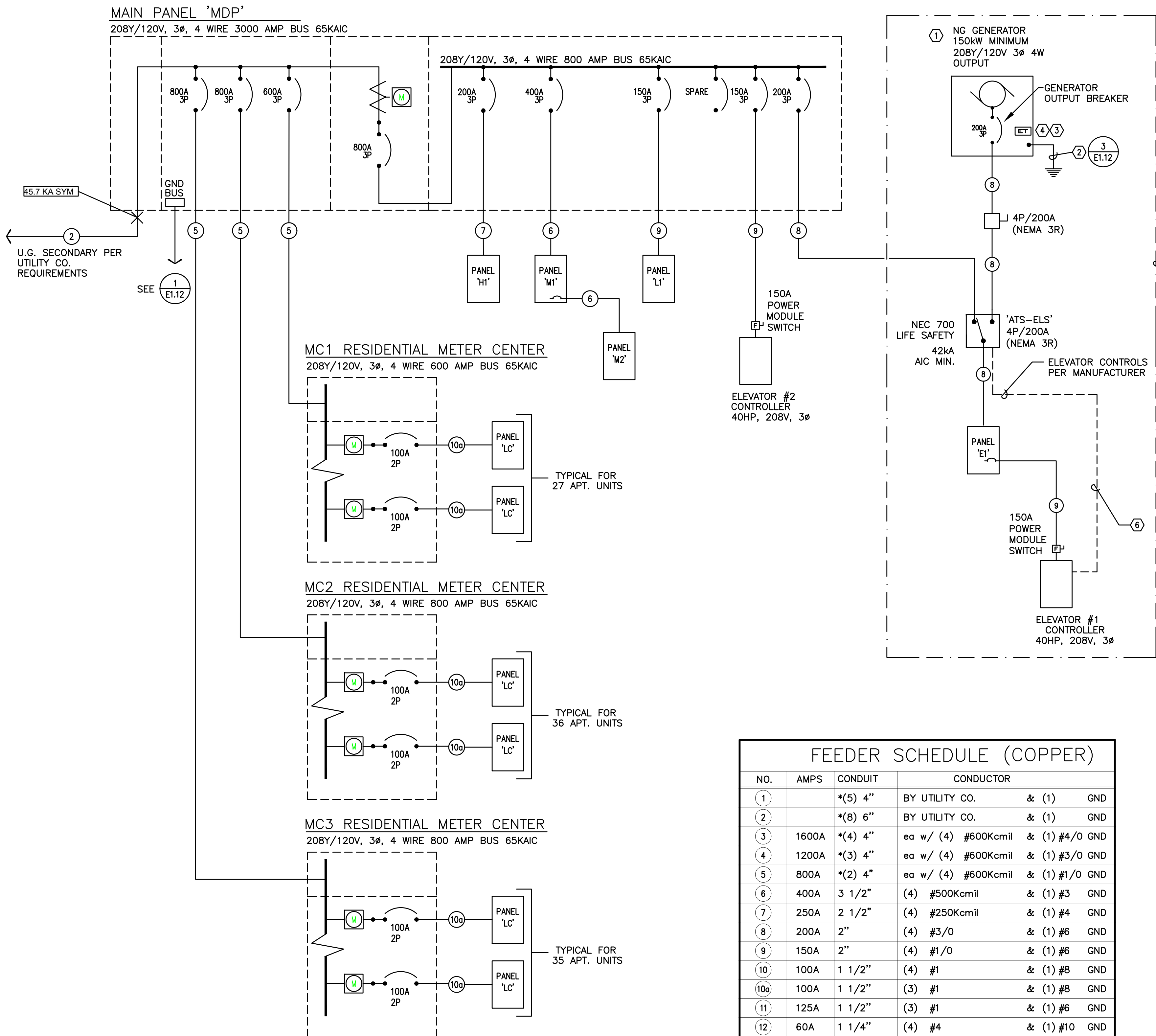
PROJECT NO.
17004
03/12/2021

REVISIONS: A



1 SITE PLAN - NORTH BUILDING
E1.01 SCALE: 1/8" = 1'-0"

E1.01



* PARALLEL FEEDER

Susan Emmons - North Building							
LOAD SUMMARY - MAIN PANEL 'MDP'							
LOAD:	LIGHTS	RECEPT	HEAT	KITCHEN	EQUIP	MOTORS	MISC
Panel H1 (House Loads)	8,320	17,340		14,700	3,600		
Panel M1/M2 (Equip. Loads)	0	720	6,500	0	24,000	20,471	1,220
Panel L1 (Laundry Equip)					23,300		
Panel E1 (Gen Set) (incl. Elev. #1)	625				2,000	43,476	42,500
Elevator #2						42,500	
MC1 (Tenant Meters)							212,000
MC2 (Tenant Meters)							248,000
MC3 (Tenant Meters)							241,000
SUBTOTAL	8,945	18,060	6,500	14,700	52,900	106,447	42,500
X-FACTOR	1.25	1 + .5	1	0.65	1	1	0.25
CODE LOAD:	11,181	14,030	6,500	9,555	52,900	106,447	702,220
CONN LOAD:		910 KVA					
VOLTS:		208 3ph					
TOTAL CALC:		913 KVA					
CALC AMPS:		2536 AMPS					

ONE-LINE GENERAL NOTES:

- COORDINATE ALL WORK ASSOCIATED WITH ELECTRIC SERVICE WITH LOCAL UTILITY. PROVIDE ALL CONDUIT, GROUNDING, TRANSFORMER VAULT/PAD, ETC., IN ACCORDANCE WITH SERVING UTILITY REQUIREMENTS.
- COORDINATE METERING REQUIREMENTS WITH UTILITY.
- FOR LOAD CENTER FEEDER LENGTHS GREATER THAN 145'-0" FROM METER CENTER, INCREASE WIRE SIZE ONE SIZE UP FOR VOLTAGE DROP.
- 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.
- ASME A17.1, SECTION 2.27.2.1 THROUGH 5 STATES THAT IF THE EMERGENCY OR STANDBY POWER SYSTEM IS NOT CAPABLE OF OPERATING ALL ELEVATORS SIMULTANEOUSLY, THEN A SELECTOR SWITCH WILL NEED TO BE INSTALLED TO PROVIDE AUTOMATIC SELECTION BETWEEN THE TWO ELEVATOR CARS IN THE EVENT OF A POWER OUTAGE.
- ELEVATOR MANUFACTURER SHALL VERIFY THAT THE ELEVATOR WILL BE SUPPLIED WITH A KEY SWITCH TO OPERATE AND SELECT THE ELEVATOR CARS ON EMERGENCY POWER, AND THAT THE CARS WILL OPERATE IN SEQUENCE. THIS IS UNDERSTOOD TO MEAN THAT ONLY ONE CAR AT A TIME WILL OPERATE ON EMERGENCY POWER AND NOT SIMULTANEOUSLY, THUS PROVING THE 60KW GENERATOR TO BE ADEQUATE TO SUPPORT THE CODE REQUIREMENT FOR EMERGENCY POWER TO A MINIMUM OF ONE ELEVATOR FOR EGRESS IN THE EVENT OF A POWER OUTAGE.

ONE-LINE NOTES:

- NATURAL GAS GENERATOR TO OPERATE ONLY ONE ELEVATOR IN THE EVENT OF A POWER OUTAGE. VERIFY ELEVATOR ELECTRICAL REQUIREMENTS AND CONSULT GENERATOR PROVIDER FOR PROPER SIZING BASED ON STANDBY POWER LOAD. REFER TO PANEL E1 FOR CIRCUITING INFORMATION.
- PROVIDE GROUND FOR SEPARATELY DERIVED SYSTEM PER NEC.
- 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.
- COORDINATE INSTALLATION OF OUTPUT BREAKER WITH GENERATOR MANUFACTURER TO SELECTIVELY COORDINATE WITH POWER STUDY RECOMMENDATIONS.
- THE STANDBY POWER SYSTEM SHALL MEET ALL REQUIREMENTS OF NFPA 110 AND 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.

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SUSAN EMMONS - NORTH BUILDING
680 NW 18TH AVENUE,
PORTLAND, OR

NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL
ONE-LINE DIAGRAM

PROJECT NO.
17004

03/12/2021

REVISIONS: A

E1.11

MFIA PANEL SCHEDULE													
panel		mounting SURFACE		location ELECT RM		connected load amps							
H1 (House Loads)													
voltage		phase		bus & main		calculated load amps							
120/208V (SCCR: 42KAIC)		3		200A		MLO							
service	va	a/p	no.	a b c	no.	a/p	va	service	va	a/p	no.	a b c	no.
1 LIGHTS – BLDG EXTERIOR	100	20/1	1	*	2	20/1	1260	RECEPTACLES – 1ST FLR	122				
1 LIGHTS – STAIR 1	240	20/1	3	*	4	20/1	1260	RECEPTACLES – 1ST FLR	2				
1 LIGHTS – STAIR 2	240	20/1	5	*	6	20/1	1080	RECEPTACLES – 2ND FLR	2				
1 LTS – FLRS 1 CORR'D (EGRESS)	435	20/1	7	*	8	20/1	1080	RECEPTACLES – 2ND FLR	2				
1 LTS – FLRS 2 CORR'D (EGRESS)	435	20/1	9	*	10	20/1	1080	RECEPTACLES – 2ND FLR	2				
1 LTS – FLRS 1&2 CORRIDOR	870	20/1	11	*	12	20/1	1080	RECEPTACLES – 2ND FLR	2				
1 LTS – FLRS 1&2	840	20/1	13	*	14	20/1	1080	RECEPTACLES – 3RD FLR	2				
1 LTS – FLRS 3 CORR'D (EGRESS)	435	20/1	15	*	16	20/1	1080	RECEPTACLES – 3RD FLR	2				
1 LTS – FLRS 4 CORR'D (EGRESS)	435	20/1	17	*	18	20/1	1080	RECEPTACLES – 4TH FLR	2				
1 LTS – FLRS 3&4 CORRIDOR	870	20/1	19	*	20	20/1	1080	RECEPTACLES – 4TH FLR	2				
1 LTS – FLRS 3,4,5,6	1680	20/1	21	*	22	20/1	1080	RECEPTACLES – 5TH FLR	2				
1 LTS – FLRS 5 CORR'D (EGRESS)	435	20/1	23	*	24	20/1	1080	RECEPTACLES – 5TH FLR	2				
1 LTS – FLRS 6 CORR'D (EGRESS)	435	20/1	25	*	26	20/1	900	RECEPTACLES – 6TH FLR	2				
1 LTS – FLRS 5&6 CORR'D	870	20/1	27	*	28	20/1	900	RECEPTACLES – 6TH FLR	2				
5 INVERTER INV-1	600	20/1	29	*	30	20/1	500	ELEV MACH RM RECEPT	2				
5 INVERTER INV-2	600	20/1	31	*	32	20/1	720	RECEPTACLES – MAIL ROOM	2				
5 INVERTER INV-3	600	20/1	33	*	34	20/1	1500	HOOD/MICRO	4				
5 INVERTER INV-4	600	20/1	35	*	36	50/2	6000	RANGE	4				
5 INVERTER INV-5	600	20/1	37	*	38	*	6000	*	4				
5 INVERTER INV-6	600	20/1	39	*	40	20/1	1200	FRIDGE	4				
2 ELEV. PIT LTS & RECEPTS	500	20/1	41	*	42	20/1	500	RECEPT – AMENITY KITCHEN	2				
NOTES:													
Phase A	16000	VA						line-line voltage	208				
Phase B	12860	VA											
Phase C	15000	VA						largest motor (va)	0				
Total Connected	43960	VA											
load code:	ph. A	ph. B	ph. C	total	factor	calculated load (va)							
1. LIGHTS=	2680	3660	1980	VA	8320	1.25							
2. RECEPT.=	6120	5400	5820	VA	17340	1 + 0.5							
3. HEATING=	0	0	0	VA	0	1.00							
4. KITCHEN=	6000	2700	6000	VA	14700	0.90							
5. EQUIP.=	1200	1200	1200	VA	3600	1.00							
6. MOTORS=	0	0	0	VA	0	*							
7. MISC=	0	0	0	VA	0	1.00							
(* 125% of the largest motor + 100% of the balance) TOTAL =													
40900													

MFIA PANEL SCHEDULE													
panel		mounting SURFACE		location ELECT RM		connected load amps							
M1 (Mechanical Loads)													
voltage		phase		bus & main		calculated load amps							
120/208V (SCCR: 42KAIC)		3		400A		MLO							
service	va	a/p	no.	a b c	no.	a/p	va	service	va	a/p	no.	a b c	no.
5 PHONE BOARD	500	20/1	1	*	2	50/2	2900	TRASH COMPACTOR	6				
5 COMMUNICATIONS BOARD	500	20/1	3	*	4	*	2900	*	6				
5 SECURITY SYSTEM	1500	20/1	5	*	6	20/1	1500	PALETT JACK CHARGER	5				
5 AUTO DOORS	1500	20/1	7	*	8	20/1	1500	BIKE CHARGING	5				
5 ENTRY ACCESS SYSTEM	1500	20/1	9	*	10			WHEELCHAIR LIFT	6				
5 BUILDING SIGN	1500	20/1	11	*	12			*	6				
3 WH-1, WH-2, WH-3 (GAS)	1500	20/1	13	*	14	20/1	720	RECEPT – TRASH ROOM	2				
6 RP-1/RP-2	1900	20/1	15	*	16	20/1	1500	EH-2	3				
6 BP-1	3865	50/3	17	*	18	20/1	1176	SP-1 (ELEV PIT)	6				
6 *	3865	*	19	*	20	20/1	1500	SMOKE DAMPERS	5				
6 *	3865	*	21	*	22	20/1	1500	SMOKE DAMPERS	5				
3 EH-3	500	20/1	23	*	24	20/1	1500	SMOKE DAMPERS	5				
3 EH-4	1500	20/2	25	*	26	20/1	2000	SMOKE DAMPERS	5				
3 *	1500	*	27	*	28	20/1	2000	SMOKE DAMPERS	5				
5 IRRIGATION CONTROLS	1500	20/1	29	*	30	20/1	2000	SMOKE DAMPERS	5				
SPARE	20/1	31	*	32	20/1	2000	SMOKE DAMPERS	5					
SPARE	20/1	33	*	34				BLANK					
SPARE	20/1	35	*	36				BLANK					
7 PANEL M2	11300	200/3	37	*	38			BLANK					
7 *	11580	*	39	*	40			BLANK					
7 *	10080	*	41	*	42			BLANK					
NOTES:													
Phase A	30785	VA						line-line voltage	208				
Phase B	28745	VA											
Phase C	25121	VA						largest motor (va)	0				
Total Connected	84651	VA											
load code:	ph. A	ph. B	ph. C	total	factor	calculated load (va)							
1. LIGHTS=	0	0	0	VA	0	1.25							
2. RECEPT.=	720	0	0	VA	720	1 + 0.5							
3. HEATING=	3000	3000	500	VA	6500	1.00							
4. KITCHEN=	0	0	0	VA	0	1.00							
5. EQUIP.=	9000	5500	9500	VA	24000	1.00							
6. MOTORS=	6765	8665	5041	VA	20471	*							
7. MISC=	11300	11580	10080	VA	32960	1.00							
(* 125% of the largest motor + 100% of the balance) TOTAL =													
84651													

MFIA PANEL SCHEDULE													
panel		mounting		location		connected load amps							
L1 (Laundry)		FLUSH		RM 222									
voltage		phase		bus & main		calculated load amps		106					
120/208V		3		150A		MLO							
C	service	va	a/p	no.	a b c	no.	a/p	va	service	C			
2	WASHER	500	20/1	1	*	2	40/2	2800	DRYER	69			
2	WASHER	500	20/1	3	*	4	*	2800	*	2			
2	WASHER	500	20/1	5	*	6	40/2	2800	DRYER	2			
2	WASHER	500	20/1	7	*	8	*	2800	*	2			
2	WASHER	500	20/1	9	*	10	40/2	2800	DRYER	2			
2	WASHER	500	20/1	11	*	12	*	2800	*	2			
5	LAUNDRY CARD MACHINE	1500	20/1	13	*	14	40/2	2800	DRYER	2			
6	EF-4 (FLRS 3,5)	50	20/1	15	*	16	*	2800	*	2			
	SPARE	0	20/1	17	*	18	40/2	2800	DRYER	2			
	SPARE	0	20/1	19	*	20	*	2800	*	2			
	SPARE	0	20/1	21	*	22	40/2	2800	DRYER	2			
	SPARE	0	20/1	23	*	24	*	2800	*	2			
	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				
NOTES:													
Phase A		13700 VA						line-line voltage					
Phase B		12250 VA								208			
Phase C		12200 VA						largest motor (va)					
Total Connected		38150 VA								0			
load code:		ph. A	ph. B	ph. C	total	factor	calculated load (va)						
1. LIGHTS=		0	0	0	VA	0	1.25		0				
2. RECEPT.=		12200	12200	12200	VA	36600	1 + 0.5		23300				
3. HEATING=		0	0	0	VA	0	1.00		0				
4. KITCHEN=		0	0	0	VA	0	1.00		0				
5. EQUIP.=		1500	0	0	VA	1500	1.00		1500				
6. MOTORS=		0	50	0	VA	50	*		50				
7. MISC=		0	0	0	VA	0	1.00		0				
(* 125% of the largest motor + 100% of the balance)								TOTAL =		24850			

Alphabet Dist. -- North Building																			
RESIDENTIAL LOAD SUMMARY -- MC1 (SECOND FLOOR)																			
UNIT TYPE:	QTY PER FLOOR						TOTAL	AREA (AVG SF)	LTG/RECEPT (3VA / SF)	SM APPL (1500VA X 2)	LAUNDRY (1500VA)	COOKING (CONNECTED)	MICROWAVE (CONNECTED)	DISHWASHER (CONNECTED)	ELECT DRYER (CONNECTED)	WATER HEATER (CONNECTED)	DISPOSAL (CONNECTED)	MOTORS (CONNECTED)	LARGEST OF: AC/HEATING (CONNECTED)
	LW 1	LW 2	LW 3	LW 4	LW 5	LW 6													
Studio Unit	13	14	0	0	0	0	27	317	951	3000	0	14500	1500		0	0	0	0	3000
TOTALS:	13	14	0	0	0	0	27	8559	25677	81000	0	391500	40500		0	0	0	0	81000
VOLTS: 208 3ph																			
TOTAL CONNECTED: 620 KVA																			
DEMAND FACTOR: 0.33 Based on Total Number of Residential Units = 28-30 (See N.E.C. Article: 220.84)																			
TOTAL CALCULATED: 204 KVA																			
CALCULATED AMPS: 568 AMPS																			
NOTE:																			

Alphabet Dist. – North Building																			
RESIDENTIAL LOAD SUMMARY – MC2 (FOURTH FLOOR)																			
UNIT TYPE:	QTY PER FLOOR						TOTAL	AREA (AVG SF)	LIG/RECEPT (3VA / SF)	SM APPL (1500VA X 2)	LAUNDRY (1500VA)	COOKING (CONNECTED)	MICROWAVE (CONNECTED)	DISHWASHER (CONNECTED)	ELECT DRYER (CONNECTED)	WATER HEATER (CONNECTED)	DISPOSAL (CONNECTED)	MOTORS (CONNECTED)	LARGEST OF: AC/HEATING (CONNECTED)
	LW 1	LW 2	LW 3	LW 4	LW 5	LW 6													
Studio Unit	0	0	18	18	0	0	36	317	951	3000	0	14500	1500	0	0	0	0	0	3000
TOTALS:	0	0	18	18	0	0	36	11412	34236	108000	0	522000	54000	0	0	0	0	0	108000
VOLTS: 208 3ph																			
TOTAL CONNECTED: 826 KVA																			
DEMAND FACTOR: 0.3 Based on Total Number of Residential Units = 34–36 (See N.E.C. Article: 220.84)																			
TOTAL CALCULATED: 248 KVA																			
CALCULATED AMPS: 688 AMPS																			
NOTE:																			

Alphabet Dist. – North Building																				
RESIDENTIAL LOAD SUMMARY – MC3 (SIXTH FLOOR)																				
UNIT TYPE:	QTY PER FLOOR						TOTAL	AREA (AVG SF)	LIG/RECEPT (3VA / SF)	SM APPL (1500VA X 2)	LAUNDRY (1500VA)	COOKING (CONNECTED)	MICROWAVE (CONNECTED)	DISHWASHER (CONNECTED)	ELECT DRYER (CONNECTED)	WATER HEATER (CONNECTED)	DISPOSAL (CONNECTED)	MOTORS (CONNECTED)	LARGEST OF: AC/HEATER (CONNECTED)	
	LW 1	LW 2	LW 3	LW 4	LW 5	LW 6														
Studio Unit	0	0	0	0	18	16	0	34	317	951	3000	0	14500	1500	0	0	0	0	0	3000
1Bedroom					1		1	1	350	1050	3000	0	14500	1500	0	0	0	0	0	3000
TOTALS:	0	0	0	0	18	17	0	35	11128	33384	105000	0	507500	52500	0	0	0	0	0	105000
VOLTS: 208 3ph																				
TOTAL CONNECTED: 803 KVA																				
DEMAND FACTOR: 0.3 Based on Total Number of Residential Units = 34–36 (See N.E.C. Article: 220.84)																				
TOTAL CALCULATED: 241 KVA																				
CALCULATED AMPS: 669 AMPS																				
NOTE:																				

DWELLING UNIT LOAD CALCULATION

Project: Susan Emmons N. Bldg Apartments

Unit Type: Studio

Area: 325 square feet(average)

Minimum Size Feeder (NEC 220.40):

General lighting load at 3 VA / SF 975 VA

Small Appliance load (2 dkt at 1500VA each) 3,000 VA

Laundry Load (1 dkt at 1500VA) 0 VA

Electric Range 14,500 VA

Other Cooking Appliance Load (Microwave Oven) 1,500 VA

Dishwasher Load 0 VA

Electric Dryer Load 0 VA

Electric Water Heater Load 0 VA

Disposal load 0 VA

Other motor loads 0 VA

Total "General Loads" 19,975 VA

First 10 kVA of "general loads" at 100% 10,000 VA

Remainder of "general loads" at 40% 3,990 VA

Net "general load" 13,990 VA

Largest of: 3,000 VA of electric space heating (less than 4) at 65% 1,950 VA

-or- VA of electric space heating (4 or more) at 40% 0 VA

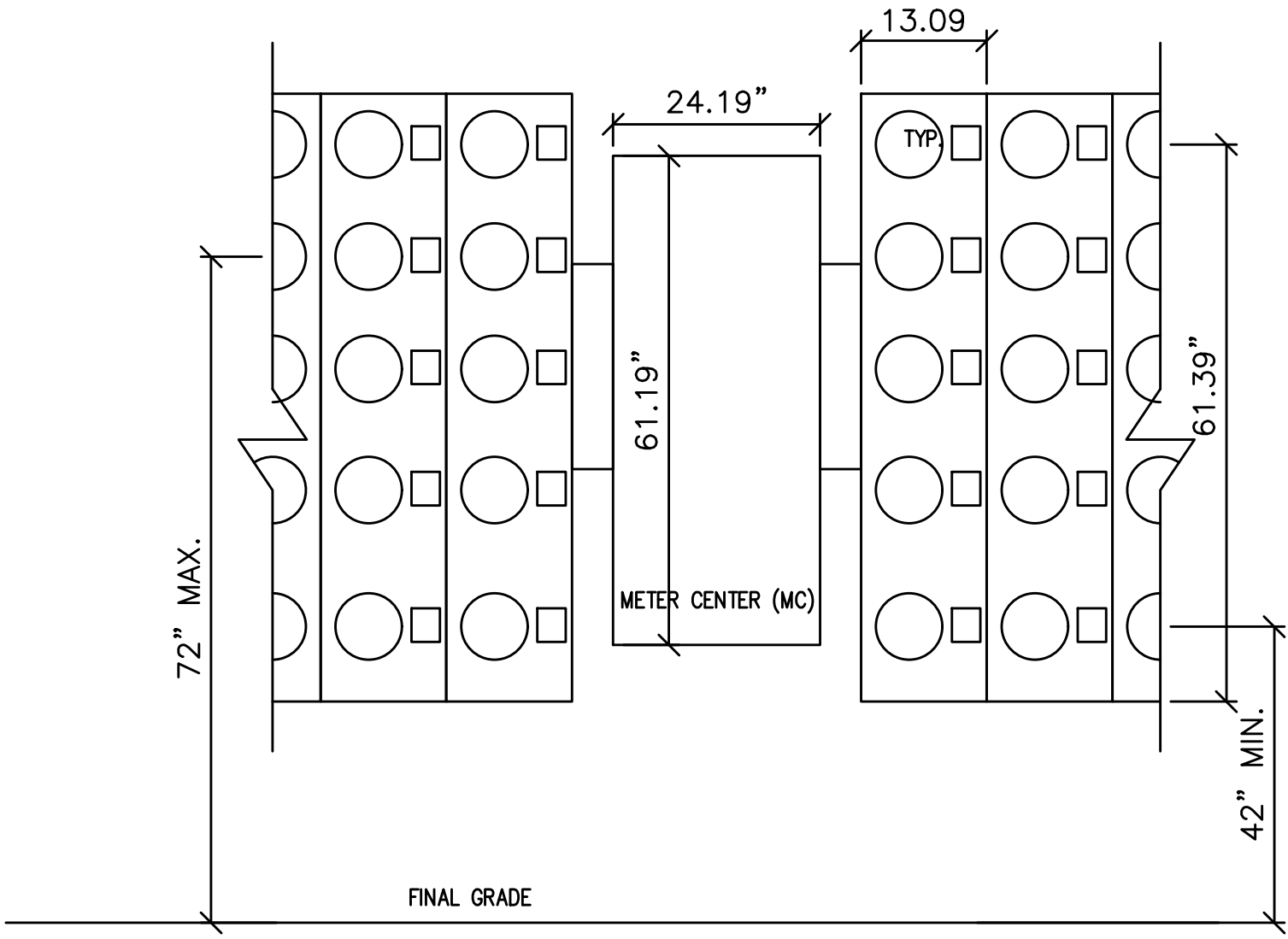
-or- VA of air conditioning/cooling/heat pumps at 100% 0 VA

TOTAL LOAD 15,940 VA

For 120/240-volt, 3-wire, single-phase service or feeder, 15,940 VA / 240 volts = 66 Amps

Therefore, this dwelling unit shall be permitted to be served by a 100 amp service.

MFA CIRCUIT DIRECTORY											17-Apr-20	
Loadcenter Name		mounting			location							
LC-STUDIO (TYPICAL)		RECESSED										
voltage		phase		bus & main								
208/120		1		100A MLO		(SCCR: 10K)						
service		o/p	no.	L1	L2	o/p	service					
LIGHTS-KITCHEN/LIVING		20/1	1	*	2	20/1(A)	APPLIANCE CIRCUIT					
LTS & RECEPT - BATH		20/1	3	*	4	20/1(A)	APPLIANCE CIRCUIT					
RECEPT - LIVING		20/1(A)	5	*	6	20/1	REFRIGERATOR					
RECEPT - LIVING		20/1(A)	7	*	8	20/1	DISPOSAL					
RECEPT - (optional)		20/1(A)	9	*	10	20/1	HOOD/MICROWAVE					
SMART PANEL (optional)		20/1	11	*	12	50/2	RANGE					
SPARE		20/1	13	*	14	*						
SPARE		20/1	15	*	16	20/2	HEAT					
SPARE		20/1	17	*	18	*						
SPARE		20/1	19	*	20	20/1	SPARE					
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 INTERRUPTER CIRCUIT BREAKER. INSTALL PER NEC 210.12												
2. LOADS FOR THIS PANEL ARE INDICATED ON THE "DWELLING UNIT LOAD CALCULATION".												
3. BREAKER & WIRE SHALL BE SIZED FOR EQUIPMENT INSTALLED.												
4. (G) DENOTES GFCI RATED BREAKER.												



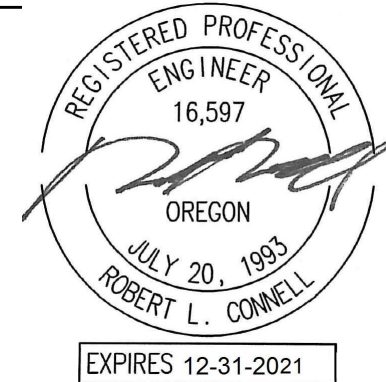
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E1.13

TYPICAL METER ELEVATION

NOT TO SCALE

TYPICAL METER ARRANGEMENT PER PGE REQUIREMENTS. COMPONENTS SHOWN ARE APPROXIMATE BASED ON VENDOR INFORMATION. ACTUAL EQUIPMENT TO BE INSTALLED MAY VARY. ELECTRICAL CONTRACTOR TO PROVIDE CUTSHEETS OF THE PRODUCTS INSTALLED UPON SUBMITTAL REVIEW & APPROVAL.

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NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL
SCHEDULES & DETAILS
PROJECT NO.
17004
03/12/2021

REVISIONS: A

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LIGHTING FIXTURE LIST					
TYPE	LAMP	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	OPTIONS
A1 A1E	LED 3000K 2000LM/80CRI 25W	LITHONIA (OR APPROVED OTHER)	ZLIN SERIES	TYPE :4' GEN. PURPOSE STRIP MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :DIFFUSED ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	TYPE 'AE' SIMILAR TO TYPE 'A' EXCEPT WITH EMERGENCY BATTERY BACK-UP EQUIP. RMS, TRASH RM
A2	LED 3500K 3000LM/80CRI 23W	LITHONIA (OR APPROVED OTHER)	FEML48 SERIES	TYPE :4' ENCLOSED INDUSTRIAL MOUNTING :SURFACE HOUSING :POLYCARBONATE LENS/REFL :CLEAR POLYCARBONATE VOLTAGE :MVOLT BALLAST :LED DRIVER	ELEVATOR PIT & TOP OF SHAFT
B1 B1E	LED 3000K 3600LM/80CRI 34W	FAIL SAFE (OR APPROVED OTHER)	HVSL8 SERIES	TYPE :4' WRAP AROUND MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	B1E TO BE PROVIDED WITH EMERGENCY BATTERY BALLAST. PROVIDE WITH INTEGRAL OCCUPANCY. SENSOR, DIM50 STANDBY MODE. STAIRWELLS, LAUNDRY
B3 B3E	LED 3000K 575LM/FT 80CRI 20W	NEO RAY LIGHTING (OR APPROVED OTHER)	S124DS-C SERIES	TYPE :4FT LINEAR FIXTURE MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :STRAIGHT BLADE DIFFUSER VOLTAGE :MVOLT BALLAST :LED DRIVER (0-10 DIMMING)	B3E PROVIDED WITH EMERGENCY BATTERY BACKUP. MATTE WHITE FINISH VERIFY MOUNTING TYPE W/ ARCHITECT OFFICE, TRASH RMS LAUNDRY, BIKE RMS
C1 C1E	LED 1300LM/80CRI 3000K 16W	USAI LIGHTING (OR APPROVED OTHER)	B4RD 16G1 SERIES	TYPE :4.5" DIA. DOWNLIGHT MOUNTING :RECESSED HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER (0-10 DIMMING)	C1E PROVIDED WITH EMERGENCY BATTERY BACK UP. 90 DEGREE BEAM TRIMLESS/WHITE FINISH IC RATED CORRIDORS, RESTROOM
C2 C2E	LED 3000K 975LM 14W	USAI LIGHTING (OR APPROVED OTHER)	BEVELED 1020 SERIES	TYPE :4.5" DIA. DOWNLIGHT MOUNTING :RECESSED HOUSING :ALUMINUM LENS/REFL :SOLITE VOLTAGE :MVOLT BALLAST :LED DRIVER	C2E TO BE PROVIDED WITH EMERGENCY BATTERY BACK UP. TRIM & FINISH PER ARCHITECT. UL LISTED WET LOCATION MAIN BUILDING ENTRANCES
C3 C3E	LED 3000K 2000LM 10W	LITHONIA LIGHTING (OR APPROVED OTHER)	WDGE1 P2 SERIES	TYPE :EXTERIOR WALL PACK MOUNTING :SURFACE (+8'-0") HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	C3E TO BE PROVIDED WITH EMERGENCY BATTERY BACK UP. FINISH PER ARCHITECT. TYPE VM DISTRIBUTION WET LOCATION LISTED BUILDING MAINTENANCE COURTYARD
C4N	(2) LED A19 3000K 10W	SEA GULL LIGHTING (NO SUBSTITUTE)	8313802-12	TYPE :EXTERIOR WALL SCONCE MOUNTING :SURFACE (+8'-0") HOUSING :ALUMINUM LENS/REFL :NA VOLTAGE :120V BALLAST :INTEGRAL LED DRIVER	C4E TO BE PROVIDED WITH REMOTE EMERGENCY BATTERY BACK UP. WHITE FINISH WET LOCATION LISTED BUILDING SERVICE ENTRANCES
C5	LED 3000K 50W	WAC LIGHTING (NO SUBSTITUTE)	HR-D425LED	TYPE :4" DIA ADJ. SPOT MOUNTING :SURFACE HOUSING :ALUMINUM LENS/REFL :NA VOLTAGE :12V BALLAST :LED DRIVER	PROVIDE APPROPRIATE HOUSING AND LOW VOLTAGE TRANSFORMER ELEVATOR LOBBY
F1	(2) LED A19 3000K 1530LM 30W	JUSTICE DESIGN (NO SUBSTITUTE)	CLD-7564W	TYPE :EXTERIOR WALL SCONCE MOUNTING :SURFACE (+8'-0") HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER	ADA COMPLIANT. VERIFY MOUNTING HEIGHT. FINISH PER ARCHITECT. WET LOCATION LISTED MAIN BUILDING ENTRANCE
D1	LED 1020LM/FT 3000K (6.7W/FT)	KELVIX LIGHTING (OR APPROVED EQUAL)	VT35K-WR-24V SERIES CH-011 CHANNEL	TYPE :LINEAR LED TAPE MOUNTING :SURFACE (IN CHANNEL) HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :24 VOLT DC BALLAST :LED DRIVER	VERIFY EXACT LENGTHS W/ARCHITECT CHANNEL TYPE PER ARCHITECT PROVIDE APPROPRIATE TRANSFORMER(S) AND ACCESSORIES FOR EACH LOCATION. UL LISTED WET LOCATION
L1 Ⓢ	LED 3000K 1620LM 18W	LIGHTOLOGY (OR APPROVED OTHER)	RLM801450	TYPE :18" DECORATIVE PENDANT MOUNTING :SUSPENDED HOUSING : LENS/REFL :GLASS GLOBE VOLTAGE :120V BALLAST :INTEGRAL LED DRIVER	MATTE BLACK FINISH PROVIDE WITH ADJUSTABLE SUSPENSION CORD. LOBBY, AMMENITY
L2	LED 3000K 35710LM 42W	LIGHTOLOGY (OR APPROVED OTHER)	HAMPTON SERIES	TYPE :20.9" DIA CEILING LIGHT MOUNTING :SURFACE HOUSING :METAL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :INTEGRAL LED DRIVER	MATTE BLACK FINISH AMMENITY, AMENITY KITCHEN
L3	LED 3000K 2000LM 22W	ALCON LIGHTING (OR APPROVED OTHER)	11170-12 SERIES	TYPE :12" DIA CEILING LIGHT MOUNTING :SURFACE HOUSING :METAL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :INTEGRAL LED DRIVER	FINISH PER ARCHITECT CORRIDORS

LIGHTING FIXTURE LIST					
TYPE	LAMP	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	OPTIONS
U1	LED 700LM/90CRI 3000K (10W)	LIGHTOUIER (OR APPROVED EQUAL)	SD5R SERIES	TYPE :5" DIA. DOWNLIGHT MOUNTING :SURFACE (J-BOX) HOUSING :ALUMINUM LENS/REFL :MOLDED POLYMER VOLTAGE :MVOLT BALLAST :LED DRIVER (0-10 DIMMING)	UNIT KITCHEN, HALL, BATHROOM
U3	LED 1300LM/90CRI 3000K 16W	DESIGN CLASSICS (OR APPROVED EQUAL)	PRODUCT #646438 MODEL 1330-30-90	TYPE :24" VANITY LIGHT MOUNTING :SURFACE (+6" ABOVE MIRROR) HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :INTEGRAL DRIVER	UNIT BATHROOM
U4	LED 2500lm 3000K (36W)	MAXIM LIGHTING (OR APPROVED OTHER)	WAFER SERIES 7746W/IT	TYPE :4FT FLAT PANEL MOUNTING :SURFACE HOUSING :ALUMINUM LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	UNIT KITCHEN
U5	LED 1200LM 3000K (17W)	PROGRESS LIGHTING (OR APPROVED EQUAL)	P3911 SERIES	TYPE :14" DIA. CEILING LIGHT MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :WHITE ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	UNIT BEDROOM, LIVING ROOM
X1 X2	LED (GREEN LETTERS) (1.5W)	LITHONIA DMF LIGHTING (OR APPROVED 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
X3	LED (GREEN LETTERS) (1.5W)	LITHONIA (OR APPROVED OTHER)	WLTE SERIES	TYPE :EXIT SIGN MOUNTING :UNIVERSAL HOUSING :DIE-CAST ALUMINUM LENS/REFL :SINGLE FACE VOLTAGE :MVOLT BALLAST :NICKLE CADMIUM BATTERY	UL LISTED WET LOCATION

MECHANICAL EQUIPMENT SCHEDULE									
NO.	EQUIPMENT NAME	HP/KW	VOLTS	PH	AMPS	CONDUIT	WIRE	GND	CIRCUIT
EF-1	EXHAUST FAN NO.1	8.2W	120	1		1/2"	#12	#12	SEE UNIT PLANS
EF-2	EXHAUST FAN NO.2	8.2W	120	1		1/2"	#12	#12	SEE E3.01
EF-3	EXHAUST FAN NO.3	8.2W	120	1		1/2"	#12	#12	SEE E3.02, E3.04, E3.06
EF-4	EXHAUST FAN NO.4	7.7W	120	1		1/2"	#12	#12	SEE E3.03, E3.05
EF-5	EXHAUST FAN NO.5	1/10 HP	120	1		1/2"	#12	#12	M2-7 (PC)
EF-6	EXHAUST FAN NO.6	7.7W	120	1		1/2"	#12	#12	M2-7 (PC)
EH-1	WALL HEATER NO.1	1.2KW	120V	1		1/2"	#12	#12	SEE UNIT PLANS
EH-2	WALL HEATER NO.2	1.5KW	120	1		1/2"	#12	#12	M1-16
EH-3	WALL HEATER NO.3	500W	120	1		1/2"	#12	#12	M1-23
EH-4	WALL HEATER NO.4	3.0KW	208V	1		1/2"	#12	#12	M1-25,27
IHP-1	MINI SPLIT SYST NO.1 (INDOOR)	(A & B)							
OHP-1	MINI SPLIT SYST NO.1 (OUTDOOR)	208	1	42.0 MCA	3/4"	#6	#10		SEE UNIT PLANS
IHP-2	MINI SPLIT SYST NO.2 (INDOOR)	(A & B)							
OHP-2	MINI SPLIT SYST NO.2 (OUTDOOR)	208	1	22.1 MCA	3/4"	#10	#10		SEE UNIT PLANS
RTU-1	AIR HANDLING UNIT NO.1	208	3	41.0MCA	3/4'	#6	#10		M2-1,3,5
RTU-2	AIR HANDLING UNIT NO.2	208	3	41.0 MCA	1/2'	#10	#10		M2-7,9,11
SP-1	SUMP PUMP NO.1	1/2HP	120	1		1/2"	#12	#12	M1-18
RP-1	RECIRC PUMP NO.1	1/2HP	120	1		1/2"	#12	#12	M1-15 (PC)
RP-2	RECIRC PUMP NO.2	1/2HP	120	1		1/2"	#12	#12	M1-15 (PC)
BP-1	BOOSTER PUMP NO.1	(2) 5HP	208	3	28.8 EA.	1"	#4	#10	M1-17,19,21
WH-1	WATER HEATER NO.1 (GAS)		120	1		1/2"	#12	#12	M1-13 (PC)
WH-2	WATER HEATER NO.2 (GAS)		120	1		1/2"	#12	#12	M1-13 (PC)
WH-3	WATER HEATER NO.3 (GAS)		120	1		1/2"	#12	#12	M1-13 (PC)

GENERAL LIGHTING NOTES:

- A. ALL LIGHT FIXTURES SHALL HAVE ENERGY EFFICIENT LAMPING AND BALLASTS.
- B. LIGHT FIXTURES FOR LIVING UNITS SHALL BE "ENERGY STAR" RATED.
- C. VERIFY ALL FIXTURE FINISHES WITH ARCHITECT PRIOR TO BID.
- D. VERIFY ALL FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO BID.
- E. VERIFY ALL FIXTURE LOCATIONS WITH ARCHITECT PRIOR TO ROUGH IN.
- F. ALL INTERIOR LIGHTING SHALL BE 3000 KELVIN UNLESS OTHERWISE NOTED.
- G. ALL PRODUCT SUBSTITUTIONS AND VALUE ENGINEERING SHALL BE SUBMITTED DURING BID PHASE, SHALL MEET DESIGN INTENT AND IS SUBJECT TO OWNER APPROVAL.
- H. EGRESS LIGHTING SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP, EITHER INTEGRAL OR REMOTE, AS REQUIRED. EGRESS LIGHTING SHALL BE PROVIDED TO MEET MINIMUM LIGHT LEVELS AS DESCRIBED PER OREGON STRUCTURAL SPECIALTY CODE 1008 AND NFPA 110.
- I. BUILDING MOUNTED LIGHT FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL AND SHALL ACT AS EGRESS LIGHTING IN THE EVENT OF POWER FAILURE.

KEYED LIGHTING NOTES:

1. PROVIDE REMOTE EMERGENCY BATTERY PACK FOR THE FIXTURES IN THE MAIN LOBBY.

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.

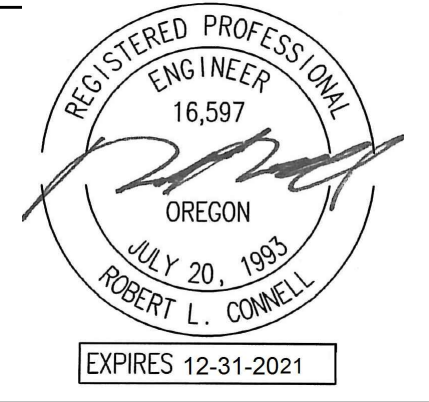
SUSAN EMMONS - NORTH BUILDING
680 NW 18TH AVENUE,
PORTLAND, OR
NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL DETAILS

PROJECT NO.
17004
03/12/2021

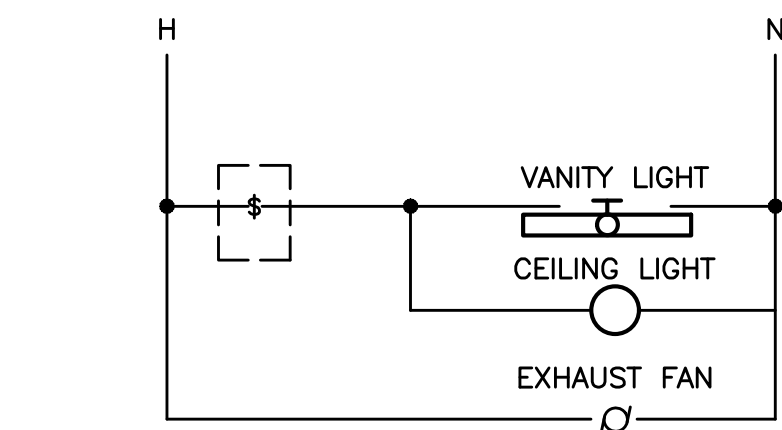
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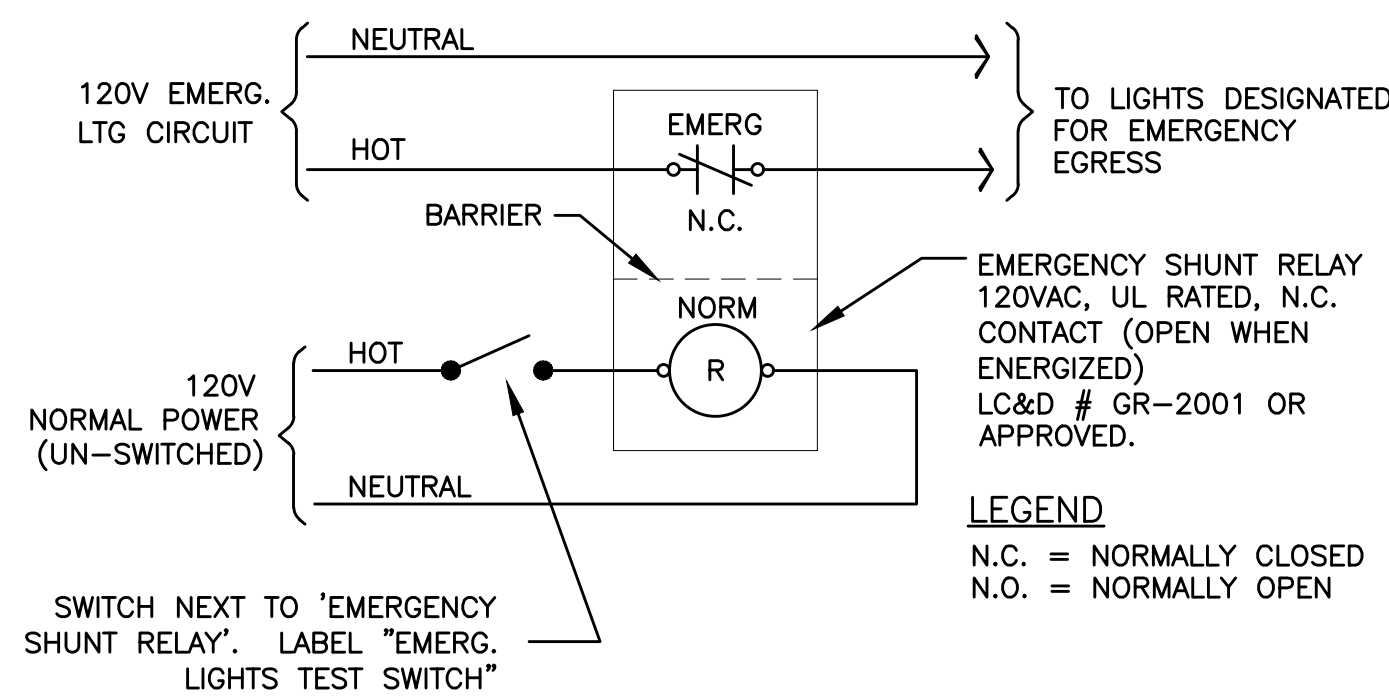


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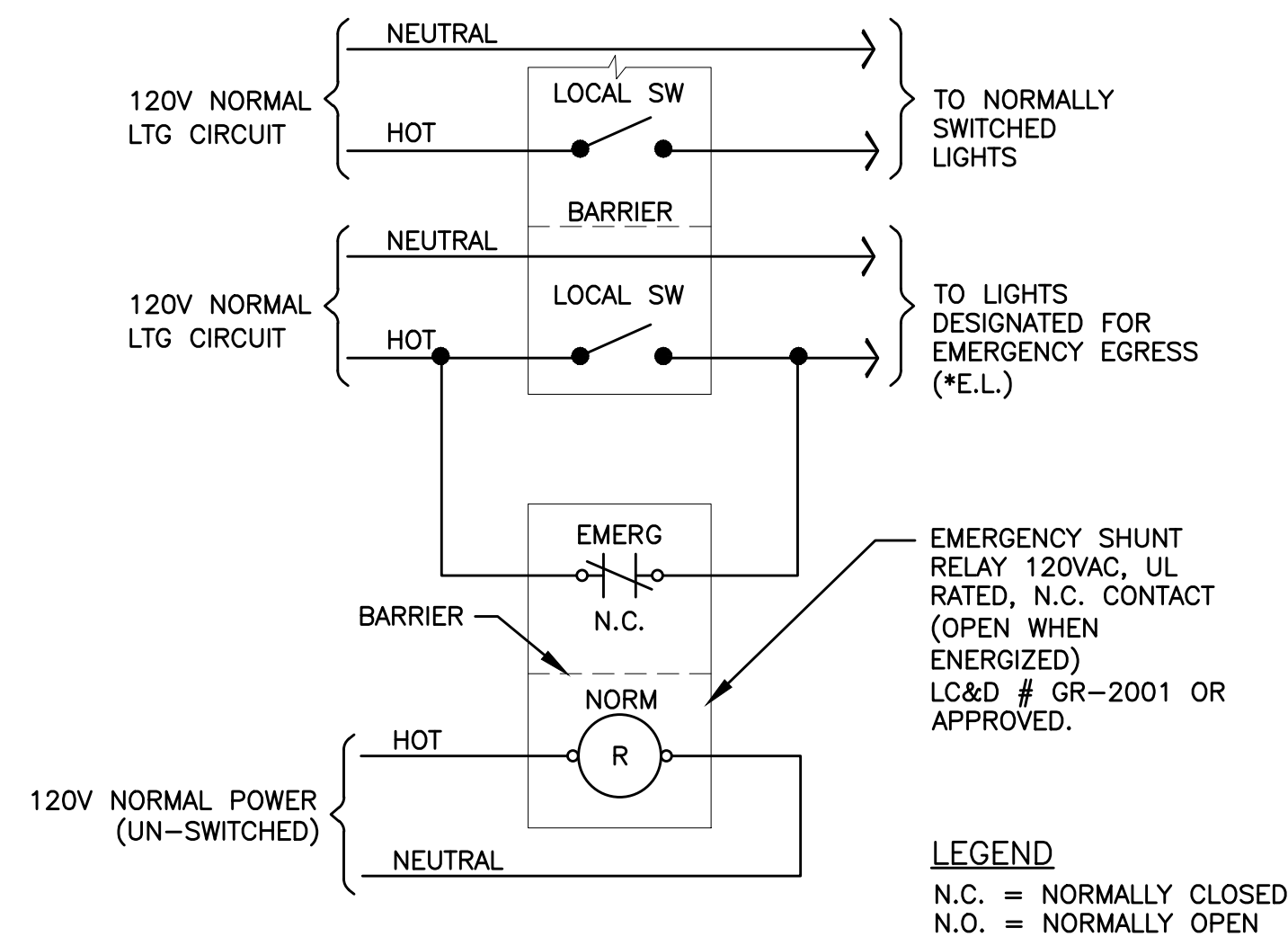


BATHROOM WITH EXHAUST FAN

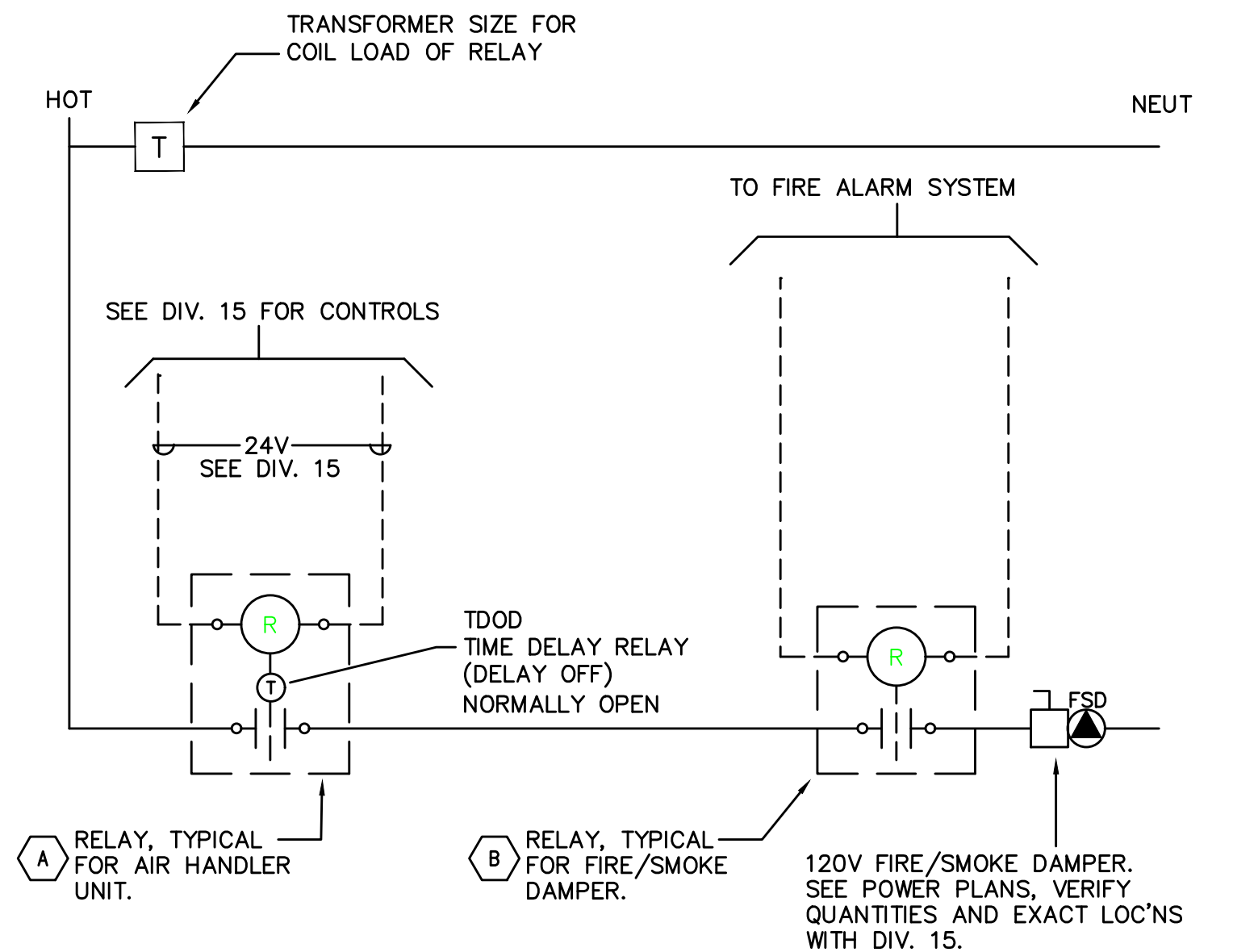
1 BATHROOM SWITCHING DIAGRAM – TYPICAL
E1.15 NO SCALE



2 EMERGENCY EGRESS LIGHTING – UNSWITCHED
E1.15 NO SCALE



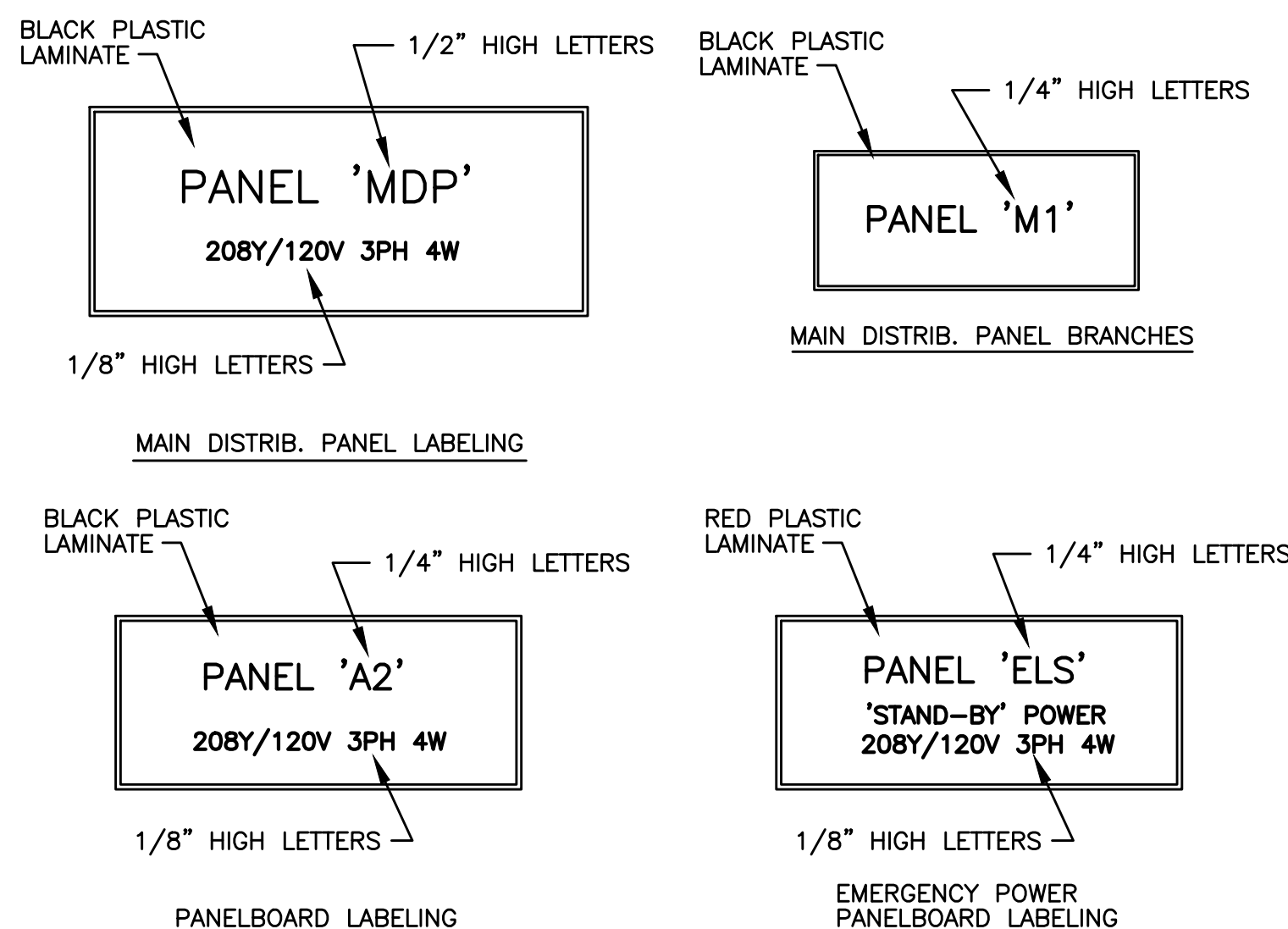
3 EMERGENCY EGRESS LIGHTING – SWITCHED
E1.15 NO SCALE



5 SMOKE/FIRE DAMPER CONTROL DIAGRAM
E1.15 NO SCALE

ADDRESSABLE DETECTOR CONTROL

- A RELAY TO BE "NORMALLY OPEN". TDOD (TIME DELAY ON DE-ENERGIZE) SET FOR 15 SECONDS. RELAY TO CLOSE UPON SIGNAL FROM HVAC CONTROL SYSTEM (ALLOWS DAMPER TO OPEN). 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.



6 SWITCHBOARD/PANEL LABELING DETAIL
E1.15 NO SCALE

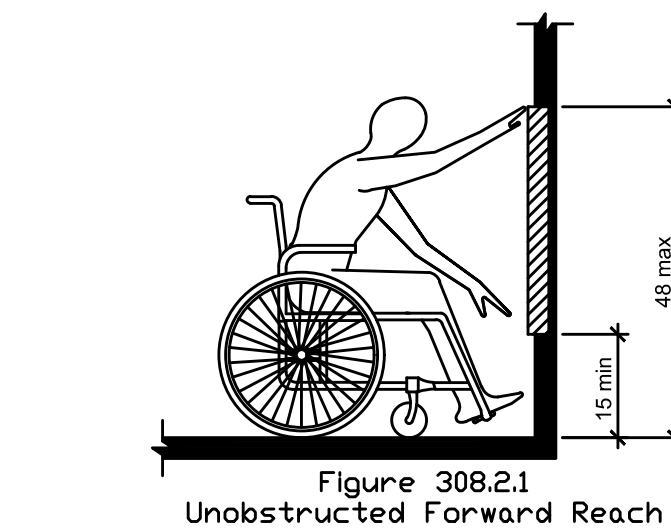


Figure 308.2.1
Unobstructed Forward Reach

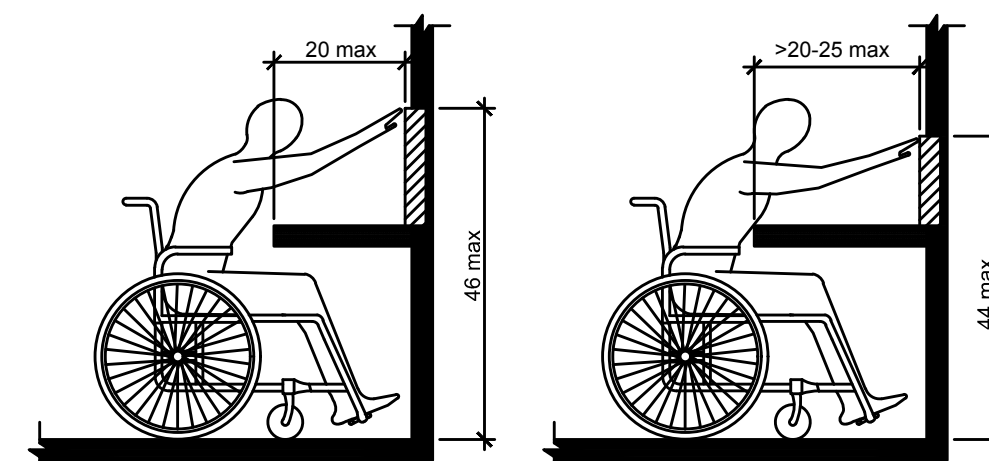


Figure 308.2.2
Obstructed High Forward Reach

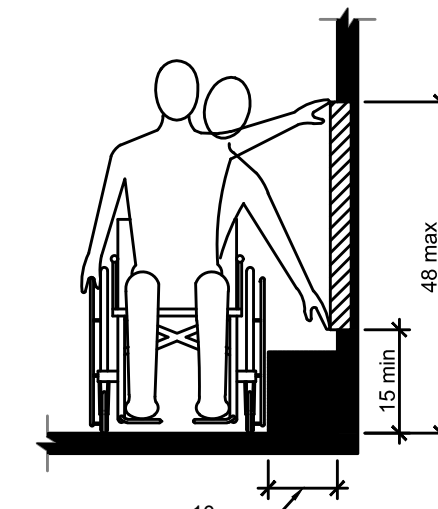


Figure 308.3.1
Unobstructed Side Reach

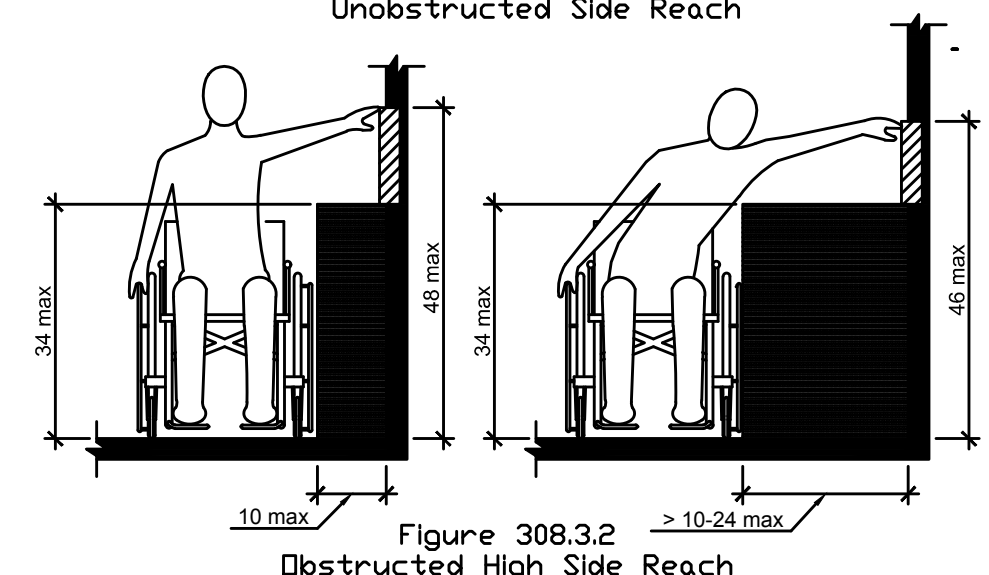


Figure 308.3.2
Obstructed High Side Reach

7 ADA REACH REQUIREMENTS
E1.15 N.T.S.

308.2 Forward Reach.

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

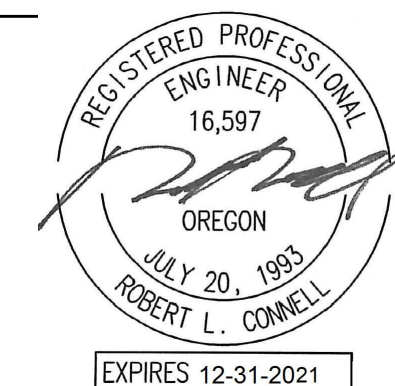
308.2.2 **Obstructed High Reach.** Where a high forward reach is over an obstruction, the clear floor or ground space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48" maximum where the reach depth is 20" maximum. Where the reach depth exceeds 20", the high forward reach shall be 44" maximum and the reach depth shall be 25" maximum.

308.3 Side Reach.

308.3.1 **Unobstructed.** Where a clear floor or ground space allows a parallel approach to 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 ground.
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 parallel approach to an object and the high side reach is over an obstruction, the height of the obstruction shall be 34" maximum and the depth of the obstruction shall 24" 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 46" maximum for a reach depth of 24" maximum.

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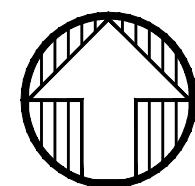
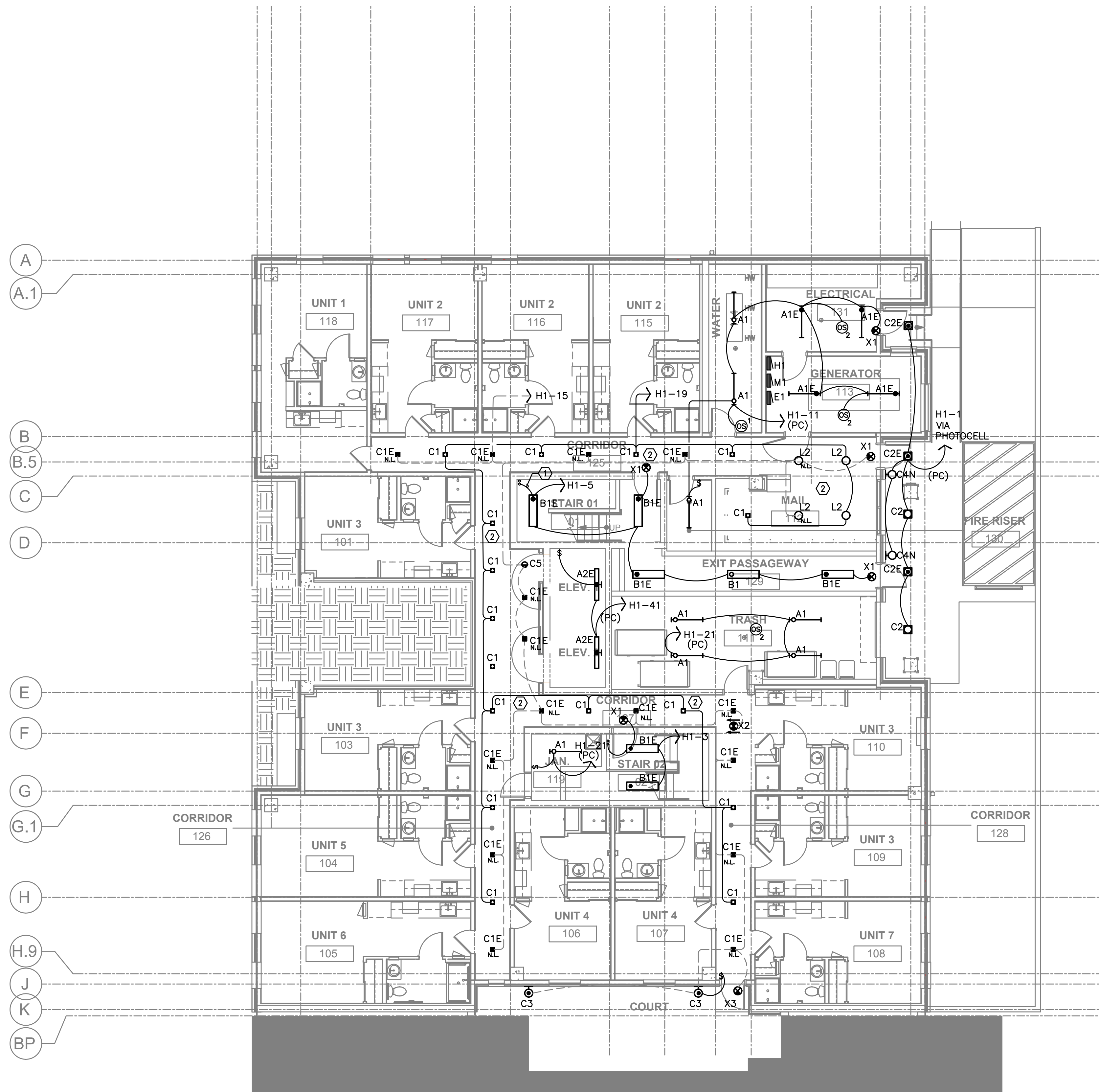
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PORTLAND, OR
NORTHWEST HOUSING ALTERNATIVES

BID SET

ELECTRICAL DETAILS
PROJECT NO.
17004
03/12/2021

REVISIONS: A

E1.15



1
E2.01

FIRST FLOOR LIGHTING PLAN

SCALE: 1/8" = 1'-0"

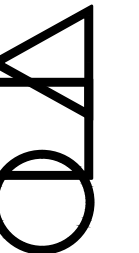
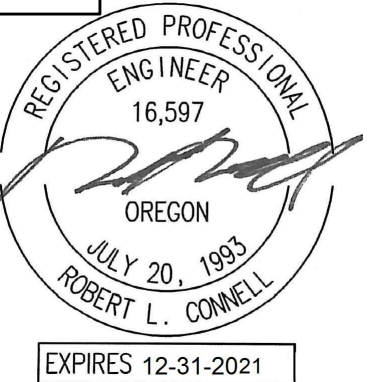
GENERAL LIGHTING NOTES:

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KEYED NOTES:

- CONTINUE CIRCUIT UP THROUGH THE STAIRWELL.
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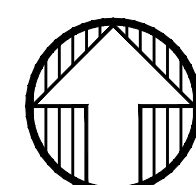
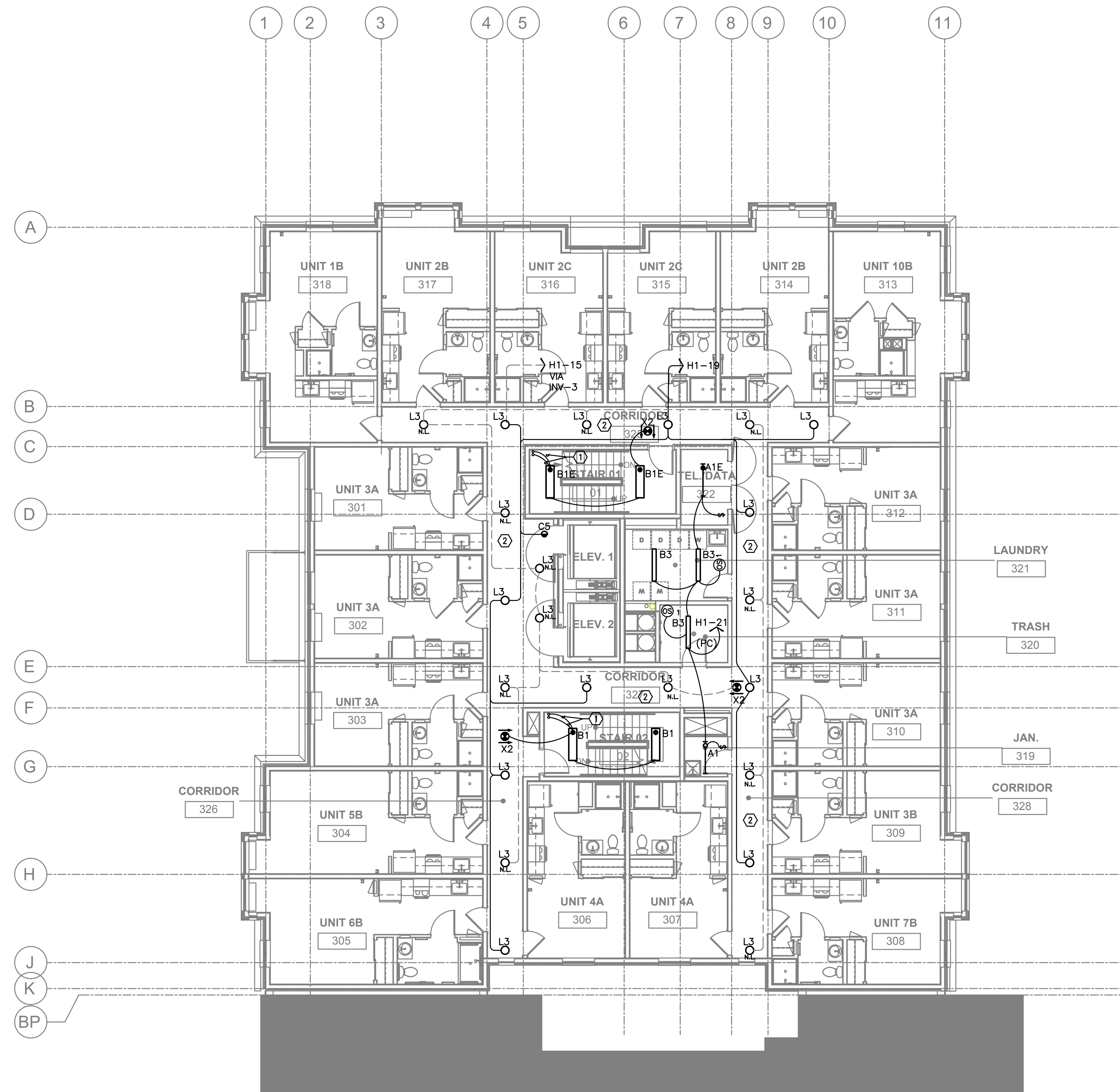
FIRST FLOOR
LIGHTING PLAN

PROJECT NO.
17004
03/12/2021

REVISIONS:

E2.01

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1 THIRD FLOOR LIGHTING PLAN
E2.03 SCALE: 1/8" = 1'-0"

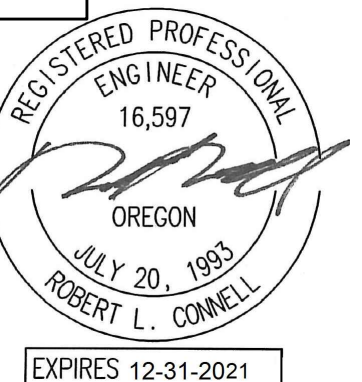
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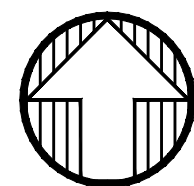
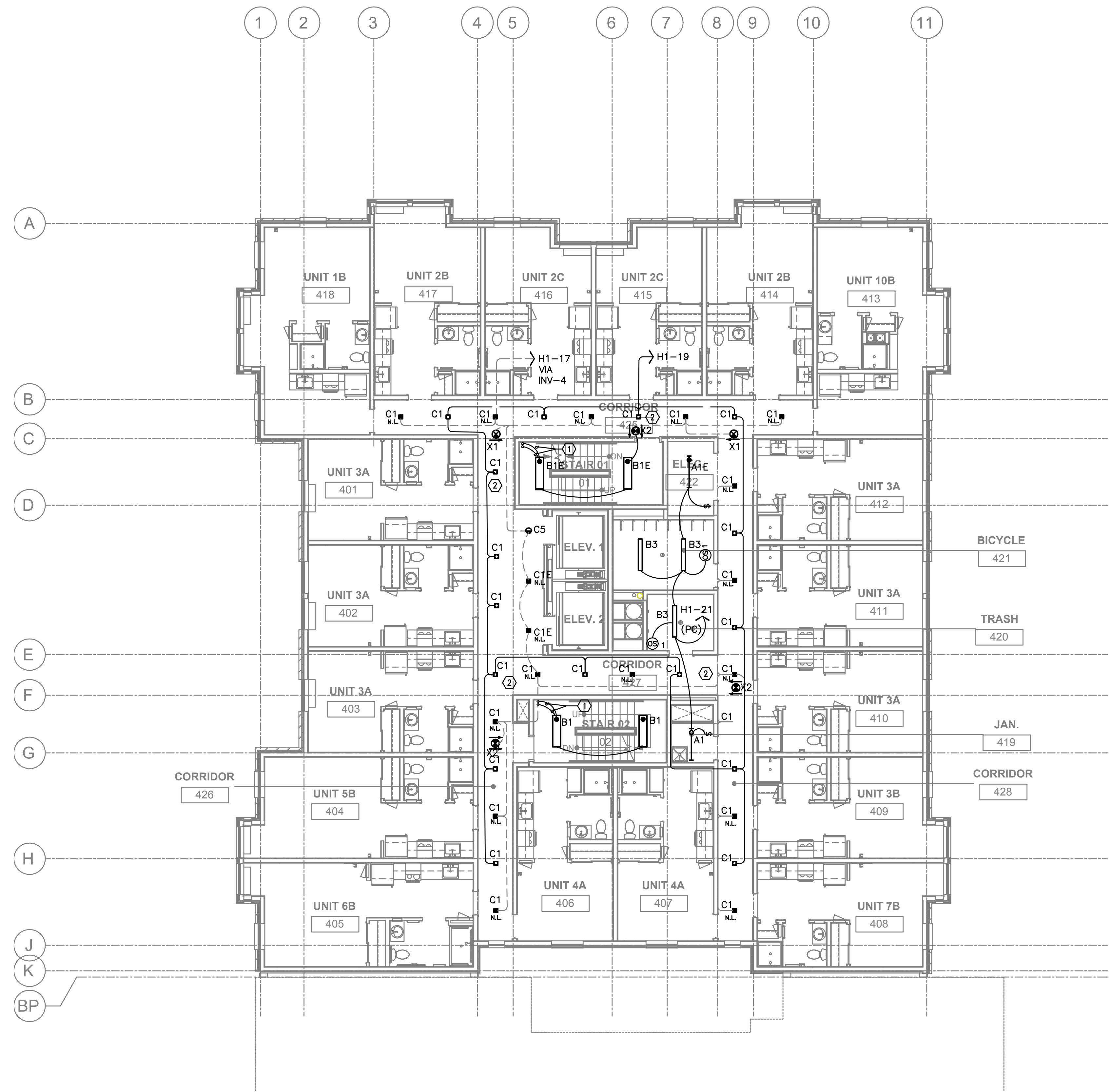
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THIRD FLOOR
LIGHTING PLAN

PROJECT NO.
17004
03/12/2021

REVISIONS: A



1
E2.04

FOURTH FLOOR LIGHTING PLAN

SCALE: 1/8" = 1'-0"

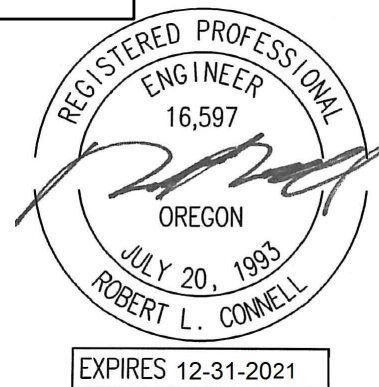
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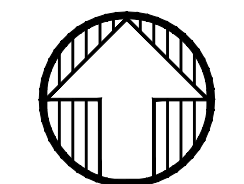
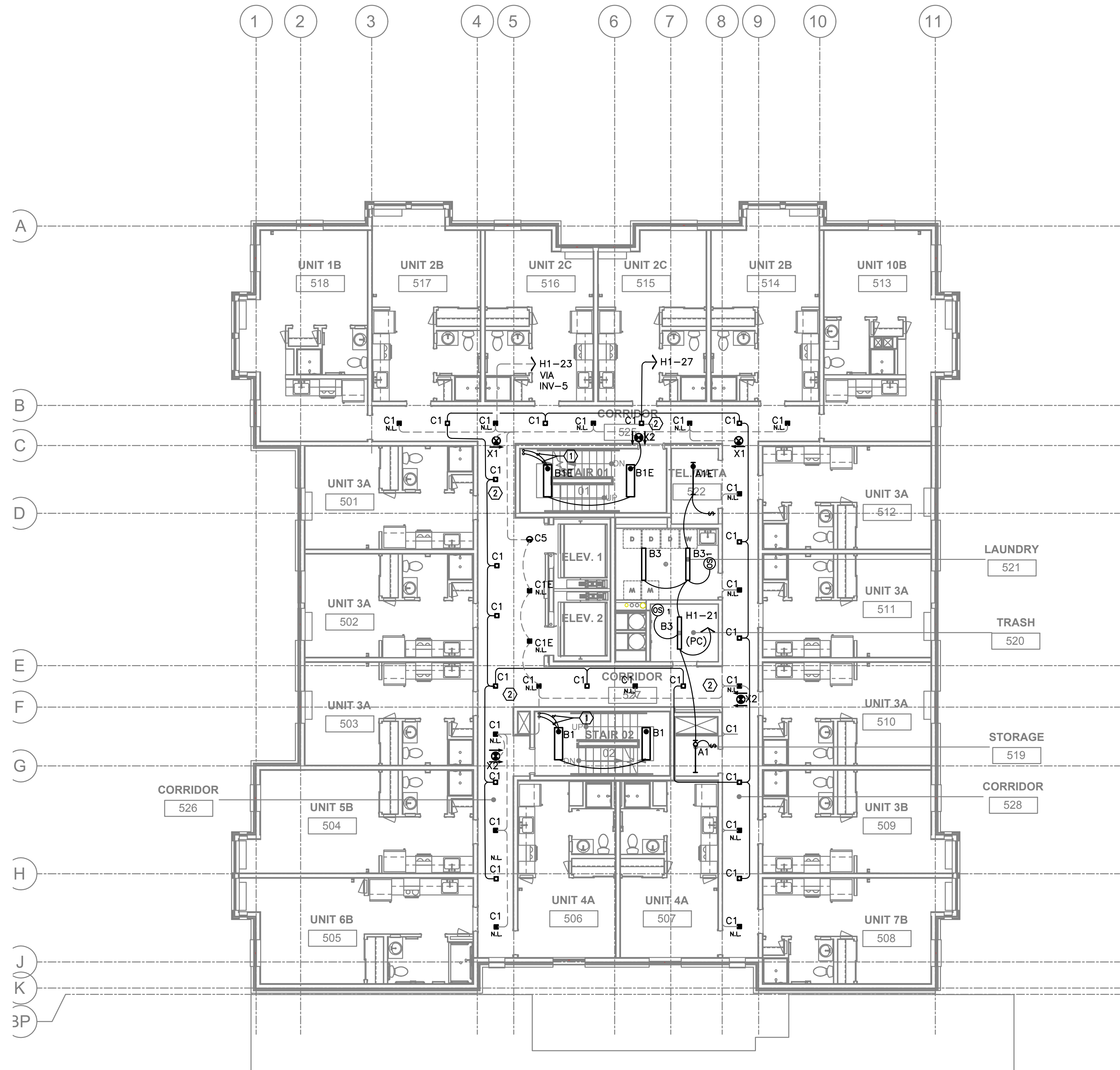


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FOURTH FLOOR
LIGHTING PLAN
PROJECT NO.
17004
03/12/2021
REVISIONS: A

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1 FIFTH FLOOR LIGHTING PLAN
E2.05 SCALE: 1/8" = 1'-0"

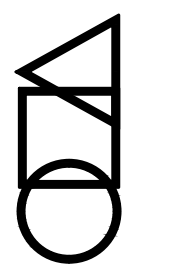
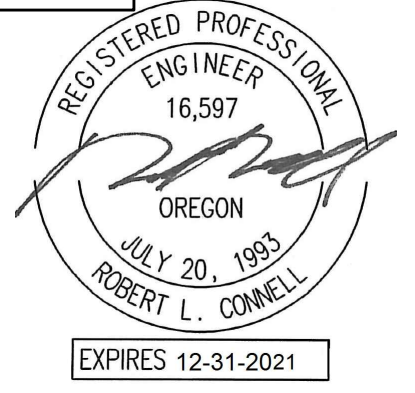
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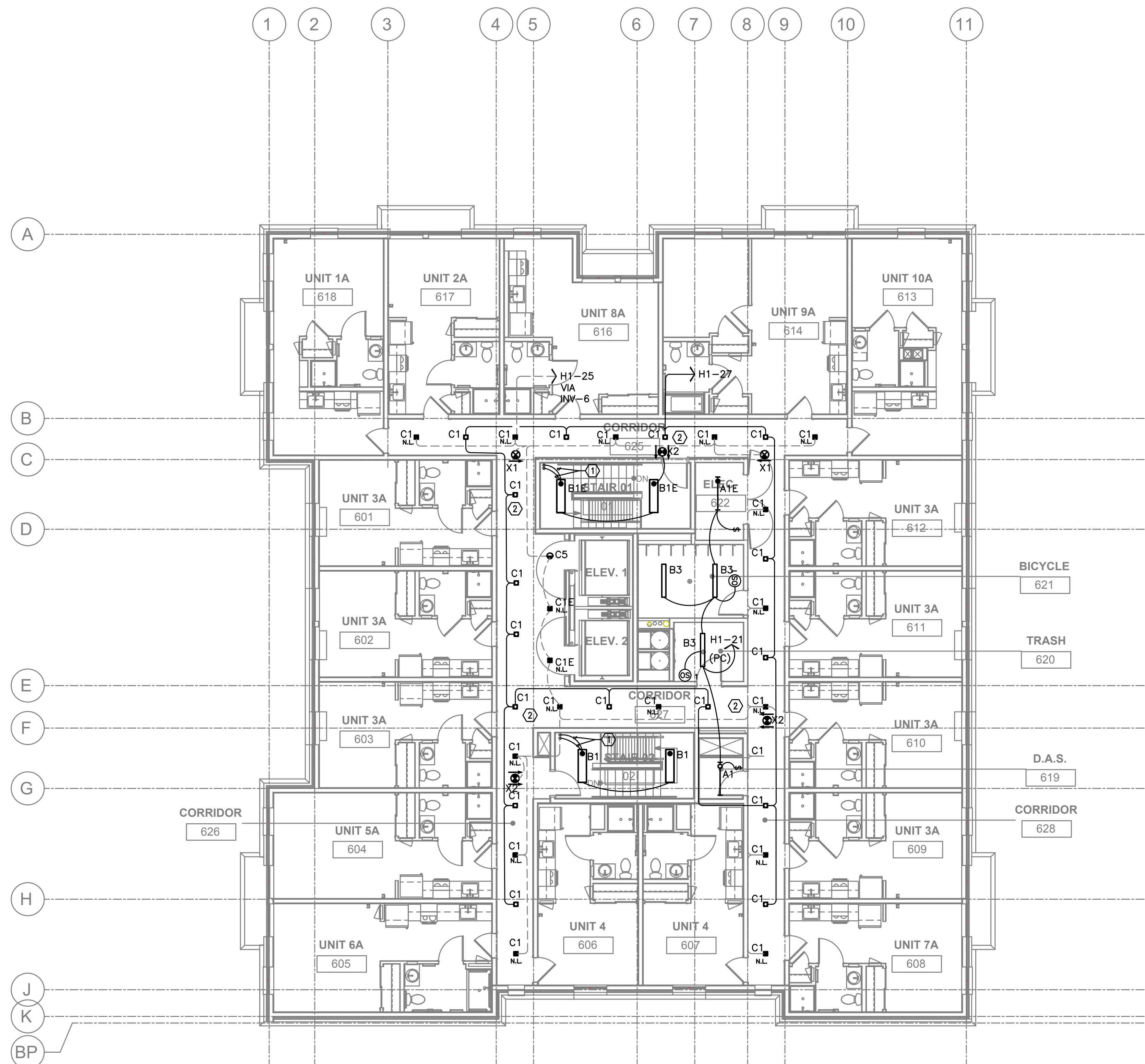
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BID SET

FIFTH FLOOR
LIGHTING PLAN
PROJECT NO.
17004
03/12/2021

REVISIONS: A

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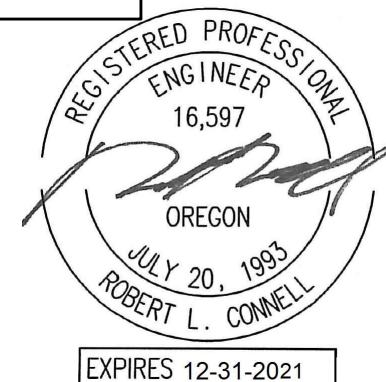
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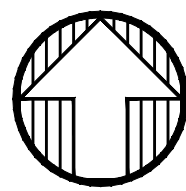
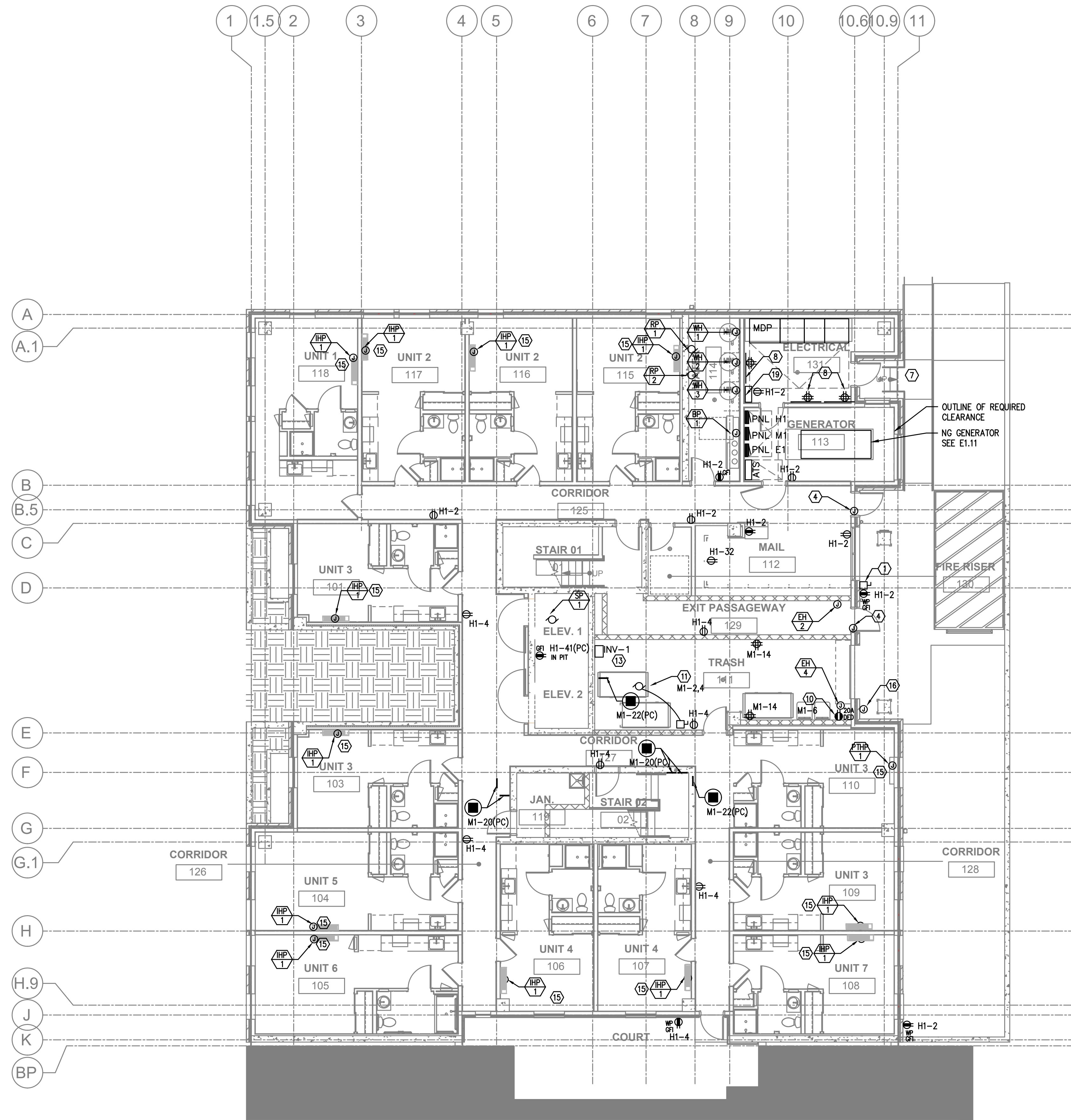
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BID SET

SIXTH FLOOR
LIGHTING PLAN

PROJECT NO.
17004
03/12/2021

REVISIONS:

E2.06



1 FIRST FLOOR POWER PLAN
E3.01 SCALE: 1/8" = 1'-0"

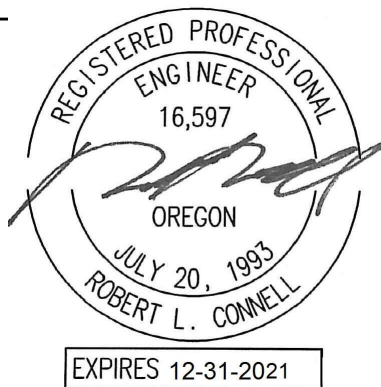
GENERAL POWER NOTES:

- A. ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.
- B. ELECTRICAL CONTRACTOR TO PROVIDE THERMOSTATS NOT SUPPLIED BY MECHANICAL CONTRACTOR. CONSULT MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- C. ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN.
- D. REFER TO INTERIOR DECORATOR AND/OR ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATION(S) AND ELEVATIONS OF FIXTURES & DEVICES. OTHER DEVICES SHOWN ON THE ELECTRICAL PLANS AND NOT INDICATED ON THE DECORATOR'S OR ARCHITECT'S DRAWINGS, SHALL BE INSTALLED AT STANDARD MOUNTING HEIGHT AS INDICATED THE SYMBOL LIST.
- E. REFER TO ENLARGED TYPICAL UNIT PLANS (E4 SERIES SHEETS) FOR TYPICAL POWER & LIGHTING LAYOUTS FOR THE APARTMENT UNITS.
- F. ELECTRICAL EQUIPMENT SHOWN IN THE ELECTRICAL ROOMS IS APPROXIMATE, BASED ON TYPICAL PRODUCTS. CONTRACTOR SHALL VERIFY ANY SUBMITTED EQUIPMENT WILL FIT WITHIN THE SPACE PROVIDED, PRIOR TO PRODUCT SUBMITTAL REVIEW.
- G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LOW VOLTAGE ('T' SERIES) PLANS, INCLUDING FIRE ALARM AND SYSTEMS INSTALLER, AND PROVIDE ROUGH IN AS NEEDED.
- H. GENERAL PURPOSE CONVENIENCE RECEPTACLES LOCATED ON THE BUILDING EXTERIOR, OTHER THAN INTERIOR COURT YARD, SHALL BE EQUIPPED WITH A LOCKING, WEATHER PROOF COVER.

KEYED NOTES:

- 1. GENERATOR DISCONNECT. SEE ONE-LINE DIAGRAM ON SHEET E1.11.
- 2. PROVIDE ONE 20A, 120V, 1P CIRCUIT FOR GENERATOR REMOTE ANNUNCIATOR. FED FROM PANEL E1.
- 3. PROVIDE ONE 20A,120V, 1P POWER CONNECTION FOR BUILDING SIGNS. CIRCUIT AS INDICATED VIA TIME CLOCK. MOUNT JUNCTION BOX TIGHT TO CEILING (AT BUILDING INTERIOR), COORDINATING EXACT LOCATION WITH SIGN INSTALLER'S SLEEVE AND PER ARCHITECT'S DIRECTION.
- 4. PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR BUILDING ENTRY ACCESS CONTROL SYSTEM AND PROVIDE ROUGH IN AND WIRING TO ACCESS POINTS LOCATED ON PLANS. CONSULT WITH LOW VOLTAGE SYSTEMS INSTALLER AND THE 'T' SERIES SHEETS FOR ADDITIONAL INFORMATION.
- 5. VERIFY ELEVATOR EQUIPMENT LOCATION AND ELECTRICAL REQUIREMENTS WITH ARCHITECT AND/OR ELEVATOR PROVIDER.
- 6. PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR AUTOMATIC DOOR OPENERS.
- 7. ELECTRICAL SERVICE METER ROOMS SHALL HAVE OUTWARD SWING DOORS EQUIPPED WITH PANIC HARDWARE. PROVIDE A KEY BOX AT THE EXTERIOR FOR ELECTRICAL UTILITIES' 24/7 ACCESS.
- 8. 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, AND PROVIDE ROUGH IN AND/OR FINAL ELECTRICAL POWER CONNECTIONS & DEVICES. REFER PANEL 'H1' SCHEDULE ON E1.12 FOR CIRCUITS.
- 9. DEDICATED POWER FOR WHEELCHAIR LIFT. VERIFY EXACT REQUIREMENTS WITH MANUFACTURER/INSTALLER PRIOR TO ROUGH IN.
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- 11. PROVIDE ONE 30A, 208V, 1PH ELECTRICAL CIRCUIT FOR TRASH COMPACTOR. FEED FROM PANEL M1.
- 12. DEDICATED 20A, 120V RECEPTACLE FOR ELECTRIC BIKE CHARGING.
- 13. EMERGENCY LIGHTING INVERTER. EVENLITE LM 535, 120V, 1P, OR APPROVED OTHER. REFER TO PANEL H1 FOR CIRCUITING.
- 14. CONTINUOUS OPERATION EXHAUST FAN TO BE TIED INTO THE LIGHTING CIRCUIT FOR THIS AREA. AHEAD OF THE LIGHTING CONTROLS. CONSULT MECHANICAL PLANS AND/OR EQUIPMENT INSTALLER FOR EXACT POWER REQUIREMENTS PRIOR TO ROUGH IN.
- 15. REFER TO TYPICAL UNIT PLANS ON THE E4 SERIES SHEETS FOR ADDITIONAL INFORMATION REGARDING THE HVAC EQUIPMENT LOCATIONS AND CIRCUITING. COORDINATE WITH MECHANICAL INSTALLER.
- 16. COORDINATE WITH LANDSCAPE DESIGNER/INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS OF ANY IRRIGATION CONTROLLER. PROVIDE POWER CONNECTION FROM PANEL 'M1' AND SLEEVE TO GRADE.
- 17. PROVIDE ALL CIRCUITING FOR LAUNDRY MACHINES FROM PANEL 'L1'.
- 18. ROOF TOP GFCI RECEPTACLES TO BE PROVIDED WITHIN A 25FT RADIUS OF ALL MECHANICAL EQUIPMENT PER CODE. LOCATIONS SHOWN REPRESENT THIS. FINAL LOCATION(S) SHALL BE FIELD DETERMINED AND INSTALLED PER CODE.
- 19. REFER TO 'T' SERIES SHEETS AND COORDINATE POWER REQUIREMENTS FOR THE FACP PANEL AND DEMARCATION BOARDS.
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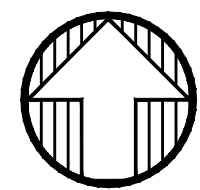
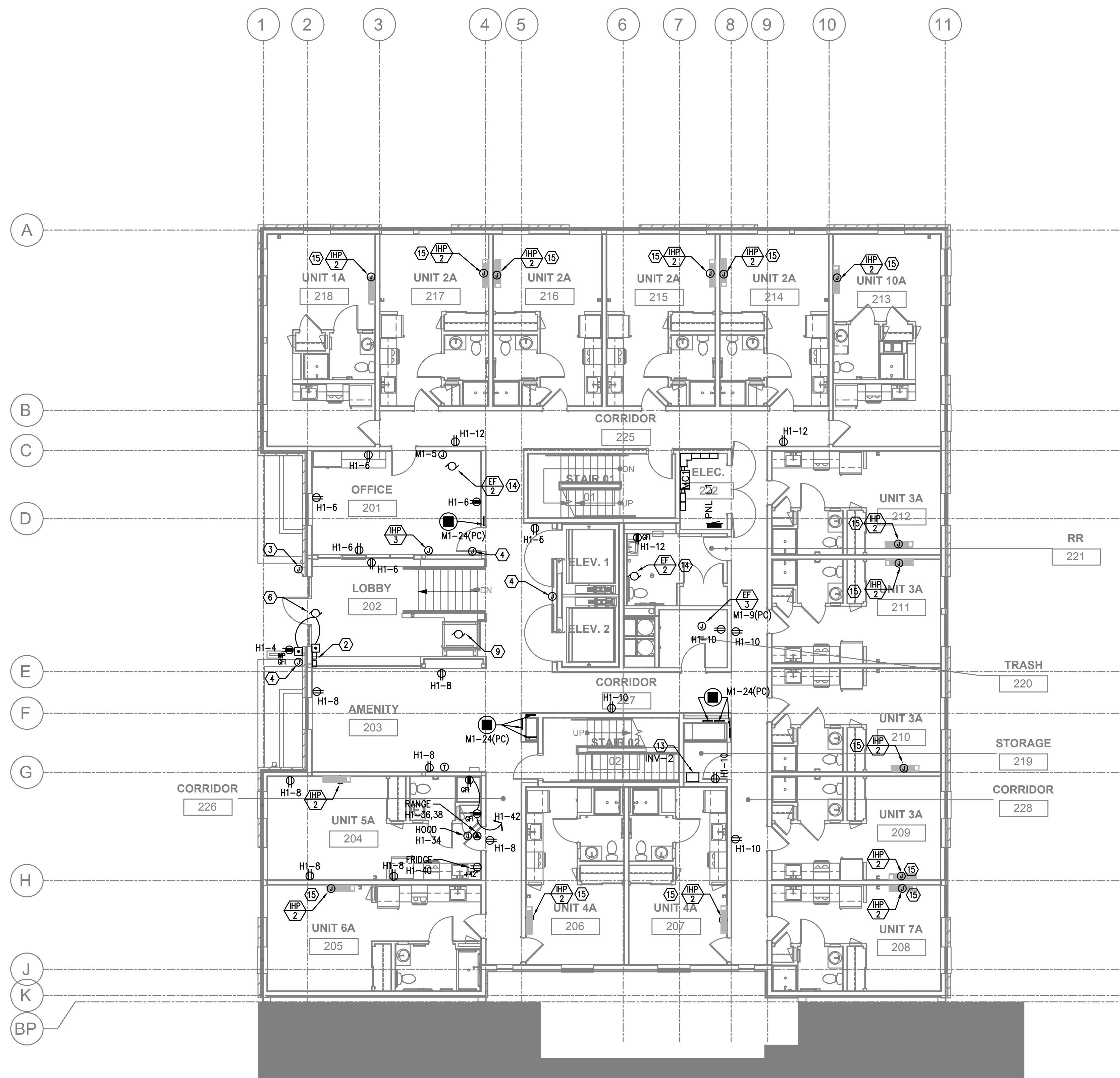
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BID SET

FIRST FLOOR
POWER PLAN
PROJECT NO.
17004
03/12/2021
REVISIONS: A



1
E3.02

SECOND FLOOR POWER PLAN

SCALE: 1/8" = 1'-0"

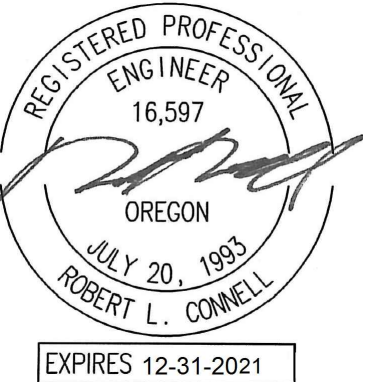
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- REFER TO ENLARGED TYPICAL UNIT PLANS (E4 SERIES SHEETS) FOR TYPICAL POWER & LIGHTING LAYOUTS FOR THE APARTMENT UNITS.
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KEYED NOTES:

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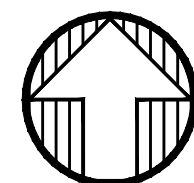
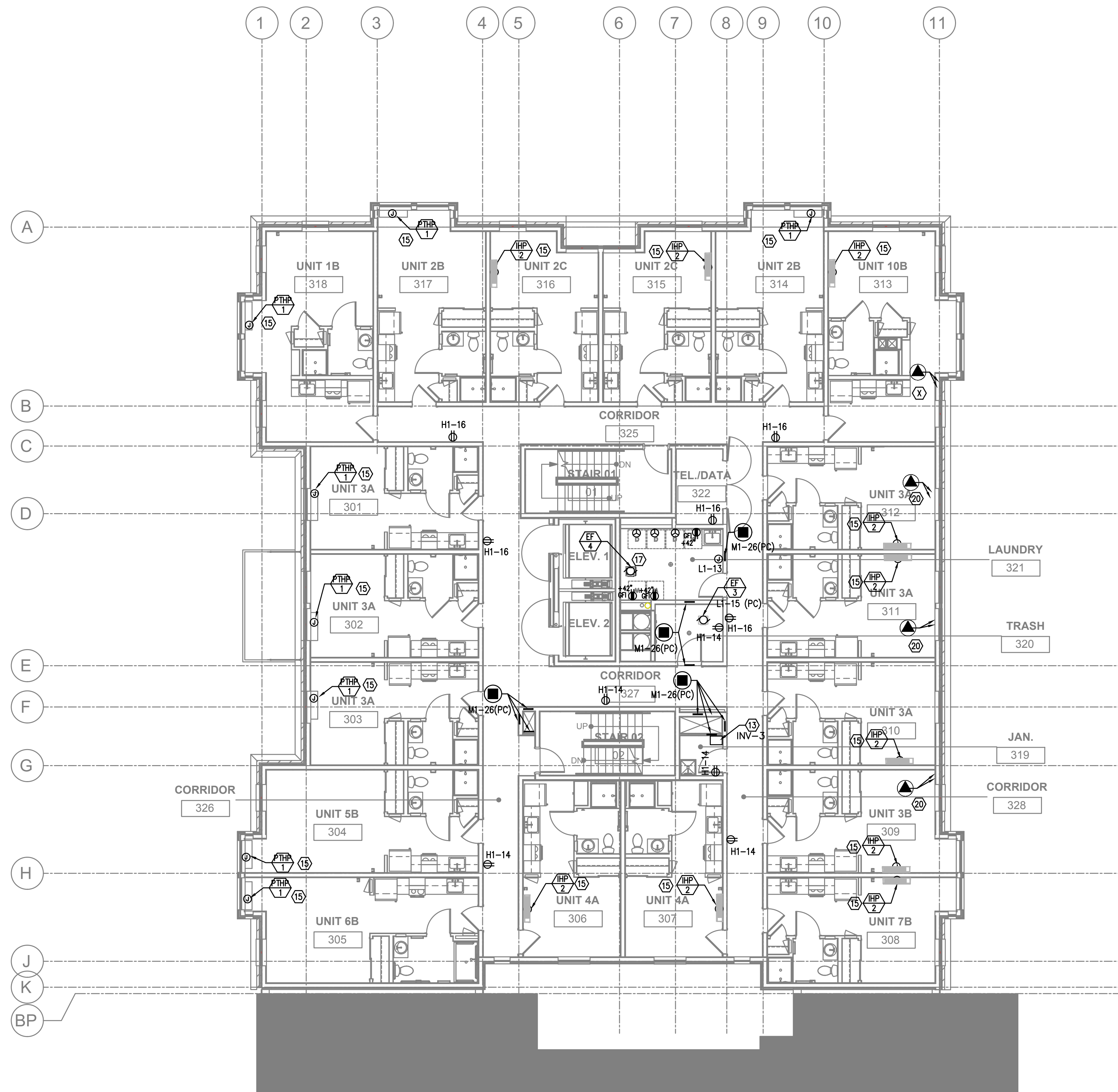
SECOND FLOOR
POWER PLAN

PROJECT NO.
17004

03/12/2021

REVISIONS: A

E3.02



1 THIRD FLOOR POWER PLAN
E3.03 SCALE: 1/8" = 1'-0"

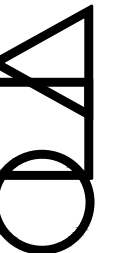
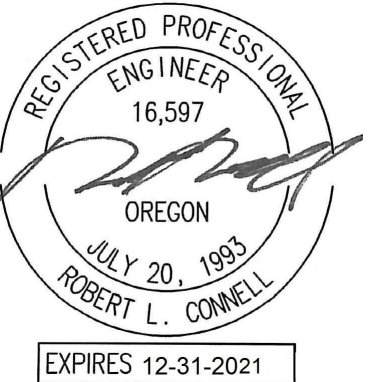
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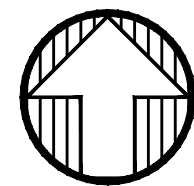
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THIRD FLOOR
POWER PLAN

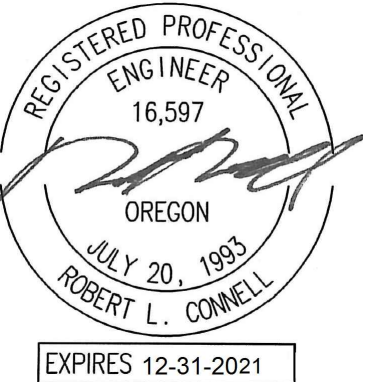
PROJECT NO.
17004
03/12/2021

REVISIONS: A

E3.03



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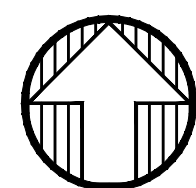
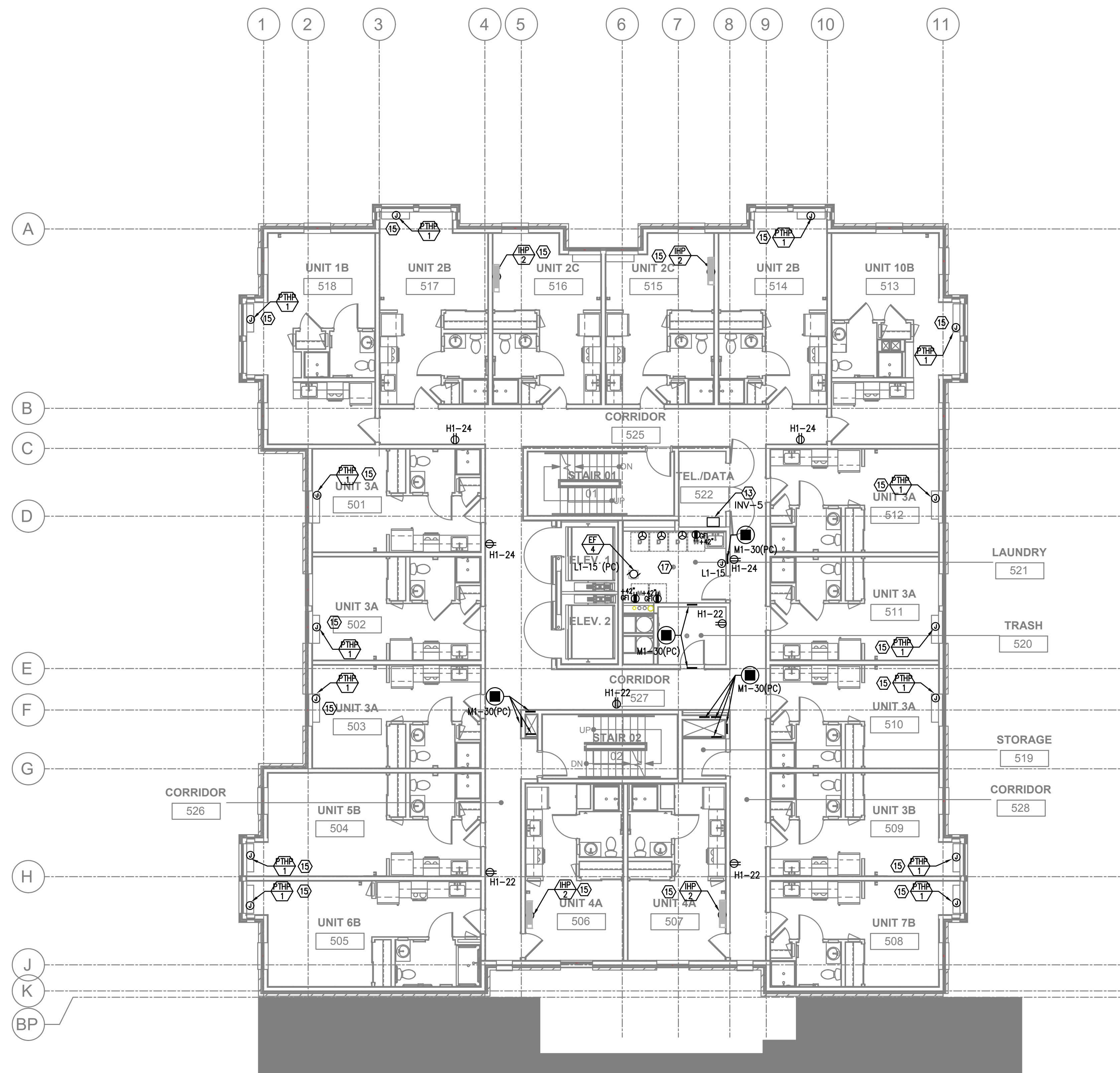
FOURTH FLOOR POWER PLAN

PROJECT NO.
17004
3/12/2021

REVISIONS:

#

E3.04



1 FIFTH FLOOR POWER PLAN
E3.05 SCALE: 1/8" = 1'-0"

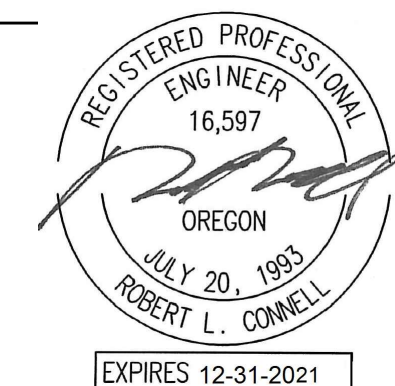
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- DEDICATED 20A, 120V RECEPTACLE FOR ELECTRIC BIKE CHARGING.
- EMERGENCY LIGHTING INVERTER, EVENLITE LM 535, 120V, 1P, OR APPROVED OTHER. REFER TO PANEL H1 FOR CIRCUITING.
- CONTINUOUS OPERATION EXHAUST FAN TO BE TIED INTO THE LIGHTING CIRCUIT FOR THIS AREA, AHEAD OF THE LIGHTING CONTROLS. CONSULT MECHANICAL PLANS AND/OR EQUIPMENT INSTALLER FOR EXACT POWER REQUIREMENTS PRIOR TO ROUGH IN.
- REFER TO TYPICAL UNIT PLANS ON THE E4 SERIES SHEETS FOR ADDITIONAL INFORMATION REGARDING THE HVAC EQUIPMENT LOCATIONS AND CIRCUITING. COORDINATE WITH MECHANICAL INSTALLER.
- COORDINATE WITH LANDSCAPE DESIGNER/INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS OF ANY IRRIGATION CONTROLLER. PROVIDE POWER CONNECTION FROM PANEL 'M1' AND SLEEVE TO GRADE.
- PROVIDE ALL CIRCUITING FOR LAUNDRY MACHINES FROM PANEL 'L1'.
- ROOF TOP GFCI RECEPTACLES TO BE PROVIDED WITHIN A 25FT RADIUS OF ALL MECHANICAL EQUIPMENT PER CODE. LOCATIONS SHOWN REPRESENT THIS. FINAL LOCATION(S) SHALL BE FIELD DETERMINED AND INSTALLED PER CODE.
- REFER TO 'T' SERIES SHEETS AND COORDINATE POWER REQUIREMENTS FOR THE FACP PANEL AND DEMARCATION BOARDS.
- ELECTRICAL CONTRACTOR TO CONSULT THE MECHANICAL PLANS AND COORDINATE WITH THE MECHANICAL INSTALLER FOR ANY POWER CONNECTIONS NEEDED FOR DAMPERS. PROVIDE ANY ROUGH IN AND/OR FINAL ELECTRICAL CONNECTIONS.

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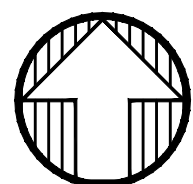
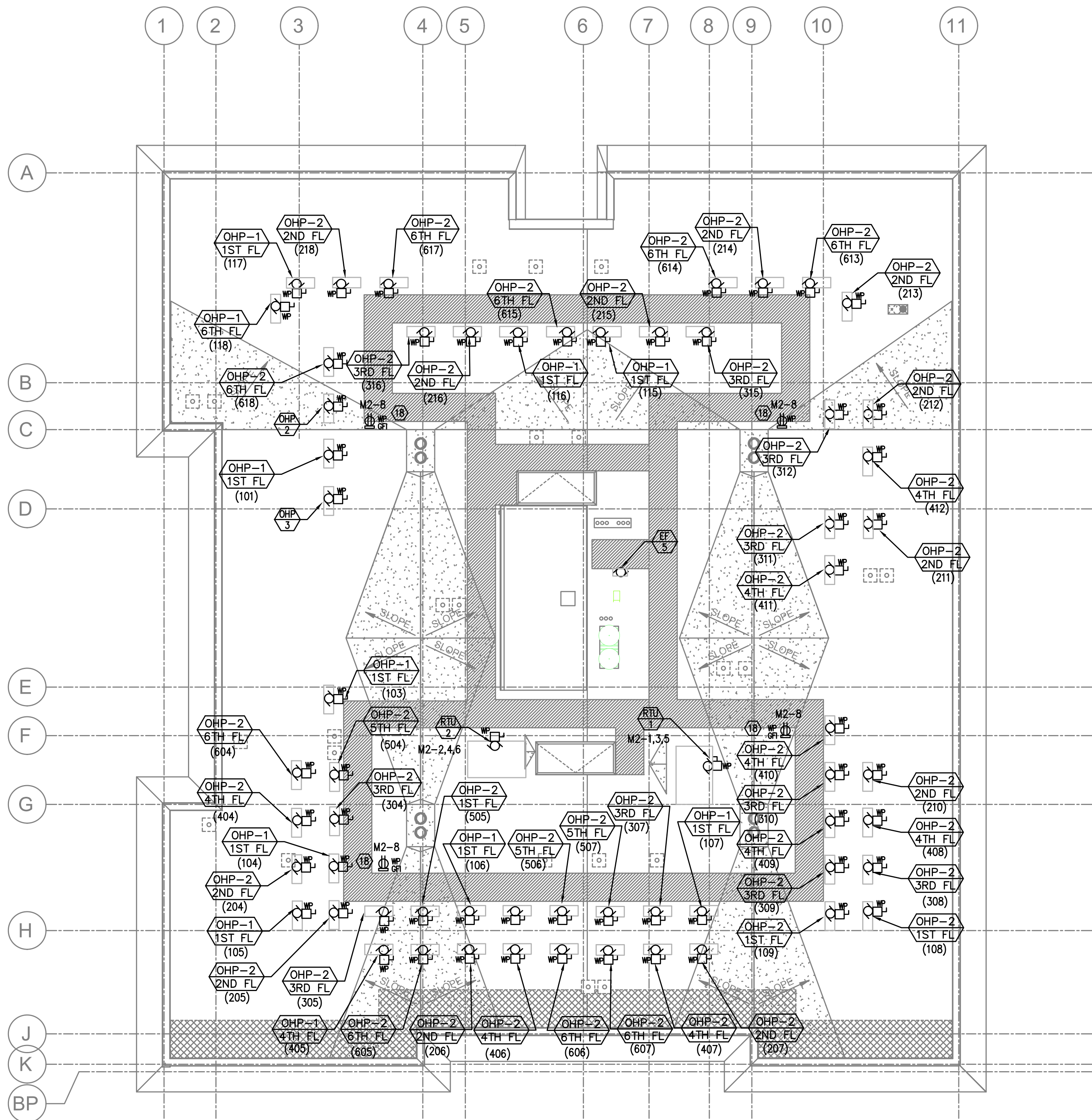
FIFTH FLOOR
POWER PLAN

PROJECT NO.
17004

03/12/2021

REVISIONS: A

E3.05



1 ROOF LEVEL POWER PLAN
E3.07 SCALE: 1/8" = 1'-0"

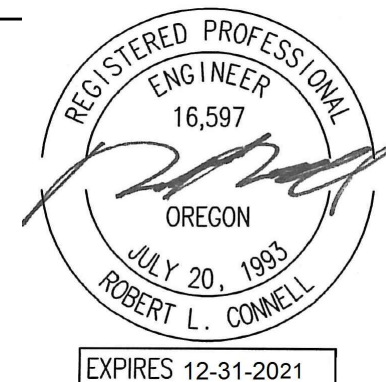
GENERAL POWER NOTES:

- ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.
- ELECTRICAL CONTRACTOR TO PROVIDE THERMOSTATS NOT SUPPLIED BY MECHANICAL CONTRACTOR. CONSULT MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN.
- REFER TO INTERIOR DECORATOR AND/OR ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATION(S) AND ELEVATIONS OF FIXTURES & DEVICES. OTHER DEVICES SHOWN ON THE ELECTRICAL PLANS AND NOT INDICATED ON THE DECORATOR'S OR ARCHITECT'S DRAWINGS, SHALL BE INSTALLED AT STANDARD MOUNTING HEIGHT AS INDICATED THE SYMBOL LIST.
- REFER TO ENLARGED TYPICAL UNIT PLANS (E4 SERIES SHEETS) FOR TYPICAL POWER & LIGHTING LAYOUTS FOR THE APARTMENT UNITS.
- ELECTRICAL EQUIPMENT SHOWN IN THE ELECTRICAL ROOMS IS APPROXIMATE, BASED ON TYPICAL PRODUCTS. CONTRACTOR SHALL VERIFY ANY SUBMITTED EQUIPMENT WILL FIT WITHIN THE SPACE PROVIDED, PRIOR TO PRODUCT SUBMITTAL REVIEW.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LOW VOLTAGE ('T' SERIES) PLANS, INCLUDING FIRE ALARM AND SYSTEMS INSTALLER, AND PROVIDE ROUGH IN AS NEEDED.
- GENERAL PURPOSE CONVENIENCE RECEPTACLES LOCATED ON THE BUILDING EXTERIOR, OTHER THAN INTERIOR COURT YARD, SHALL BE EQUIPPED WITH A LOCKING, WEATHER PROOF COVER.

KEYED NOTES:

- GENERATOR DISCONNECT. SEE ONE-LINE DIAGRAM ON SHEET E1.11.
- PROVIDE ONE 20A, 120V, 1P CIRCUIT FOR GENERATOR REMOTE ANNUNCIATOR. FED FROM PANEL E1.
- PROVIDE ONE 20A, 120V, 1P POWER CONNECTION FOR BUILDING SIGNS. CIRCUIT AS INDICATED VIA TIME CLOCK. MOUNT JUNCTION BOX TIGHT TO CEILING (AT BUILDING INTERIOR), COORDINATING EXACT LOCATION WITH SIGN INSTALLER'S SLEEVE AND PER ARCHITECT'S DIRECTION.
- PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR BUILDING ENTRY ACCESS CONTROL SYSTEM AND PROVIDE ROUGH IN AND WIRING TO ACCESS POINTS LOCATED ON PLANS. CONSULT WITH LOW VOLTAGE SYSTEMS INSTALLER AND THE 'T' SERIES SHEETS FOR ADDITIONAL INFORMATION.
- VERIFY ELEVATOR EQUIPMENT LOCATION AND ELECTRICAL REQUIREMENTS WITH ARCHITECT AND/OR ELEVATOR PROVIDER.
- PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR AUTOMATIC DOOR OPENERS.
- ELECTRICAL SERVICE METER ROOMS SHALL HAVE OUTWARD SWING DOORS EQUIPPED WITH PANIC HARDWARE. PROVIDE A KEY BOX AT THE EXTERIOR FOR ELECTRICAL UTILITIES' 24/7 ACCESS.
- 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, AND PROVIDE ROUGH IN AND/OR FINAL ELECTRICAL POWER CONNECTIONS & DEVICES. REFER PANEL 'H1' SCHEDULE ON E1.12 FOR CIRCUITS.
- DEDICATED POWER FOR WHEELCHAIR LIFT. VERIFY EXACT REQUIREMENTS WITH MANUFACTURER/INSTALLER PRIOR TO ROUGH IN.
- DEDICATED 20A, 120V RECEPTACLE FOR PALLET JACK CHARGING.
- PROVIDE ONE 30A, 208V, 1PH ELECTRICAL CIRCUIT FOR TRASH COMPACTOR. FEED FROM PANEL M1.
- DEDICATED 20A, 120V RECEPTACLE FOR ELECTRIC BIKE CHARGING.
- EMERGENCY LIGHTING INVERTER, EVENLITE LM 535, 120V, 1P, OR APPROVED OTHER. REFER TO PANEL H1 FOR CIRCUITING.
- CONTINUOUS OPERATION EXHAUST FAN TO BE TIED INTO THE LIGHTING CIRCUIT FOR THIS AREA, AHEAD OF THE LIGHTING CONTROLS. CONSULT MECHANICAL PLANS AND/OR EQUIPMENT INSTALLER FOR EXACT POWER REQUIREMENTS PRIOR TO ROUGH IN.
- REFER TO TYPICAL UNIT PLANS ON THE E4 SERIES SHEETS FOR ADDITIONAL INFORMATION REGARDING THE HVAC EQUIPMENT LOCATIONS AND CIRCUITING. COORDINATE WITH MECHANICAL INSTALLER.
- COORDINATE WITH LANDSCAPE DESIGNER/INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS OF ANY IRRIGATION CONTROLLER. PROVIDE POWER CONNECTION FROM PANEL 'M1' AND SLEEVE TO GRADE.
- PROVIDE ALL CIRCUITING FOR LAUNDRY MACHINES FROM PANEL 'L1'.
- ROOF TOP GFCI RECEPTACLES TO BE PROVIDED WITHIN A 25FT RADIUS OF ALL MECHANICAL EQUIPMENT PER CODE. LOCATIONS SHOWN REPRESENT THIS. FINAL LOCATION(S) SHALL BE FIELD DETERMINED AND INSTALLED PER CODE.
- REFER TO 'T' SERIES SHEETS AND COORDINATE POWER REQUIREMENTS FOR THE FACP PANEL AND DEMARCATION BOARDS.
- ELECTRICAL CONTRACTOR TO CONSULT THE MECHANICAL PLANS AND COORDINATE WITH THE MECHANICAL INSTALLER FOR ANY POWER CONNECTIONS NEEDED FOR DAMPERS. PROVIDE ANY ROUGH IN AND/OR FINAL ELECTRICAL CONNECTIONS.

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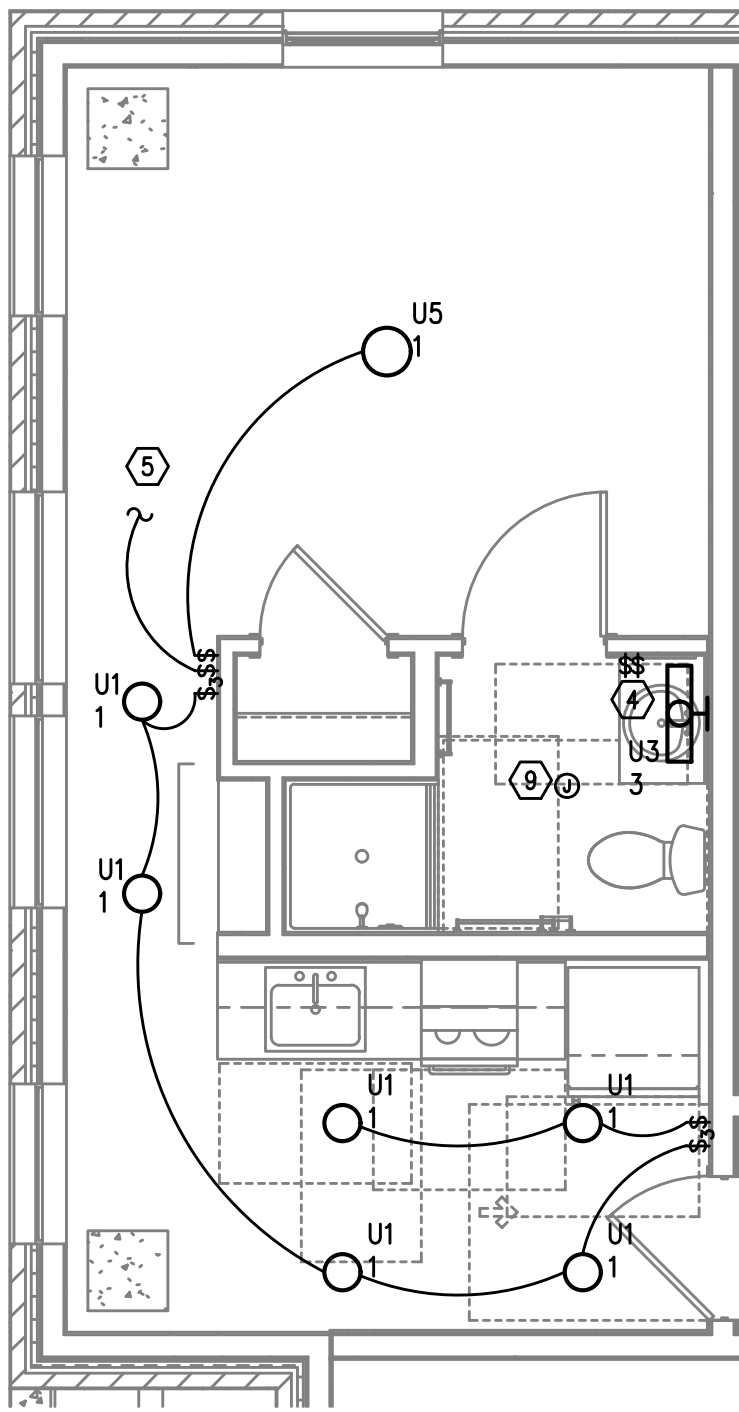
ROOF LEVEL
POWER PLAN

PROJECT NO.
17004

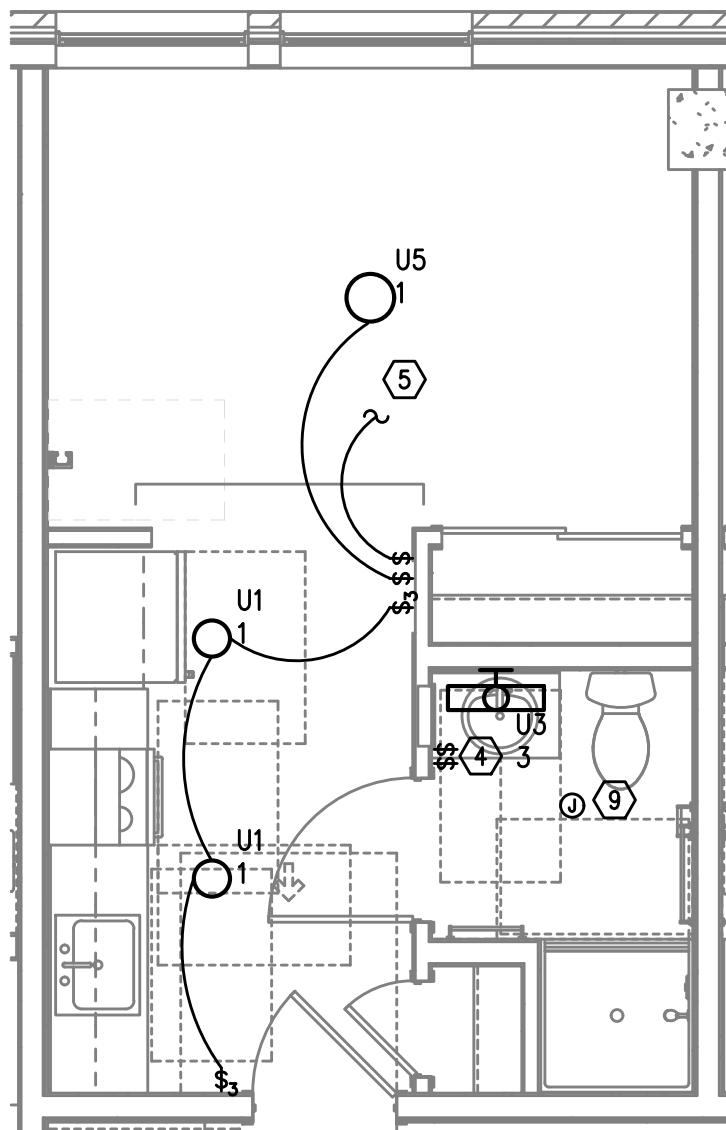
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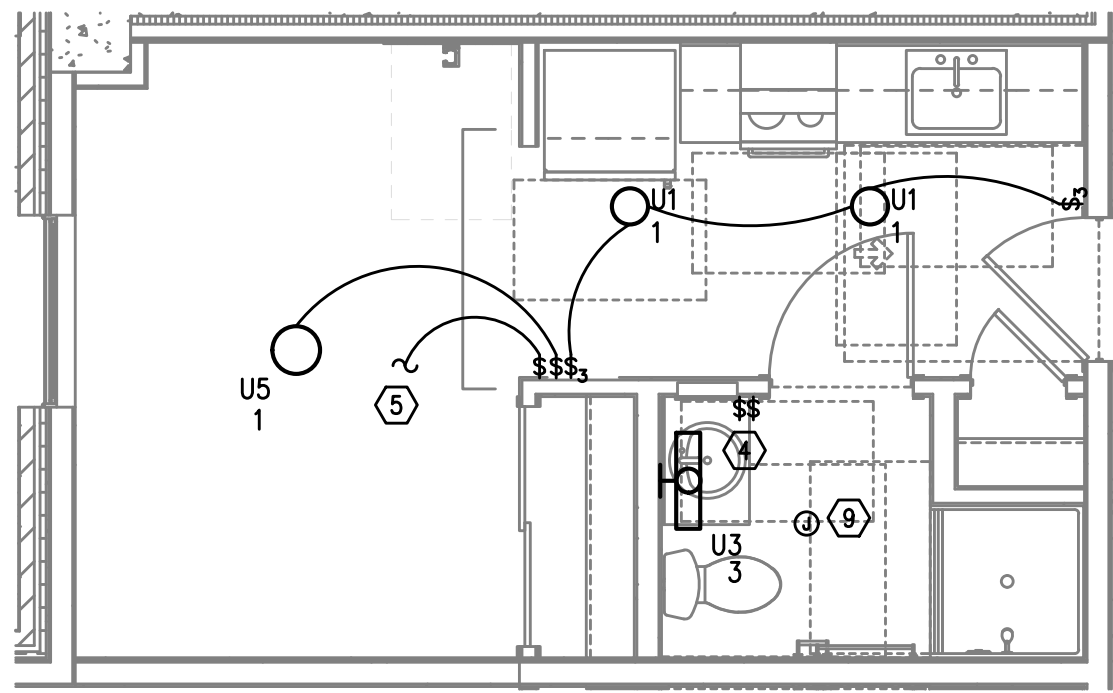
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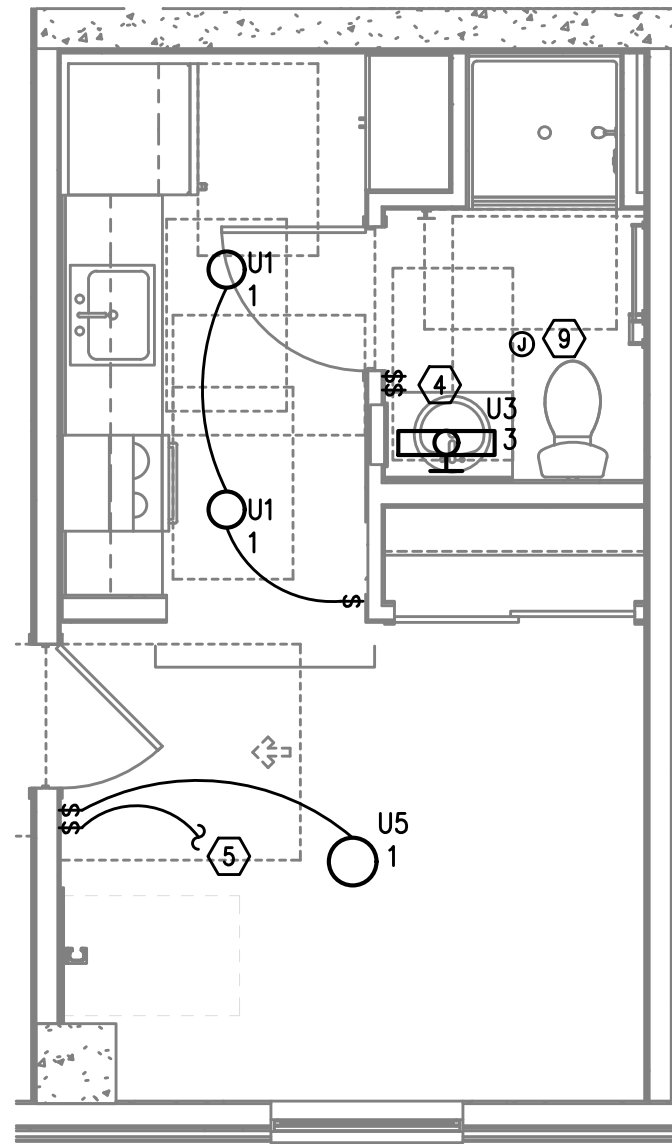
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E4.01
UNIT TYPE 1-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



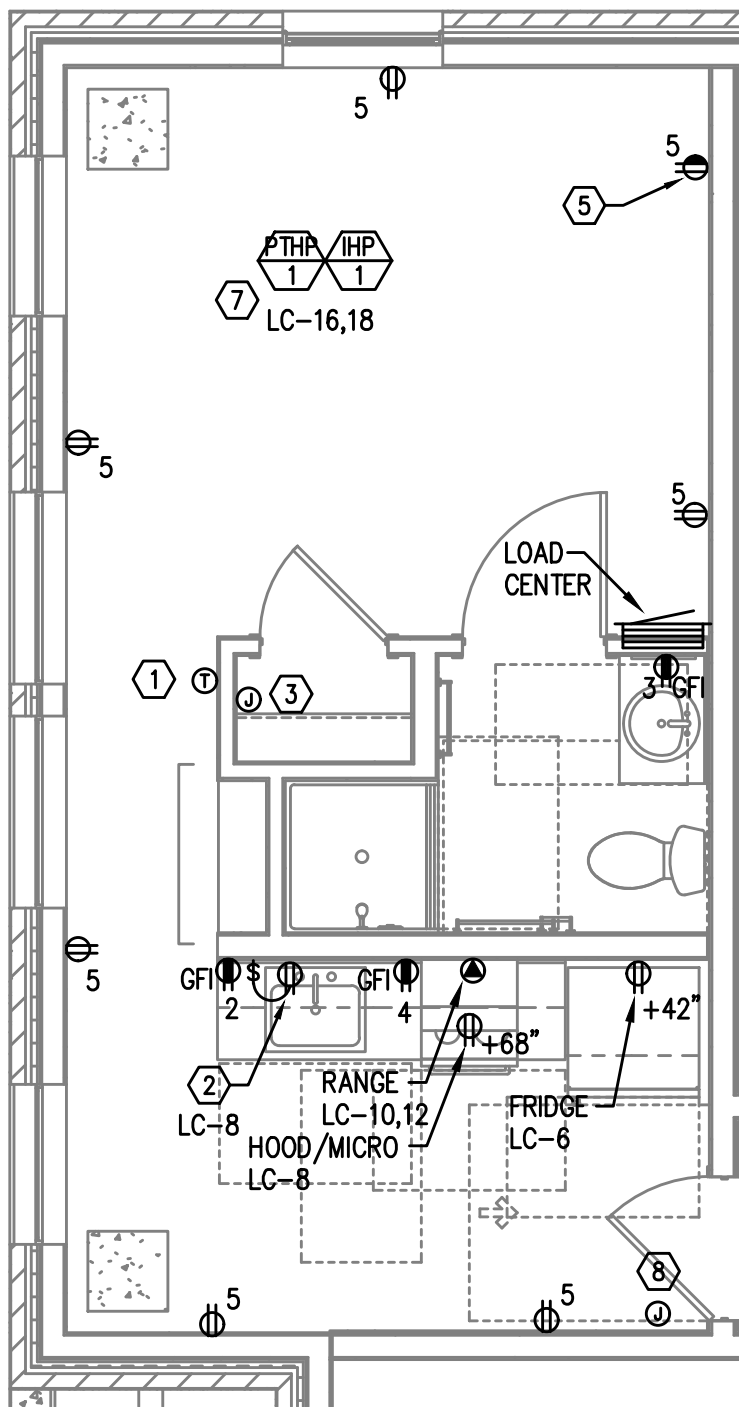
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UNIT TYPE 2-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



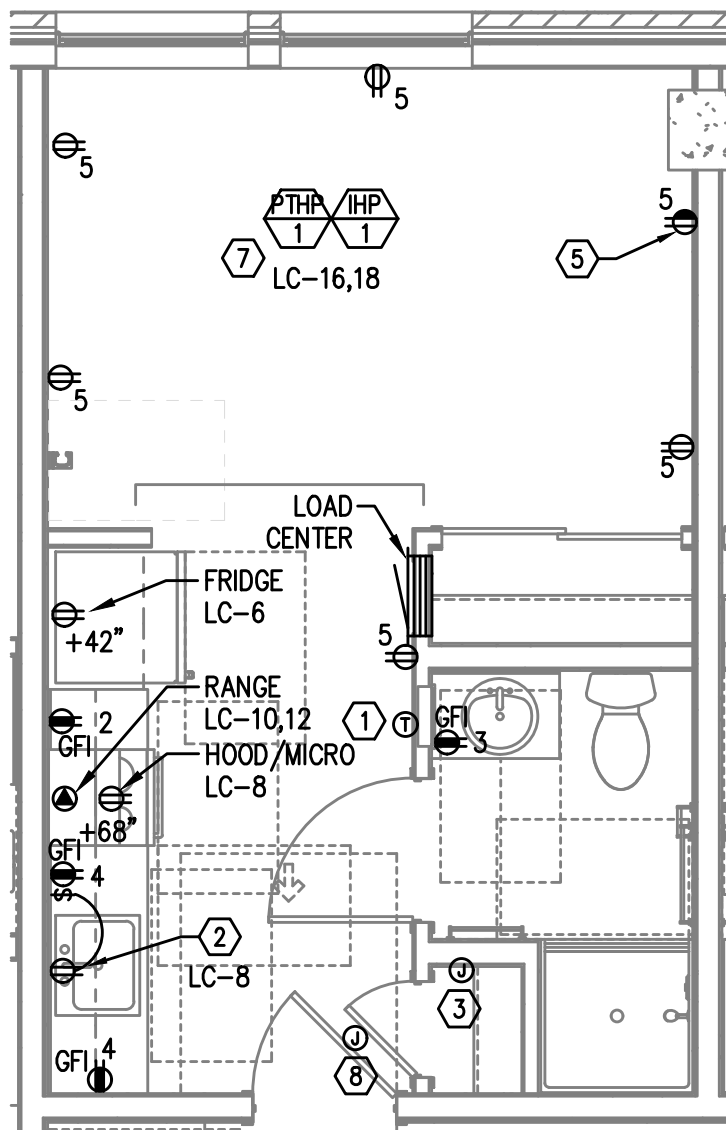
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E4.01
UNIT TYPE 3C-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



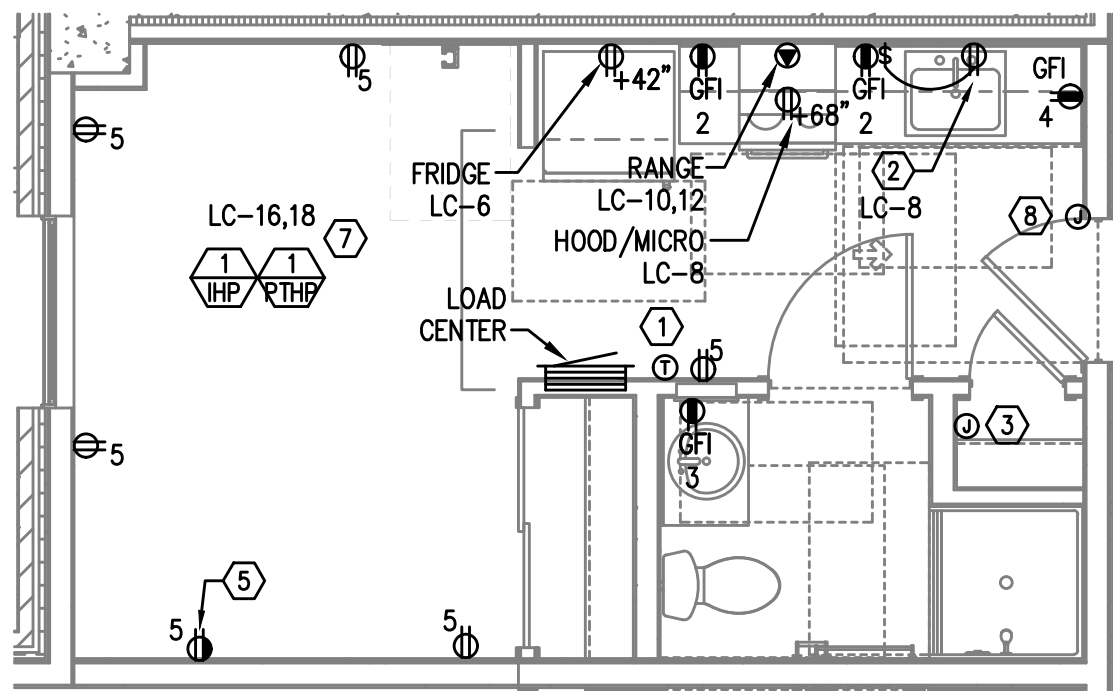
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E4.01
UNIT TYPE 4-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



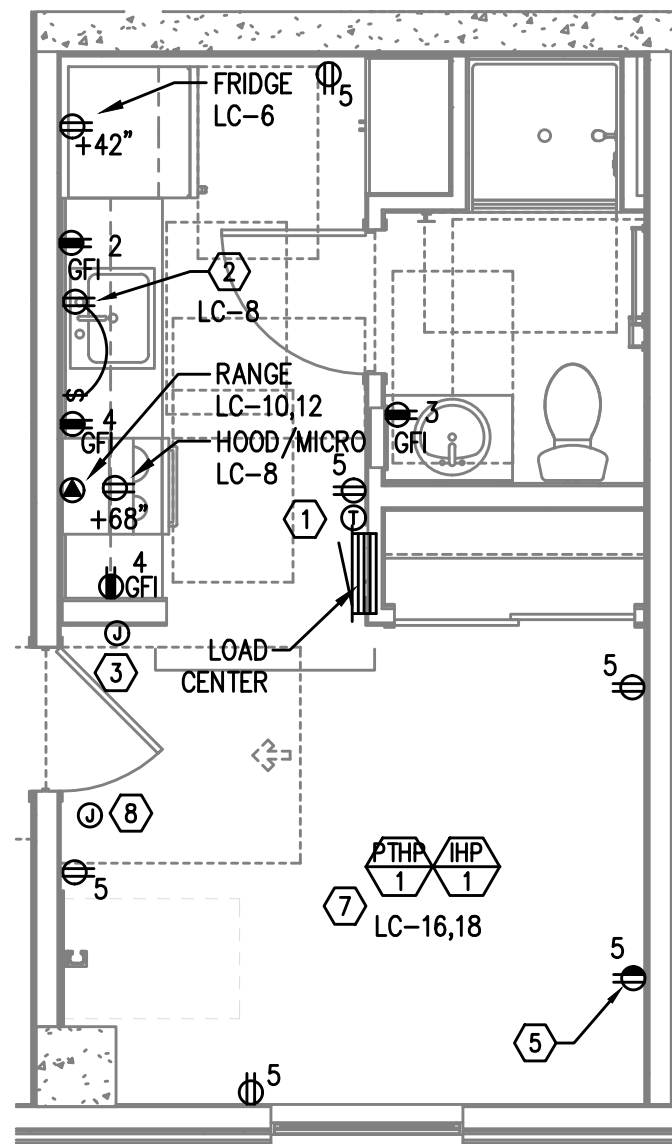
2
E4.01
UNIT TYPE 1-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



4
E4.01
UNIT TYPE 2-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



6
E4.01
UNIT TYPE 3C-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



8
E4.01
UNIT TYPE 4-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"

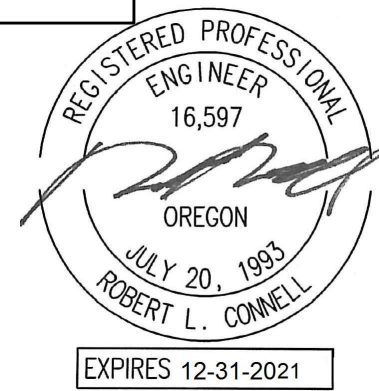
GENERAL NOTES:

- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.14 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- ALL LIGHT SWITCHES SHALL BE ROCKER STYLE, SUCH AS LEVITON DECORA, OR APPROVED EQUAL.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT FIXTURE LOCATIONS. CONSULT INTERIOR DESIGNER FOR MOUNTING HEIGHTS NOT SPECIFIED.
- KITCHEN RECEPTACLES LOCATED IN ISLANDS OR PENINSULAS WHERE THE BACK SPLASH WILL NOT ACCOMMODATE VERTICAL PLACEMENT OR THE DUPLEX RECEPTACLE, THE CONTRACTOR SHALL ROTATE THE DEVICE 90 DEGREES SO THAT THE RECEPTACLE IS INSTALLED HORIZONTALLY.
- REFER TO DETAILS ON SHEET E1.15 FOR ADDITIONAL INFORMATION REGARDING ADA REACH REQUIREMENTS FOR RECEPTACLE AND SWITCH MOUNTING HEIGHT.
- STANDARD RECEPTACLE MOUNTING HEIGHT IS 18" A.F.F. UNLESS OTHERWISE SPECIFIED. RECEPTACLES LOCATED BELOW WINDOW SILLS SHALL NOT BE LESS THE 15" A.F.F.
- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.13 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- RECEPTACLE FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. COORDINATE INSTALLATION WITH THE MECHANICAL INSTALLER.
- COORDINATE WITH THE 'T' SERIES SHEETS AND PROVIDE ROUGH IN FOR LOW VOLTAGE SYSTEMS SUCH AS TELEVISION CABLE OUTLETS AND FIRE ALARM DEVICES.

KEYED NOTES:

- PROVIDE WIRE CONNECTION FOR THERMOSTAT(S). COORDINATE WITH MECHANICAL INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS PRIOR TO ROUGH IN.
- PROVIDE ONE 20A, 120V, 1P GFCI DUPLEX RECEPTACLE UNDER KITCHEN SINK FOR DISPOSAL POWER CONNECTION.
- PROVIDE ONE 15A, RECEPTACLE CIRCUIT FROM TENANT LOAD CENTER FOR TELECOM SMART PANEL. COORDINATE WORK WITH SERVICE PROVIDER FOR EXACT LOCATION AND FINAL CONNECTION.
- REFER TO TYPICAL BATHROOM SWITCHING DETAILS ON SHEET E1.15.
- SWITCHED RECEPTACLE. SEE TYPICAL LIGHTING PLAN FOR SWITCH LOCATION.
- COMBINATION EXHAUST FAN & LIGHT SHALL BE TIED INTO THE BATHROOM LIGHTING CIRCUIT. VERIFY EXACT LOCATION W/MECHANICAL INSTALLER PRIOR TO ROUGH IN.
- REFER TO E3 SHEETS FOR HVAC EQUIPMENT LOCATION(S) & TYPE IN EACH UNIT. REVIEW & COORDINATE WITH THE MECHANICAL PLANS AND THE MECHANICAL INSTALLER FOR EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO ROUGH IN. PROVIDE CIRCUITING AS INDICATED. INDOOR HEAT PUMP UNITS ARE INTERCONNECTED WITH OUTDOOR UNIT LOCATED ON THE ROOF. POWER CONNECTION FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. CONSULT MECHANICAL PLANS TO DETERMINE WHETHER PTHP UNITS ARE CORD & PLUG OR HARDWIRED AND PROVIDE THE APPROPRIATE CONNECTION TYPE.
- 120V, 1P POWER CONNECTION FOR WATER METER. COORDINATE EXACT LOCATION WITH PLUMBING INSTALLER AND TIE INTO BATHROOM POWER CIRCUIT.
- PROVIDE 120V, 20A POWER FOR CEILING MOUNTED FAN/LIGHT COMBO AND TIE INTO BATHROOM LIGHTING CIRCUIT AND SWITCHING. REFER TO SHEET E1.15 FOR SWITCHING DIAGRAMS. REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION ON THE FAN AND COORDINATE INSTALLATION PRIOR TO ROUGH IN.

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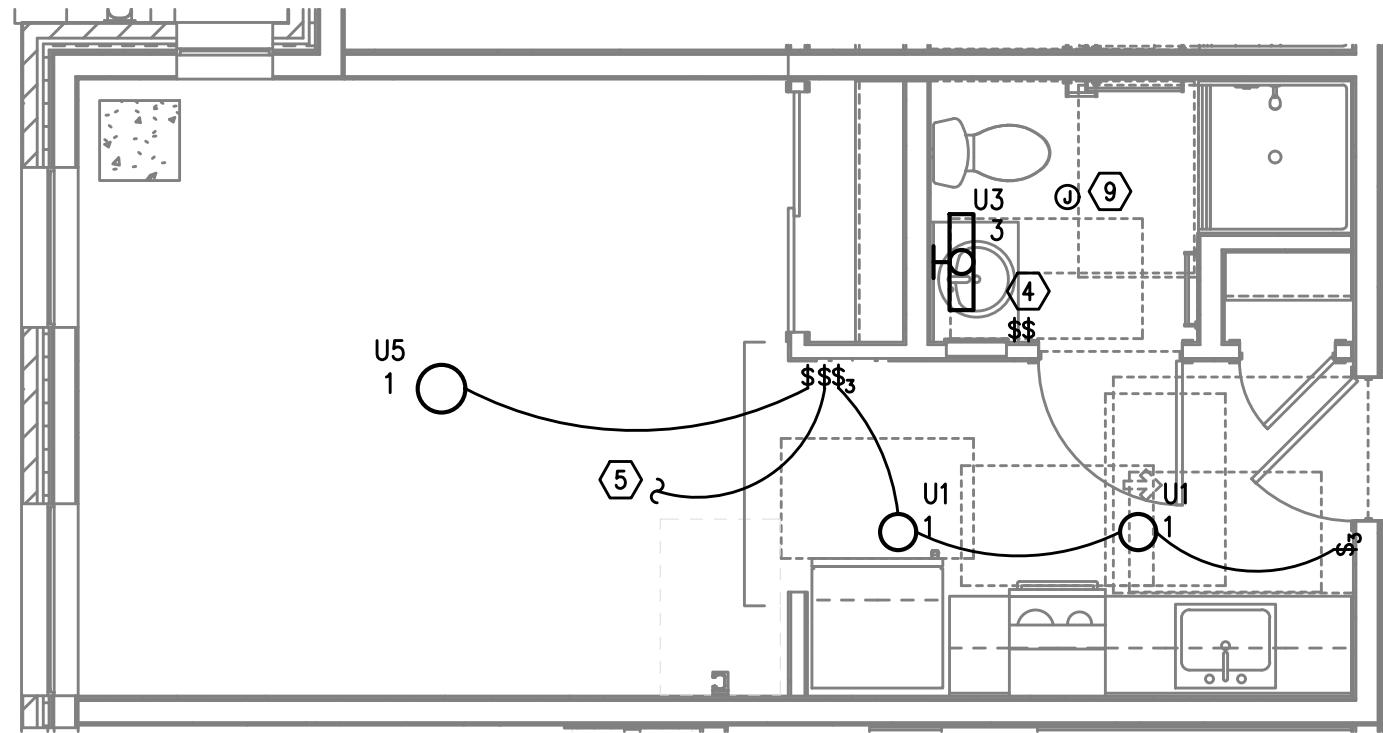


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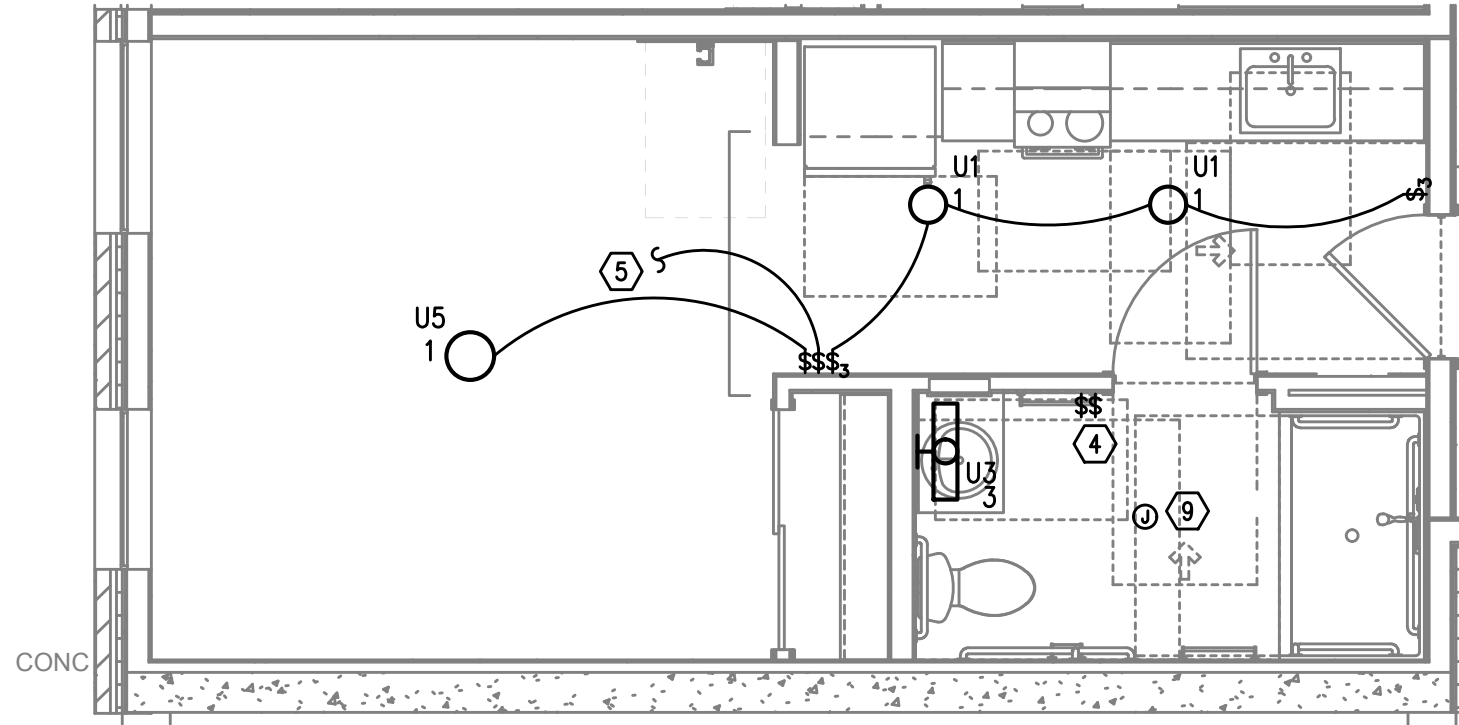
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680 NW 18TH AVENUE,
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NORTHWEST HOUSING ALTERNATIVES
BID SET

TYPICAL ENLARGED
UNIT PLANS
PROJECT NO.
17004
03/12/2021
REVISIONS: A

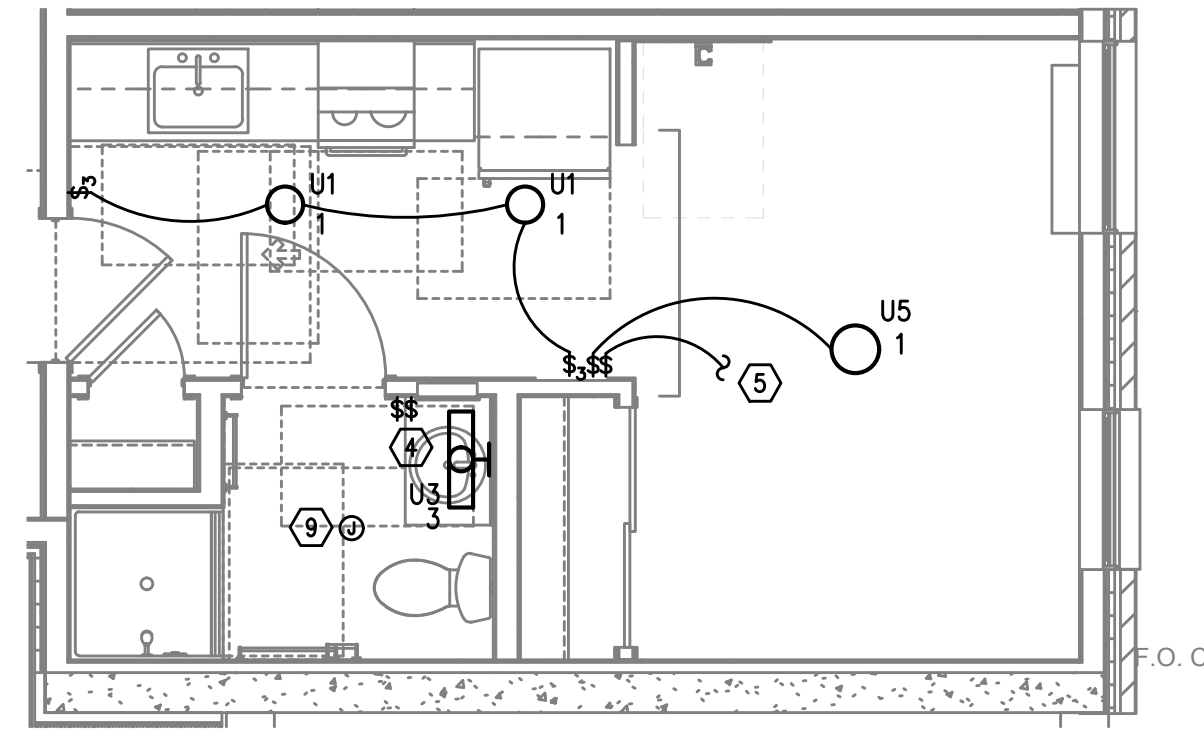
E4.01



UNIT TYPE 5--STUDIO
TYPICAL LIGHTING PLAN
1
E4.02 SCALE: 1/4" = 1'-0"



UNIT TYPE 6B--STUDIO
TYPICAL LIGHTING PLAN
3
E4.02 SCALE: 1/4" = 1'-0"



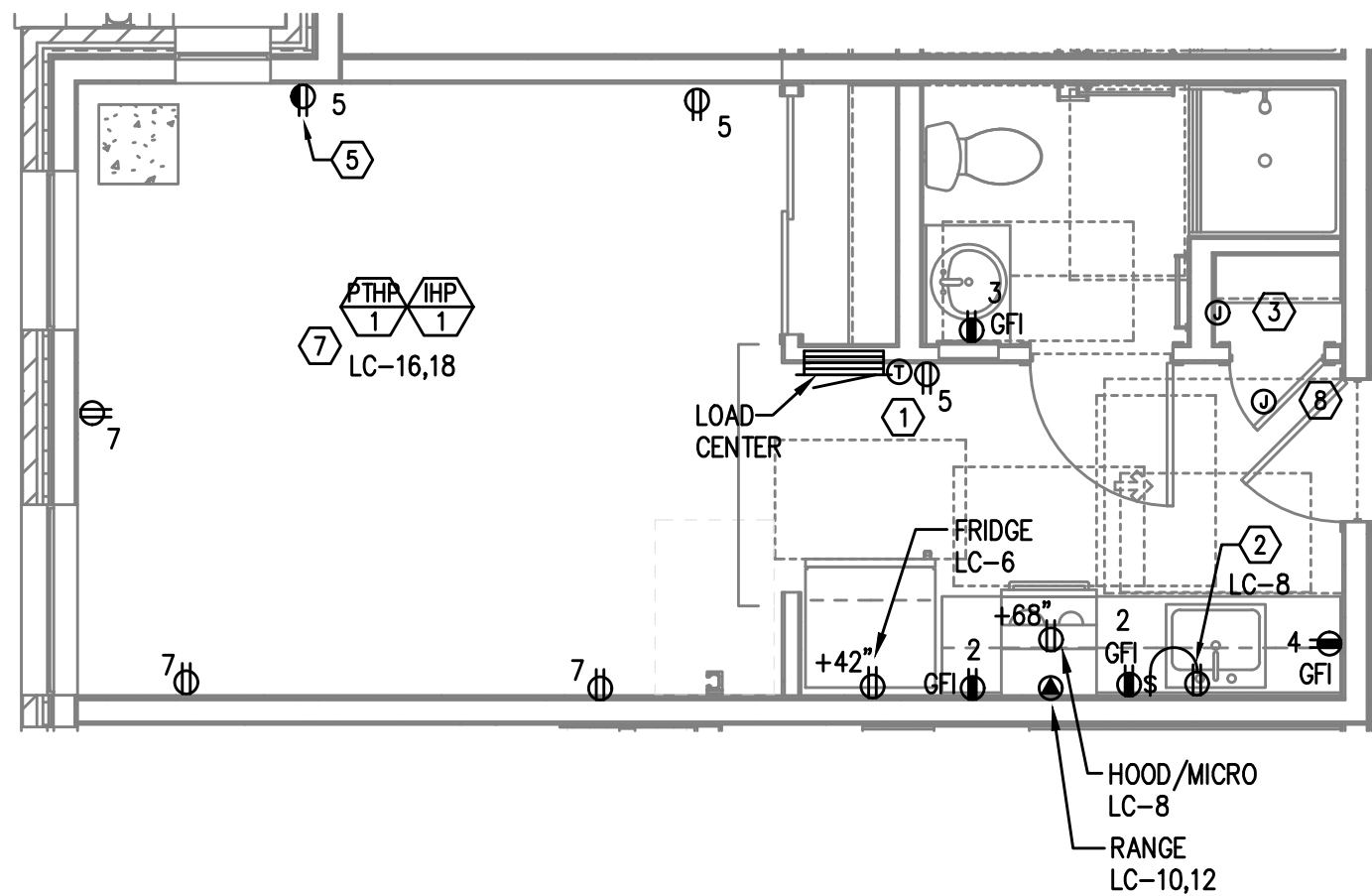
UNIT TYPE 7--STUDIO
TYPICAL LIGHTING PLAN
5
E4.02 SCALE: 1/4" = 1'-0"

GENERAL NOTES:

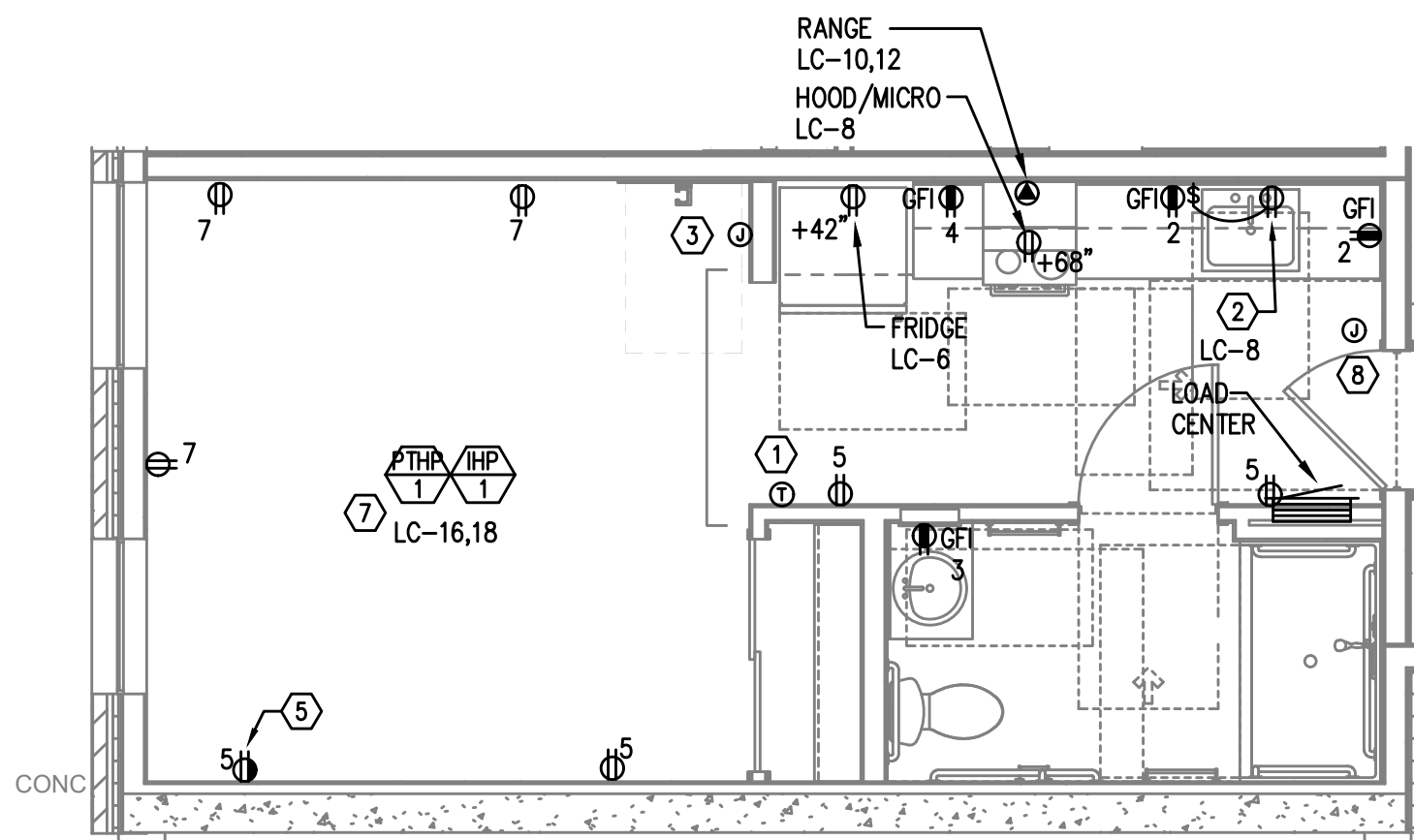
- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.14 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- ALL LIGHT SWITCHES SHALL BE ROCKER STYLE, SUCH AS LEVITON DECORA, OR APPROVED EQUAL.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT FIXTURE LOCATIONS. CONSULT INTERIOR DESIGNER FOR MOUNTING HEIGHTS NOT SPECIFIED.
- KITCHEN RECEPTACLES LOCATED IN ISLANDS OR PENINSULAS WHERE THE BACK SPLASH WILL NOT ACCOMMODATE VERTICAL PLACEMENT OR THE DUPLEX RECEPTACLE, THE CONTRACTOR SHALL ROTATE THE DEVICE 90 DEGREES SO THAT THE RECEPTACLE IS INSTALLED HORIZONTALLY.
- REFER TO DETAILS ON SHEET E1.15 FOR ADDITIONAL INFORMATION REGARDING ADA REACH REQUIREMENTS FOR RECEPTACLE AND SWITCH MOUNTING HEIGHT.
- STANDARD RECEPTACLE MOUNTING HEIGHT IS 18" A.F.F. UNLESS OTHERWISE SPECIFIED. RECEPTACLES LOCATED BELOW WINDOW SILLS SHALL NOT BE LESS THE 15" A.F.F.
- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.13 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- RECEPTACLE FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. COORDINATE INSTALLATION WITH THE MECHANICAL INSTALLER.
- COORDINATE WITH THE 'I' SERIES SHEETS AND PROVIDE ROUGH IN FOR LOW VOLTAGE SYSTEMS SUCH AS TELEVISION CABLE OUTLETS AND FIRE ALARM DEVICES.

KEYED NOTES:

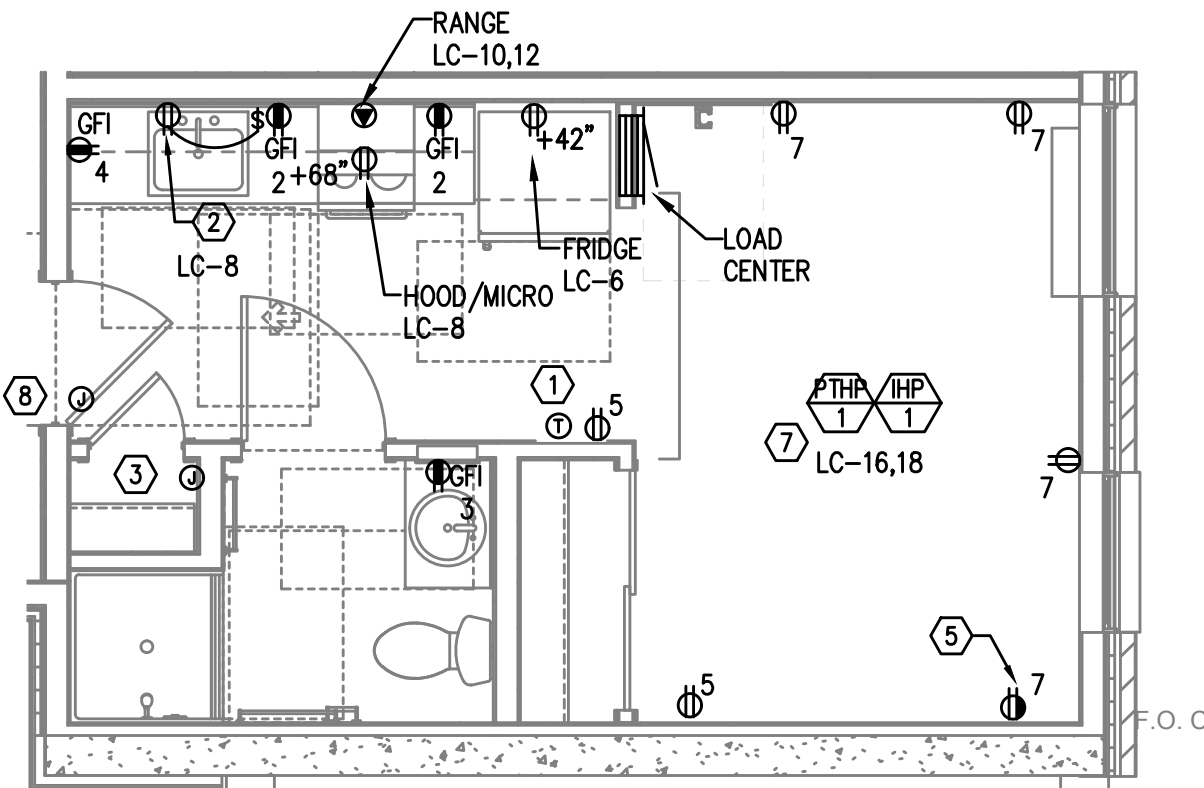
- PROVIDE WIRE CONNECTION FOR THERMOSTAT(S). COORDINATE WITH MECHANICAL INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS PRIOR TO ROUGH IN.
- PROVIDE ONE 20A, 120V, 1P GFCI DUPLEX RECEPTACLE UNDER KITCHEN SINK FOR DISPOSAL POWER CONNECTION.
- PROVIDE ONE 15A, RECEPTACLE CIRCUIT FROM TENANT LOAD CENTER FOR TELECOM SMART PANEL. COORDINATE WORK WITH SERVICE PROVIDER FOR EXACT LOCATION AND FINAL CONNECTION.
- REFER TO TYPICAL BATHROOM SWITCHING DETAILS ON SHEET E1.15.
- SWITCHED RECEPTACLE. SEE TYPICAL LIGHTING PLAN FOR SWITCH LOCATION.
- COMBINATION EXHAUST FAN & LIGHT SHALL BE TIED INTO THE BATHROOM LIGHTING CIRCUIT. VERIFY EXACT LOCATION W/MECHANICAL INSTALLER PRIOR TO ROUGH IN.
- REFER TO E3 SHEETS FOR HVAC EQUIPMENT LOCATION(S) & TYPE IN EACH UNIT. REVIEW & COORDINATE WITH THE MECHANICAL PLANS AND THE MECHANICAL INSTALLER FOR EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO ROUGH IN. PROVIDE CIRCUITING AS INDICATED. INDOOR HEAT PUMP UNITS ARE INTERCONNECTED WITH OUTDOOR UNIT LOCATED ON THE ROOF. POWER CONNECTION FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. CONSULT MECHANICAL PLANS TO DETERMINE WHETHER PTHP UNITS ARE CORD & PLUG OR HARDWIRED AND PROVIDE THE APPROPRIATE CONNECTION TYPE.
- 120V, 1P POWER CONNECTION FOR WATER METER. COORDINATE EXACT LOCATION WITH PLUMBING INSTALLER AND TIE INTO BATHROOM POWER CIRCUIT.
- PROVIDE 120V, 20A POWER FOR CEILING MOUNTED FAN/LIGHT COMBO AND TIE INTO BATHROOM LIGHTING CIRCUIT AND SWITCHING. REFER TO SHEET E1.15 FOR SWITCHING DIAGRAMS. REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION ON THE FAN AND COORDINATE INSTALLATION PRIOR TO ROUGH IN.



UNIT TYPE 5--STUDIO
TYPICAL POWER PLAN
2
E4.02 SCALE: 1/4" = 1'-0"

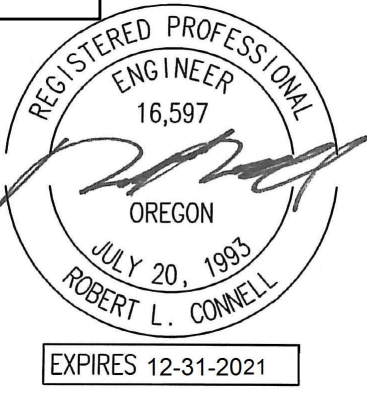


UNIT TYPE 6--STUDIO
TYPICAL POWER PLAN
4
E4.02 SCALE: 1/4" = 1'-0"



UNIT TYPE 7--STUDIO
TYPICAL POWER PLAN
6
E4.02 SCALE: 1/4" = 1'-0"

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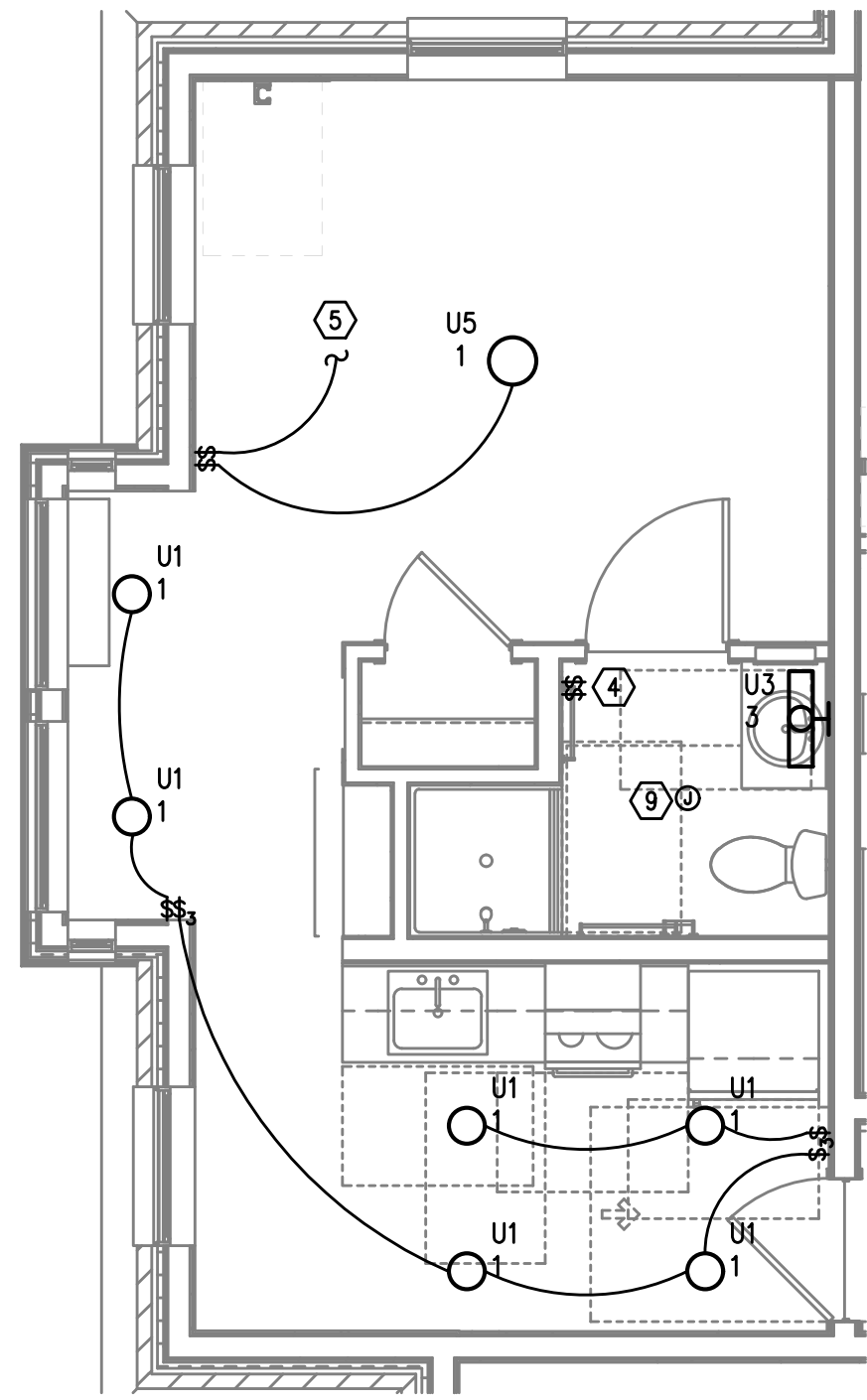


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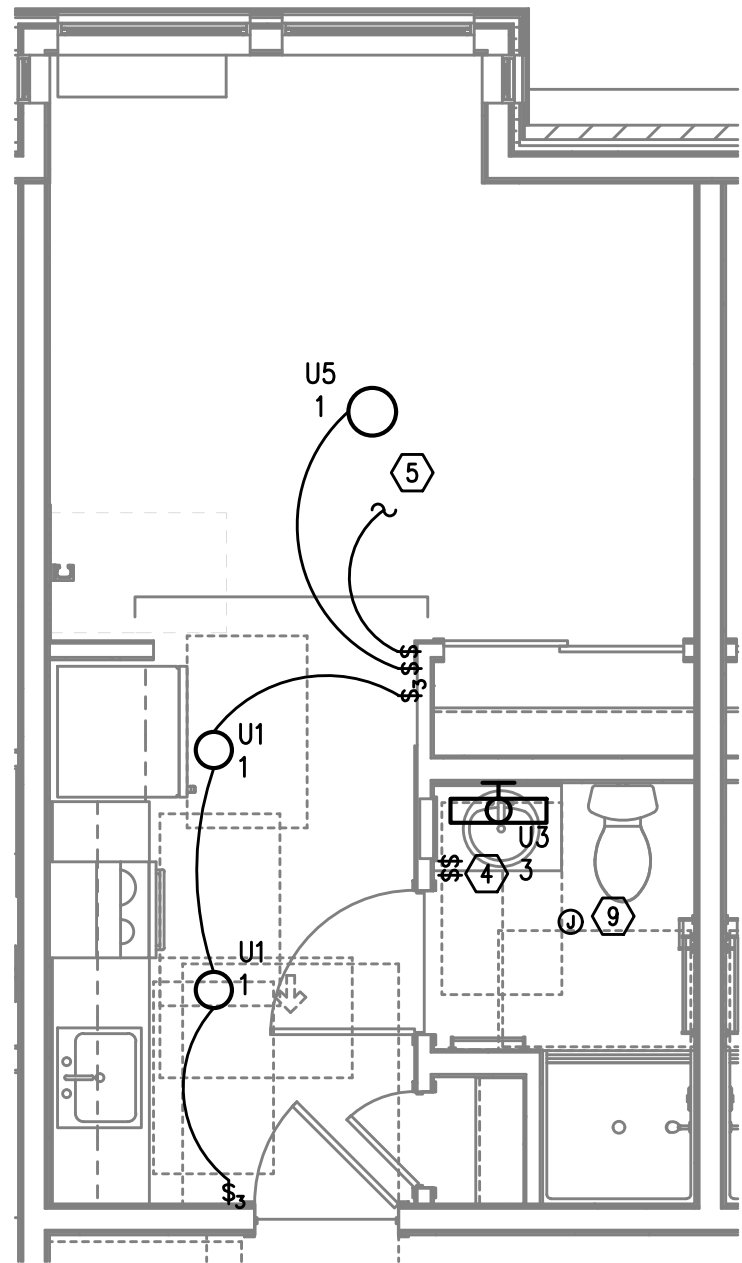
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BID SET

TYPICAL ENLARGED
UNIT PLANS
PROJECT NO.
17004
03/12/2021
REVISIONS: A

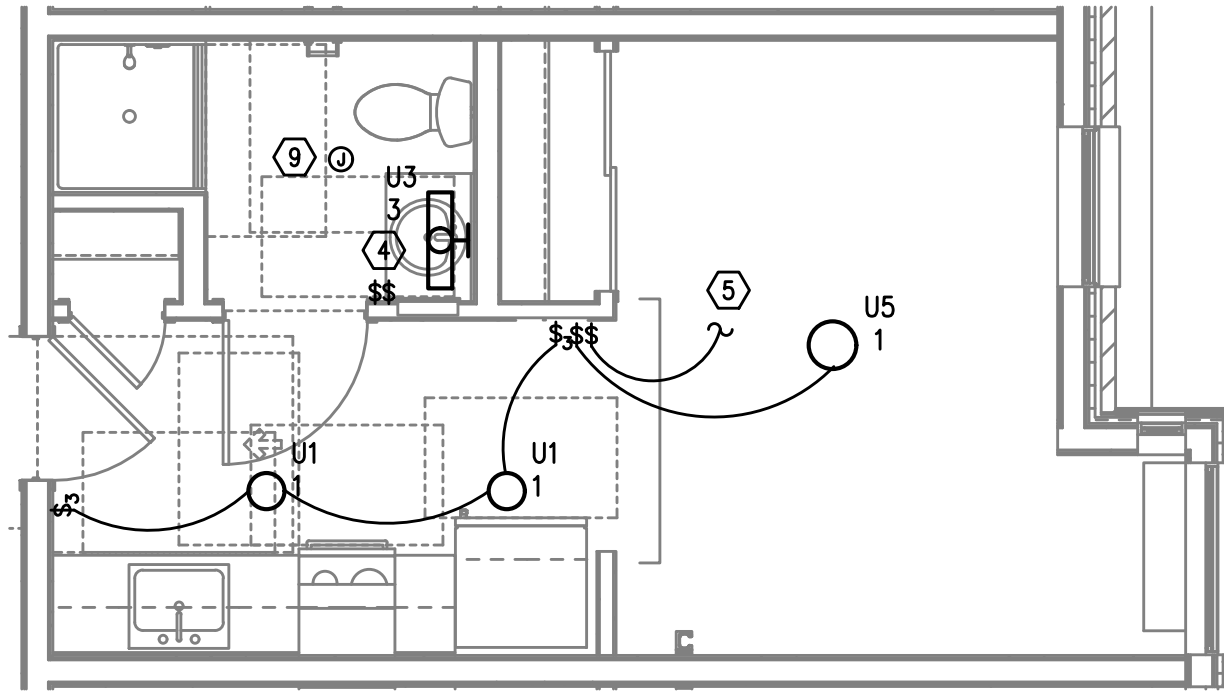
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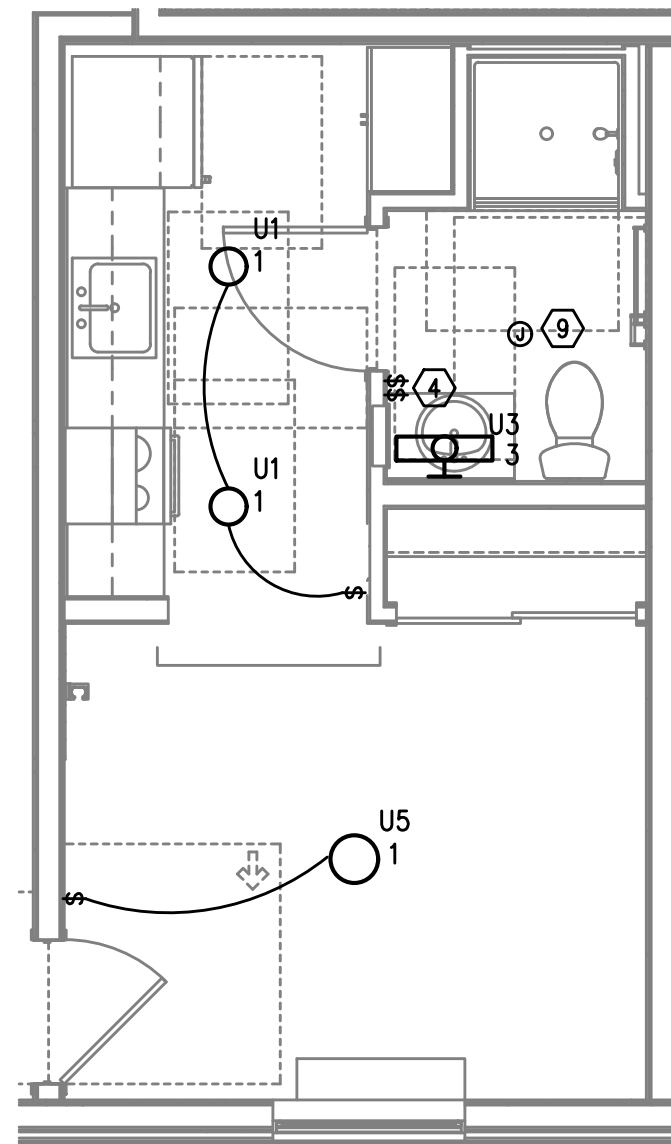
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E4.03
UNIT TYPE 1B-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



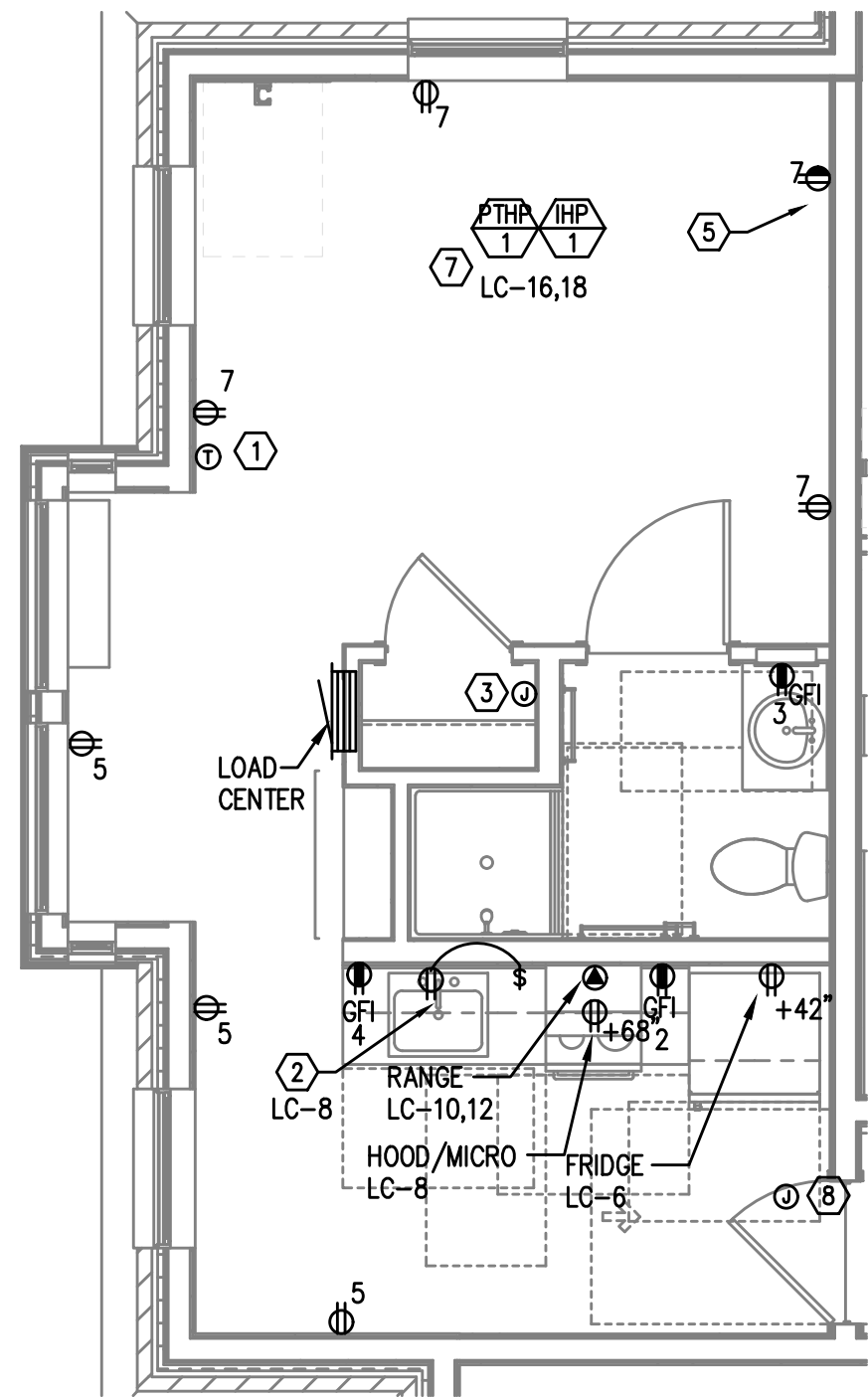
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E4.03
UNIT TYPE 2B-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



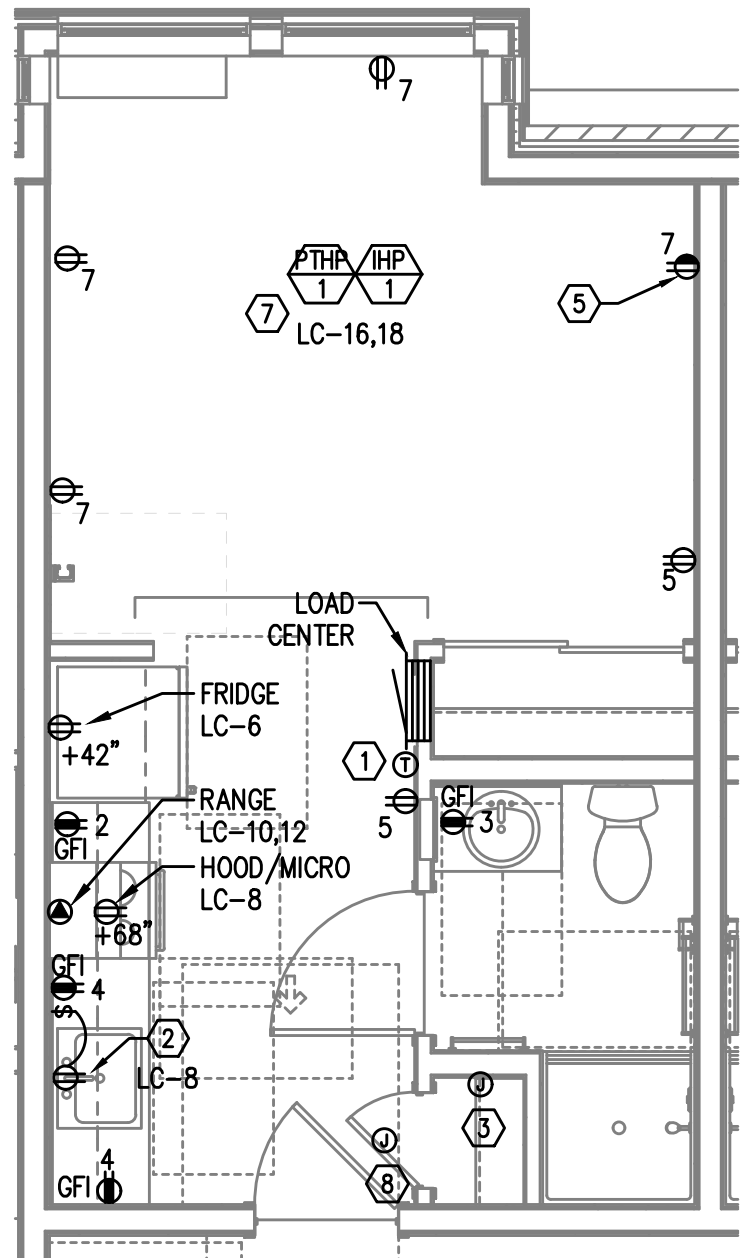
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E4.03
UNIT TYPE 3B-STUDIO
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



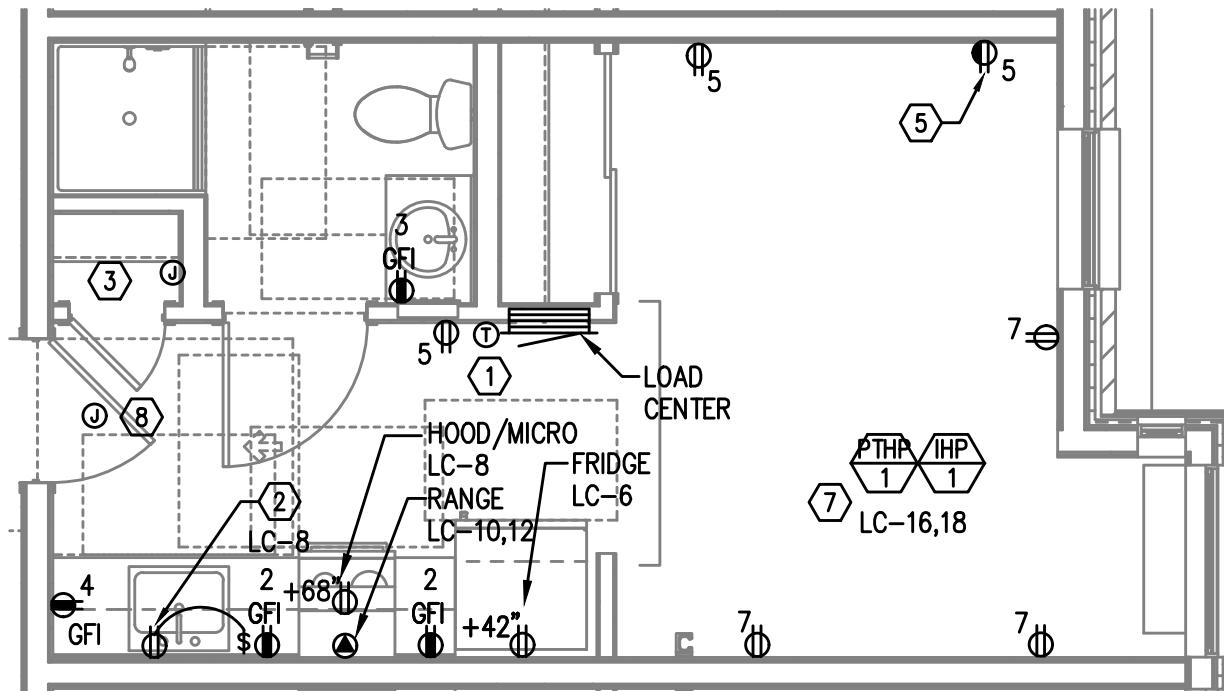
7
E4.03
UNIT TYPE 4A
TYPICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



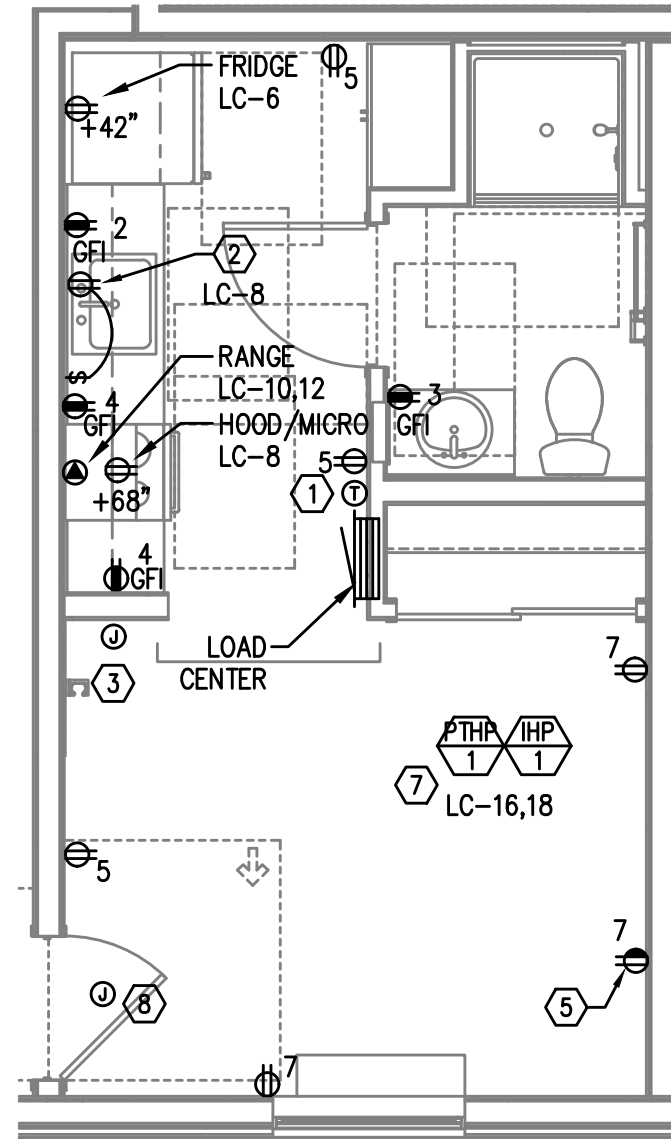
2
E4.03
UNIT TYPE 1B-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



4
E4.03
UNIT TYPE 2B-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



6
E4.03
UNIT TYPE 3B-STUDIO
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"



8
E4.03
UNIT TYPE 4A
TYPICAL POWER PLAN
SCALE: 1/4" = 1'-0"

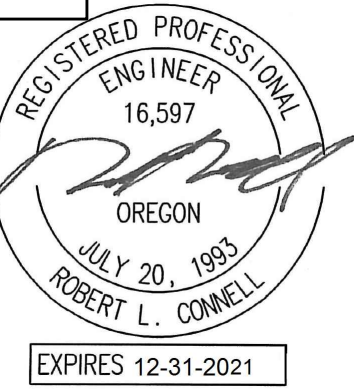
GENERAL NOTES:

- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.14 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- ALL LIGHT SWITCHES SHALL BE ROCKER STYLE, SUCH AS LEVITON DECORA, OR APPROVED EQUAL.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT FIXTURE LOCATIONS. CONSULT INTERIOR DESIGNER FOR MOUNTING HEIGHTS NOT SPECIFIED.
- KITCHEN RECEPTACLES LOCATED IN ISLANDS OR PENINSULAS WHERE THE BACK SPLASH WILL NOT ACCOMMODATE VERTICAL PLACEMENT OR THE DUPLEX RECEPTACLE, THE CONTRACTOR SHALL ROTATE THE DEVICE 90 DEGREES SO THAT THE RECEPTACLE IS INSTALLED HORIZONTALLY.
- REFER TO DETAILS ON SHEET E1.15 FOR ADDITIONAL INFORMATION REGARDING ADA REACH REQUIREMENTS FOR RECEPTACLE AND SWITCH MOUNTING HEIGHT.
- STANDARD RECEPTACLE MOUNTING HEIGHT IS 18" A.F.F. UNLESS OTHERWISE SPECIFIED. RECEPTACLES LOCATED BELOW WINDOW SILLS SHALL NOT BE LESS THAN 15" A.F.F.
- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES AND FIXTURES.
- REFER TO SHEET E1.13 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- RECEPTACLE FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. COORDINATE INSTALLATION WITH THE MECHANICAL INSTALLER.
- COORDINATE WITH THE "T" SERIES SHEETS AND PROVIDE ROUGH IN FOR LOW VOLTAGE SYSTEMS SUCH AS TELEVISION CABLE OUTLETS AND FIRE ALARM DEVICES.

KEYED NOTES:

- PROVIDE WIRE CONNECTION FOR THERMOSTAT(S). COORDINATE WITH MECHANICAL INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS PRIOR TO ROUGH IN.
- PROVIDE ONE 20A, 120V, 1P GFCI DUPLEX RECEPTACLE UNDER KITCHEN SINK FOR DISPOSAL POWER CONNECTION.
- PROVIDE ONE 15A, RECEPTACLE CIRCUIT FROM TENANT LOAD CENTER FOR TELECOM SMART PANEL. COORDINATE WORK WITH SERVICE PROVIDER FOR EXACT LOCATION AND FINAL CONNECTION.
- REFER TO TYPICAL BATHROOM SWITCHING DETAILS ON SHEET E1.15.
- SWITCHED RECEPTACLE. SEE TYPICAL LIGHTING PLAN FOR SWITCH LOCATION.
- COMBINATION EXHAUST FAN & LIGHT SHALL BE TIED INTO THE BATHROOM LIGHTING CIRCUIT. VERIFY EXACT LOCATION W/MECHANICAL INSTALLER PRIOR TO ROUGH IN.
- REFER TO E3 SHEETS FOR HVAC EQUIPMENT LOCATION(S) & TYPE IN EACH UNIT. REVIEW & COORDINATE WITH THE MECHANICAL PLANS AND THE MECHANICAL INSTALLER FOR EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO ROUGH IN. PROVIDE CIRCUITING AS INDICATED. INDOOR HEAT PUMP UNITS ARE INTERCONNECTED WITH OUTDOOR UNIT LOCATED ON THE ROOF. POWER CONNECTION FOR PTHP UNIT SHALL BE LOCATED BELOW THE UNIT, NEAR THE BASE OF THE WALL SUCH THAT THE CORD SET IS CONCEALED AS MUCH AS POSSIBLE. CONSULT MECHANICAL PLANS TO DETERMINE WHETHER PTHP UNITS ARE CORD & PLUG OR HARDWIRED AND PROVIDE THE APPROPRIATE CONNECTION TYPE.
- 120V, 1P POWER CONNECTION FOR WATER METER. COORDINATE EXACT LOCATION WITH PLUMBING INSTALLER AND TIE INTO BATHROOM POWER CIRCUIT.
- PROVIDE 120V, 20A POWER FOR CEILING MOUNTED FAN/LIGHT COMBO AND TIE INTO BATHROOM LIGHTING CIRCUIT AND SWITCHING. REFER TO SHEET E1.15 FOR SWITCHING DIAGRAMS. REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION ON THE FAN AND COORDINATE INSTALLATION PRIOR TO ROUGH IN.

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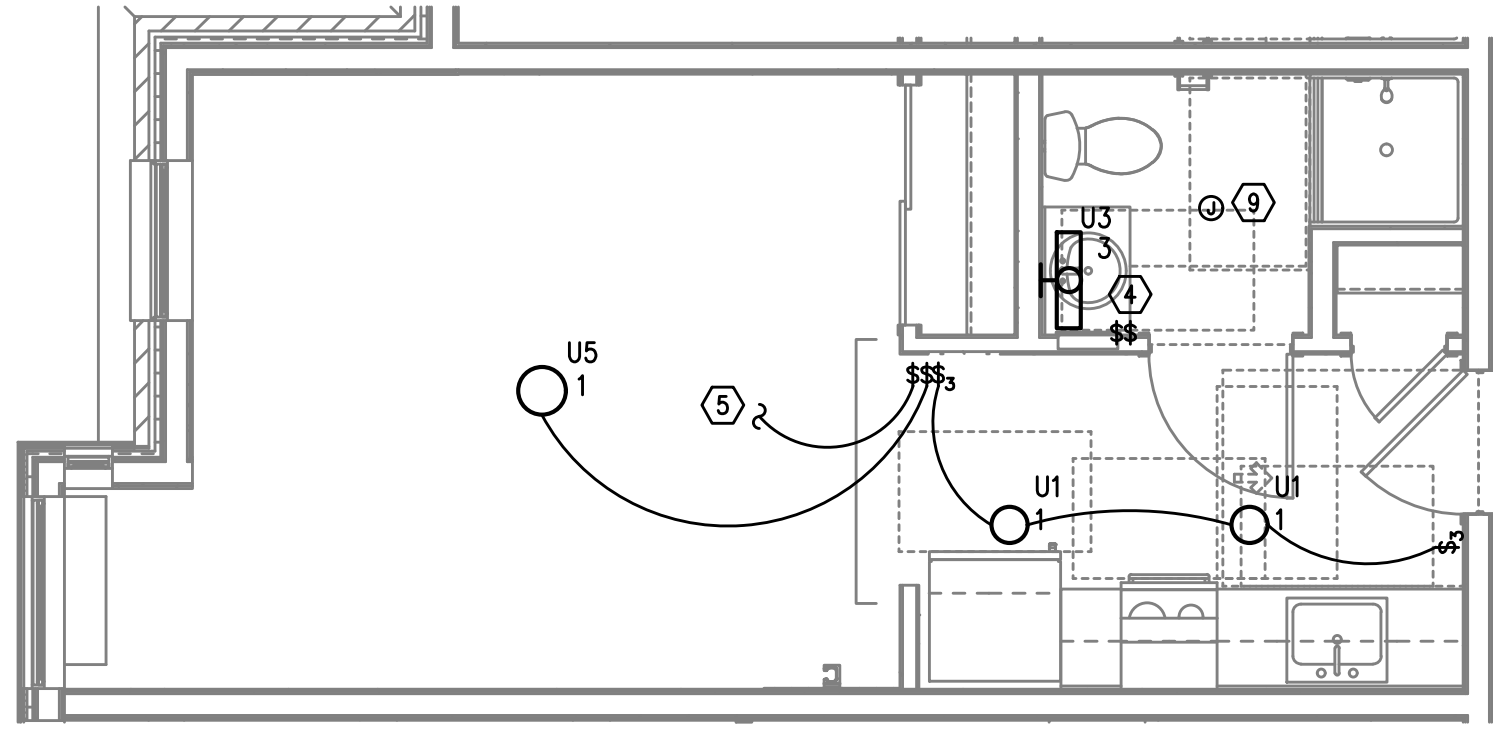
TYPICAL ENLARGED
UNIT PLANS

PROJECT NO.
17004
03/12/2021

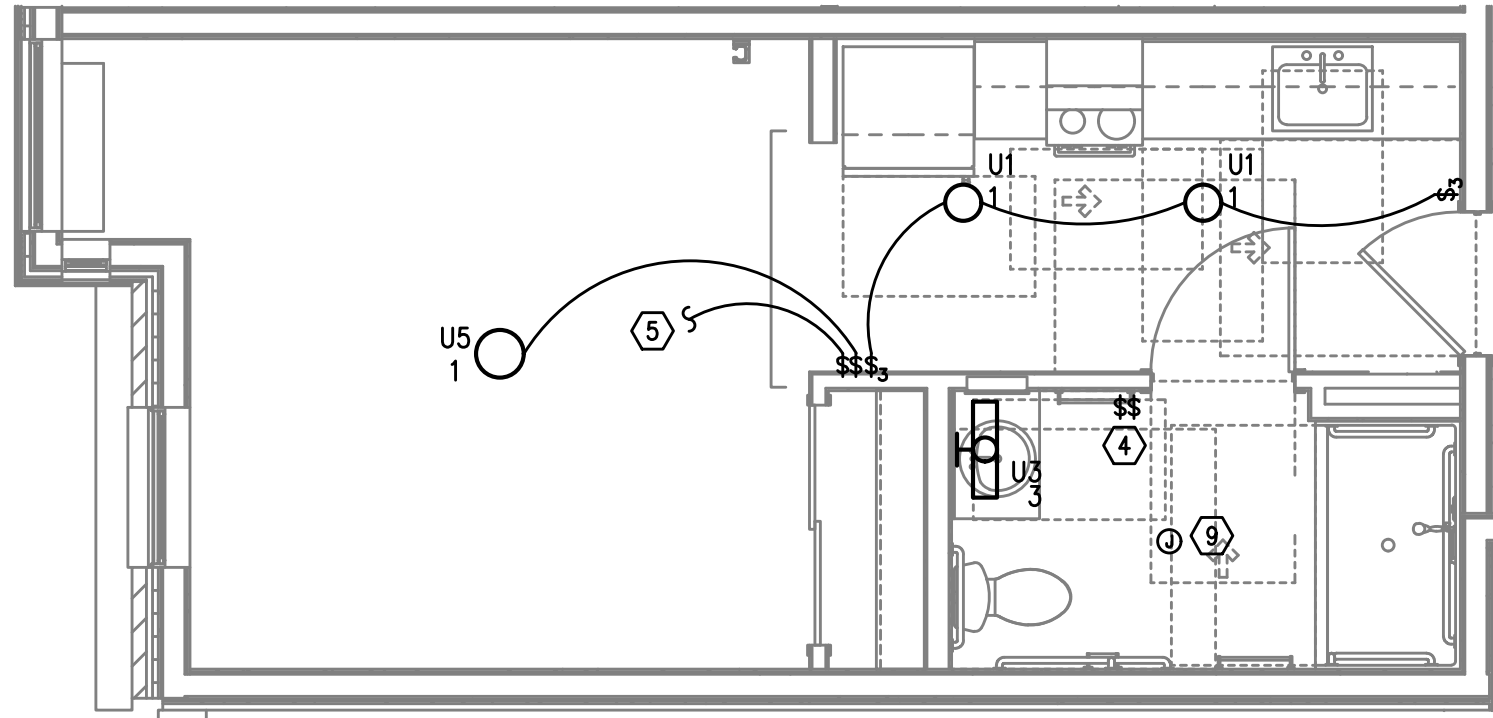
REVISIONS: A

E4.03

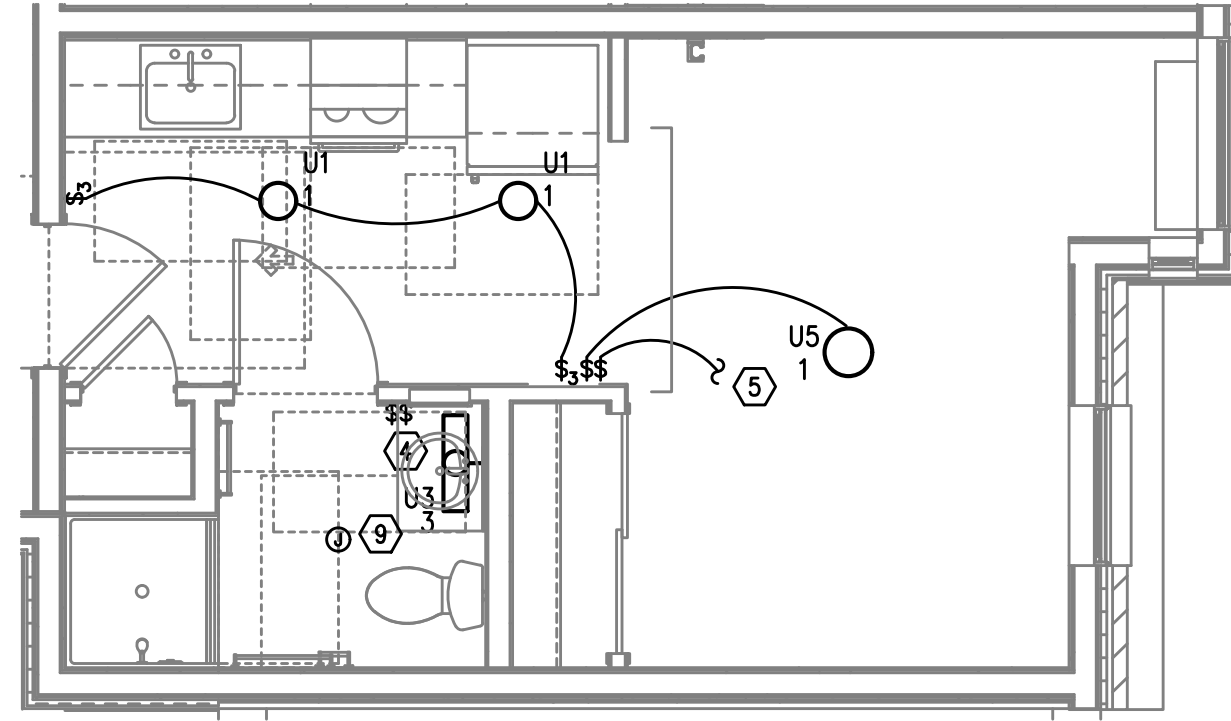
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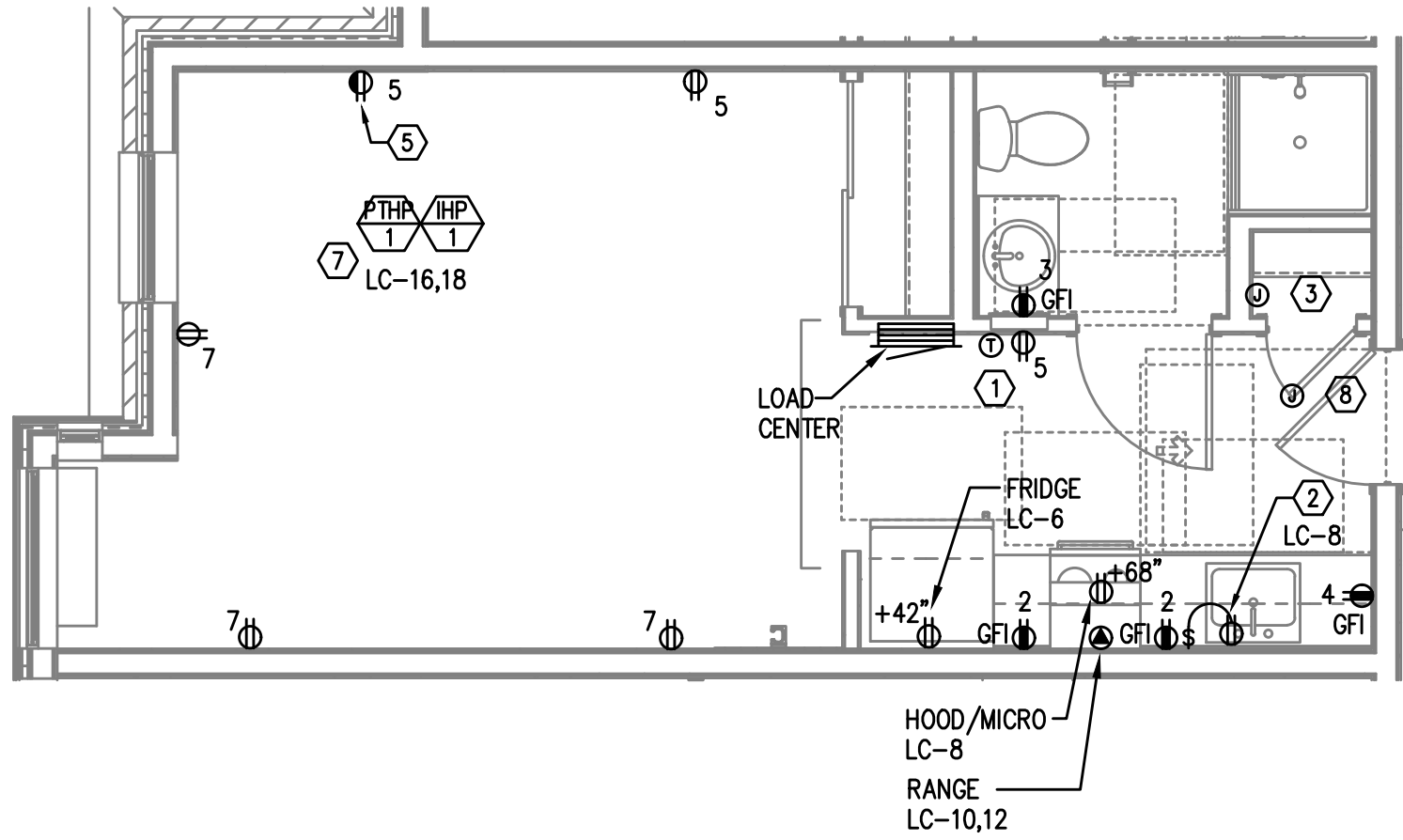
UNIT TYPE 5B-STUDIO
TYPICAL LIGHTING PLAN
1
E4.04 SCALE: 1/4" = 1'-0"



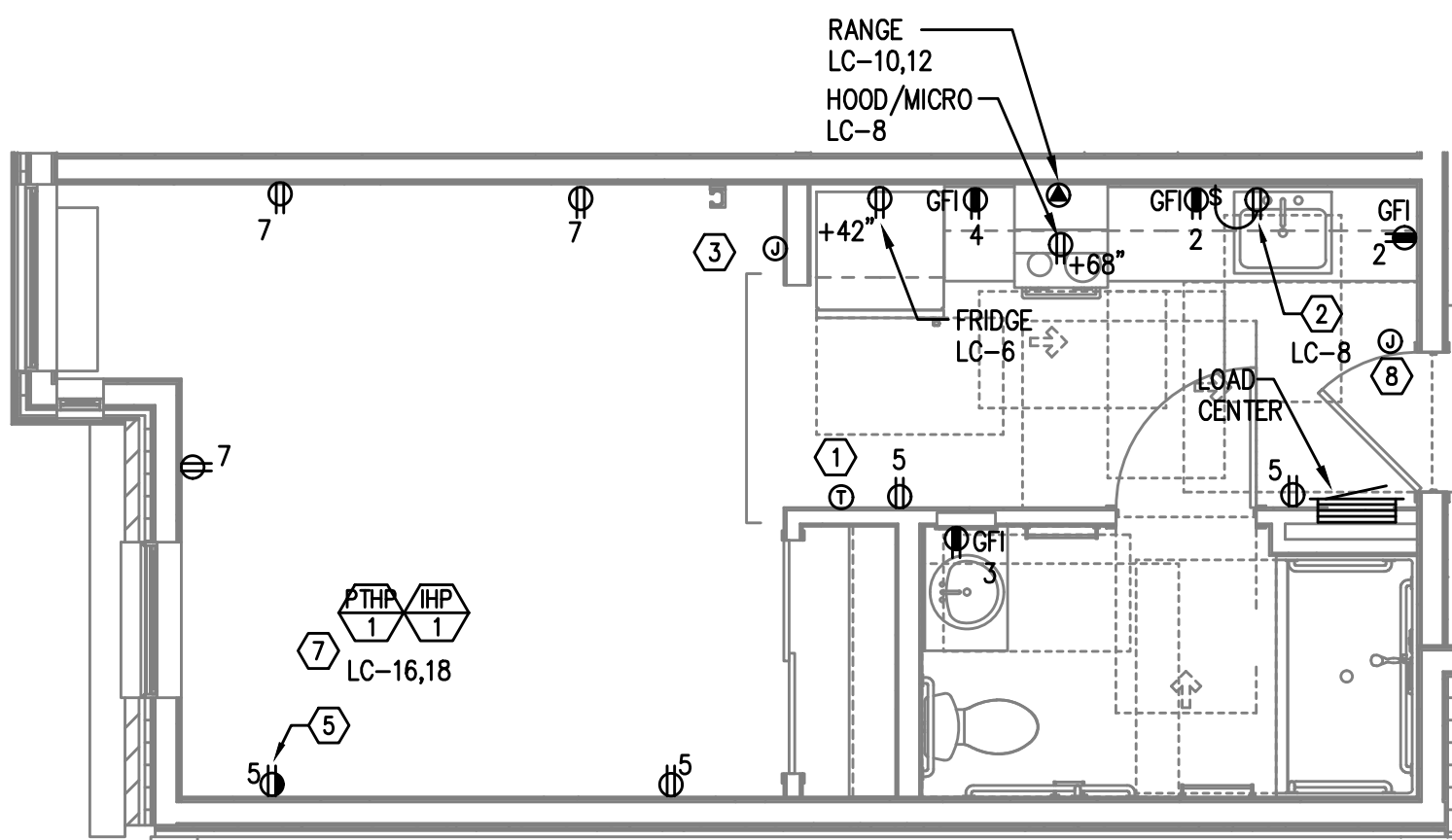
UNIT TYPE 6B-STUDIO
TYPICAL LIGHTING PLAN
3
E4.04 SCALE: 1/4" = 1'-0"



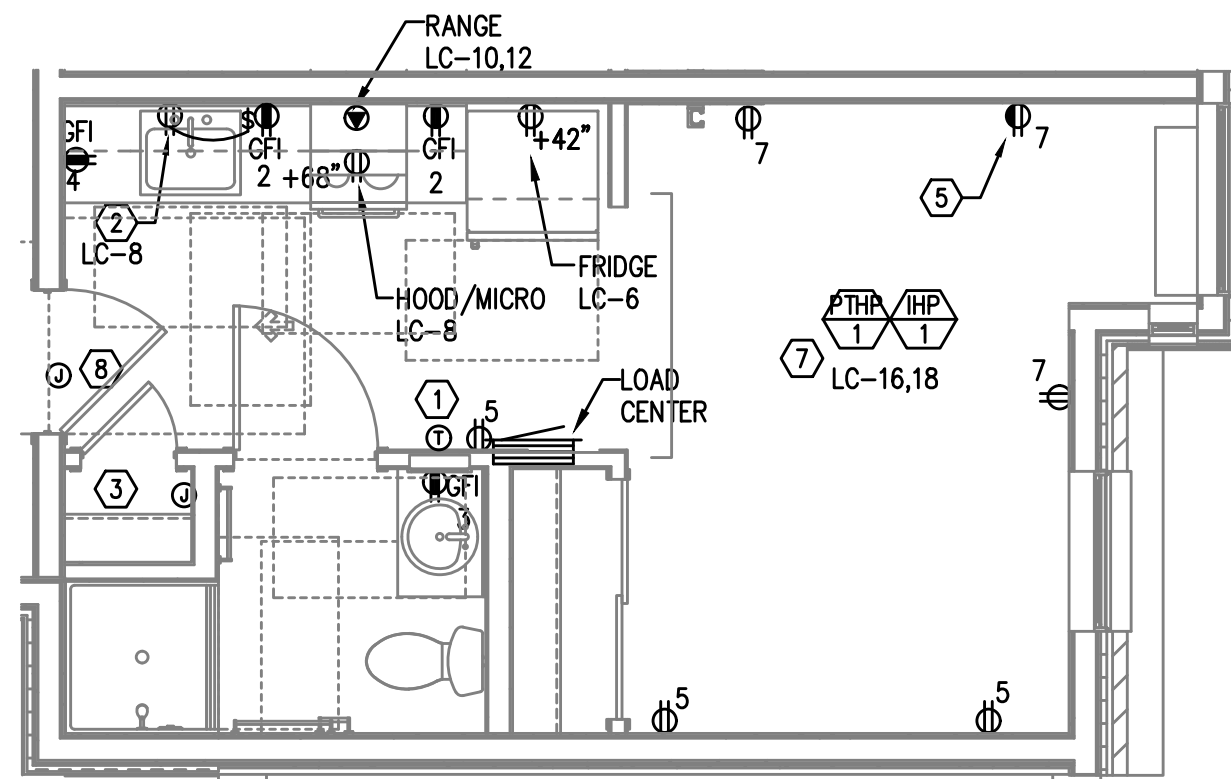
UNIT TYPE 7B-STUDIO
TYPICAL LIGHTING PLAN
5
E4.04 SCALE: 1/4" = 1'-0"



UNIT TYPE 5B-STUDIO
TYPICAL POWER PLAN
2
E4.04 SCALE: 1/4" = 1'-0"



UNIT TYPE 6B-STUDIO
TYPICAL POWER PLAN
4
E4.04 SCALE: 1/4" = 1'-0"



UNIT TYPE 7B-STUDIO
TYPICAL POWER PLAN
6
E4.04 SCALE: 1/4" = 1'-0"

GENERAL NOTES:

- ALL PLANS ARE DIAGRAMMATICAL. CONSULT ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL DEVICES AND FIXTURES.
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KEYED NOTES:

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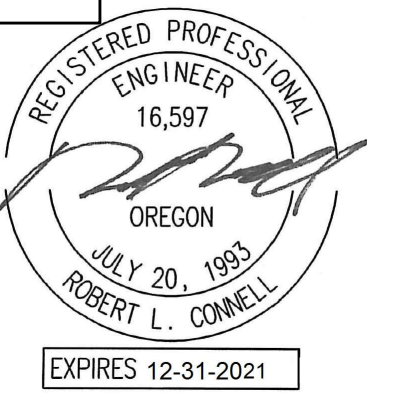
BID SET

TYPICAL ENLARGED
UNIT PLANS

PROJECT NO.
17004
03/12/2021

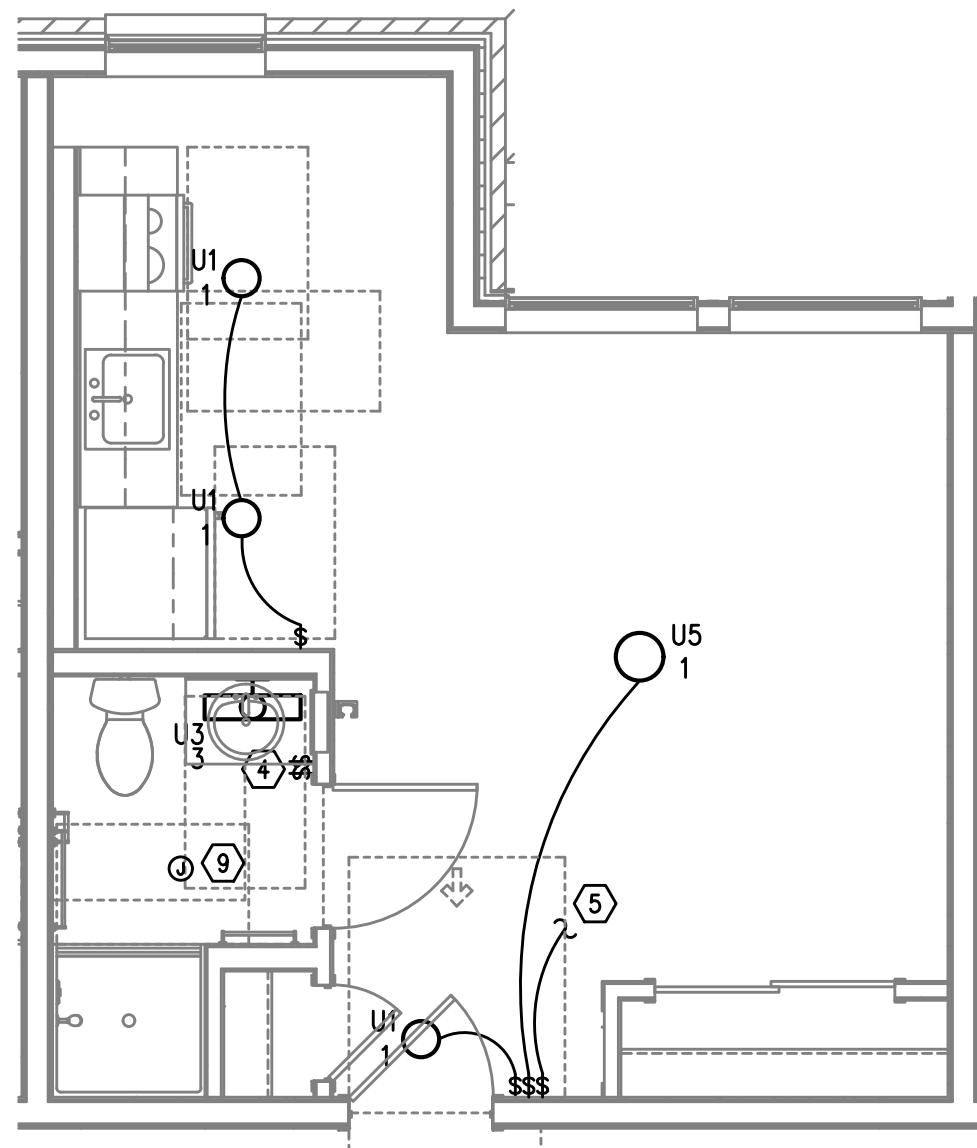
REVISIONS: A

E4.04

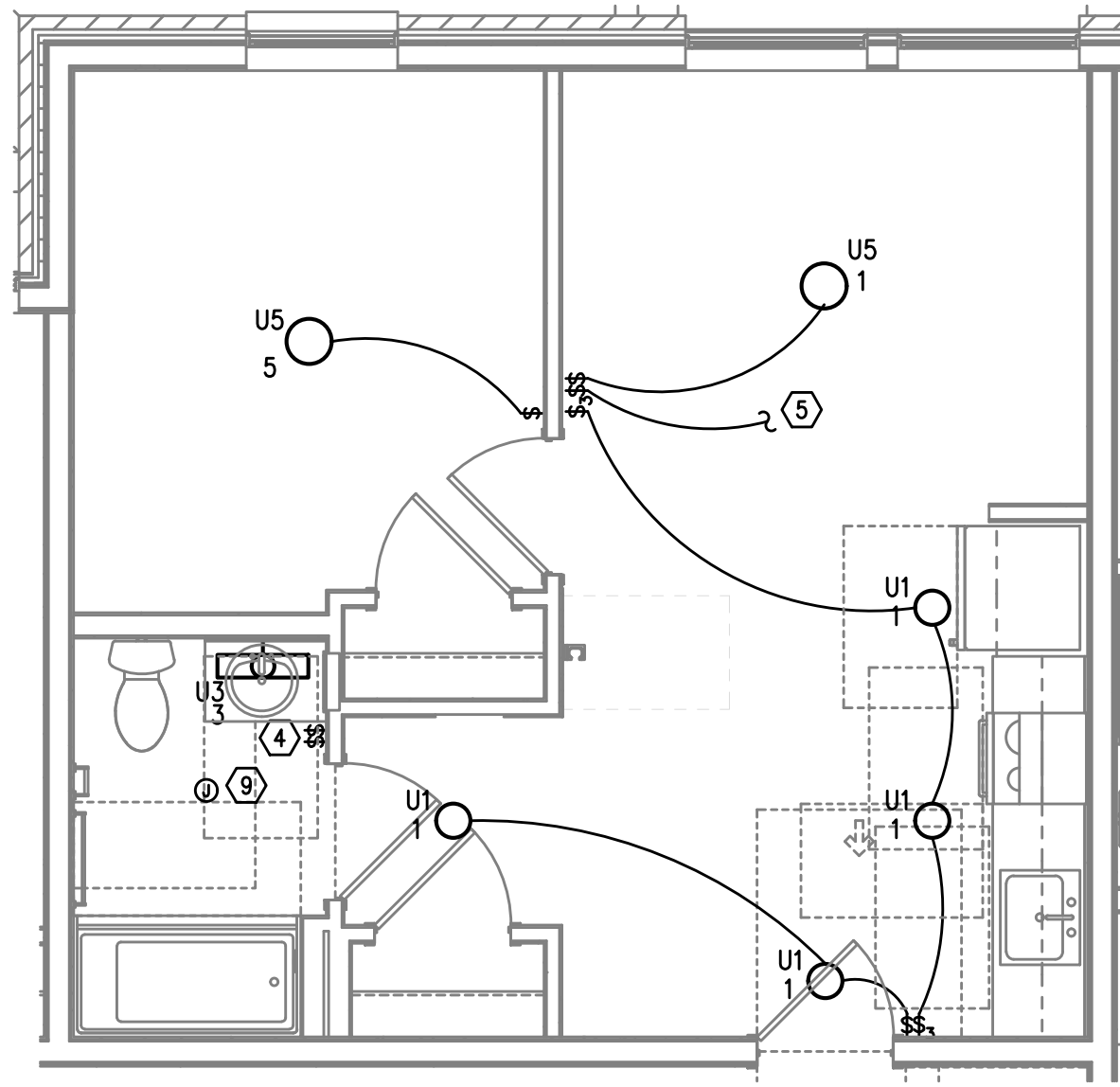


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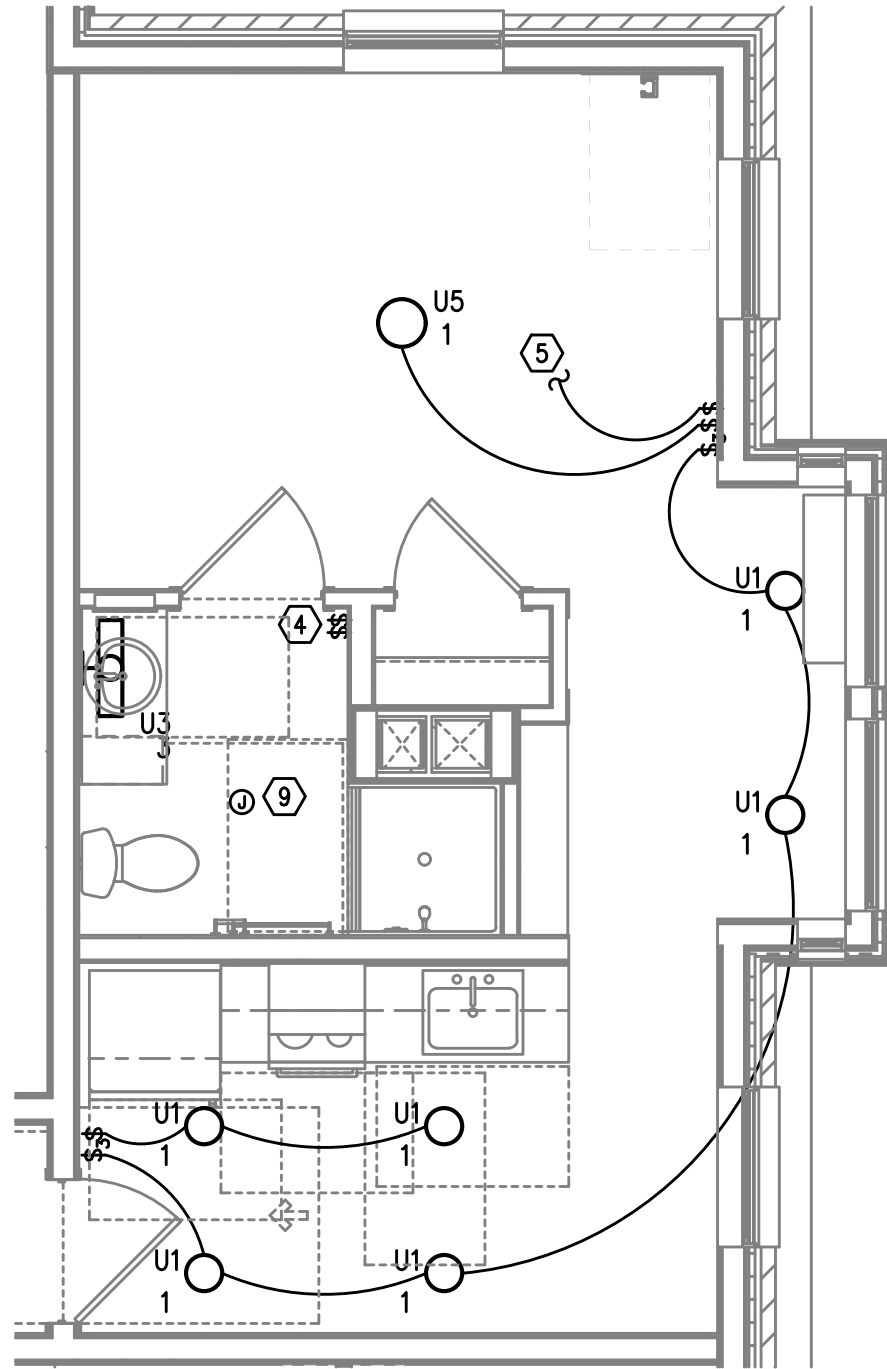
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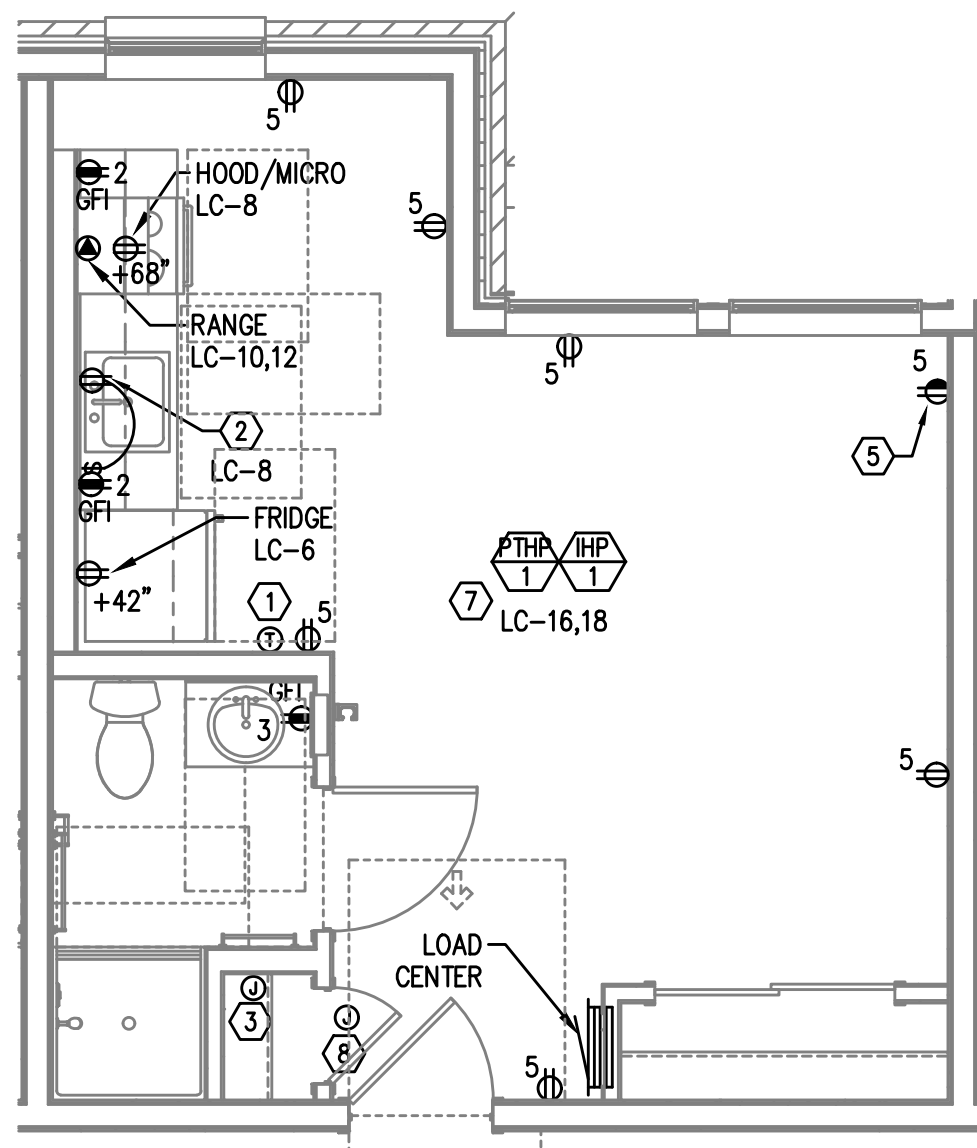
UNIT TYPE 8A-STUDIO
TYPICAL LIGHTING PLAN
1
E4.05 SCALE: 1/4" = 1'-0"



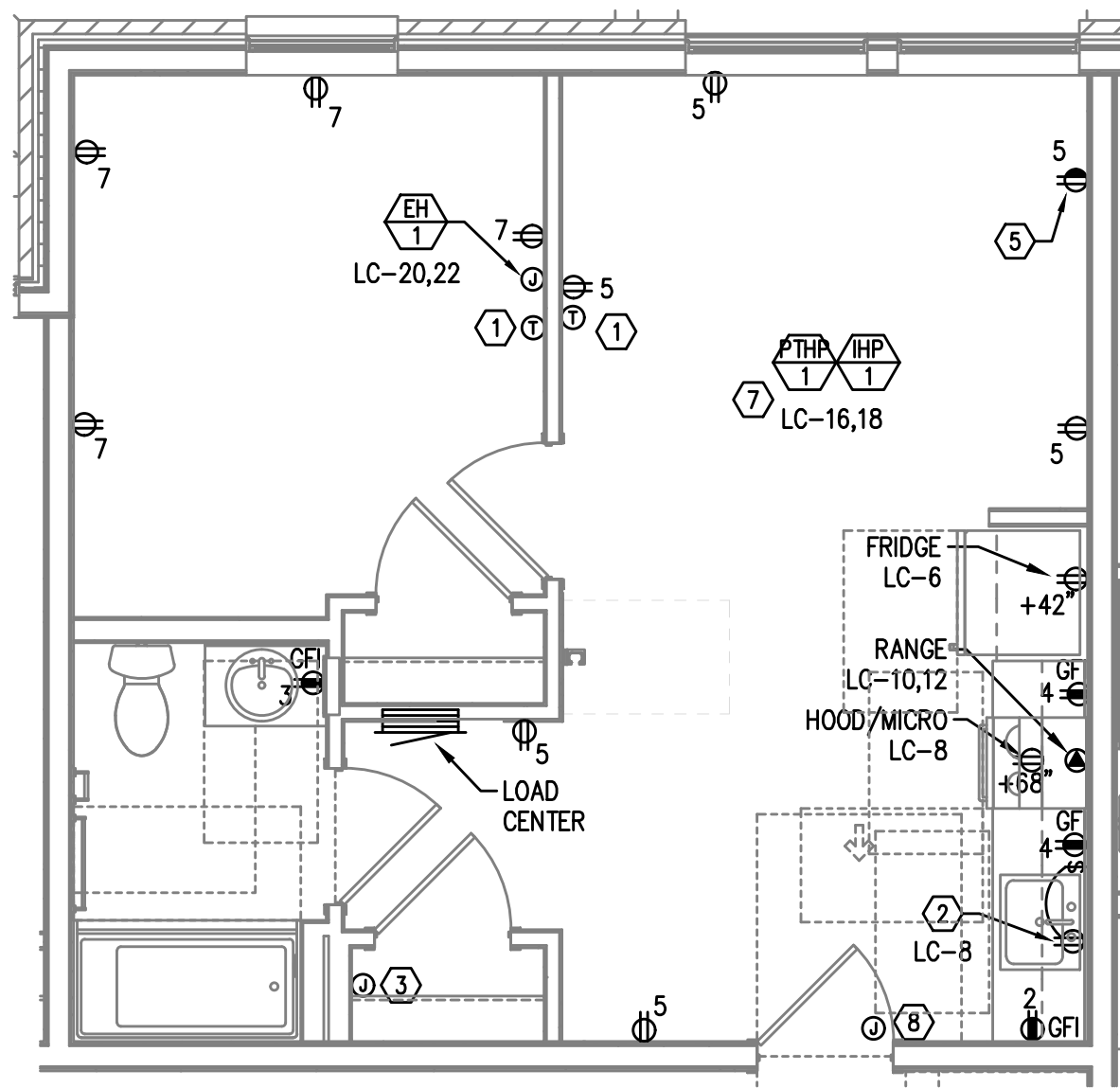
UNIT TYPE 9A-1BEDRM
TYPICAL LIGHTING PLAN
3
E4.05 SCALE: 1/4" = 1'-0"



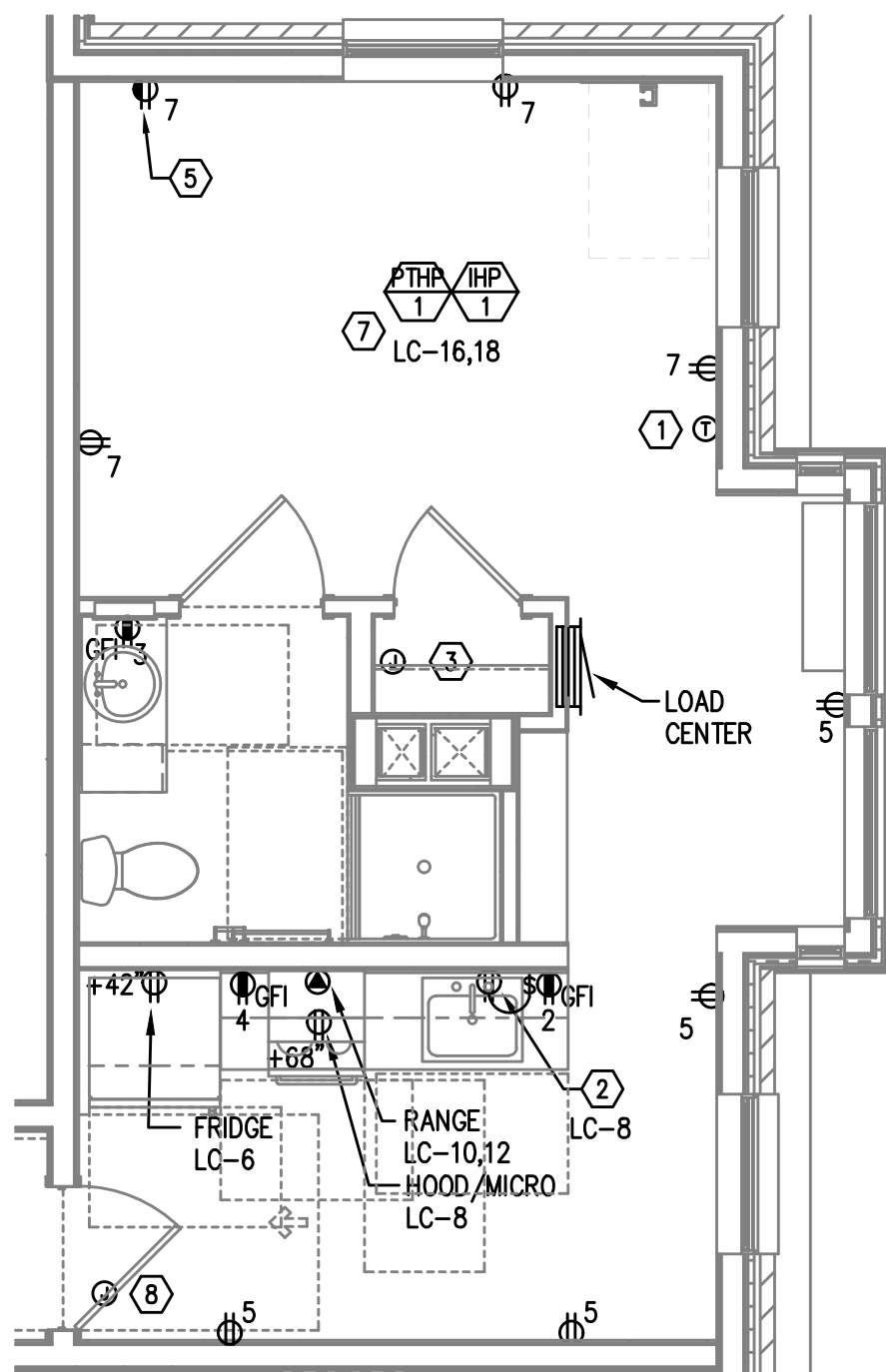
UNIT TYPE 10B
TYPICAL LIGHTING PLAN
5
E4.05 SCALE: 1/4" = 1'-0"



UNIT TYPE 8A-STUDIO
TYPICAL POWER PLAN
2
E4.05 SCALE: 1/4" = 1'-0"



UNIT TYPE 9A-1BEDRM
TYPICAL POWER PLAN
4
E4.05 SCALE: 1/4" = 1'-0"



UNIT TYPE 10B
TYPICAL POWER PLAN
6
E4.05 SCALE: 1/4" = 1'-0"

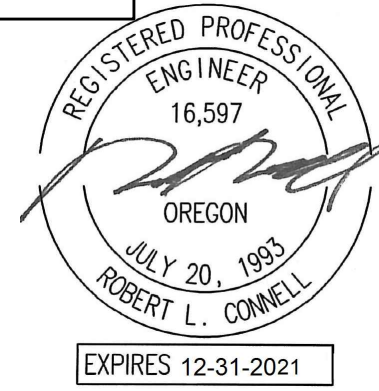
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