

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
	AREA LUMINAIRE, POST TOP

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

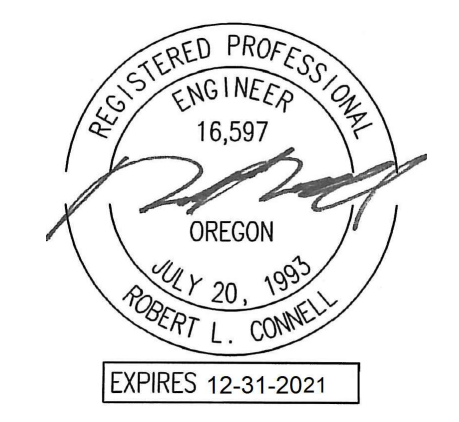
	ELECTRICAL DISTRIBUTION PANELBOARD (MLO)
	ELECTRICAL DISTRIBUTION PANELBOARD (MCB)
	SUB-FEED CIRCUIT BREAKER
	CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED ON PLAN)
	MAIN SWITCH (RATING & POLES AS INDICATED ON PLAN)
	FUSE (RATING & CLASS AS INDICATED ON PLAN)
	TRANSFER SWITCH (MANUAL OR AUTOMATIC)
	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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LOT 3

LOW RISE APARTMENTS

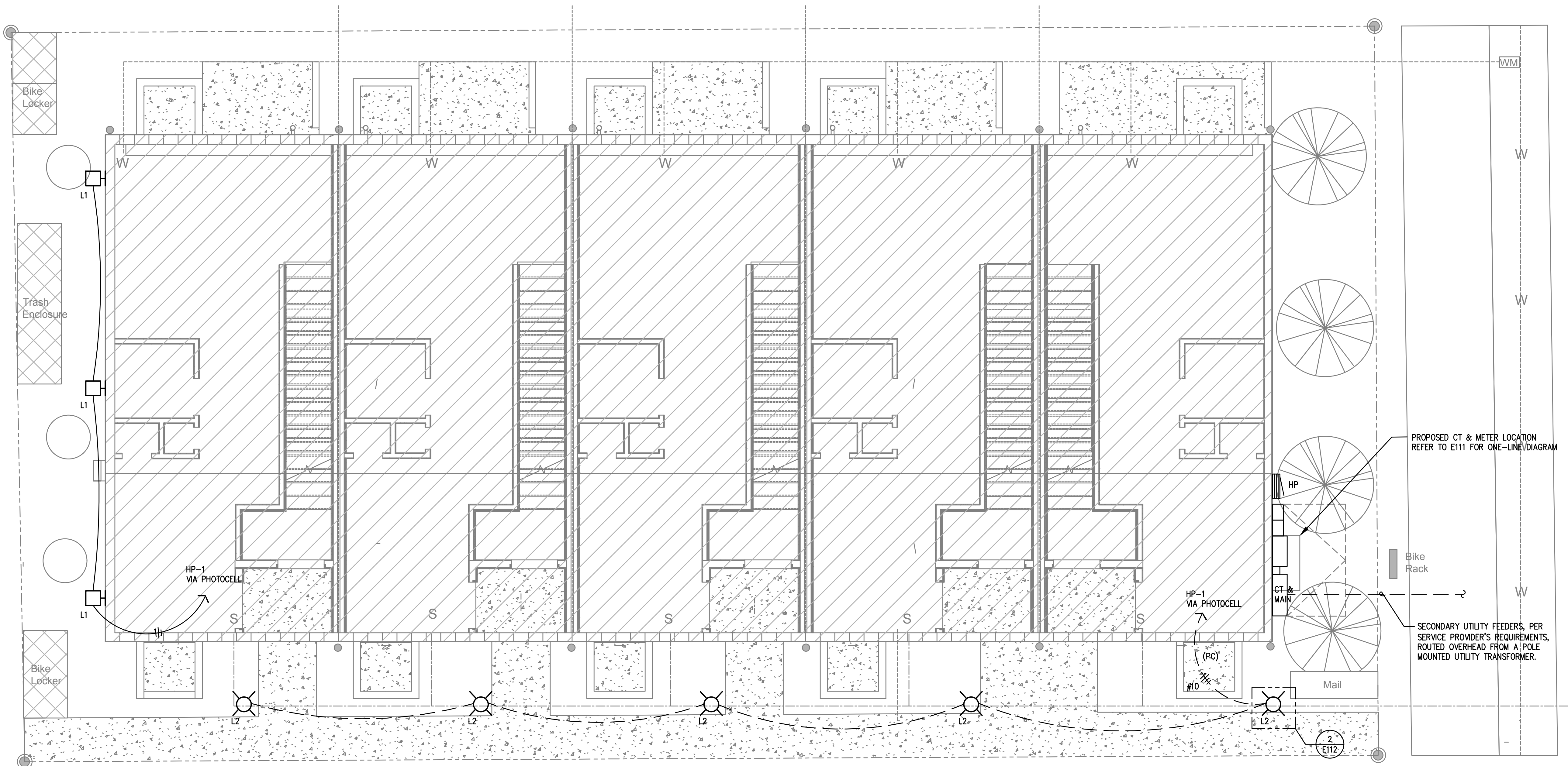
4306-4308 N Gantenbein Ave.
Portland, OR 97217

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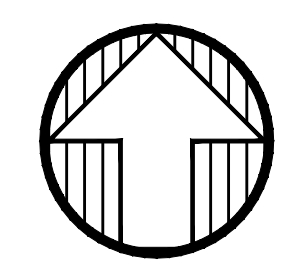
PROJECT ABBREVIATION: LOT3
DRAWN BY:
DATE ISSUED: Issue Date

electrical symbol list

E100



VANCOUVER AVENUE



1
E101
ELECTRICAL SITE PLAN
 SCALE: 1/4" = 1'-0"

GENERAL NOTES:

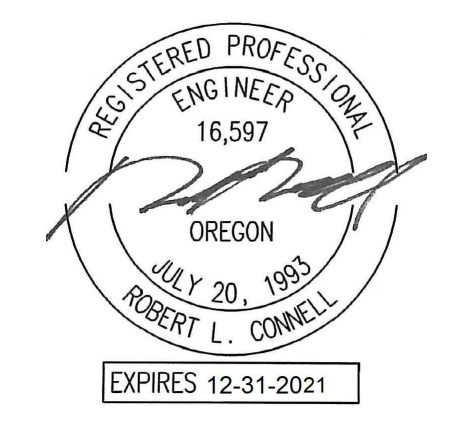
- A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- B. ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.
- C. ELECTRICAL SERVICE ENTRANCE EQUIPMENT DESIGN IS BASED ON SIEMENS PRODUCTS. ACTUAL PRODUCTS INSTALLED MAY DIFFER IN SIZE AND CONFIGURATION AND SHALL BE DOCUMENTED IN FINAL PROJECT DOCUMENTS.
- 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 E111 FOR ONE-LINE DIAGRAM, LOAD SUMMARY INFORMATION AND TYPICAL FEEDER SCHEDULE.

- I. UNDER GROUND SECONDARY CONDUIT SWEEPS SHALL BE MINIMUM 60 INCH RADIUS WITH A MINIMUM OF 7'-0" STRAIGHT CONDUIT RUN BETWEEN SWEEPS.
- J. CONTRACTOR SHALL REVIEW 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 THE 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.

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.
- 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.
- CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING.

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PROPOSED CT & METER LOCATION
REFER TO E111 FOR ONE-LINE DIAGRAM

SECONDARY UTILITY FEEDERS, PER
SERVICE PROVIDER'S REQUIREMENTS,
ROUTED OVERHEAD FROM A POLE
MOUNTED UTILITY TRANSFORMER.

LOT 3

**LOW RISE
APARTMENTS**

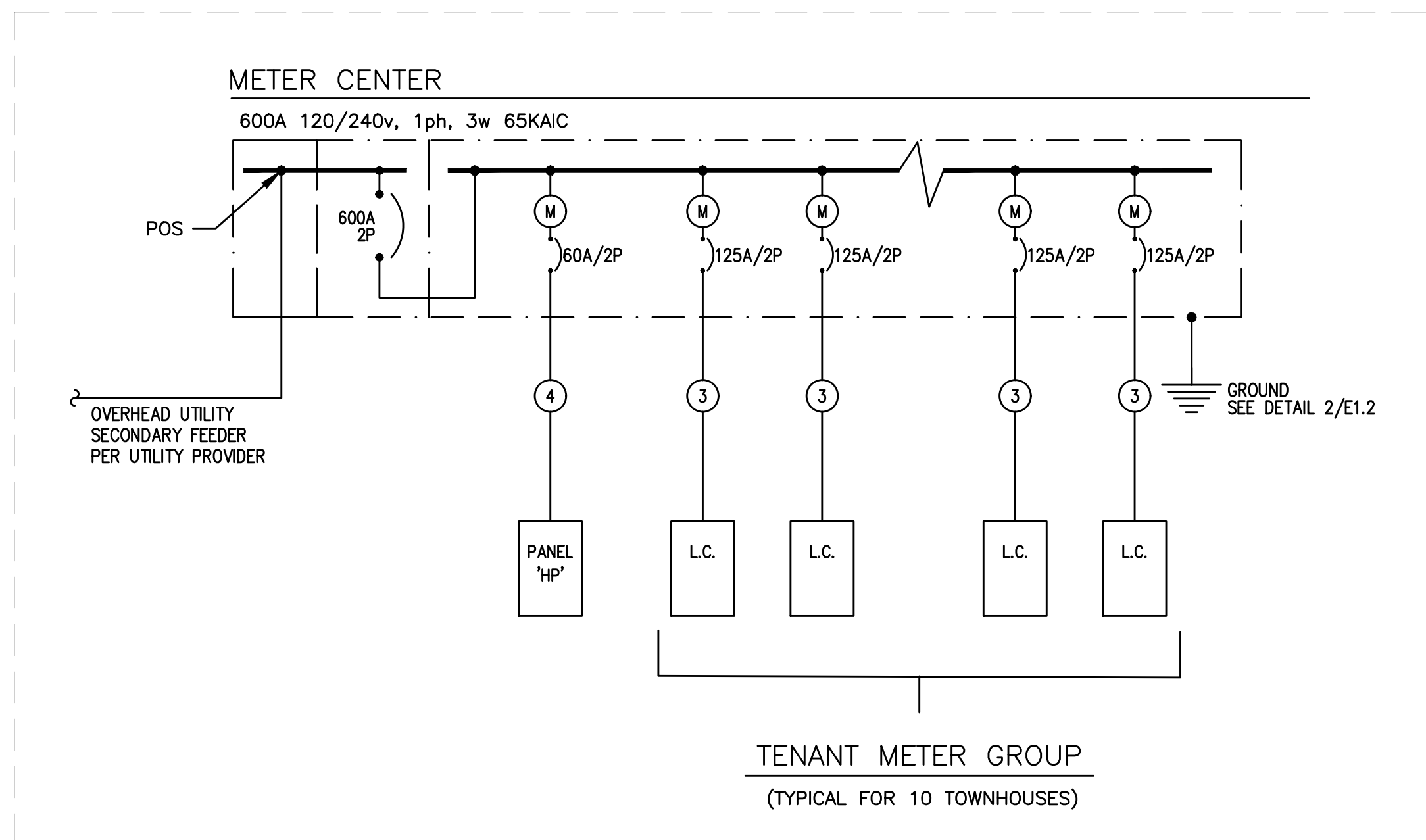
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Permit Set

PROJECT ABBREVIATION: LOT3
DRAWN BY: dmt
DATE ISSUED: Issue Date

**electrical
site plan**

E101



Lot 3 Townhouses
Typical Overall Building Load Summary

LOAD:	LIGHTS	RECEPT	HEAT	EQUIP	MOTORS	RESIDENT LOADS	LARGEST MOTOR
House Panel (typ)	1,000	500					
Combined Townhouses (total of 10)						130,000	
SUBTOTAL	1,000	500	0	0	0	130,000	0
X-FACTOR	1.25	1 + .5	1	1	1	1	0.25
CODE LOAD:	1,250	500	0	0	0	130,000	0

CONN LOAD: 132 KVA

VOLTS: 240 1ph
TOTAL CALC: 132 KVA
CALC AMPS: 549 AMPS

10/31/2020

Lot 3 Townhouses
RESIDENTIAL LOAD SUMMARY

UNIT TYPE:	Lv 1/2	Lv 3/4	TOTAL	AREA (SF)	LI/RECEPT (KVA / SF)	SM APPL (1500VA x 2)	LAUNDRY (1500VA)	COOKING (CONNECTED)	MICROWAVE (CONNECTED)	DISHWASHER (CONNECTED)	DRYER (CONNECTED)	WATER HEATER (CONNECTED)	DISPOSAL (CONNECTED)	MOTORS (CONNECTED)	LARGEST OF AIR/HEATING (CONNECTED)
Unit #1 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #2 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #3 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #4 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #5 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #6 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #7 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #8 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #9 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
Unit #10 - 2br TH	1	1	1	928	2784	3000	1500	11600	1500	1200	5600	4500	900	0	5336
TOTALS:	5	5	10	7424	22272	24000	12000	92800	12000	9600	44800	36000	7200	0	42880

VOLTS: 240 1ph
TOTAL CONNECTED: 303 KVA
DEMAND FACTOR: 0.43 Based on Total Number of Residential Units = 8-10 (See N.E.C. Article: 220.84)
TOTAL CALCULATED: 130 KVA
CALCULATED AMPS: 544 AMPS

NOTE:

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REGISTERED PROFESSIONAL ENGINEER
16,597
OREGON
JULY 20, 1993
ROBERT L. CONNELL
EXPIRES 12-31-2021

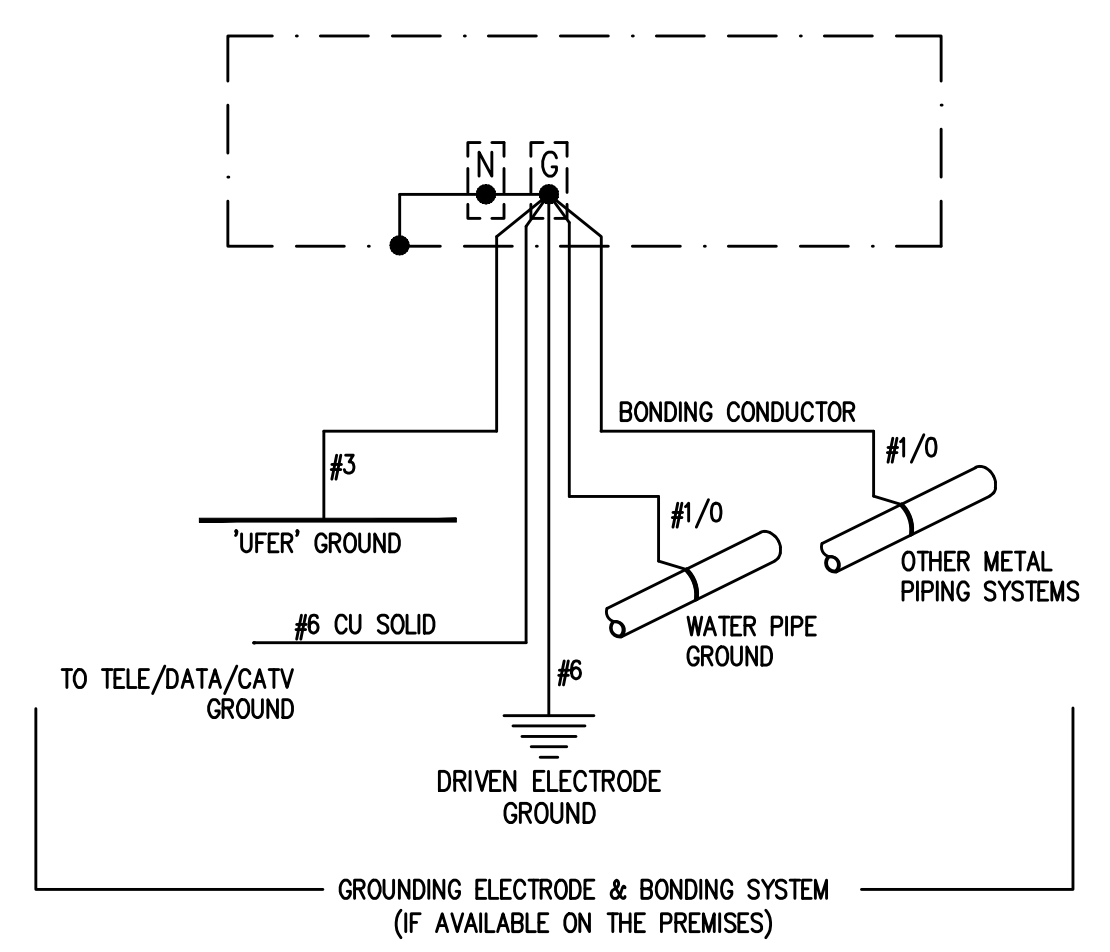
1 ELECTRICAL ONE-LINE DIAGRAMS (TYPICAL)
E111 120/240V, 1Ø, 3 WIRE

FEEDER SCHEDULE (COPPER)

NO.	AMPS	CONDUIT	CONDUCTOR	
1		*(5) 4"	BY UTILITY CO.	& (1) GND
2	600A	(2) 3"	ea w/ (3) #350Kcmil	& (1) #2/0 GND
3	125A	1 1/2"	(3) #1	& (1) #6 GND
4	60A	1"	(3) #4	& (1) #8 GND

* PARALLEL FEEDER

- ONE-LINE GENERAL NOTES:
- COORDINATE ALL WORK ASSOCIATED WITH ELECTRIC SERVICE WITH LOCAL UTILITY. PROVIDE ALL CONDUIT & CONDUCTORS, 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.



2 GROUNDING/BONDING DIAGRAM
E111 120/208V, 3Ø, 4 WIRE

MFA PANEL SCHEDULE 31-Oct-20

panel HOUSE PANEL voltage	mounting SURFACE NEMA 3R	location bus & main	connected load
C	1	160A	7
1 LIGHTS - SITE & BUILDING	292 20/1	1 * 2 20/1	900 RECEPT - EXTERIOR
1 LIGHTS - EGRESS	55 20/1	3 * 4 20/1	500 IRRIGATION
SPARE	20/1	5 * 6 20/1	SPARE
SPARE	20/1	7 * 8 20/1	SPARE
SPARE	20/1	9 * 10 20/1	SPARE
SPARE	20/1	11 * 12 20/1	SPARE
BLANK	20/1	13 * 14	BLANK
BLANK	15	* 16	BLANK
BLANK	17	* 18	BLANK
BLANK	19	* 20	BLANK
BLANK	21	* 22	BLANK
BLANK	23	* 24	BLANK
BLANK	25	* 26	BLANK
BLANK	27	* 28	BLANK
BLANK	29	* 30	BLANK

Line 1 1192 VA
Line 2 555 VA

NOTES:
line-line voltage 240
largest motor (va) 0

Total Connected 1747 VA

load code:	line 1	line 2	total	factor	calculated load (va)
1. LIGHTS=	292	55	VA	347 1.25	434
2. RECEPT=	900	0	VA	900 1 + 0.5	900
3. HEATING=	0	0	VA	0 1.00	0
4. KITCHEN=	0	0	VA	0 1.00	0
5. EQUIP.=	0	500	VA	500 1.00	500
6. MOTORS=	0	0	VA	0 *	0
7. SUB-PANEL=	0	0	VA	0 1.00	0
(* 125% of the largest motor + 100% of the balance)					TOTAL = 1834

MFA CIRCUIT DIRECTORY 31-Oct-20

Loadcenter Name LC-2-Bedroom (TYPICAL)	mounting RECESSED	location bus & main
208/120	1	125A MLO (SCCR: 10K)
service	4/p	no. 1
LIGHTS-KITCHEN/LIVING	20/1(A)	1 * 2 20/1(A) APPLIANCE CIRCUIT
LTS & RECEPT - BATH	20/1	3 * 4 20/1(A) APPLIANCE CIRCUIT
LTS & RECEPT-BEDROOM	20/1(A)	5 * 6 20/1 REFRIGERATOR
LTS & RECEPT-BEDROOM	20/1(A)	7 * 8 50/2 RANGE
RECEPTACLES	20/1(A)	9 * 10
RECEPTACLES	20/1(A)	11 * 12 20/1 HOOD
SPARE	20/1(A)	13 * 14 20/1 DISPOSAL
WASHER	20/1	15 * 16 20/1 DISHWASHER
DRYER	30/2	17 * 18 20/1 SPARE
*	19	* 20 30/2 HEAT (SPLIT SYSTEM)
WATER HEATER	30/2	21 * 22
*	23	* 24 20/1 SMART PANEL (OPTION)
SPARE	20/1	25 * 26 20/1 SPARE
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

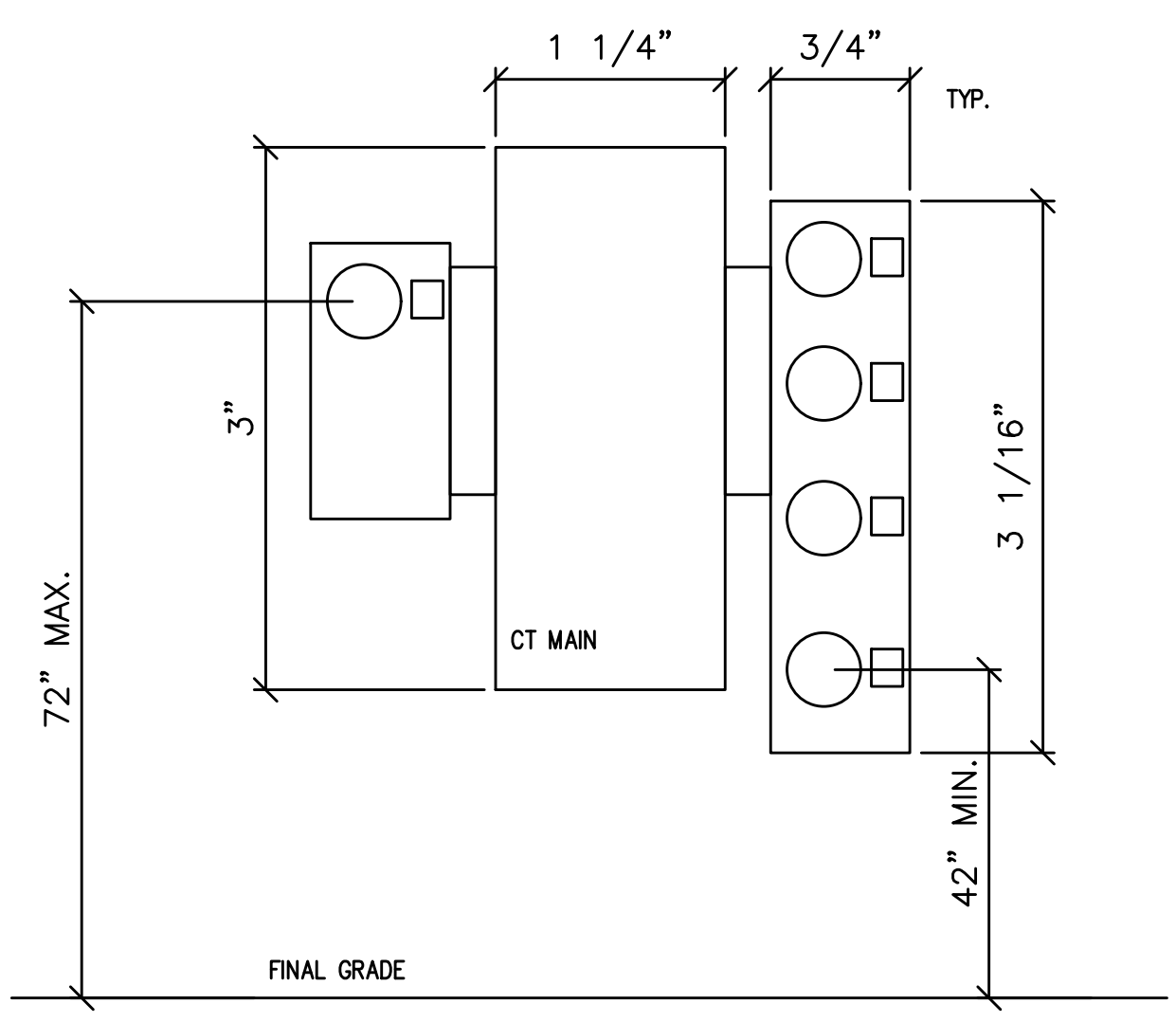
NOTES:
1. (A) DENOTES: ARC-FAULT INTERRUPTER CIRCUIT BREAKER. INSTALL PER NEC 210.12.
2. LOADS FOR THIS PANEL ARE INDICATED ON THE "DWELLING UNIT LOAD CALCULATION".
3. BREAKER & WIRE SHALL BE SIZED FOR EQUIPMENT INSTALLED.
4. (G) DENOTES GFCI RATED BREAKER.

DWELLING UNIT LOAD CALCULATION

Project: Lot 3 Townhouses
Unit Type: 2 Bedroom (typical)
Area: 928 square feet(average)

Minimum Size Feeder (NEC 220.40):	
General lighting load at 3 VA / SF	2,784 VA
Small Appliance load (2 ckt at 1500VA each)	3,000 VA
Laundry Load (1 ckt at 1500VA)	1,500 VA
Range	11,600 VA
Other Cooking Appliance Load (Microwave Oven)	1,500 VA
Dishwasher Load	1,200 VA
Dryer Load	5,600 VA
Water Heater Load	4,500 VA
Disposal load	900 VA
Other motor loads	0 VA
Total "General Loads"	32,584 VA
First 10 kVA of "general loads" at 100%	10,000 VA
Remainder of "general loads" at 40%	9,034 VA
Net "general load"	19,034 VA
Largest of:	
-or- VA of electric space heating (less than 4) at 65%	0 VA
-or- VA of electric space heating (4 or more) at 40%	0 VA
-or- VA of air conditioning/cooling/heat pumps at 100%	5,336 VA
TOTAL LOAD	24,370 VA
For 120/240-volt, 4-wire, Single-phase service or feeder,	
24,370 VA / 240 volts =	102 Amps
Therefore, this dwelling unit shall be permitted to be served by a 125 amp service.	

3 TYPICAL METER ELEVATION
E111 NOT TO SCALE



TYPICAL METER ARRANGEMENT PER UTILITY PROVIDER'S 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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LOT 3

LOW RISE APARTMENTS

4306-4308 N Gantenbein Ave.
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DRAWN BY:
DATE ISSUED: Issue Date

electrical one-line diagram & schedules

E111

MECHANICAL EQUIPMENT SCHEDULE									
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 POWER PLANS
HP-1A	MINI SPLIT SYST NO.1 (INDOOR)								
HP-1B	MINI SPLIT SYST NO.1 (INDOOR)								
OHP-1	MINI SPLIT SYST NO.1 (OUTDOOR)	240	240	1	21.9 MCA	3/4"	#6	#10	SEE POWER PLANS
WH-1	WATER HEATER NO.1	4.5KW	240	1		1/2"	#12	#12	SEE POWER PLANS

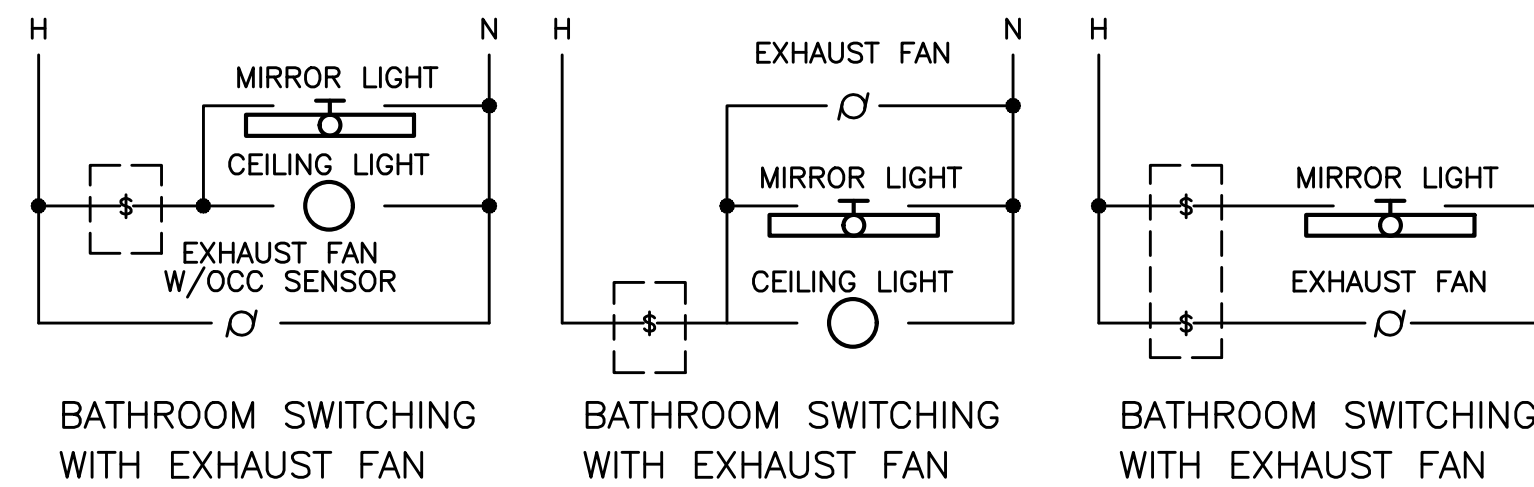
GENERAL EQUIPMENT NOTES:

- CONTRACTOR/DESIGNER SHALL VERIFY ALL MECHANICAL EQUIPMENT CONNECTION LOAD REQUIREMENTS WITH THE MECHANICAL EQUIPMENT PROVIDER PRIOR TO ROUGH IN.
- MECHANICAL EQUIPMENT SIZES SHOWN IN THE MECHANICAL SCHEDULE ABOVE ARE FOR REFERENCE ONLY AND MAY NOT REFLECT THE ACTUAL EQUIPMENT TO BE INSTALLED.
- 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.
- REFER TO TYPICAL UNIT PLAN LOAD CENTER SCHEDULES ON THIS SHEET FOR CIRCUITING INFORMATION.

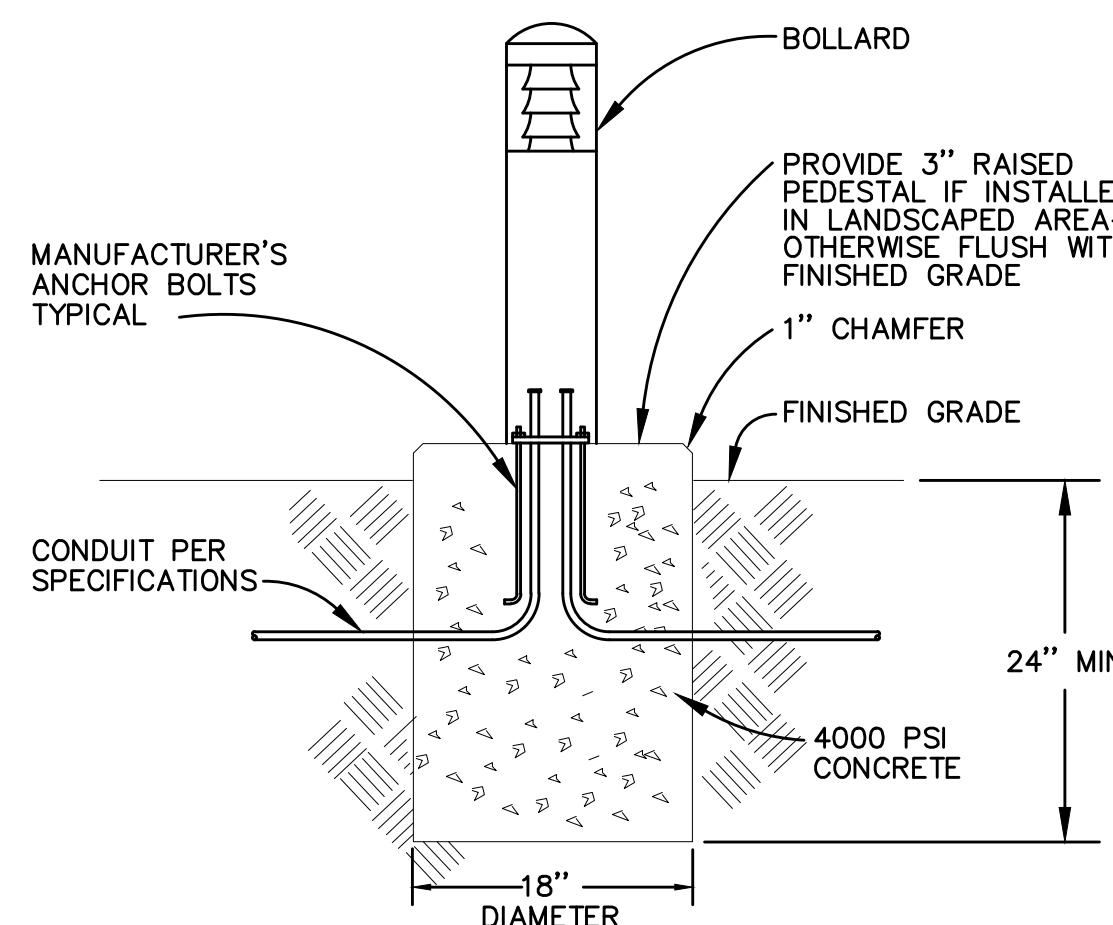
LIGHTING FIXTURE LIST					
TYPE	LAMP	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	OPTIONS
EM	LED 11W	LSI LIGHTING (OR APPROVED OTHER)	CSL SERIES	TYPE :EMERGENCY LIGHT MOUNTING :WALL MOUNT (+8'-0" MIN.) HOUSING :THERMOPLASTIC LENS/REFL :NA VOLTAGE :MVOLT BALLAST :BATTERY BACK UP	FINISH PER ARCHITECT UNIT COMMON ENTRY
L1	LED 4000K 2873LM	LSI LIGHTING (OR APPROVED OTHER)	XPWS3 SERIES	TYPE :EXTERIOR WALL PACK MOUNTING :WALL MOUNT (+8'-0" MIN.) HOUSING :ALUMINUM LENS/REFL :TEMPERED GLASS VOLTAGE :MVOLT BALLAST :BATTERY BACK UP	FINISH PER ARCHITECT UL LISTED WET LOCATION BUILDING EXTERIOR
L2	LED 4000K 2873LM	LSI LIGHTING (OR APPROVED OTHER)	CBR7 SERIES	TYPE :42" BOLLARD LIGHT MOUNTING :AT GRADE HOUSING :ALUMINUM LENS/REFL :POLYCARBONATE VOLTAGE :MVOLT BALLAST :BATTERY BACK UP	FINISH PER ARCHITECT UL LISTED WET LOCATION BUILDING WALK WAY
U1	LED 3000K 670LM	HALO LOGHTING (OR APPROVED OTHER)	SLD4059 SERIES	TYPE :4" 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
U4	LED 3000K 1700LM	DESIGN CLASSICS LIGHTING (OR APPROVED OTHER)	5014-9030T16 SERIES	TYPE :14" DIA. CEILING LIGHT MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	FINISH PER ARCHITECT UNIT DINING AREA
U4	LED 3000K 1700LM	DESIGN CLASSICS LIGHTING (OR APPROVED OTHER)	5014-9030T16 SERIES	TYPE :14" DIA. CEILING LIGHT MOUNTING :SURFACE HOUSING :STEEL LENS/REFL :ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (0-10 DIMMING)	FINISH PER ARCHITECT UNIT DINING AREA
U5	LED 3000K 800LM	KUZCO LIGHTING (OR APPROVED OTHER)	EW3105 SERIES	TYPE :EXTERIOR SCNCE MOUNTING :SURFACE (+6.5FT AFF) HOUSING :ALUMINUM LENS/REFL :TEMPERED GLASS VOLTAGE :120V BALLAST :LED DRIVER	FINISH PER ARCHITECT UNIT ENTRIES, PATIOS

GENERAL LIGHTING NOTES:

- ALL LIGHT FIXTURES SHALL HAVE ENERGY EFFICIENT LAMPING AND BALLASTS.
- LIGHT FIXTURES FOR LIVING UNITS SHALL BE "ENERGY STAR" RATED.
- VERIFY ALL FIXTURE FINISHES WITH ARCHITECT PRIOR TO BID.
- VERIFY ALL FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO BID.
- VERIFY ALL FIXTURE LOCATIONS WITH ARCHITECT PRIOR TO ROUGH IN.
- ALL INTERIOR LIGHTING SHALL BE 3000 KELVIN UNLESS OTHERWISE NOTED.
- ALL PRODUCT SUBSTITUTIONS AND VALUE ENGINEERING SHALL BE SUBMITTED DURING BID PHASE, SHALL MEET DESIGN INTENT AND IS SUBJECT TO OWNER APPROVAL.
- EGRESS LIGHTING SHALL BE PROVIDED TO MEET MINIMUM LIGHT LEVELS AS DESCRIBED PER OREGON STRUCTURAL SPECIALTY CODE 1006.3.
- BUILDING EXTERIOR & SITE LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL, EITHER INTEGRAL OR REMOTE, FOR DUSK-TILL-DAWN OPERATION.
- BUILDING MOUNTED LIGHT FIXTURES TYPES 'L1' & 'U5' (ON HOUSE POWER) SHALL BE CONTROLLED VIA ROOF MOUNTED PHOTOCELL. THESE FIXTURES ARE TO BE SEPARATE FROM TENANT CONTROLLED "PORCH" LIGHTS.



1 BATHROOM SWITCHING DIAGRAM - TYPICAL
NO SCALE



2 BOLLARD LIGHT DETAIL
NO SCALE

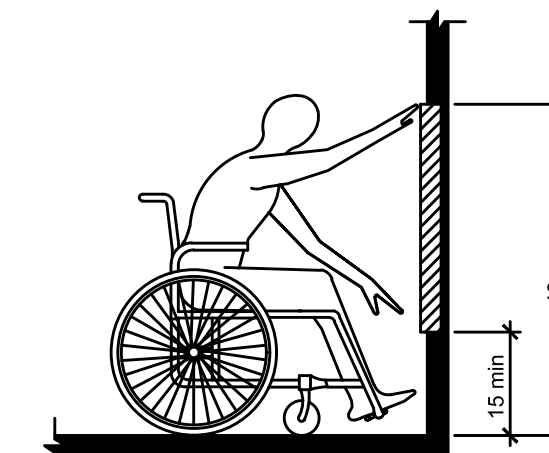


Figure 308.2.1
Unobstructed Forward Reach

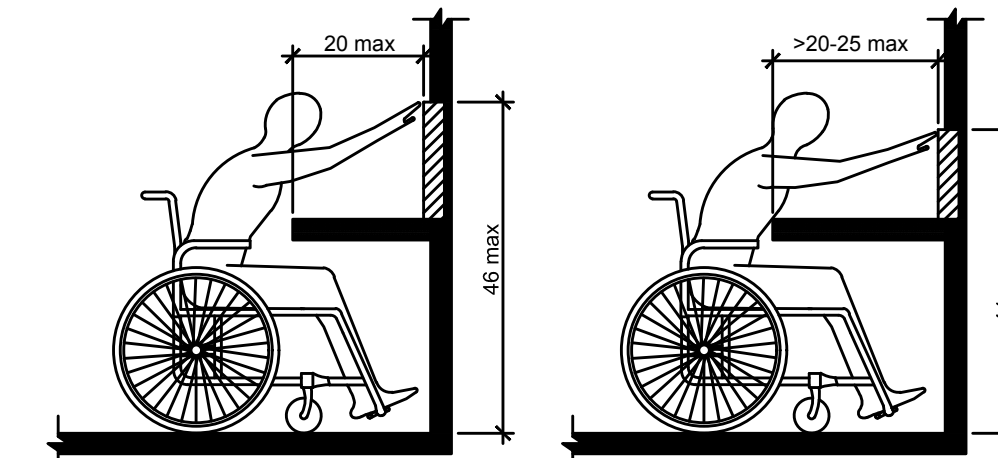


Figure 308.2.2
Obstructed High Forward Reach

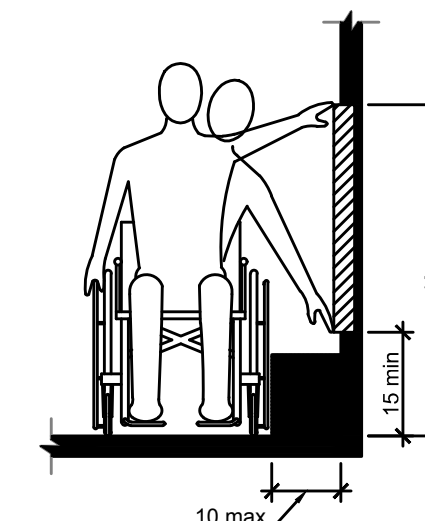


Figure 308.3.1
Unobstructed Side Reach

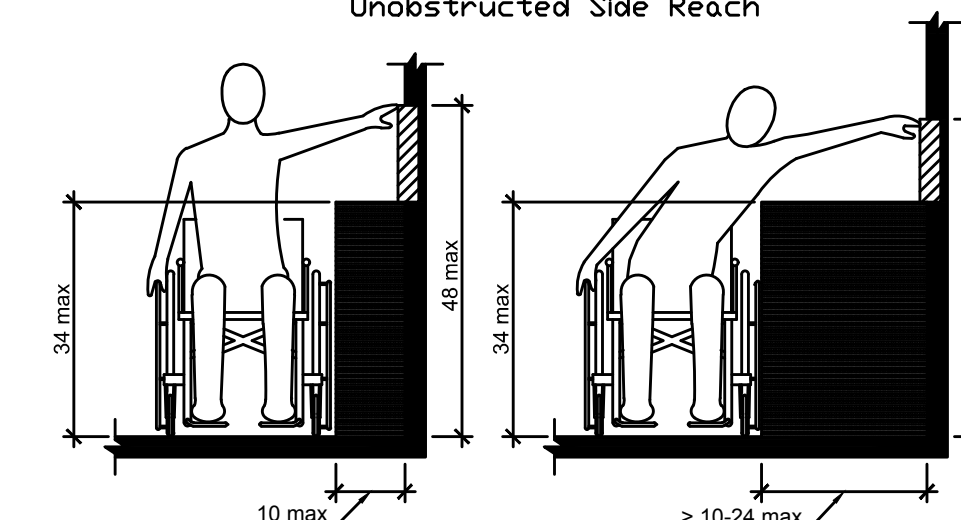


Figure 308.3.2
Obstructed High Side Reach

3 ADA REACH REQUIREMENTS
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.

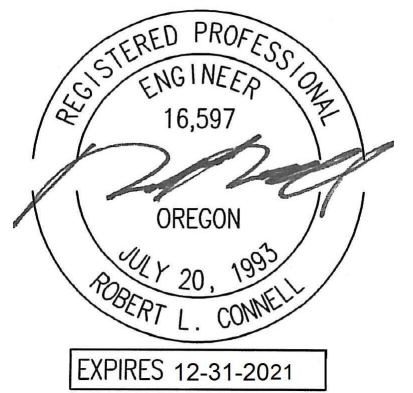
308.3 Side Reach.

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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LOT 3

LOW RISE
APARTMENTS

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Ave.
Portland, OR 97217

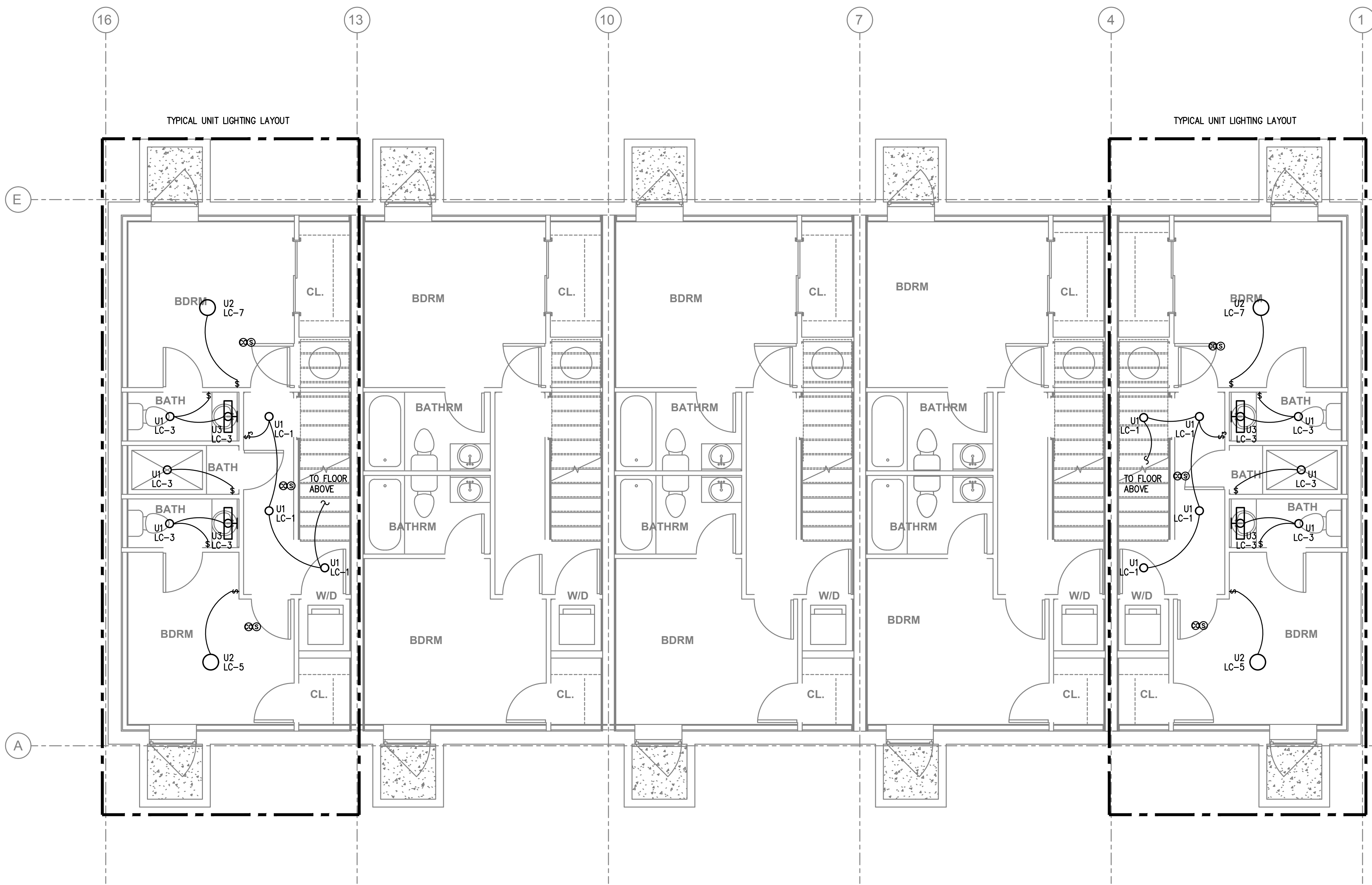
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DRAWN BY:
DATE ISSUED: Issue Date

electrical schedules
& details

E112

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1 BASEMENT LEVEL LIGHTING PLAN
 E200 SCALE: 1/4" = 1'-0"

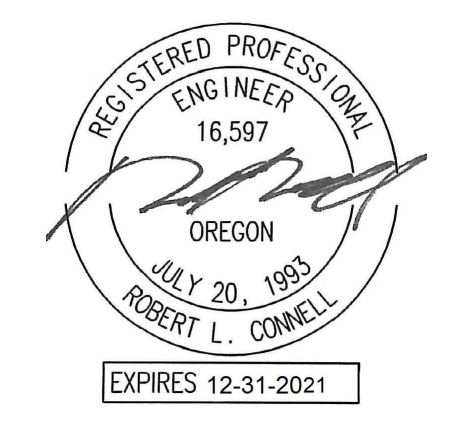
GENERAL NOTES:

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- B. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.
- C. REFER TO SHEET E111 FOR TYPICAL UNIT LOAD CENTER DIRECTORIES.
- D. ALL LIGHT SWITCHES SHALL BE ROCKER STYLE, SUCH AS LEVITON DECORA, OR APPROVED EQUAL.
- E. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL PLAN SHEETS AND COORDINATE WITH THE MECHANICAL INSTALLER TO AVOID CONFLICTS BETWEEN HVAC EQUIPMENT AND LIGHT FIXTURES WITHIN THE APARTMENT UNITS.
- F. PROVIDE ROUGH IN ONLY FOR FIRE ALARM DEVICES PROVIDED AND INSTALLED BY OTHERS. DEVICES SHOWN ON THE PLANS ARE FOR REFERENCE ONLY.
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- H. REFER TO SHEET E112 FOR TYPICAL BATHROOM LIGHT SWITCHING WIRING DIAGRAM.

KEYED NOTES:

- 1. EXTERIOR BUILDING LIGHTS ON "HOUSE" POWER TO BE PROVIDED WITH DUSK-TILL-DAWN LIGHTING CONTROL VIA EITHER ROOF MOUNTED PHOTOCELL OR MECHANICAL TIME CLOCK PER OWNERS DIRECTION.
- 2. EGRESS LIGHT FIXTURE TO BE MOUNTED AT 8FT AFF, MINIMUM.

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LOT 3

LOW RISE APARTMENTS

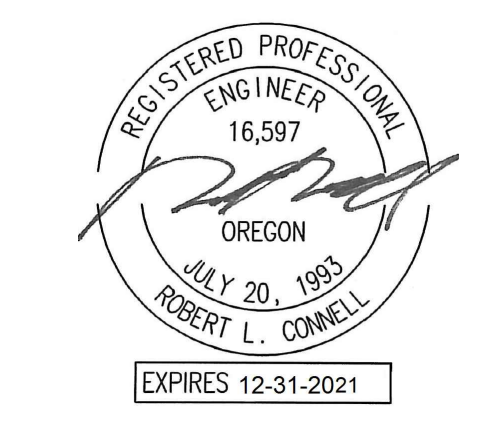
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basement level lighting plan

E200



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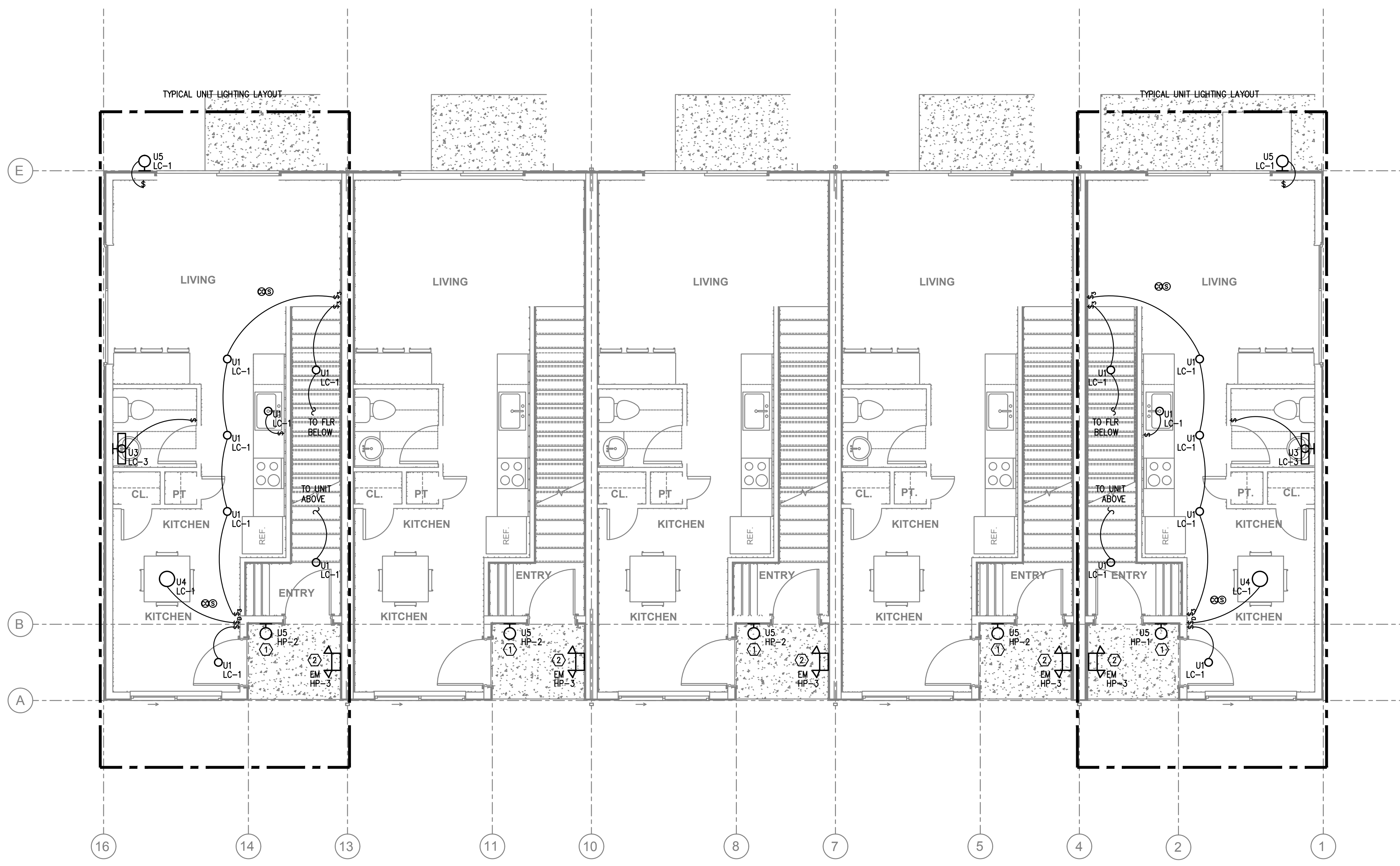
LOT 3

LOW RISE APARTMENTS

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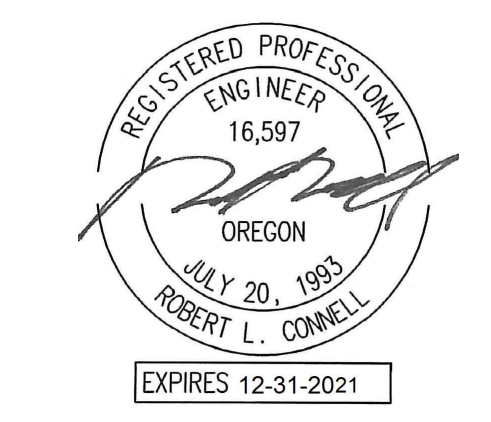
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1 LEVEL 1 – LIGHTING PLAN
 E201 SCALE: 1/4" = 1'-0"

level one lighting plan

E201



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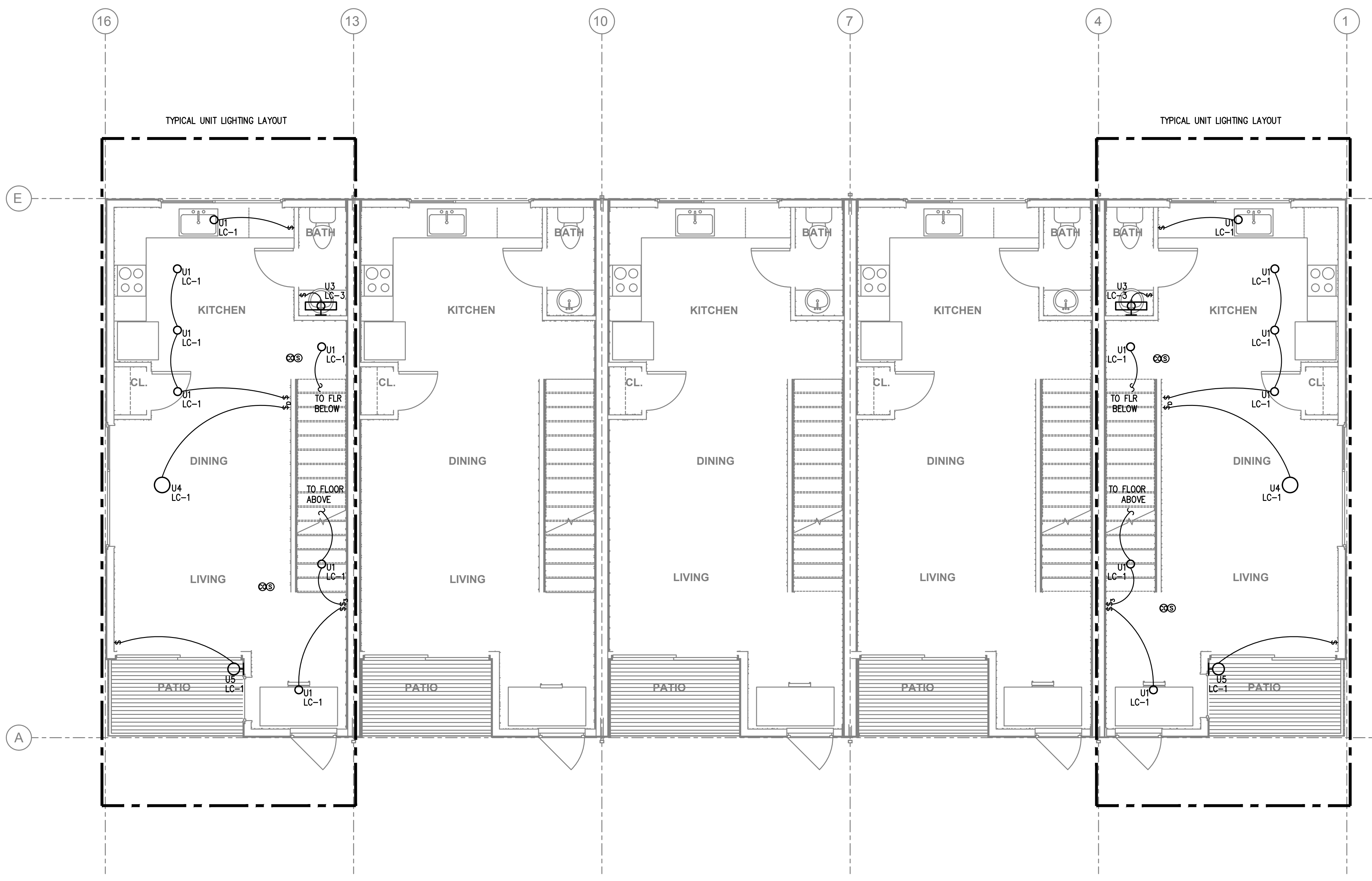
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 CONTACT: DENISE TAYLOR

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KEYED NOTES:

- 1. EXTERIOR BUILDING LIGHTS ON "HOUSE" POWER TO BE PROVIDED WITH DUSK-TILL-DAWN LIGHTING CONTROL VIA EITHER ROOF MOUNTED PHOTOCELL OR MECHANICAL TIME CLOCK PER OWNERS DIRECTION.
- 2. EGRESS LIGHT FIXTURE TO BE MOUNTED AT 8FT AFF, MINIMUM.



1 LEVEL 2 — LIGHTING PLAN
E202 SCALE: 1/4" = 1'-0"

LOT 3

LOW RISE APARTMENTS

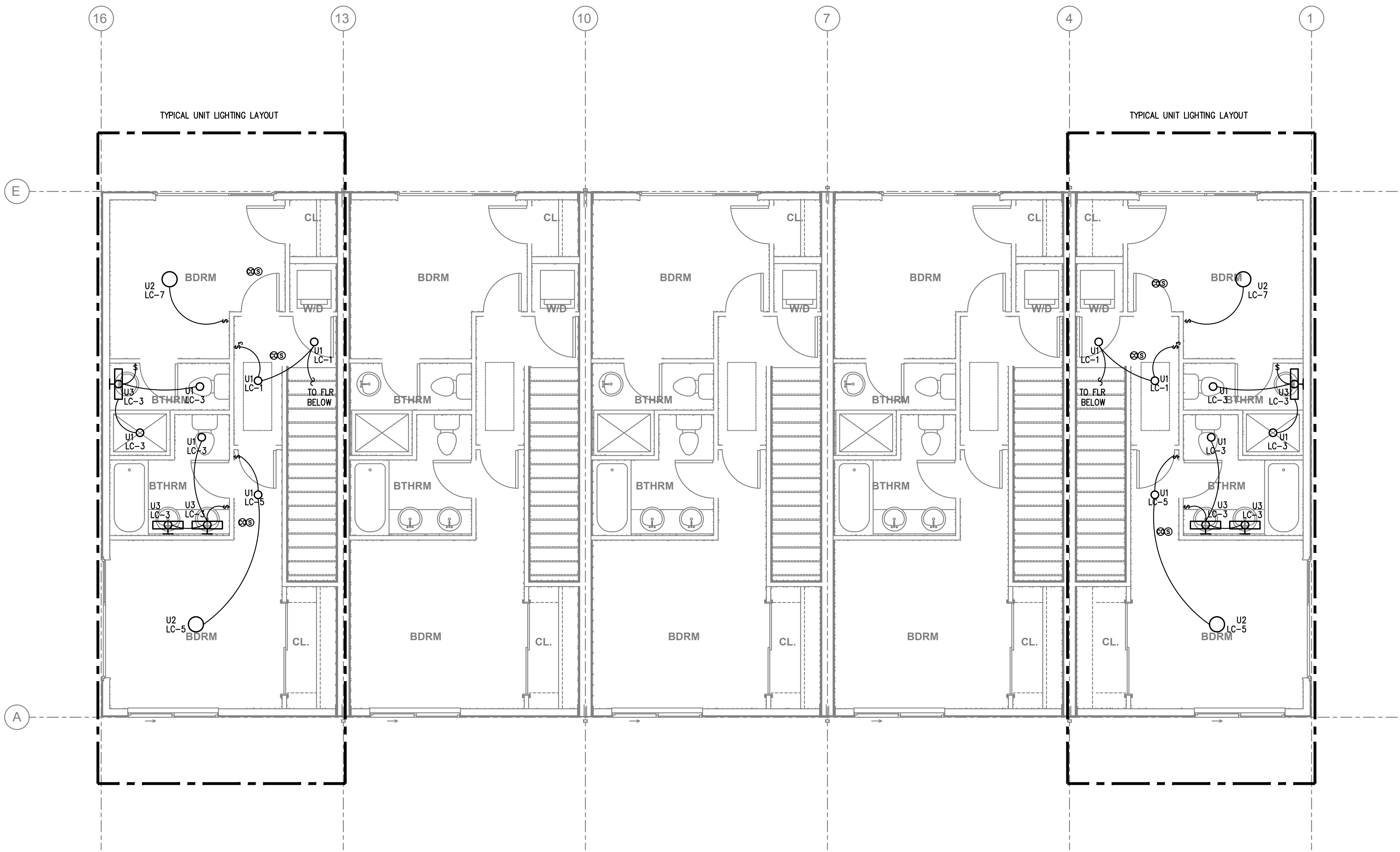
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level two lighting plan

E202



1 LEVEL 3 – LIGHTING PLAN
 E203 SCALE: 1/4" = 1'-0"

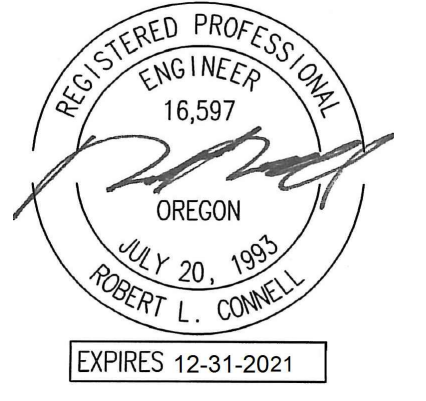
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LOT 3

LOW RISE APARTMENTS

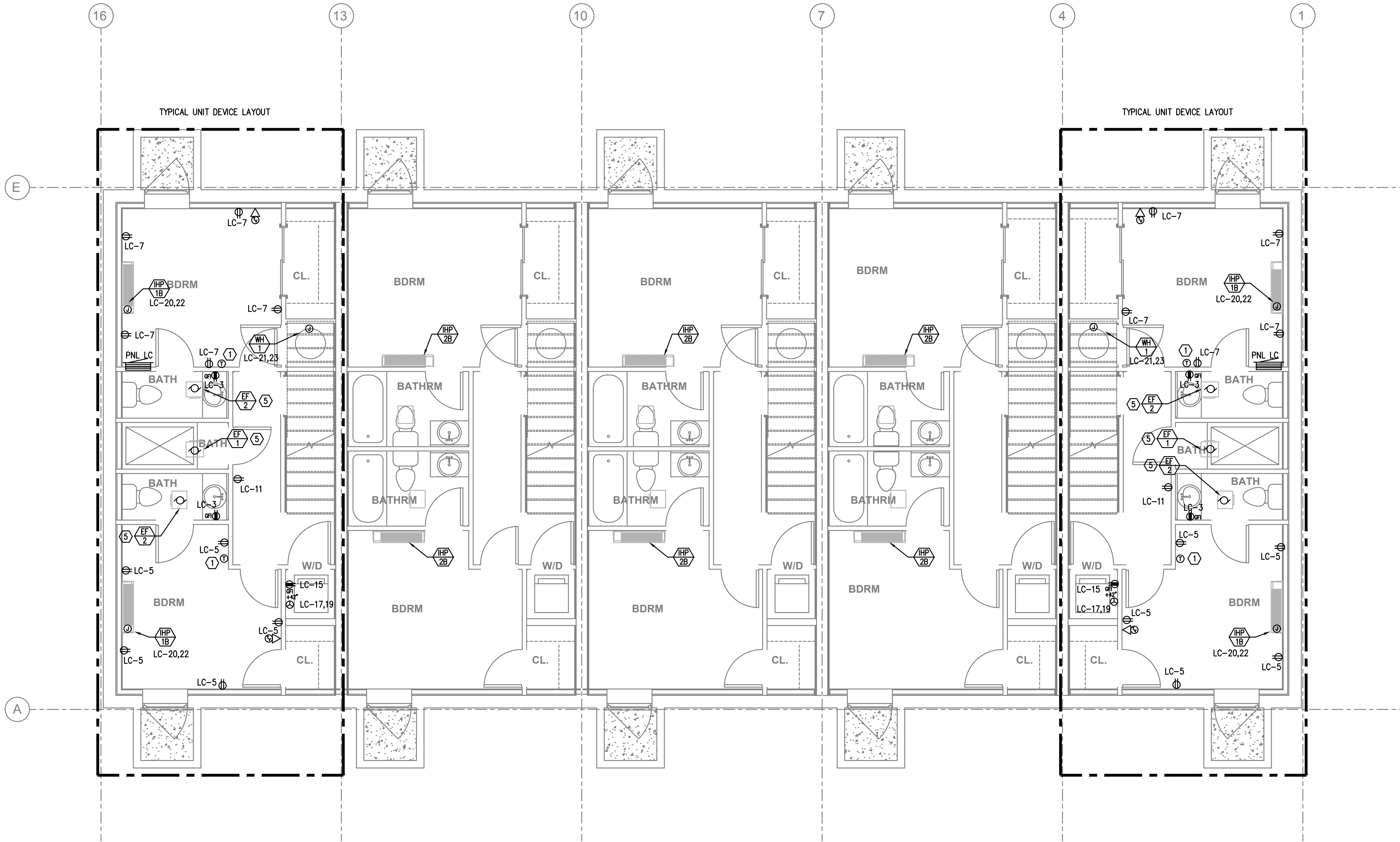
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level three lighting plan

E203



1 BASEMENT LEVEL POWER PLAN
 E300 SCALE: 1/4" = 1'-0"

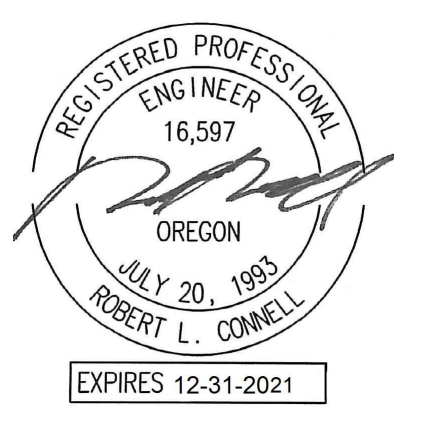
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- B. WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- C. ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS AS REQUIRED. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN.
- D. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.
- E. COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E112 FOR MECHANICAL EQUIPMENT SCHEDULE.
- F. SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE, BASED ON SIEMENS PRODUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ENDURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.
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KEYED NOTES:

- 1. PROVIDE WIRE CONNECTION FOR THERMOSTAT(S). COORDINATE WITH MECHANICAL INSTALLER FOR EXACT LOCATION AND POWER REQUIREMENTS PRIOR TO ROUGH IN. THERMOSTATS TO BE MOUNTED AT 48" AFF MAX. TO HIGHEST OPERABLE PART.
- 2. PROVIDE ONE 20A, 120V, 1P GFCI DUPLEX RECEPTACLE UNDER KITCHEN SINK FOR DISPOSAL POWER CONNECTION. DISPOSAL TO BE PROVIDED WITH "SAFEAIRE" SINK DISPOSAL AIR SWITCH, MOUNTED PER ARCHITECT'S DIRECTION. VERIFY DEVICE FINISH WITH ARCHITECT PRIOR TO ORDERING.
- 3. PROVIDE ONE 15A, RECEPTACLE CIRCUIT FROM TENANT LOAD CENTER FOR TELECOM SMART PANEL. COORDINATE WORK WITH SERVICE PROVIDER FOR EXACT LOCATION AND FINAL CONNECTION.
- 4. FOR RANGE HOODS/MICROWAVES PROVIDED WITH A CORD & PLUG SET, PROVIDE A 20A DUPLEX RECEPTACLE LOCATED INSIDE THE OVERHEAD CABINET. HARDWIRED APPLIANCES MAY BE CIRCUITED VIA J-BOX MOUNTED FLUSH OR RECESSED INTO THE WALL DIRECTLY BEHIND THE APPLIANCE.
- 5. REFER TO BATHROOM SWITCHING DIAGRAMS ON E112 FOR ADDITIONAL INFORMATION.

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LOT 3

LOW RISE APARTMENTS

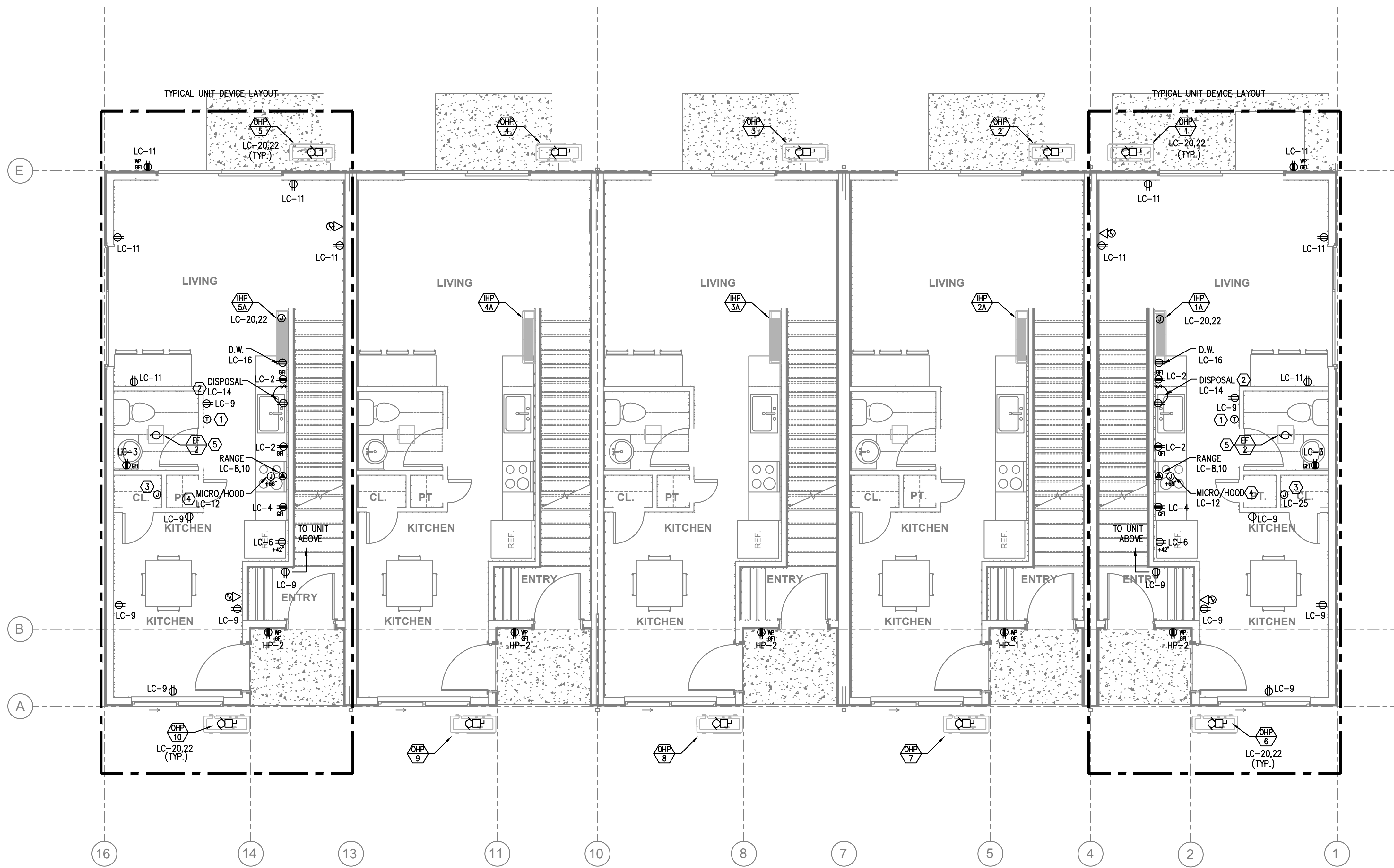
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basement level power plan

E300



1 LEVEL 1 - POWER PLAN
 E301 SCALE: 1/4" = 1'-0"

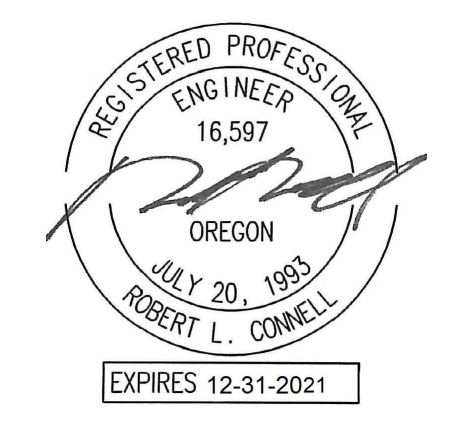
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- 5. REFER TO BATHROOM SWITCHING DIAGRAMS ON E112 FOR ADDITIONAL INFORMATION.

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 CONTACT: DENISE TAYLOR

LOT 3

LOW RISE APARTMENTS

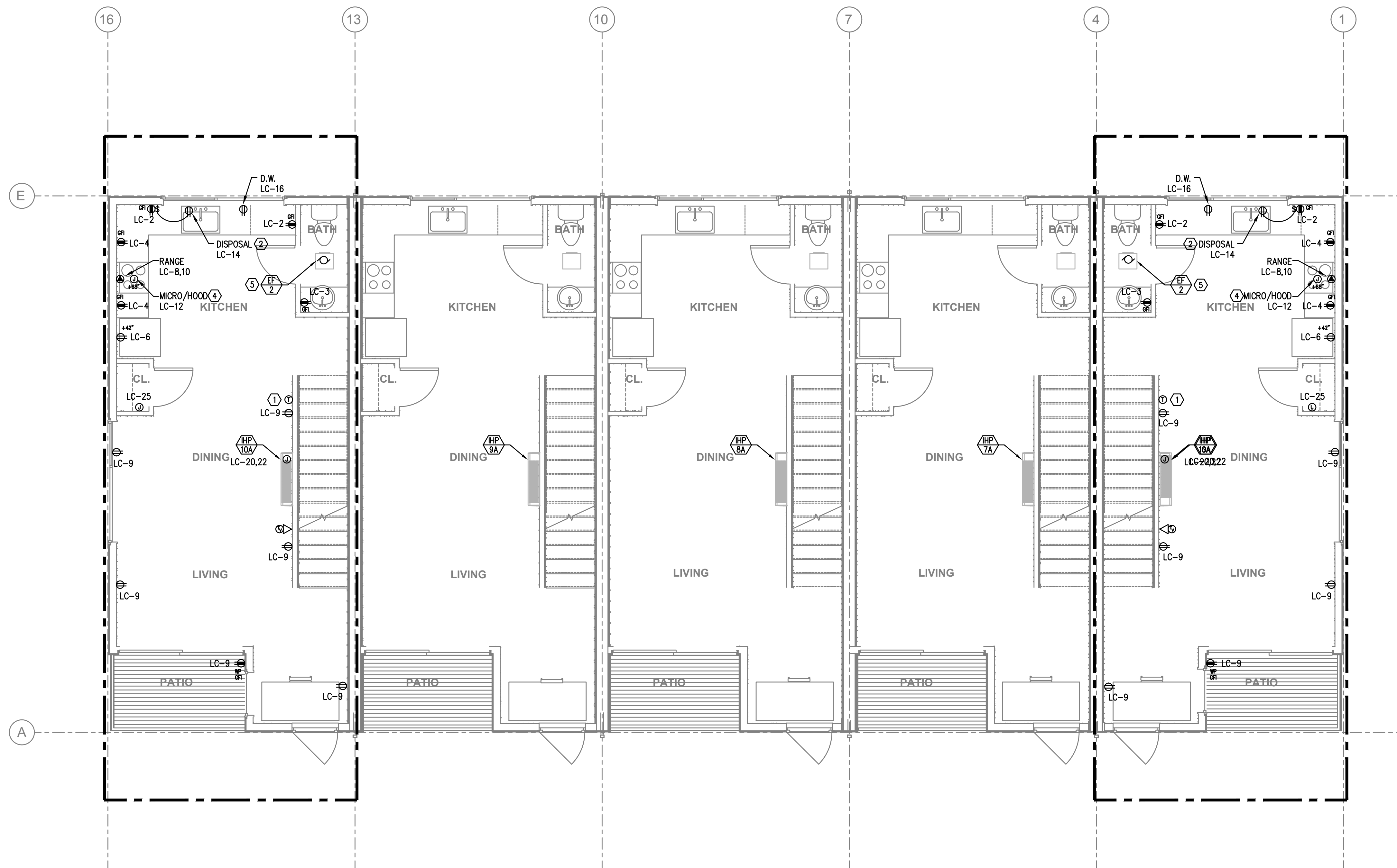
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 DRAWN BY: dmt
 DATE ISSUED: Issue Date

level one
 power plan

E301



1 LEVEL 2 - POWER PLAN
 E302 SCALE: 1/4" = 1'-0"

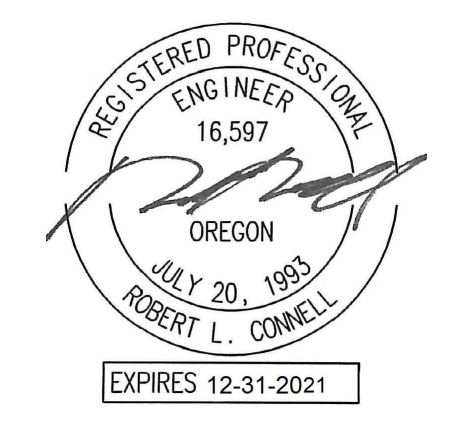
GENERAL POWER NOTES:

- 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 SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS AS REQUIRED. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN.
- D. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.
- E. COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E112 FOR MECHANICAL EQUIPMENT SCHEDULE.
- F. SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE, BASED ON SIEMENS PRODUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ENDURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.
- G. PROVIDE ROUGH IN ONLY FOR FIRE ALARM DEVICES PROVIDED AND INSTALLED BY OTHERS. DEVICES SHOWN ON THE PLANS ARE FOR REFERENCE ONLY.
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LOT 3

LOW RISE APARTMENTS

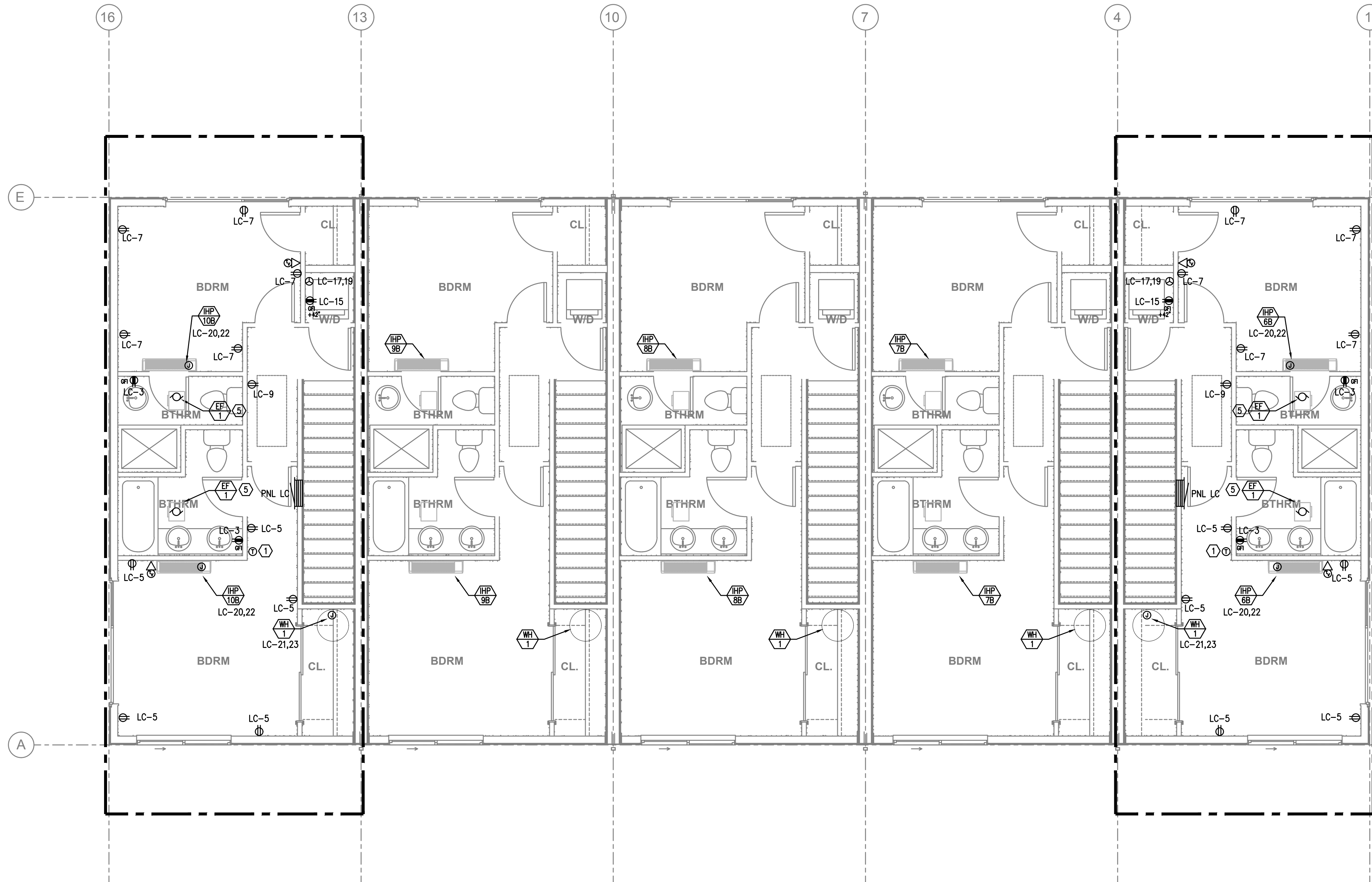
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level two power plan

E302



1 LEVEL 3 – POWER PLAN
 E303 SCALE: 1/4" = 1'-0"

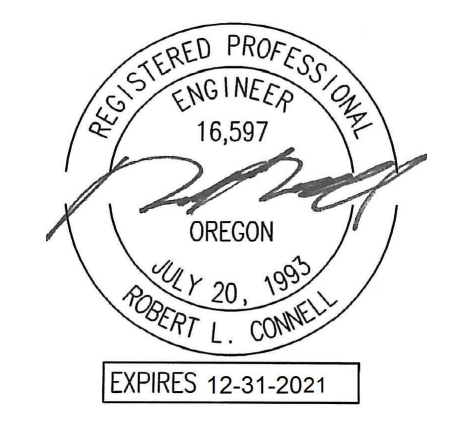
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level three power plan

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