GENERAL NOTES:

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE INDICATED AS EXISTING (E), RELOCATED (RL) OR FUTURE.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO 2019 CALIFORNIA MECHANICAL CODE (CMC), 2019 CALIFORNIA PLUMBING CODE (CPC), 2019 CALIFORNIA BUILDING CODE (CBC), 2016 CALIFORNIA FIRE CODE (CFC), 2019 CALIFORNIA ELECTRICAL CODE, 2019 CALIFORNIA ENERGY CODE (CAL. CFR TITLE 24, PART 6), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA),
3. SUBMITTALS: REFER TO SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
4. ALL EQUIPMENT SHALL BE MOUNTED AND ATTACHED TO STRUCTURE SO THAT IT IS RESTRAINED IN THE CASE OF A SEISMIC EVENT IN ACCORDANCE WITH THE REQUIREMENTS OF 2019 CBC.
5. RECORD DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD DURING CONSTRUCTION OF AS-BUILT CONDITIONS ON A SET OF CONTRACT DRAWINGS. PROGRESS AS-BUILTS SHALL BE AVAILABLE FOR OWNER REVIEW WITH EACH SUBMISSION FOR PAYMENT APPLICATION. FINAL RED LINE RECORD DRAWING MARK-UPS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE WITHIN 30 DAYS OF COMPLETION OF THE PROJECT.
6. OPERATION & MAINTENANCE (O&M) MANUALS: AT COMPLETION OF PROJECT CONTRACTOR SHALL SUBMIT TO THE OWNER UP TO 4 COPIES (QTY TO BE VERIFIED WITH OWNER) OF O&M MANUALS WHICH SHALL INCLUDE:
   - MFGR'S. O&M INSTRUCTIONS FOR ALL EQUIPMENT
   - COPIES OF APPROVED SUBMITTAL DATA SHOWING EQUIPMENT SPECIFICATIONS, CAPACITIES, ETC.
   - 11x17 (FOLDED) COPIES OF ALL SHOP DRAWINGS
   - 11x17 (FOLDED) COPIES OF CONTRACT RECORD DRAWINGS

   ALL O&M MANUALS SHALL BE INDEXED & BOUND IN 3 RING BINDERS WITH CLEAR LABELING & TABBED DIVIDERSg.
7. OWNERS STAFF AND MAINTENANCE STAFF SHALL BE THOROUGHLY INSTRUCTED IN THE USE AND MAINTENANCE OF THE ELECTRICAL SYSTEM EQUIPMENT, LIGHT FIXTURE, LIGHTING CONTROLS, AND COMMUNICATION SYSTEMS BY MANUFACTURES AUTHORIZED DISTRIBUTOR PERSONNEL OR OWNER APPROVED EQUAL. THE INSTRUCTION TO THE STAFF SHALL INCLUDE HANDS ON DEMONSTRATION OF THE VARIOUS FUNCTIONS & OPERATIONS OF THE SYSTEMS AND INCLUDE REQUIRED MAINTENANCE TASKS AND INSTRUCTIONS. TRAINING SHALL INCLUDE A MINIMUM OF EIGHT (8) HOURS.

LIGHTING FIXTURE SCHEDULE

FIX NO.	MANUFACTURER	CATALOG NO.	LAMP TYPE	LUMENS	COLOR TEMP	DIM	T24 WATTS	BRANCH CKT DESIGN WATTS	MOUNTING/ HEIGHT	REMARKS/ACCESSORIES
C1	METALUX	22FP3830C9 – FPXSURF22	LED	3654	3000K / 90CRI	0–10V	39.1	45	SURFACE CEILING	SURFACE MOUNT KIT
C1-EM	METALUX	22FP3830C9 – EL7W – FPXSURF22	LED	3654	3000K / 90CRI	0–10V	39.1	45	SURFACE CEILING	SURFACE MOUNT KIT; 7W–90 MINUTE EMERG. BATTERY
C2	METALUX	14FP3830C9 – FPXSURF14	LED	3648	3000K / 90CRI	0–10V	38.9	45	SURFACE CEILING	SURFACE MOUNT KIT
C2-EM	METALUX	14FP3830C9 – EL7W – FPXSURF14	LED	3648	3000K / 90CRI	0–10V	38.9	45	SURFACE CEILING	SURFACE MOUNT KIT; 7W–90 MINUTE EMERG. BATTERY
C3	METALUX	24FP5830C9 – FPXSURF24	LED	5282	3000K / 90CRI	0–10V	58.2	70	SURFACE CEILING	SURFACE MOUNT KIT
C3-EM	METALUX	24FP5830C9 – EL7W – FPXSURF24	LED	5282	3000K / 90CRI	0–10V	58.2	70	SURFACE CEILING	SURFACE MOUNT KIT; 7W–90 MINUTE EMERG. BATTERY
C4	HE WILLIAMS	SLF-2–L26/830–HIA–DRV–120	LED	2780	3000K / 80CRI	NON–DIM	21.3	25	SURFACE WALL	JANITORS CLOSET
C5	LITHONIA	UCEL–36IN–30K–90CRI–SWR–WH	LED	1344	3000K / 90CRI	TRIAC	18	25	UNDER CABINET	COMMON ROOM
C6	LITHONIA	FMVCCL–24IN–MVOLT–30K–90CRI–XX (COLOR TBD)	LED	1391	3000K / 90CRI	NON–DIM	17.7	25	VANITY LIGHT	
.										
R1	JUNO	JSF–11IN–30K–90CRI–120FRPC–WH	LED	1300	3000K / 90CRI	TRIAC	15	20	SURFACE CEILING	
R2	LITHONIA	FMVCCL–24IN–MVOLT–30K–90CRI–XX (COLOR TBD)	LED	1391	3000K / 90CRI	NON–DIM	17.7	25	VANITY LIGHT	
R3	LITHONIA	UCEL–24IN–30K–90CRI–SWR–WH	LED	927	3000K / 90CRI	TRIAC	12	15	UNDER CAB	USE MAX LENGTH TO FIT AVAILABLE CABINET SPACE
	LITHONIA	UCEL–36IN–30K–90CRI–SWR–WH	LED	1344	3000K / 90CRI	TRIAC	18	25	UNDER CAB	USE MAX LENGTH TO FIT AVAILABLE CABINET SPACE
	LITHONIA	UCEL–48IN–30K–90CRI–SWR–WH	LED	1895	3000K / 90CRI	TRIAC	24	30	UNDER CAB	USE MAX LENGTH TO FIT AVAILABLE CABINET SPACE
R4	JUNO	JSF–7IN–30K–90CRI–120FRPC–WH	LED	1000	3000K / 90CRI	TRIAC	13	15	SINK	
SA1	RAB	SLIM17FA–15–ADJ–BLACK	LED	1761	4000K	0–10V	14.2	20	EXT SCONCE	COLOR: BRONZE
SB1	GARDCO	ECF–S–32L–365–NW–G2–AR–BLC–120–BL–IMR13–BK	LED	6094	4000K	0–10V	40	50	LIGHT STANDARD	BI–LEVEL OCCUPANCY SENSING
SB1–POLE	GARDCO	SRA–CA–4–188–15–D1–DT5–BK	–	–	–	–	–	–	15FT AFG	13FT POLE + 2FT PEDESTAL BASE; 15FT AFG
SB2	GARDCO	ECF–S–32L–365–NW–G2–AR–5–120–BL–IMR13–BK	LED2 X	6094	4000K	0–10V	80	95	LIGHT STANDARD	BI–LEVEL OCCUPANCY SENSING; DOUBLE HEAD ASSEMBLY @ 180
SB2–POLE	GARDCO	SRA–CA–4–188–15–D2–DT5–BK	–	–	–	–	–	–	15FT AFG	13FT POLE + 2FT PEDESTAL BASE; 15FT AFG
SC1	GARDCO	BRM832–36–108L–58–NW–G2–120–IMRI–BK	LED	1226	4000K	0–10V	38.6	45	BOLLARD	BI–LEVEL OCCUPANCY SENSING
SD1	COOPER–HALO	PR6–FS12–D010 – PR6M–12–WD–8FS–MW	LED	2000	4000K	0–10V	21.3	25	RECESSED DOWN LIGHT	
SD1–EM	COOPER–HALO	PR6–FS12–D010–REM7 – PR6M–12–WD–8FS–MW	LED	2000	4000K	0–10V	21.3	25	RECESSED DOWN LIGHT	7W–90 MINUTE EMERG. BATTERY
SE1	LAMPS PLUS	JOHN TIMBERLAND #8M841 (BLACK)	LED	750	3000K	N/A	10	15	SURFACE WALL	
X1	LITHONIA	LQC–W–1–G–ELN	LED	–	GREEN	NON–DIM	–	5	SURFACE WALL & CEILING	EXIT SIGNAGE
ED1	BRK	7030BSL	–	–	–	–	–	–	SURFACE CEILING	SMOKE AND CO DET.

AFG – ABOVE FINISH GRADE/AFS – ABOVE FINISH SLAB/ASC – ABOVE SUSPENDED CEILING/AFF – ABOVE FINISH FLOOR/ARF – ABOVE RAISED FLOOR

ELECTRICAL DRAWING INDEX

PG	SHEET	TITLE
1	E0.00	ELECTRICAL INFORMATION SHEET
2	E0.10	T24 LIGHTING INTERIOR
3	E0.20	T24 LIGHTING EXTERIOR
4	E0.30	T24 ELECTRICAL POWER DISTRIBUTION
5	E1.00	ELECTRICAL SITE PLAN
6	E1.01	UTILITY & MAIN SERVICE DETAILS
7	E1.10	SITE LIGHTING PLAN
8	E1.11	DETAILS
9	E2.10	FIRST FLOOR LIGHTING PLAN
10	E2.20	SECOND FLOOR LIGHTING PLAN
11	E2.30	THIRD FLOOR LIGHTING PLAN
12	E3.10	FIRST FLOOR POWER PLAN
13	E3.20	SECOND FLOOR POWER PLAN
14	E3.30	THIRD FLOOR POWER PLAN
15	E3.40	ROOF POWER PLAN
16	E4.10	LIGHTING & POWER PLANS – UNITS 101, 102, 103
17	E4.20	LIGHTING & POWER PLANS – UNITS 201, 202, 203, 204, 205, 207, 208
18	E4.21	LIGHTING & POWER PLANS – UNITS 206, 209
19	E4.30	LIGHTING & POWER PLANS – UNITS 301, 302, 303, 304, 305, 306, 307, 308
20	E5.00	ONE–LINE DIAGRAM
21	E6.00	SITE SECURITY CAMERA PLAN
22	E6.10	FIRST FLOOR SECURITY CAMERA PLAN
23	E6.20	SECOND FLOOR SECURITY CAMERA PLAN
24	E6.30	THIRD FLOOR SECURITY CAMERA PLAN
25	E7.00	ELECTRICAL SPECIFICATIONS
26	EL1.10	SITE LIGHTING PHOTOMETRICS – NORMAL
27	EL2.10	FIRST FLOOR PHOTOMETRICS – NORMAL
28	EL2.10E	FIRST FLOOR PHOTOMETRICS – EMERG
29	EL2.20	SECOND FLOOR PHOTOMETRICS – NORMAL
30	EL2.20E	SECOND FLOOR PHOTOMETRICS – EMERG
31	EL2.30	THIRD FLOOR PHOTOMETRICS – NORMAL
32	EL2.30E	THIRD FLOOR PHOTOMETRICS – EMERG

MECHANICAL EQUIPMENT

	VOLT	PHASE	HP	FLA	VA	EQUIP. FOR C.B.	EQUIP. DISC. SIZE	EQUIP. DISC. FUSE SIZE	REMARKS
EF–1	120	1	–	0.54	65	(8)	(8)	N/A	EXHAUST FAN – LAUNDRY ROOM
EF–2	120	1	–	0.56	67.1	(8)	(8)	N/A	EXHAUST FAN – TRASH ROOM
EF–3	120	1	–	0.21	25.0	(8)	(8)	N/A	EXHAUST FAN – LAUNDRY ROOM
EF–4	120	1	–	0.21	25.0	(8)	(8)	N/A	EXHAUST FAN – TOILET ROOM 112
FC–1	120	1	–	16.7	2004	30A–1P	(8)	N/A	ELECTRIC FAN CONVECTOR
ERV–1	120	1	–	0.75	90	(8)	(4)	N/A	ENERGY RECOVERY UNIT
ERV–2	120	1	–	0.75	90	(8)	(4)	N/A	ENERGY RECOVERY UNIT
HP–1	208	1	–	16.5	3432	30A–2P	30AF–2P	20A	OFFICE & COMMON ROOM SPLIT SYSTEM
AH–1	208	1	–	0.48	100	N/A	(8)	N/A	COMMON ROOM FAN COIL; FED FROM OUTDOOR UNIT
HPHW–1	208	3	–	101.5	36567	150A–3P	200AF–3P	125A	ROOF TOP WATER HEATER
EWH–1	208	3	–	67.0	24138	100A–3P	100AF–3P	90A	ELECTRIC WATER HEATER
EWH–2	208	3	–	67.0	24138	100A–3P	100AF–3P	90A	ELECTRIC WATER HEATER
DHW–1A	115	1	–	4.4	506	(8)	NEMA 5–20R	N/A	HOT WATER CIRCULATION PUMP – FIRST FLOOR
DHW–1B	115	1	–	4.4	506	(8)	NEMA 5–20R	N/A	HOT WATER CIRCULATION PUMP – SECOND & THIRD FLOORS
FSD–1	120	1	–	< 1.0	< 120	(8)	(8)	N/A	FIRE SMOKE DAMPER – COORDINATE AUX CONTACTS WITH FIRE ALARM
PS–1	120	1	–	< 2.0	< 240	(8)	NEMA 5–20R	N/A	SOLAR PUMPING STATION; MFG: VIESSMANN; MODEL: DN25

(1) CONTRACTOR TO FIELD VERIFY ALL EQUIPMENT ELECTRICAL CHARACTERISTICS.
(2) TOGGLE TYPE MOTOR RATED DISCONNECT SWITCH, PROVIDED WITH EQUIPMENT OVERLOADS.
(3) COMBINE WITH LIGHTING CIRCUITS.
(4) PROVIDE EQUIP. SERVICE DISC. SWITCH IF UNIT DOES NOT HAVE INTEGRAL DISCONNECTING MEANS.
(5) PROVIDE RECEPTACLE TO MATCH UNIT CORD.
(6) PROVIDE MOTOR THERMAL OVERLOAD PROTECTION IF MOTOR DOES NOT HAVE MOTOR THERMAL OVERLOAD PROTECTION.
(7) SIZE PER EQUIPMENT FULL LOAD NAMEPLATE CURRENT.
(8) SEE ELECTRICAL PLAN.
N/A – NOT APPLICABLE.

ELECTRICAL SYMBOLS & ABBREVIATIONS

NO SCALE

PANELS

- VOLTAGE AND PHASE AS NOTED PER DWGS. — 120/240V, 1 PHASE PANEL; 240/120V, 3 PHASE PANEL; 120/208V, 1 PHASE PANEL; 208/120V, 3 PHASE PANEL
- 480/277V, 3 PHASE PANEL
- 480V, 3 PHASE PANEL
- SPECIAL VOLTAGE PANEL
- EMERGENCY POWER PANEL

CONDUIT

- CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE
- CONDUIT RUN CONCEALED IN CEILING OR WALL, U.O.N.
- C — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR COMMUNICATION SYSTEM
- E — EMERGENCY SYSTEM CIRCUITING
- PA — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR PA SYSTEM
- P — P — PRIMARY
- S — S — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR SECURITY SYSTEM
- T — CONDUIT RUN CONCEALED IN OR UNDER SLAB OR BELOW GRADE FOR TELEPHONE SYSTEM
- HOME RUN TO POWER SOURCE
- CONDUIT TURN DOWN
- CONDUIT TURN UP
- GROUND CONDUCTOR; NEUTRAL CONDUCTOR; POWER CONDUCTORS
- LOW VOLTAGE CONTROL CONDUCTORS
- 1 1/2" — CONDUIT SIZE

DEVICES

- SINGLE POLE SWITCH, +46" U.O.N. (2 – CIRCUIT # & SWITCHING; 2 – DOUBLE POLE; 3 – 3 WAY; 4 – 4 WAY)
- DUPLEX RECPT, NEMA 5–20R, +18" U.O.N.
- FOUR–PLEX RECPT, NEMA 5–20R, +18" U.O.N.
- DUPLEX RECPT, W/GROUND FAULT INTERUPTER +44", U.O.N.
- GFI — ROOF/CEILING/RECEPT/DROP RECEPT
- ROOF/CEILING 4 PLEX/DROP RECEPT
- FLOOR RECEPTACLE
- PP — POWER PACK
- 240V RECEPT
- 208V RECEPT
- 480V RECEPT
- T/C — TIME CLOCK
- J — JUNCTION BOX
- TELEPHONE OUTLET
- TELCO/DATA OUTLET
- DATA OUTLET
- CABLE TV OUTLET
- A.C. MOTOR GENERAL SYMBOL
- SAFETY SWITCH, SIZE AS NOTED
- MAGNETIC STARTER
- COMBINATION STARTER
- MANUAL STARTER
- P — PRIMARY; S — SECONDARY — DISTRIBUTION TRANSFORMER
- NXX — BOX SIZE
- PULL BOX – POWER; TEL; COMMUNICATION
- 1 CAM — SECURITY CAMERA. FIELD COORDINATE WITH OWNERS SECURITY CONSULTANT

LIGHTING DEVICES

- FLUORESCENT FIXTURE, RECESSED IN CEILING
- FLUORESCENT FIXTURE, SURFACE OR PENDANT MOUNTED
- FLUORESCENT FIXTURE, WALL MOUNTED
- FLUORESCENT STRIP, SURFACE, PENDANT, OR WALL MOUNTED AS NOTED.
- NL — NL= NIGHT LIGHT; EM= EMERGENCY LIGHT
- EM
- LIGHT FIXTURE
- EMERGENCY BATTERY POWERED LIGHT
- EXIT SIGN, WITH DIRECTIONAL ARROWS AS SHOWN
- SINGLE POLE SWITCH, +46" U.O.N. (2 – CIRCUIT # & SWITCHING; 2 – DOUBLE POLE; 3 – 3 WAY; 4 – 4 WAY)
- LIGHTING CONTROL STATION
- XX CEILING / XX WALL — OS = OCCUPANCY SENSOR; DS = DAYLIGHT SENSOR; IR = INFRARED SENSOR
- SINGLE OR DUAL SWITCH OCCUPANCY SENSOR
- RCX — ROOM CONTROL X=CONTROL REFERENCE NUMBER

IDENTIFICATION LABELS

- E — LIGHT FIXTURE TAG
- AC 1 — MECHANICAL EQUIPMENT TAG
- 1 — COMPLY WITH LETTER OR NUMBER NOTE ON SHEET
- 8 / E4 — SEE DETAIL 8, SHEET E4
- XXXYY — FEEDER IDENTIFICATION TAG
  - XXX=FEEDER:
  - YY=
    - P–PRIMARY POWER
    - S–SECONDARY POWER
    - E–ELECTRIC POWER
    - EM–EMERGENCY POWER
    - T–TELCO SERVICE
    - TD–TELCO DATA
    - CA–CABLE SERWICE

ABBREVIATIONS

A – AMP
ADMIN – ADMINISTRATION
AFF – ABOVE FINISHED FLOOR
AFG – ABOVE FINISHED GRADE
AFS – ABOVE FINISHED SLAB
AL – ALUMINUM
ARCH – ARCHITECT
ARF – ABOVE RAISED FLOOR
ASC – ABOVE SUSPENDED CEILING
BD – BOARD
BLDG – BUILDING
C – CONDUIT
CKT – CIRCUIT
CO – CONDUIT ONLY
CONC – CONCRETE
CONN – CONNECT
CU – COPPER
DISC – DISCONNECT
DWG – DRAWING
(E) – EXISTING
ELEC – ELECTRICAL
EM – EMERGENCY
EP – EXPLOSION PROOF
EQUIP – EQUIPMENT
ES – ENERGY SAVING
EXIST – EXISTING
FA – FIRE ALARM
FACP – FIRE ALARM CONTROL PANEL FAP – FIRE ALARM PANEL
FDR – FEEDER
GND – GROUND
HP – HORSEPOWER
MAX – MAXIMUM
MECH – MECHANICAL
MFG – MANUFACTURER
MIN – MINIMUM
MSB – MAIN SWITCH BOARD
MTG – MOUNTING
(N) – NEW
NL – NIGHT LIGHT
(NL) – NEW LOCATION
NFDS – NON–FUSED DISC. SW.
OH – OVERHEAD
PB – PULL BOX
P.O.C – POINT OF CONNECTION
PG&E – PACIFIC GAS AND ELECTRIC
PNL – PANEL
QTY – QUANTITY
(R) – REMOVE
(RL) – RELOCATE
RGS – RIGID GALVANIZED STEEL
(RRE) – REMOVE AND REPLACE EXISTING
(RRN) – REMOVE AND REPLACE NEW
SCH – SCHEDULE
STRUCT – STRUCTURAL
SW – SWITCH
SWBD – SWITCHBOARD
SYM – SYMETRICAL
SYS – SYSTEM
TELE – TELEPHONE
TERM – TERMINAL
TRANS – TRANSFORMER
TYP – TYPICAL
UG – UNDERGROUND
UON – UNLESS OTHERWISE NOTED
VIF – VERIFY IN FIELD
V – VOLTS
WP – WEATHERPROOF
WRGS – WRAPPED RIGID GALVANIZED STEEL
– PHASE

NOTE: DIMENSIONS TO CENTERLINE, UNLESS OTHERWISE NOTED.

ELECTRICAL INFORMATION SHEET

REGISTERED PROFESSIONAL ENGINEER — DANIEL GRANT SMITH — 11/30/22 — E 13492 — EXPIRATION DATE: 08-30-24 — ELECTRICAL — STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21–044–0
DWG. NO. **E0.00**
SH 1 OF 32
REV. 1

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.			
Project Name: AFFORDABLE HOUSING PROJECT		Report Page:	Page 1 of 8
Project Address: 415 NATURAL BRIDGES DRIVE		Date Prepared:	10-30-2022

A. GENERAL INFORMATION

01	Project Location (city)	SANTA CRUZ	04	Total Conditioned Floor Area (ft²)	3,417.7
02	Climate Zone	3	05	Total Unconditioned Floor Area (ft²)	390.1
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	3

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☑ High-Rise Residential ☐ Relocatable ☐ Healthcare ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	390.1	Area Category	3,417.7
☐ Altered Lighting System				
Total Area of Work (ft²)	**390.1**		**3,417.7**	

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04		05		06	07	08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	=	Total Allowed (Watts)	≥	Total Designed (Watts)	Adjustments PAF Control Credits §140.6(a)2 (-)	= Total Adjusted (Watts) *Includes Adjustments	05 Must be ≥08 §140.6
	(See Table I)	(See Table J)	(See Table J)	(See Table K)				(See Table F)	(See Table P)		
Conditioned:		331.58			=	**331.58**	≥	269.4		= **269.4**	**COMPLIES**
Unconditioned:		1,872.26			=	**1,872.26**	≥	1,754.2		= **1,754.2**	**COMPLIES**

Table Continued

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: AFFORDABLE HOUSING PROJECT		Report Page:	Page 2 of 8
Project Address: 415 NATURAL BRIDGES DRIVE		Date Prepared:	10-30-2022

Controls Compliance (See Table H for Details)	**COMPLIES with Exceptional Conditions**
Rated Power Reduction Compliance (See Table Q for Details)	**Not Applicable**

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table H Indoor Lighting Controls Permit Applicant Notes:
ELECTRICAL ROOM: electrical room
MECHANICAL ROOM: mechanical room
RESTROOM: restroom, <100SQFT

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01 Name or Item Tag	02 Complete Luminaire Description	03 Modular (Track) Fixture	04 Small Aperture & Color Change[1]	05 Watts per luminaire[2]	06 How Wattage is determined	07 Total number luminaires	08 Exempt per §140.6(a)3	09 Design Watts	10 Field Inspector Pass	Fail
C2	1X4 LED FLAT PANEL SURFACE	☐	☐	38.9	Mfr. Spec[2]	6	☐	233.4	☐	☐
C5	3FT LED UNDERCOUNTER LIGHT	☐	☐	18	Mfr. Spec[2]	2	☐	36	☐	☐
						Total Designed Watts CONDITIONED SPACES:		**269.4**		

Designed Wattage: Unconditioned Spaces

01 Name or Item Tag	02 Complete Luminaire Description	03 Modular (Track) Fixture	04 Small Aperture & Color Change[1]	05 Watts per luminaire[2]	06 How Wattage is determined	07 Total number luminaires	08 Exempt per §140.6(a)3	09 Design Watts	10 Field Inspector Pass	Fail
C1	2X2 LED FLAT PANEL SURFACE	☐	☐	39.1	Mfr. Spec[2]	21	☐	821.1	☐	☐
C2	1X4 LED FLAT PANEL SURFACE	☐	☐	38.9	Mfr. Spec[2]	17	☐	661.3	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: AFFORDABLE HOUSING PROJECT		Report Page:	Page 3 of 8
Project Address: 415 NATURAL BRIDGES DRIVE		Date Prepared:	10-30-2022

01 Name or Item Tag	02 Complete Luminaire Description	03 Modular (Track) Fixture	04 Small Aperture & Color Change[1]	05 Watts per luminaire[2]	06 How Wattage is determined	07 Total number luminaires	08 Exempt per §140.6(a)3	09 Design Watts	10 Field Inspector Pass	Fail
C3	2X4 LED FLAT PANEL SURFACE	☐	☐	58.2	Mfr. Spec[2]	4	☐	232.8	☐	☐
C4	JANITOR CLOSET LIGHT	☐	☐	21.3	Mfr. Spec[2]	1	☐	21.3	☐	☐
C6	LED VANITY LIGHT	☐	☐	17.7	Mfr. Spec[2]	1	☐	17.7	☐	☐
						Total Designed Watts UNCONDITIONED SPACES:		**1,754.2**		

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*
[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01 Mandatory Demand Response §110.12(c)	02 Shut-Off Controls §130.1(c)	03 Field Inspector Pass	Fail
Not Required ≤ 10,000 SF	See Area/Space Level Controls	☐	☐

Area Level Controls

04 Area Description	05 Complete Building or Area Category Primary Function Area	06 Area Controls §130.1(a)	07 Multi-Level Controls §130.1(b)	08 Shut-Off Controls §130.1(c)	09 Primary/Skylit Daylighting §130.1(d)	10 Secondary Daylighting §140.6(d)	11 Interlocked Systems §140.6(a)1	12 Field Inspector Pass	Fail
ELECTRICAL ROOM	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Exempt*	Exempt*	NA	NA	☐	☐	☐

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MECHANICAL ROOM	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Exempt*	Exempt*	NA	NA	☐	☐	☐
LAUNDRY ROOM	Laundry	Manual ON/ OFF	Dimmer	Vacancy	NA	NA	☐	☐	☐
STORAGE ROOM	Commercial and Industrial Storage	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
TRASH ROOM	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
STAIRWELLS	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
CORRIDORS	Corridor	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
RESTROOM	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:

ELECTRICAL ROOM	*electrical room*
MECHANICAL ROOM	*mechanical room*
RESTROOM	*restroom, <100SQFT*

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01 Area Description	02 Complete Building or Area Category Primary Function Area	03 Allowed Density (W/ft²)	04 Area (ft²)	05 Allowed Wattage (Watts)	06 Additional Allowances / Adjustment: Area Category	PAF
COMMON ROOM	Convention, Conference, Multipurpose, and Meeting Center	0.85	390.1	331.58	☐	☐
		TOTAL:	**390.1**	**331.58**	See Tables J or P for detail	

STATE OF CALIFORNIA
Indoor Lighting
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CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
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01 Area Description	02 Complete Building or Area Category Primary Function Area	03 Allowed Density (W/ft²)	04 Area (ft²)	05 Allowed Wattage (Watts)	06 Additional Allowances / Adjustment: Area Category	PAF
Unconditioned Spaces						
ELECTRICAL ROOM	Electrical, Mechanical, Telephone Rooms	0.4	90.4	36.16	☐	☐
MECHANICAL ROOM	Electrical, Mechanical, Telephone Rooms	0.4	112	44.8	☐	☐
LAUNDRY ROOM	Laundry	0.45	117	52.65	☐	☐
STORAGE ROOM	Commercial and Industrial Storage	0.6	735	441	☐	☐
TRASH ROOM	All Other Space Types	0.4	180.5	72.2	☐	☐
STAIRWELLS	Stairwell	0.5	874.5	437.25	☐	☐
CORRIDORS	Corridor	0.6	1,243.8	746.28	☐	☐
RESTROOM	Restroom	0.65	64.5	41.92	☐	☐
		TOTAL:	**3,417.7**	**1,872.26**	See Tables J or P for detail	

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

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CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: AFFORDABLE HOUSING PROJECT		Report Page:	Page 6 of 8
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N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS

This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐

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CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
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○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ ☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

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CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: AFFORDABLE HOUSING PROJECT		Report Page:	Page 8 of 8
Project Address: 415 NATURAL BRIDGES DRIVE		Date Prepared:	10-30-2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name:	DAVID SMITH, PE	Documentation Author Signature:	David Smith
Company:	CENTRAL PACIFIC ENGINEERING, INC	Signature Date:	10-30-2022
Address:	9035 SOQUEL AVE, SUITE 205	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	DAVID SMITH, PE	Responsible Designer Signature:	David Smith
Company :	CENTRAL PACIFIC ENGINEERING, INC	Date Signed:	10-30-2022
Address:	9035 SOQUEL AVE, SUITE 205	License:	CA-E13492
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

TITLE 24 - LIGHTING INTERIOR

REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — E 13492 — EXPIRATION DATE: 09-30-24 — ELECTRICAL — STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE 108 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ
DR. SAK. | DATE 04/20//22 | CHK. DGS | APPD. DGS | SCALE AS NOTED

JOB NO. 21-044-0
DWG. NO. **E0.10**
SH 2 OF 32 | REV. 1

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)2L for outdoor lighting scopes using the prescriptive path.			
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 1 of 6
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	10-30-2022

A. GENERAL INFORMATION

01	Project Location (city)	SANTA CRUZ	04	Total Illuminated Hardscape Area (ft^2)	8,090.6
02	Climate Zone	3			
03	Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):				

- ☐ LZ-0: Very Low - Undeveloped Parkland
- ☑ LZ-2: Moderate - Rural Areas
- ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval
- ☐ LZ-1: Low - Developed Parkland
- ☐ LZ-3: Moderately High - Urban Areas

B. PROJECT SCOPE
Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My project consists of:

01	02	
☑ New Lighting System	Must Comply with Allowances from §140.7.	
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	○ Yes ○ No
03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100*

C. COMPLIANCE RESULTS
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L / Compliance Results

01		02		03		04		05		06		07		08	09
General Hardscape Allowance §140.7(d)1	+	Per Application §140.7(d)2	+	Sales Frontage §140.7(d)2	+	Ornamental §140.7(d)2	+	Per Specific Area §140.7(d)2	OR	Existing Power §141.0(b)2L	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 Must be ≥ 08**
(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		(See Table N)				(See Table F)	
725.579	+		+		+		+		OR		=	725.579	≥	579.2	**COMPLIES**
												Cutoff Compliance (See Table G for Details)		**Not Applicable**	
												Controls Compliance (See Table H for Details)		**COMPLIES**	

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSI19

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 2 of 6
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	10-30-2022

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. OUTDOOR LIGHTING FIXTURE SCHEDULE
Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1,2]	How Wattage is determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. ≥ 6,200 initial lumen output §130.2(b)[4]	Field Inspector Pass	Fail
SA1	WALL MTG DOWN LIGH	☐ Linear	15	Mfr. Spec[1]	11	New	☐	165	NA: <6,200 lumens	☐	☐
SB1	POLE LIGHT	☐ Linear	40	Mfr. Spec[1]	1	New	☐	40	NA: <6,200 lumens	☐	☐
SB2	POLE LIGHT	☐ Linear	80	Mfr. Spec[1]	1	New	☐	80	NA: <6,200 lumens	☐	☐
SC1	BOLLARD	☐ Linear	38.6	Mfr. Spec[1]	6	New	☐	231.6	NA: <6,200 lumens	☐	☐
SD1	DOWNLIGHT	☐ Linear	21.3	Mfr. Spec[1]	2	New	☐	42.6	NA: <6,200 lumens	☐	☐
SE1	WALL MTG LIGHT	☐ Linear	10	Mfr. Spec[1]	2	New	☐	20	NA: <6,200 lumens	☐	☐
						Total Designed Watts:		**579.2**			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

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[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet for the luminaire should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope*
[4] *Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output ≥ 6,200 unless exempted by §130.2(b).*

G. CUTOFF REQUIREMENTS (BUG)
This Section Does Not Apply

H. OUTDOOR LIGHTING CONTROLS
Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 04, do not leave the field blank, instead select NA or Exempt* from the dropdown list to indicate not applicable or an exemption.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector Pass	Fail
FRONT WALKWAY	Photocontrol	Yes	Yes	☐	☐
PARKING LOT	Photocontrol	Yes	Yes	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).

I. LIGHTING POWER ALLOWANCE (per §140.7)
Table Continued

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSI19

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 4 of 6
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	10-30-2022

Table Continued

Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lost it" Allowances are per Table 140.7-B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

01	"Use it or lose it" Allowances (select all that apply)			
☑ General Hardscape Allowance	☐ Per Application	☐ Sales Frontage	☐ Ornamental	☐ Per Specific Area
Table I (below)	Table J	Table K	Table L	Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

02	03	04	05	06	07	08	09	10
		Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			
Area Description	Surface Type	Illuminated Area (ft^2)	Allowed Density (W/ft^2)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	Total General AWA + LWA (Watts)
FRONT WALKWAY	Concrete	977.6	0.025	24.44	463	0.4	185.2	209.64
PARKING LOT	Asphalt	7,113	0.023	163.599	602	0.17	102.34	265.939
							Initial Wattage Allowance for Entire Site (Watts):	**250**
							Total General Hardscape Allowance (Watts):	**725.579**

J. LIGHTING ALLOWANCE: PER APPLICATION
This Section Does Not Apply

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL
This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This Section Does Not Apply

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This Section Does Not Apply

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSI19

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 5 of 6
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	10-30-2022

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTO-01-E - Must be submitted for all buildings.	☐	☐
◉	○	NRCI-LTO-02-E - Must be submitted for a lighting control system; or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
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Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	10-30-2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name:	DAVID SMITH, PE	Documentation Author Signature:	*David Smith*
Company:	CENTRAL PACIFIC ENGINEERING, INC	Signature Date:	10-30-22
Address:	9035 SOQUEL AVE, SUITE 205	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	DAVID SMITH, PE	Responsible Designer Signature:	*David Smith*
Company :	CENTRAL PACIFIC ENGINEERING, INC	Date Signed:	10-30-22
Address:	9035 SOQUEL AVE, SUITE 205	License:	CA-E13492
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

TITLE 24 - LIGHTING EXTERIOR

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20/22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E0.20**
SH 3 OF 32
REV. 1

STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
This document is used to demonstrate compliance with mandatory requirements in §130.5 for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)2P for alterations.			
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 1 of 5
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	08-15-2022

A. GENERAL INFORMATION

01	Project Location (city)	SANTA CRUZ	02	Occupancy Types Within Project:	
☑ Office	☐ Retail	☐ Warehouse	☐ Hotel/ Motel	☐ School	☐ Support Areas
☐ Parking Garage	☑ High-Rise Residential	☐ Relocatable	☐ Healthcare Facilities	☐ Other (Write In):	

B. PROJECT SCOPE

Table Instructions: Include any electrical service systems that are within the scope of the permit application.

01	02	03	04	05	06
					Demand Response Controls
Electrical Service Designation/ Description	Scope of Work[1]	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a)[2]	System subject to CA Elec Code Article 517 Exception to §130.5(a)&(b)	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.
MAIN PANEL	New electrical service equipment & meter	432	☑	☐	

[1] FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.
[2] Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

C. COMPLIANCE RESULTS

Table Instructions: If this table says "DOES NOT COMPLY" refer to Table D. for guidance and review the Table that indicates "No".

01		02		03		04	05
Service Electrical Metering §130.5(a)	AND	Separation for Monitoring §130.5(b)	AND	Voltage Drop §130.5(c)	AND	Controlled Receptacles §130.5(d)	**Compliance Results**
(See Table F)		(See Table G)		(See Table H)		(See Table I)	
	AND	Yes	AND	Yes	AND	Yes	**COMPLIES with Exceptional Conditions**

STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 2 of 5
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	08-15-2022

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table B indicates the project is exempt from §130.5(a) Service Electrical Metering requirements because the utility company has provided the project a metering system that indicates instantaneous kW demand and kWh for a utility-definied period.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. SERVICE ELECTRICAL METERING

This Section Does Not Apply

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

Table Instructions: Complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(b). Using the dropdown choices in column 01, indicate the load types included for each service. Any load types that are not included in the service do not need to be shown.

Electrical Service Designation/Description: MAIN PANEL

01	02	03	04	05	
Load Type per Table 130.5-B[1]	Minimum Required Separation of Load per Table 130.5-B	Compliance Method[2]	Location of Requirements in Construction Documents	Field Inspector	
				Pass	Fail
Plug Loads and appliances < 25kVA	All plug load separated by floor, type or area Groups of plug loads exceeding 25 kVA connected load in an area less than 5000 sf	Method 1	E5.00	☐	☐

** NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

[1] FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.
[2] Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type
Method 3: Branch circuits serve load types individually & provisions for adding future branch curcuit monitoring
Method 4: Complete metering system measures and reports loads by type
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 3 of 5
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	08-15-2022

H. VOLTAGE DROP

Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §130.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)2Piii.

01	02		03	04	05	
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
					Pass	Fail
MAIN PANEL	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	In construction documents	E5.00- FEEDER SCHEDULE	☐	☐

**NOTES If "Permitted by CA Elec Code*" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES

Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(d). Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

01	02	03	04	05	06	
Room Name or Description	Location/ Type of Controlled Receptacles	Shut-Off Controls	Permanent Durable Marking Will be Used	Location of Requirements in Construction Documents	Field Inspector	
					Pass	Fail
OFFICE	Within 6ft of uncontrolled receptacles	Occupancy Sensor	☑	E3.10	☐	☐
				Add Row	Remove Last	

** If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-ELC-01-E - Must be submitted for all buildings.	☐	☐

STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 4 of 5
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	08-15-2022

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to electrical power distribution requirements.

STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	AFFORDABLE HOUSING PROJECT	Report Page:	Page 5 of 5
Project Address:	415 NATURAL BRIDGES DRIVE	Date Prepared:	08-15-2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	DAVID SMITH, PE	Documentation Author Signature:	(signature)
Company:	CENTRAL PACIFIC ENGINEERING, INC	Signature Date:	08-15-2022
Address:	9035 SOQUEL AVE, SUITE 205	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	DAVID SMITH, PE	Responsible Designer Signature:	(signature)
Company :	CENTRAL PACIFIC ENGINEERING, INC	Date Signed:	08-15-2022
Address:	9035 SOQUEL AVE, SUITE 205	License:	CA-E13492, EXP 09-30-2020
City/State/Zip:	SANTA CRUZ, CA 95062	Phone:	831-476-1525

TITLE 24 - ELECTRICAL POWER DISTRIBUTION

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11-18-22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

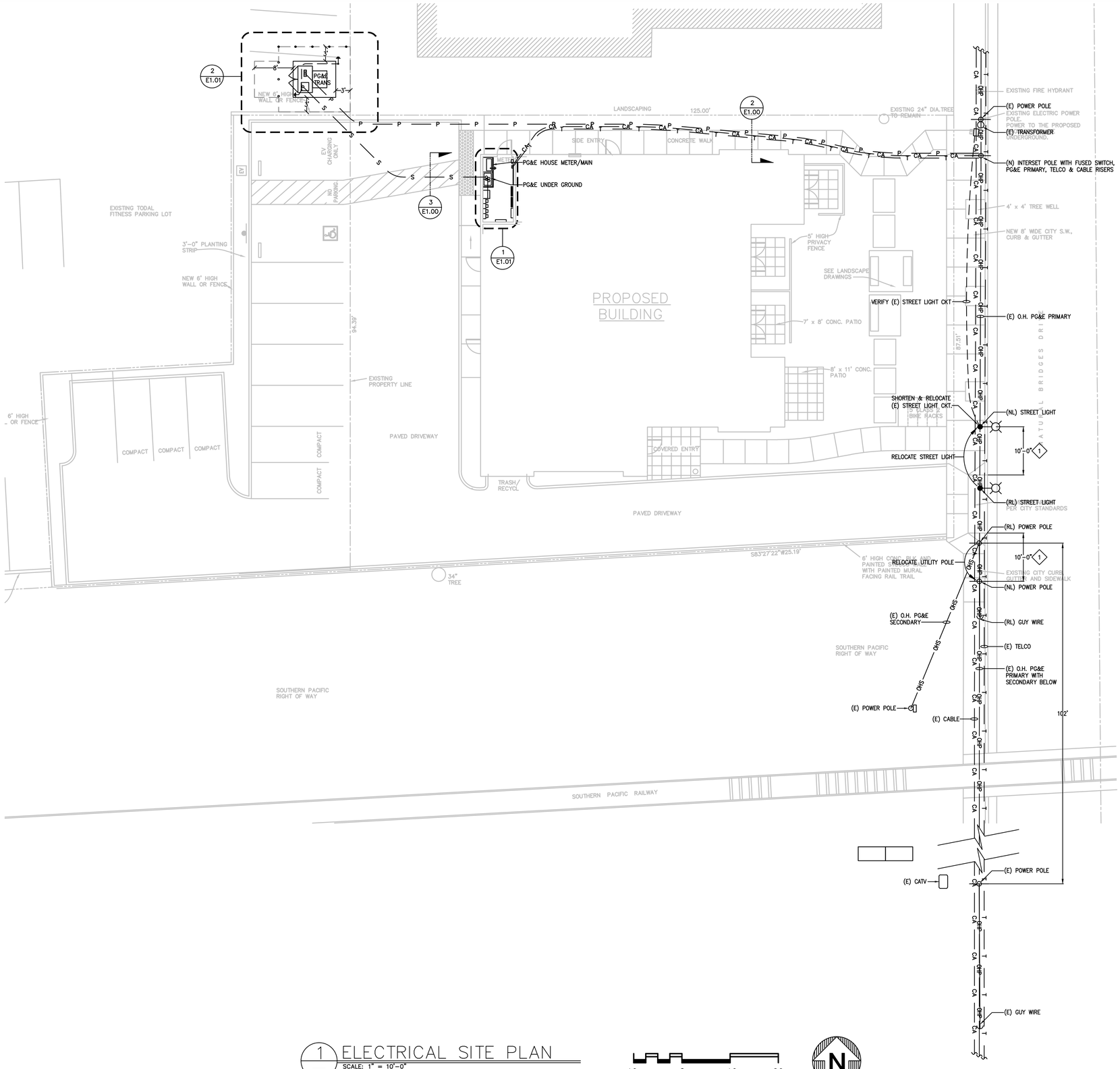
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **E0.30**

SH 4 OF 32 REV. 1



SHEET NOTES:

1. CITY REQUIRED SETBACK FROM DRIVEWAY ENTRANCE.

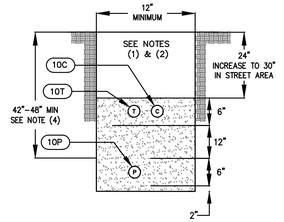
SHEET LEGEND

P	P	UG PRIMARY
S	S	UG SECONDARY
OHP	OHP	OVERHEAD PRIMARY
OHS	OHS	OVERHEAD SECONDARY
T	T	TELCO – AT&T
CA	CA	CABLE SERVICE – COMCAST

STANDARD PG&E UTILITY SHOWN HEREON, IN WHOLE OR IN PART, ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. ALL SAID DETAILS SHALL BE VERIFIED WITH PG&E PRIOR TO CONSTRUCTION. THE ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION ERRORS DUE TO THE USE OF DETAILS SHOWN HEREON FOR ACTUAL CONSTRUCTION.

CONDUIT SEPARATION TABLE						
FACILITY	GAS	TELEPHONE (CONDUIT)	TELEPHONE (DIRECT BURIED)	CABLE TELEVISION	SECONDARY ELECTRIC	PRIMARY ELECTRIC
ALL MEASUREMENTS ARE IN INCHES						
GAS	N/A	12	12	12	6	12
TELEPHONE (CONDUIT)	12	N/A	1	1	12	12
TELEPHONE (DIRECT BURIED)	12	1	N/A	1	12	12
CABLE TELEVISION	12	1	1	N/A	12	12
SECONDARY ELECTRIC	6	12	12	12	N/A	3
PRIMARY ELECTRIC	12	12	12	12	3	N/A

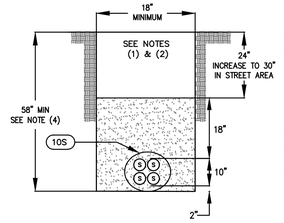
① GREATER DEPTH MAY BE NECESSARY AT THE RISER, DEPENDING ON THE RADIUS OF RISER SWEEP USED.



NOTES:

1. ROCKFREE EARTHFILL (SAND OR NATIVE SOIL WHEN SUITABLE) +12" MIN. SHALL BE USED BY THE CONTRACTOR TO PROVIDE A SMOOTH BEDDING AND COVER FOR THE CONDUIT. SOILS CONTAINING OCCASIONAL ROUNDED ROCKS LESS THAN ¾" DIAMETER IS ACCEPTABLE BACKFILL. CRUSHED ROCK OR SHARP-EDGED MATERIALS OF ANY KIND ARE UNACCEPTABLE. FROM A LEVEL 4" BELOW TO 6" ABOVE ALL FACILITIES WITHIN TRENCH AREA. FILL TO BE AT 90% COMPACTION. SANDFILL TO BE AT +12", 90% COMPACTION.
2. BACKFILL AND COMPACTION TO MEET CIVIL, CITY, COUNTY, STATE REQUIREMENTS.
3. DEPTHS AND SEPARATIONS SHOWN ARE MINIMUMS.
4. ADDITIONAL DEPTH MUST BE PROVIDED TO MAINTAIN THE REQUIRED SEPARATION AND COVER IF OTHER FACILITIES CROSS ELECTRIC, TELEPHONE, OR CABLE TELEVISION FACILITIES.

2 TRENCH DETAIL
NO SCALE



NOTES:

1. ROCKFREE EARTHFILL (SAND OR NATIVE SOIL WHEN SUITABLE) +12" MIN. SHALL BE USED BY THE CONTRACTOR TO PROVIDE A SMOOTH BEDDING AND COVER FOR THE CONDUIT. SOILS CONTAINING OCCASIONAL ROUNDED ROCKS LESS THAN ¾" DIAMETER IS ACCEPTABLE BACKFILL. CRUSHED ROCK OR SHARP-EDGED MATERIALS OF ANY KIND ARE UNACCEPTABLE. FROM A LEVEL 4" BELOW TO 6" ABOVE ALL FACILITIES WITHIN TRENCH AREA. FILL TO BE AT 90% COMPACTION. SANDFILL TO BE AT +12", 90% COMPACTION.
2. BACKFILL AND COMPACTION TO MEET CIVIL, CITY, COUNTY, STATE REQUIREMENTS.
3. DEPTHS AND SEPARATIONS SHOWN ARE MINIMUMS.
4. ADDITIONAL DEPTH MUST BE PROVIDED TO MAINTAIN THE REQUIRED SEPARATION AND COVER IF OTHER FACILITIES CROSS ELECTRIC, TELEPHONE, OR CABLE TELEVISION FACILITIES.

3 TRENCH DETAIL
NO SCALE

1 ELECTRICAL SITE PLAN
SCALE: 1" = 10'–0"

10 0 10 20
SCALE: 1" = 10'–0"

ELECTRICAL SITE PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 06-30-24
ELECTRICAL
STATE OF CALIFORNIA

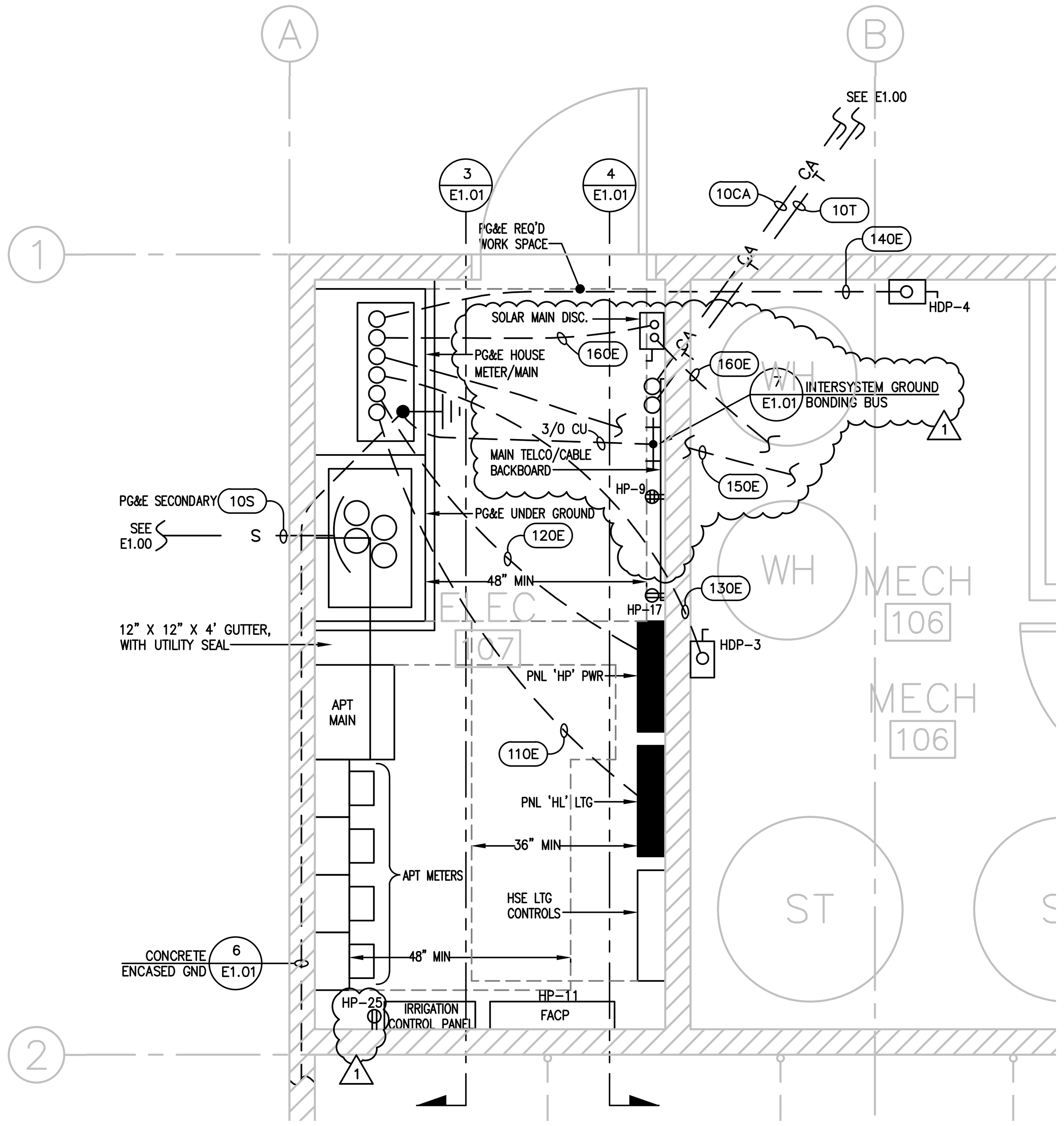
Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

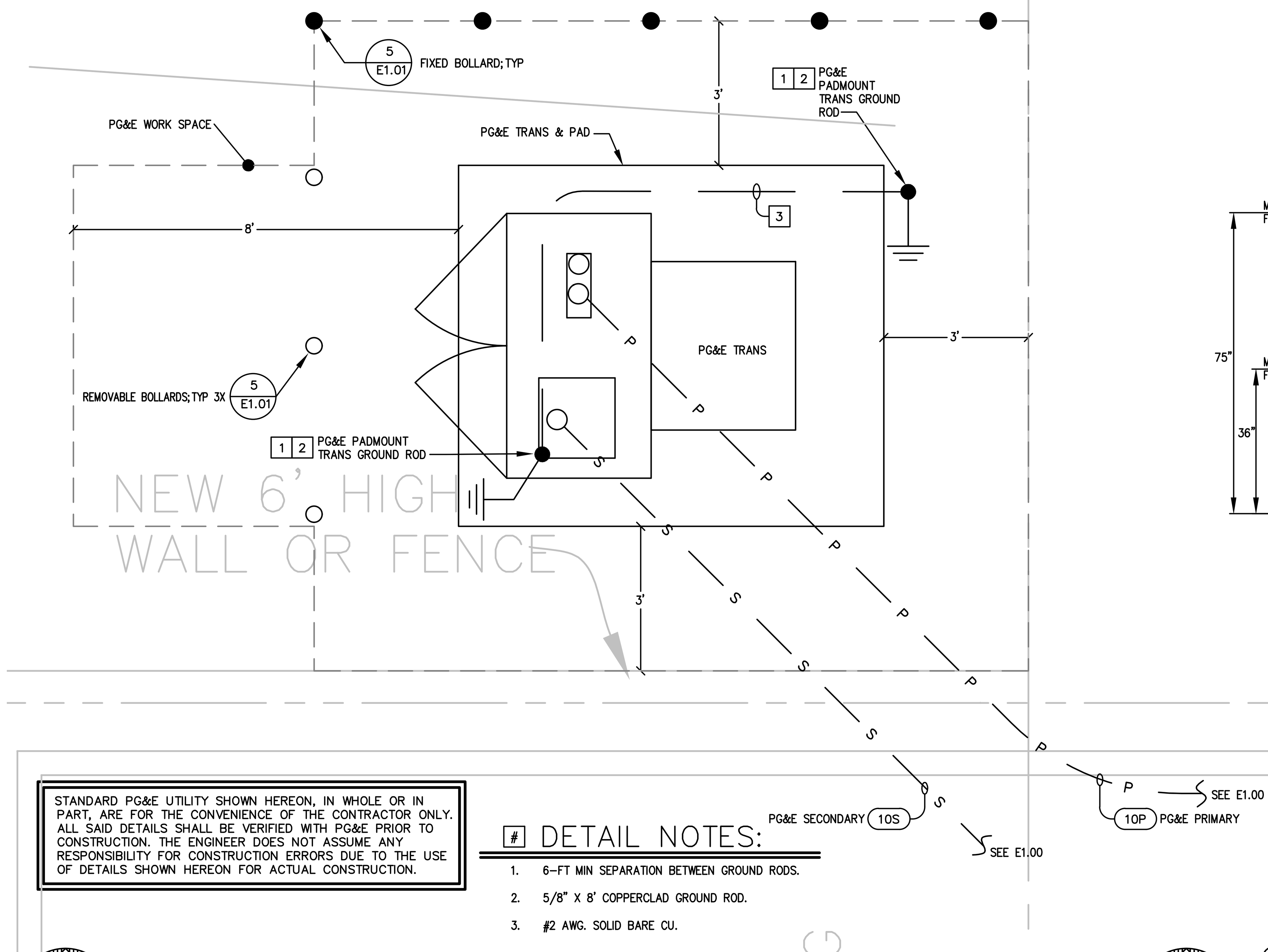
TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E1.00**
SH 5 OF 32
REV. 1



1 ELECTRIC ROOM DETAIL
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"

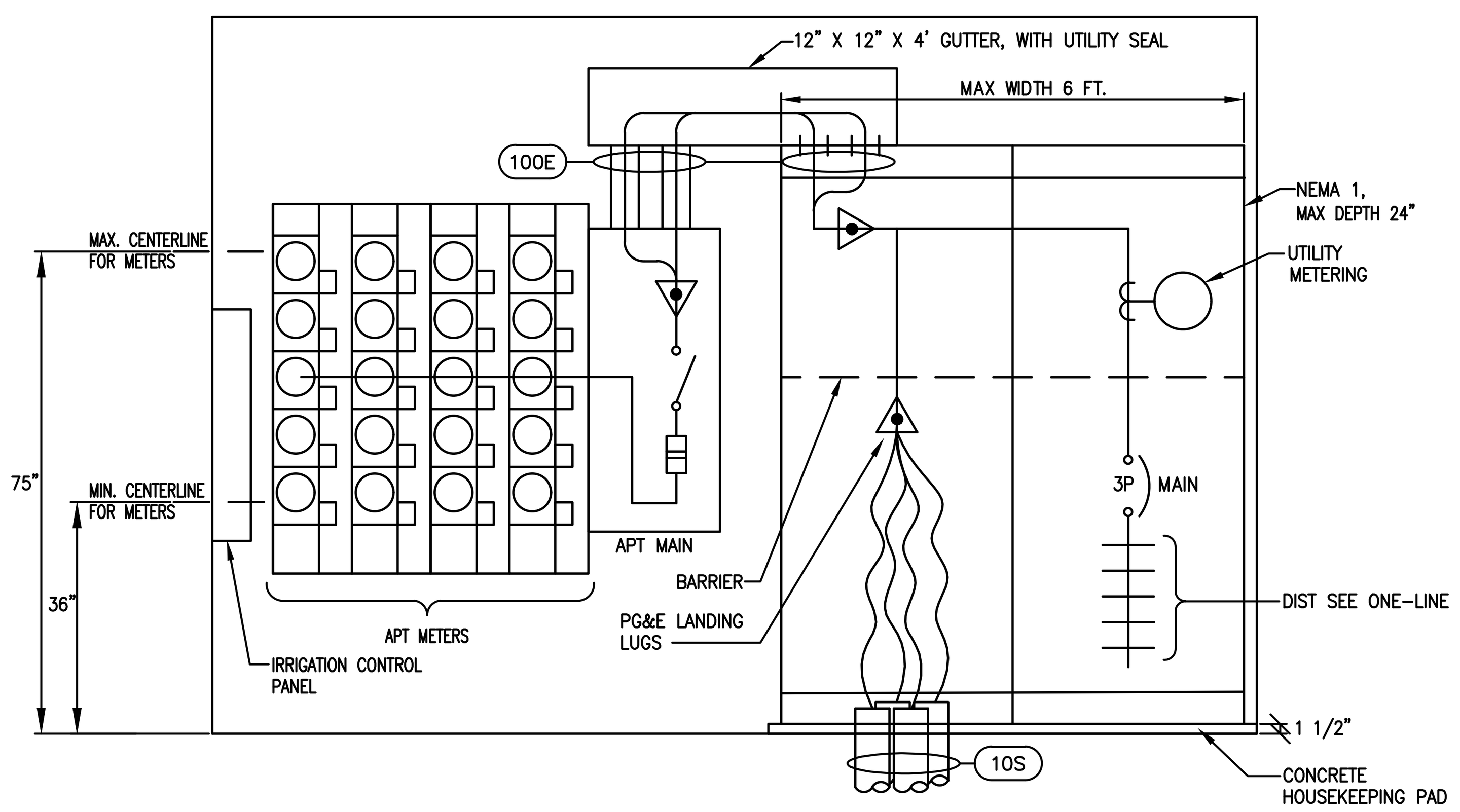


STANDARD PG&E UTILITY SHOWN HEREON, IN WHOLE OR IN PART, ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. ALL SAID DETAILS SHALL BE VERIFIED WITH PG&E PRIOR TO CONSTRUCTION. THE ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION ERRORS DUE TO THE USE OF DETAILS SHOWN HEREON FOR ACTUAL CONSTRUCTION.

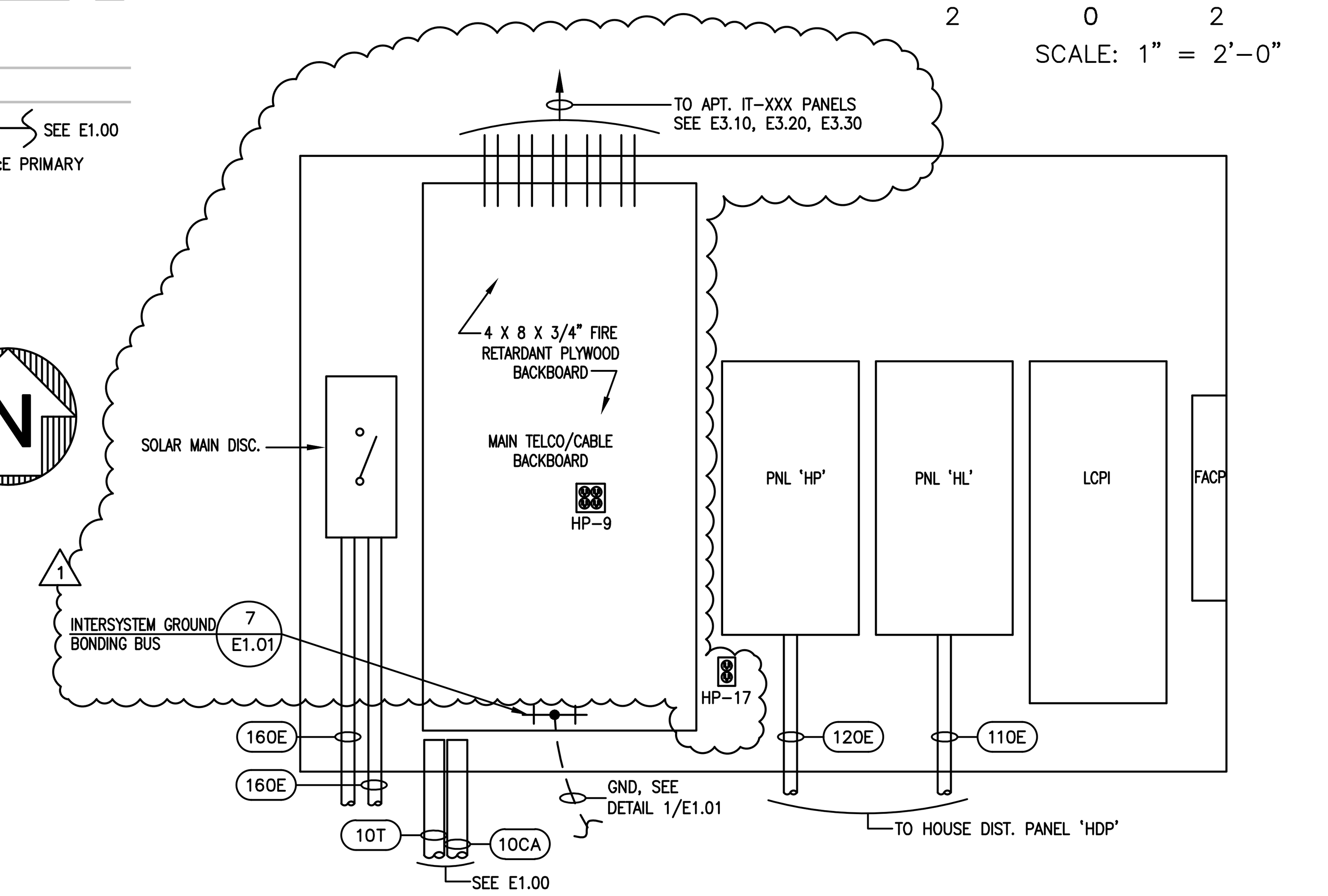
DETAIL NOTES:

1. 6-FT MIN SEPARATION BETWEEN GROUND RODS.
2. 5/8" X 8' COPPERCLAD GROUND ROD.
3. #2 AWG. SOLID BARE CU.

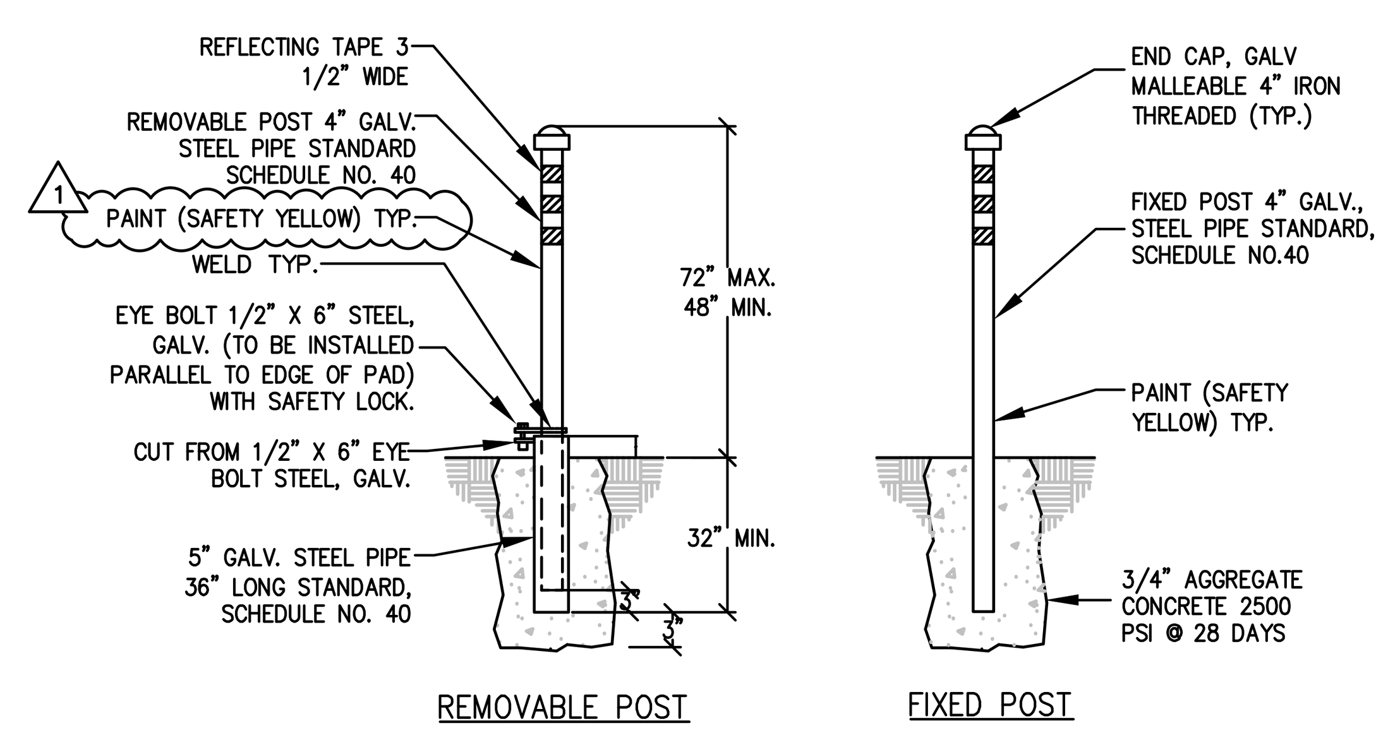
2 TRANSFORMER DETAIL
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"



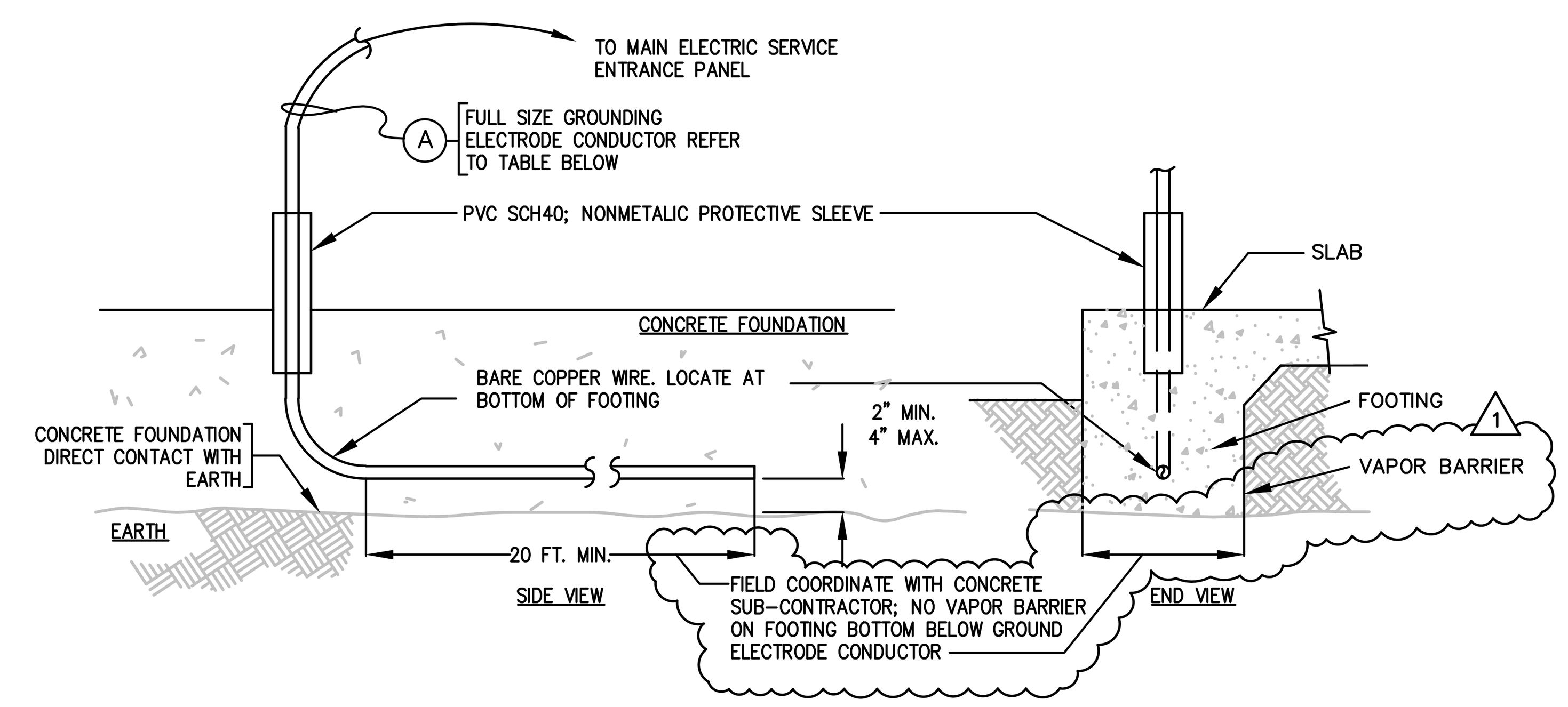
3 ELECTRICAL ROOM – EAST ELEVATION
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"



4 ELECTRICAL ROOM – WEST ELEVATION
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"

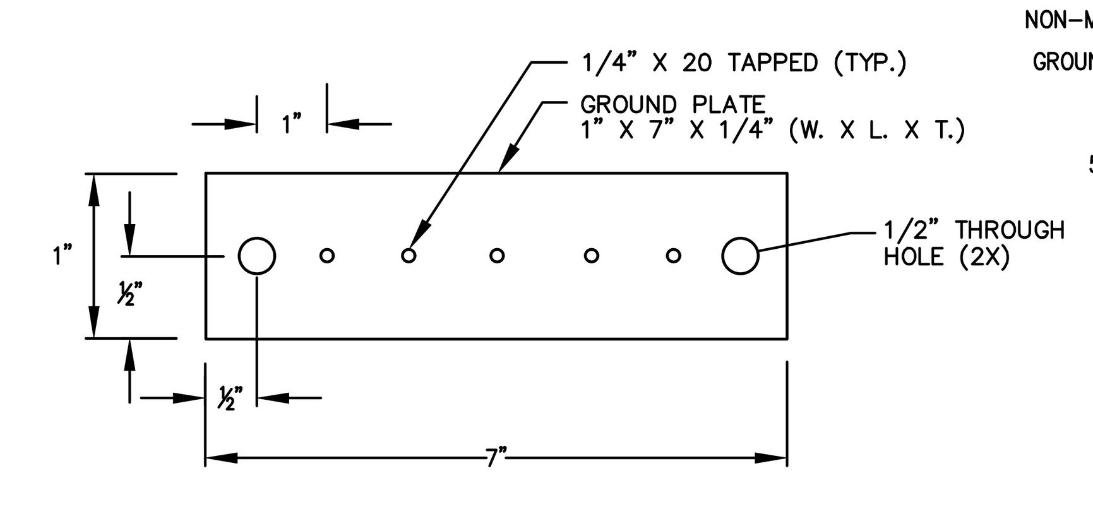


5 PROTECTION BOLLARDS
NO SCALE

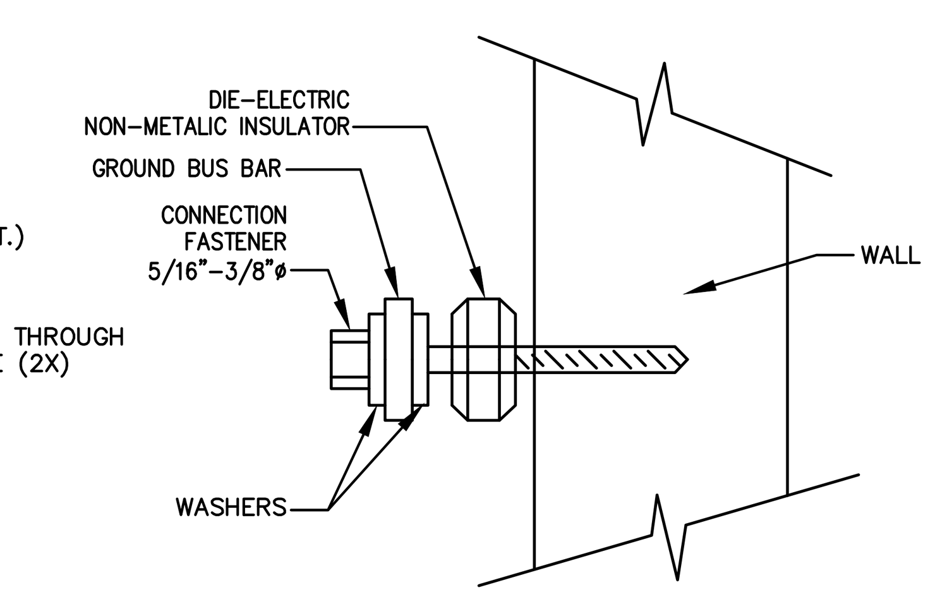


SIZE OF LARGEST SERVICE ENTRANCE CONDUCTOR OR EQUIVALENT FOR PARALLEL CONDUCTORS		(A) SIZE OF GROUNDING ELECTRODE CONDUCTOR
COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM	COPPER
1/0 OR SMALLER	3/0 OR SMALLER	4
2/0 OR 3/0	4/0 OR 250 KCMIL	4
OVER 3/0 THRU 350 KCMIL	OVER 250 KCMIL THRU 500 KCMIL	2
OVER 350 KCMIL THRU 600 KCMIL	OVER 500 KCMIL THRU 900 KCMIL	1/0
OVER 600 KCMIL THRU 1100 KCMIL	OVER 900 KCMIL THRU 1750 KCMIL	2/0
OVER 1100 KCMIL	OVER 1750 KCMIL	3/0

6 CONCRETE ENCASED GROUND ELECTRODE DETAIL
NO SCALE



GROUND BUS-PLATE



ISOLATION STAND-OFF

7 INTERSYSTEM GROUND BONDING BUS
NO SCALE

UTILITY AND MAIN SERVICE DETAILS

REGISTERED PROFESSIONAL ENGINEER DAVID GRANT SMITH E 13492 EXPIRATION DATE: 09-30-24 ELECTRICAL STATE OF CALIFORNIA 11.18.22

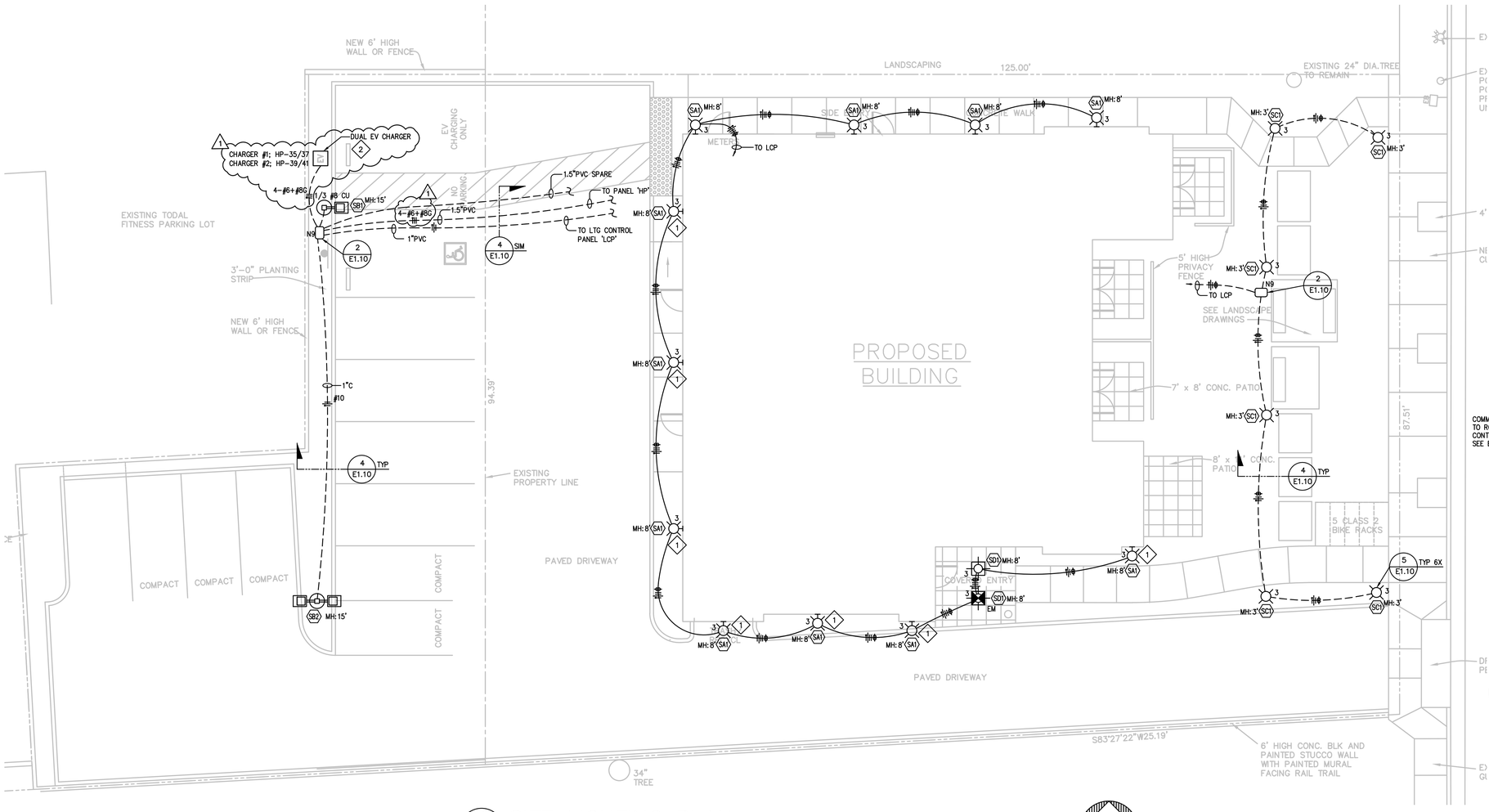
Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: AFFORDABLE HOUSING PROJECT
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20/22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. E1.01
SH 6 OF 32
REV. 1



1 SITE LIGHTING PLAN

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

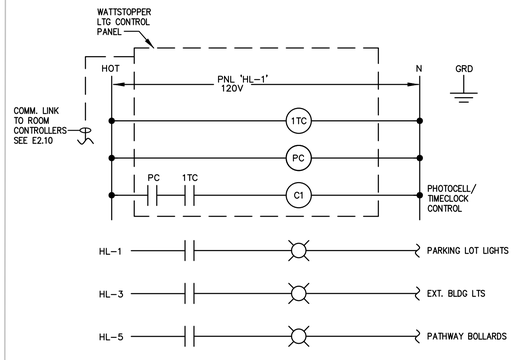
8 0 8 16

SCALE: 1" = 8'-0"

N

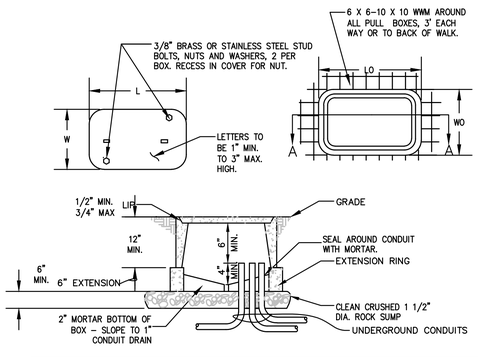
⚠ SHEET NOTES:

1. ADJUST FIXTURE WITH 15 DEGREE TILT.
2. DUAL EV CHARGER; MFG: EVBOX; MODEL: IQON



6 EXTERIOR LTG TIMER/ PHOTOCELL LIGHTING CONTROL – 'LCP1

NO SCALE



PULL BOX NO.	CONCRETE BOX					CONCRETE			COVERS	
CHRISTY	CAL-TRANS	MIN. * THICKNESS	MIN. DEPTH BOX AND EXTENSION	LO	WO	L**	W**	R	EDGE THICKNESS	EDGE TOPER
N9	NO. 3 1/2	1"	NO EXTENSION	20"	14"	15 3/8"	10 1/8"	1 1/8"	1 3/4"	1/8"

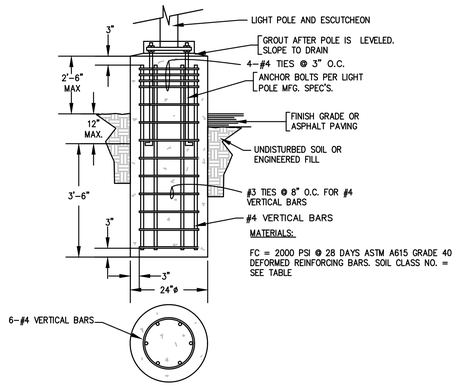
* EXCLUDING CONDUIT WEB ** TOP DIMENSION

2 PULL BOX DETAIL

NO SCALE

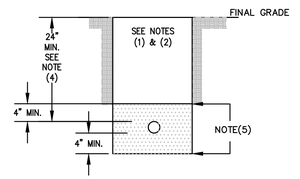
☑ DETAIL NOTES:

1. USE STEEL COVER AND SPECIAL CONCRETE FOOTING AS SHOWN. WHEN BOX IS TO BE INSTALLED WHERE SUBJECT TO VEHICULAR TRAFFIC LOADS. STEEL COVER SHALL HAVE EMBOSSED NON-SKID PATTERN.
2. STEEL REINFORCING SHALL BE AS REGULARLY USED IN THE STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURER.
3. TOP OF PULL BOXES SHALL BE FLUSH WITH SURROUNDING GRADE OR TOP OF ADJACENT CURB, EXCEPT THAT IN UNPAVED AREAS WHERE PULL BOX IS NOT IMMEDIATELY ADJACENT TO AND PROTECTED BY A CONCRETE FOUNDATION, POLE OR OTHER PROTECTIVE CONSTRUCTION. THE BOX SHALL BE PLACED WITH ITS TOP 0.10 FOOT ABOVE SURROUNDING GRADE. WHERE PRACTICAL, PULL BOXES SHOWN IN THE VICINITY OF CURBS SHALL BE PLACED ADJACENT TO THE BACK OF NEAREST CURB, AND PULL BOXES SHOWN ADJACENT TO STANDARDS SHALL BE PLACED ON SIDE OF FOUNDATION FACING SERVICE POINT U.O.N.
4. PULL BOXES COVERS SHALL BE MARKED AS "SITE LIGHTING"
5. THE NOMINAL DIMENSIONS OF THE OPENING IN WHICH THE COVER SETS SHALL BE THE SAME AS THE COVER DIMENSIONS EXCEPT THE LENGTH AND WIDTH DIMENSIONS SHALL BE ⅛" GREATER.
6. ALL COVERS AND BOXES SHALL BE INTERCHANGABLE WITH CALIFORNIA STD. MALE OR FEMALE GAUGE. THE TOP SURFACES SHALL BE FLUSH WITHIN 1/8". TOP OUTSIDE EDGE OF ALL CONCRETE COVERS AND PULL BOXES SHALL HAVE A ¾" MIN. RADIUS.
7. WHEN PULL BOX IS INSTALLED IN SIDEWALK AREA ON A STRUCTURE, THE DEPTH OF THE PULL BOX SHALL BE ADJUSTED SO THE TOP OF THE BOX IS FLUSH WITH THE TOP OF SIDEWALK.



3 LIGHT POLE PEDESTAL

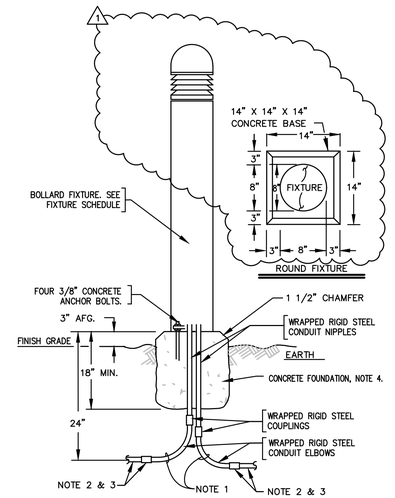
NO SCALE



1. ROCKFREE EARTHFILL (SAND OR NATIVE SOIL WHEN SUITABLE) +12" MIN. SHALL BE USED BY THE CONTRACTOR TO PROVIDE A SMOOTH BEDDING AND COVER FOR THE CONDUIT. SOILS CONTAINING OCCASIONAL ROUNDED ROCKS LESS THAN ¾" DIAMETER IS ACCEPTABLE BACKFILL. CRUSHED ROCK OR SHARP-EDGED MATERIALS OF ANY KIND ARE UNACCEPTABLE. FROM A LEVEL 4" BELOW TO 4" ABOVE ALL FACILITIES WITHIN TRENCH AREA. FILL TO BE AT 90% COMPACTION. SANDFILL TO BE AT +12", 90% COMPACTION.
2. BACKFILL AND COMPACT TO 90% LANDSCAPE AREAS & 95% HARDSCAPE AREAS.
3. DEPTHS AND SEPARATIONS SHOWN ARE MINIMUMS.
4. ADDITIONAL DEPTH MUST BE PROVIDED TO MAINTAIN THE REQUIRED SEPARATION AND COVER IF OTHER FACILITIES CROSS ELECTRIC, TELEPHONE, OR CABLE TELEVISION FACILITIES.
5. BACKFILL SAND.

4 TRENCH DETAIL

NO SCALE



NOTES:

1. INSTALL A MINIMUM OF TWO (2) WRAPPED RIGID STEEL CONDUIT ELBOWS, TO LIGHT FIXTURE.
2. CAP OFF UNUSED CONDUITS.
3. PVC SCHEDULE 40 TO NEXT FIXTURE.
4. CONCRETE FOUNDATION: FC = 2500 PSI @ 28 DAYS.

5 BOLLARD MOUNTING DETAIL

NO SCALE

SITE LIGHTING PLAN

REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — No. E 13492 — EXPIRATION DATE: 06-30-24 — ELECTRICAL — STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
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831-476-1525
CPE JOB: 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E1.10**
SH 7 OF 32
REV. 1

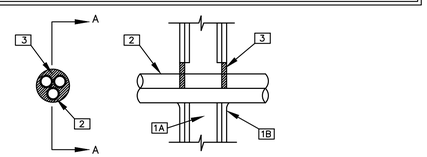
DETAIL NOTES:

SYSTEM NO. W-L-1222
F RATINGS – 1 AND 2 HR (SEE ITEM 1)
T RATINGS – 1/4 AND 1 HR (SEE ITEM 2)

1. WALL ASSEMBLY – THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS – WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE AND SPACED MAX 24 IN. OC.
   B. GYPSUM BOARD* – THICKNESS AND TYPE, NUMBER OF LAYERS AND FASTENERS AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 6 IN.
   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
2. THROUGH PENETRANT – ONE OR MORE METALLIC PIPES, CONDUITS OR TUBING TO BE INSTALLED ECCENTRICALLY OR CONCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE SPACE BETWEEN THE PIPES CONDUITS OR TUBING SHALL BE A MIN 1/4 IN. TO MAX 2 IN. THE ANNULAR SPACE BETWEEN THE PIPES, CONDUITS OR TUBING AND THE PERIPHERY OF THE OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 2 IN.. PIPES, CONDUITS OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS AND TUBES MAY BE USED;
   A. STEEL PIPE– NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE – NOM 8 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT – NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT, NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR NOM 4 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT.
   D. COPPER PIPE – NOM 4 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
   E. COPPER TUBE – NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
   WHEN ITEM 2A, 2B OR 2C IS USED, T RATING IS 1 HR. WHEN ITEM 2D OR 2E IS USED, T RATING IS 1/4 HR.
2A. THROUGH PENETRATING PRODUCT* – FLEXIBLE METAL PIPING – AS AN ALTERNATE TO ITEM 2, ONE OF MORE NOM 1 1/4 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL PIPES TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE PIPES AND THE PERIPHERY OF THE OPENING SHALL BE 0 IN. (POINT CONTACT) TO MAX 2 IN. PIPES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY.
   OMEGA FLEX INC
   TITEFLEX CORP
   A BUNDY CO
   WARD MFG INC
3. FILL, VOID OR CAVITY MATERIAL* – SEALANT – MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL ASSEMBLY. AT POINT CONTACT LOCATION, MIN 1/4 IN. DIAM BEAD OF FILL MATERIAL APPLIED AT METALLIC PIPE/GYPSUM BOARD INTERFACE ON BOTH SURFACES OF WALL.
   SPECIFIED TECHNOLOGIES INC – SPECSEAL LCI SEALANT

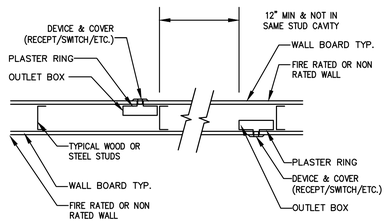
*BEARING THE UL CLASSIFICATION MARKING

"THROUGH PENETRATON FIRE STOP SYSTEM" DETAILS ARE FOR REFERENCE ONLY. PENETRATIONS THROUGH FIRE-RATED WALLS SHALL BE PROTECTED IN ACCORDANCE WITH APPROPRIATE CBC SECTIONS. SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED LISTING. MANUFACTURER'S INSTRUCTIONS AND APPROVED LISTING SHALL BE PROVIDED FOR REVIEW BY INSPECTION AUTHORITIES. SUBSTITUTIONS OF OR REVISIONS OR ADDITIONS TO APPROVED SYSTEMS SHALL BE SUBMITTED TO THE INSPECTOR OF RECORD AND OSHPD FIRE MARSHAL FOR FIELD REVIEW AND APPROVAL.



SECTION A–A

1 — FIRE PENETRATION DETAIL
NO SCALE



2 — TYPICAL OUTLET BOX MOUNTING
NO SCALE

DETAILS

REGISTERED PROFESSIONAL ENGINEER
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CPE JOB 21-044-0

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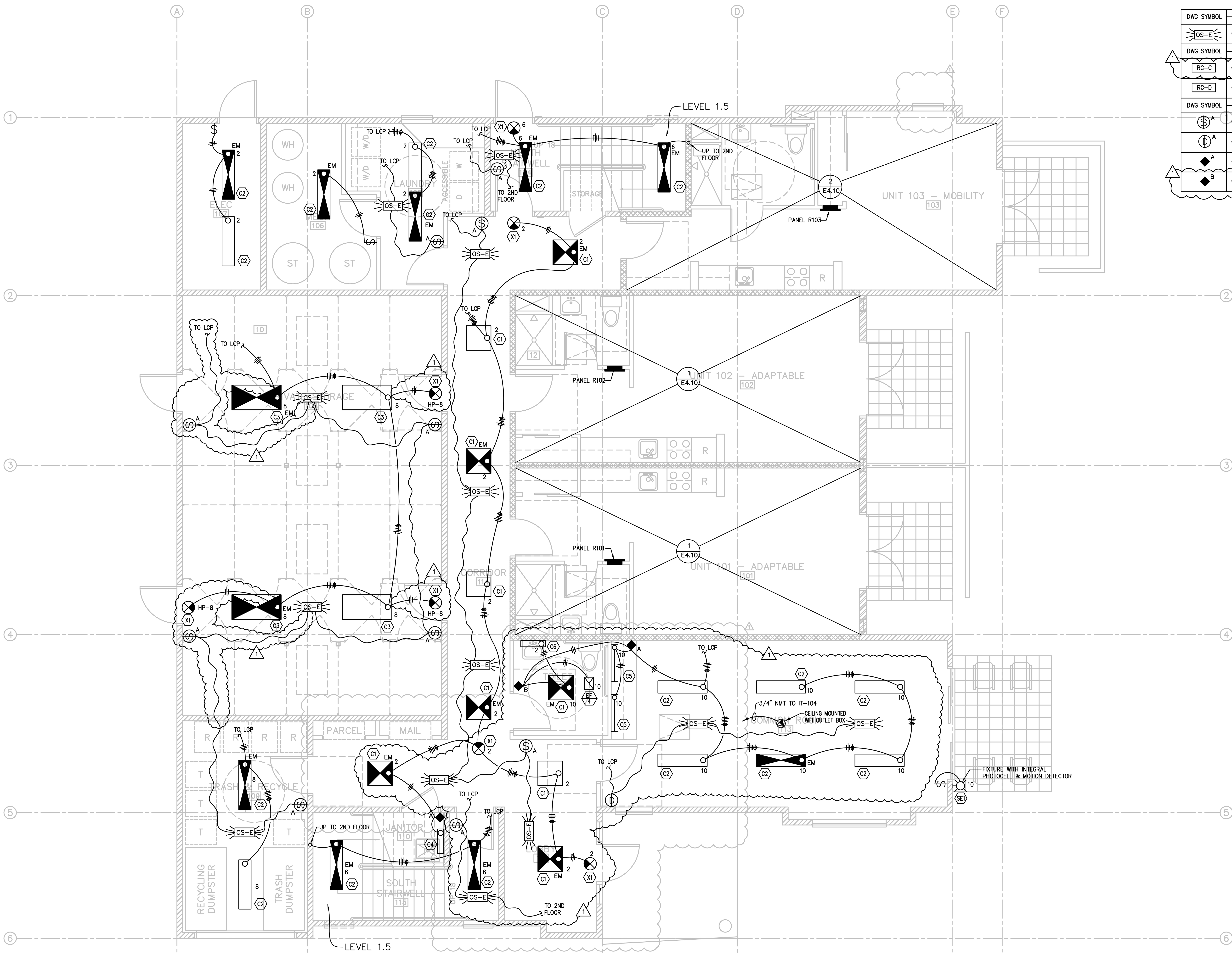
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21–044–0
DWG. NO. **E1.11**
SH 8 OF 32
REV. 1



1 FIRST FLOOR LIGHTING PLAN

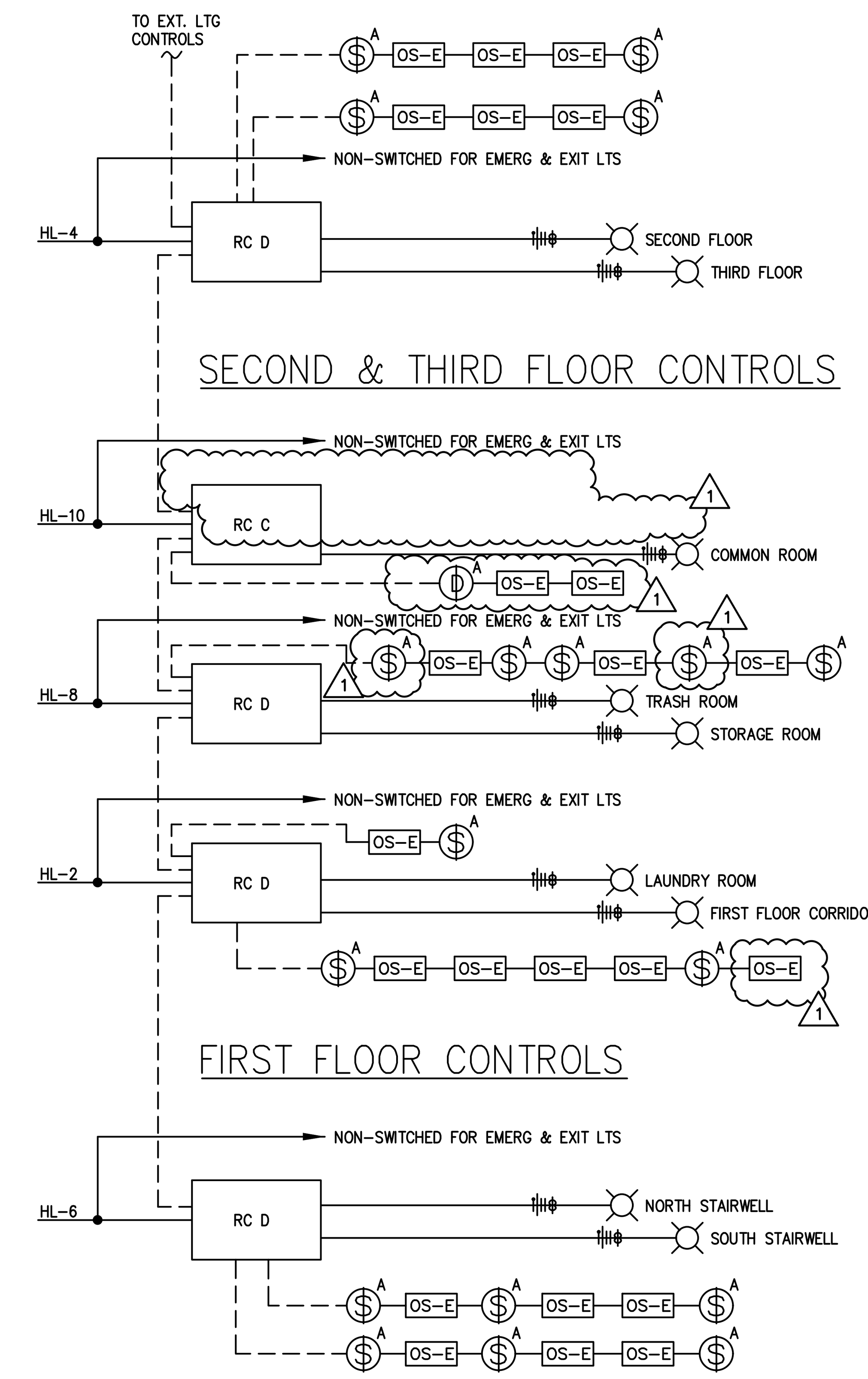
SCALE: 1/4" = 1'-0"

4 0 4 8

SCALE: 1" = 4'-0"

N

DWG SYMBOL	CEILING & WALL MOUNTED OCCUPANCY SENSORS		
	MFG	MODEL	DESCRIPTION
OS-E	WATTSTOPPER	LMPC-100	PIR CEILING SENSOR
DWG SYMBOL	ROOM CONTROLLER		
	MFG	MODEL	DESCRIPTION
RC-C	WATTSTOPPER	LMRC-211	ON-OFF (0-10V) DIMMING ROOM CONTROLLER WITH 1 RELAY
RC-D	WATTSTOPPER	LMRC-212	ON-OFF (0-10V) DIMMING ROOM CONTROLLER WITH 2 RELAYS
DWG SYMBOL	PERSONAL CONTROLS		
	MFG	MODEL	DESCRIPTION
$ A	WATTSTOPPER	LMSW-101	1 BUTTON DIGITAL WALL SWITCH
D A	WATTSTOPPER	LMDM-101	1 BUTTON DIMMING WALL SWITCH
◆ A	WATTSTOPPER	PW-100	PIR WALL SWITCH SENSOR
◆ B	WATTSTOPPER	PW-200	PIR DUAL RELAY WALL SWITCH SENSOR



SECOND & THIRD FLOOR CONTROLS

FIRST FLOOR CONTROLS

STAIR WELL CONTROLS

FIRST FLOOR LIGHTING PLAN

REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — E 13492 — EXPIRATION DATE: 09-30-24 — ELECTRICAL — STATE OF CALIFORNIA — 11.18.22

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CPE JOB 21-044-0

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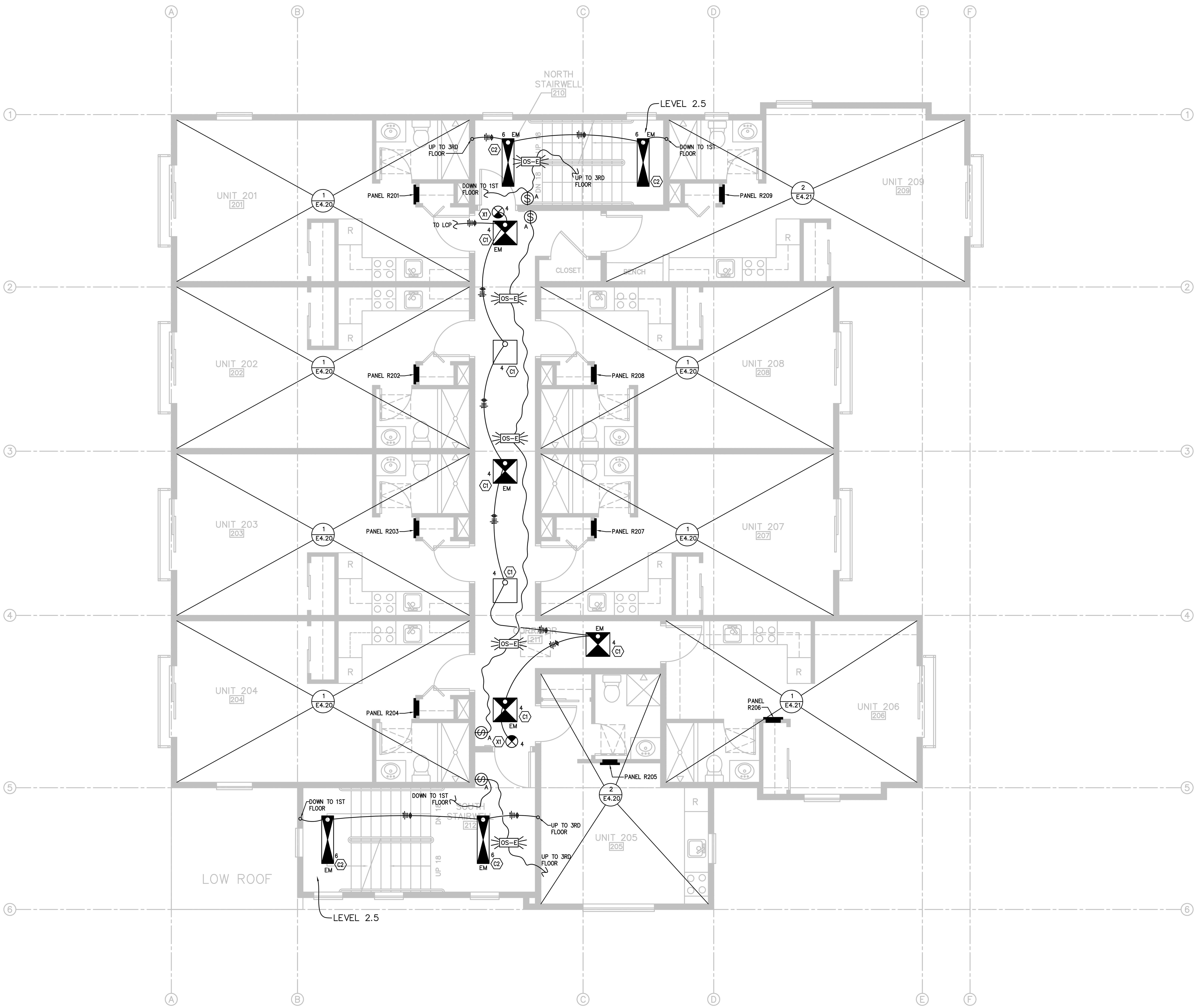
SAK	04/20/22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **E2.10**

REV. 1



1 SECOND FLOOR LIGHTING PLAN
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

SECOND FLOOR LIGHTING PLAN

PROPRIETARY DATA

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REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11.18.22
E 13492
EXPIRATION DATE: 09-30-24
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STATE OF CALIFORNIA

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TITLE: **AFFORDABLE HOUSING PROJECT**

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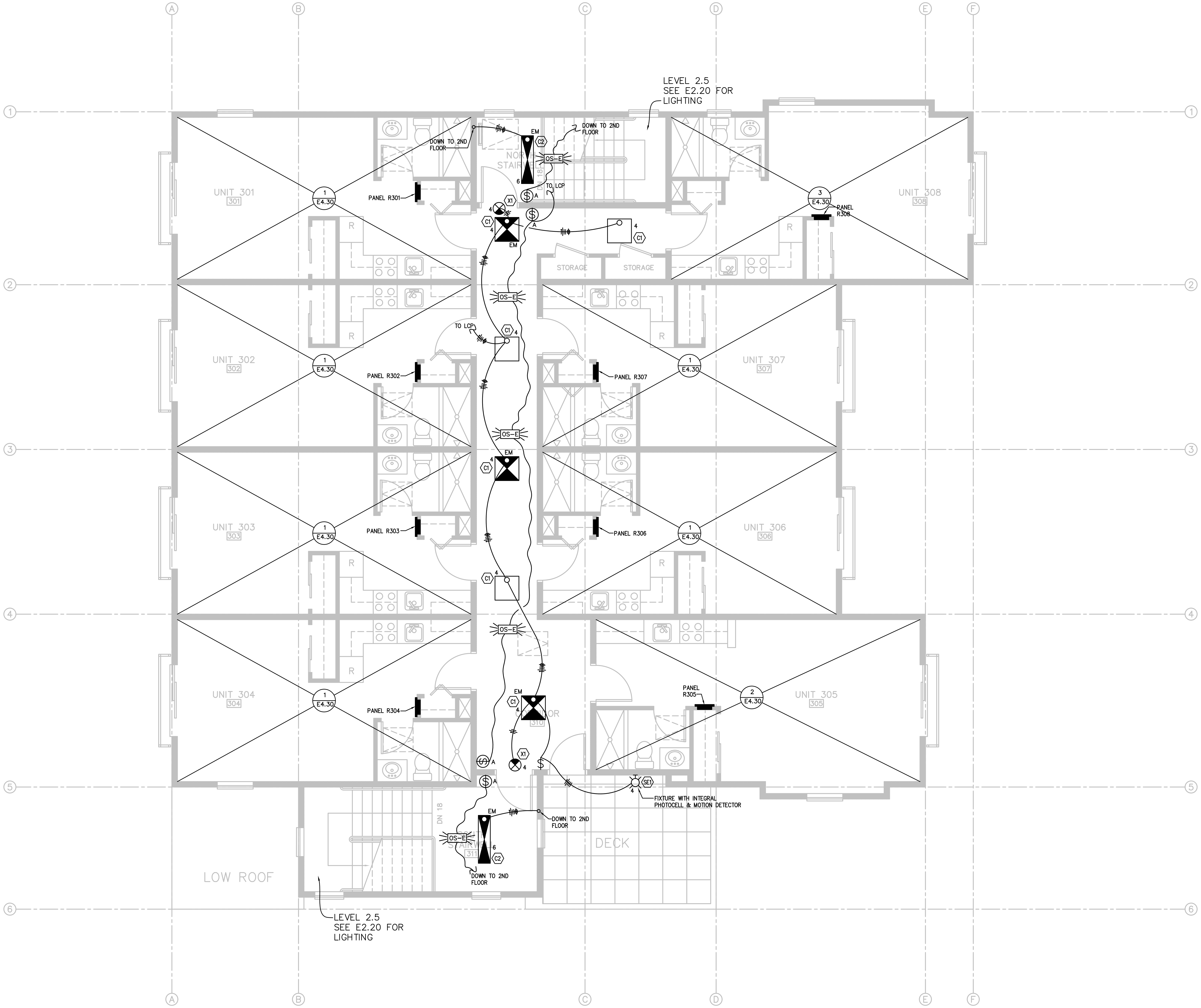
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E2.20**
SH 10 OF 32
REV. 1



1 THIRD FLOOR LIGHTING PLAN

SCALE: 1/4" = 1'-0"

4 0 4 8

SCALE: 1" = 4'-0"

N

THIRD FLOOR LIGHTING PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11.18.22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
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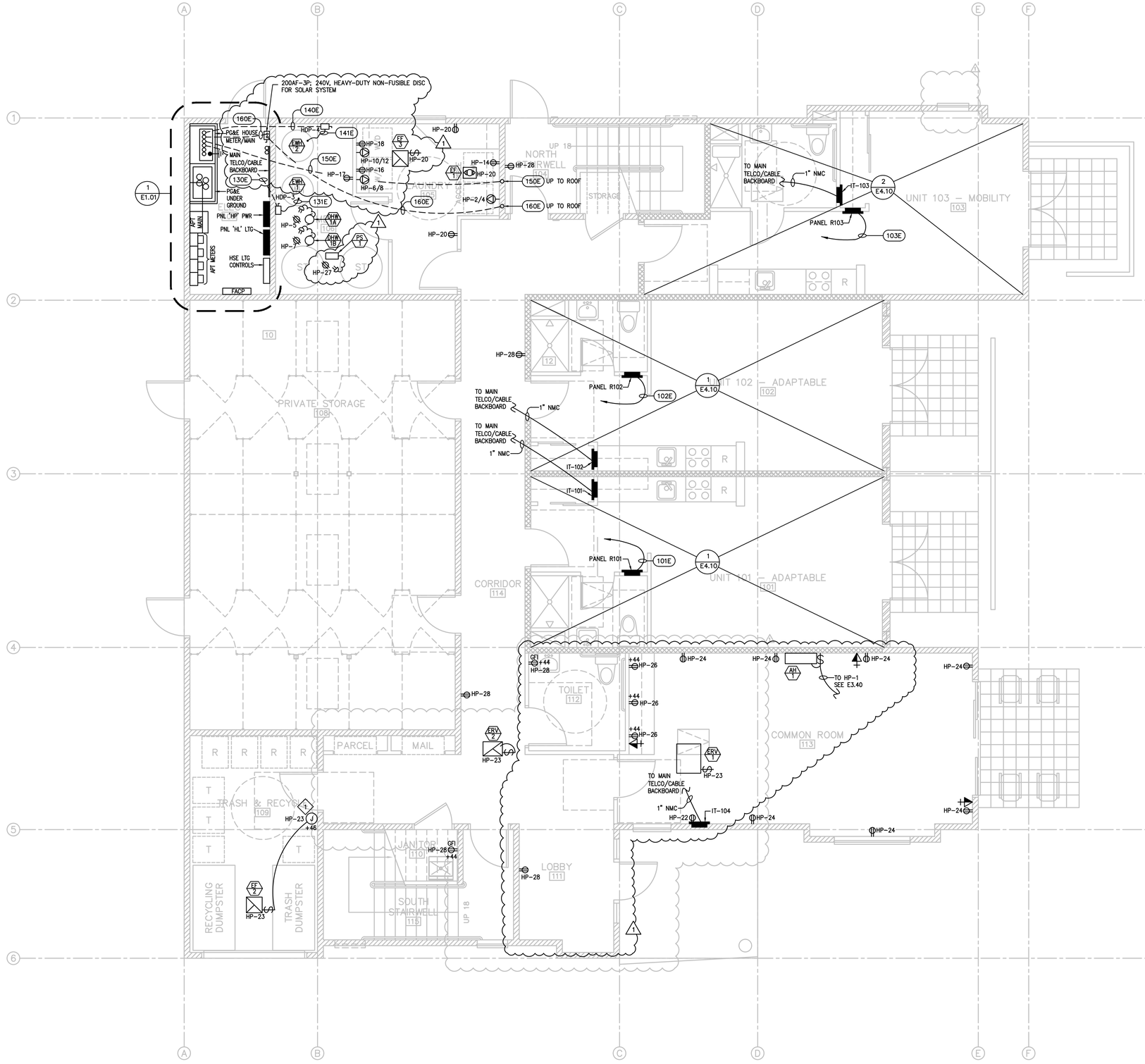
JOB NO. 21-044-0

DWG. NO. E2.30

SH 11 OF 32

REV. 1



1 FIRST FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

N

SHEET NOTES:

1. WIRE CKT. HP-23 TO EF-2 THRU 4 SQ. DEEP W/1 GANG PLASTER RING SWITCH BOX FOR POSSIBLE FUTURE CONTROL.

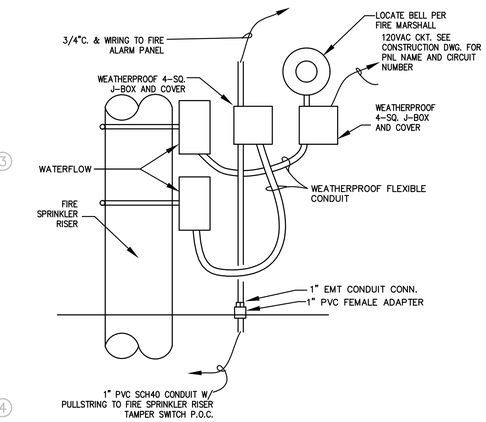
SHEET LEGEND

1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1–RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE 'IT-XXX'
–2–PORT QUICKPORT WALLPLATE, PART # 41080–2WP
–QUICKPORT F–CONNECTOR COUPLER, PART # 41084–FWF
–HOME 5E QUICKPORT JACK, PART # 5EHOM–RWS

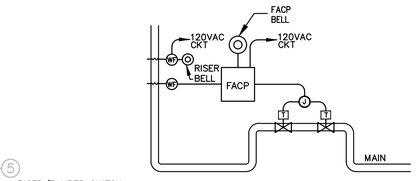
PANEL IT–XXX; LEVITON
–14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605–140
–COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603–DP6
–NON–SURGE J–BOX KIT, PART # 47605–ACN
–UNIVERSAL SHELF BRACKET, PART # 49605–AUB
–SADDLE TIE KIT, PART # 49605–AST

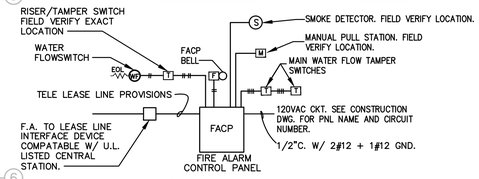
GENERAL NOTES:

1. ALL RECEPTACLES IN THE BEDROOM, THE DINING ROOM, HALLWAY, DEN, LIBRARIES, CLOSET, THE FAMILY ROOM AND SIMILAR ROOMS SHALL BE ARC–FAULT CIRCUIT INTERRUPTER PER CEC ARTICLE 210.12.
2. ALL RECEPTACLES IN UNITS SHALL BE TAMPER–RESISTANT RECEPTACLES PER CEC ARTICLE 406.14.
3. ALL BUILDING EXTERIOR WEATHER PROOF RECEPTACLE COVERS SHALL BE IN–USE TYPE.



2 FIRE ALARM RISER
NO SCALE





DETAIL NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION & CONNECTION WORK FOR F.A. PANEL TO CENTRAL STATION LINK. OWNER SHALL PAY ALL FEES & CHARGES FOR CENTRAL STATION MONITORING SERVICE & FOR TELE CO. LEASE LINE.
2. FIRE ALARM PANEL, MULTI ZONE, AUTO BATTERY CHARGER, BROWN OUT PROTECTION, & SUPERVISED BY CONTRACTOR. ALL OTHER MONITORING DEVICE CONDUITS WITH PULL CORDS BY ELECTRICAL CONTRACTOR.

3 FIRE ALARM DIAGRAM
NO SCALE

FIRST FLOOR POWER PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
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EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

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TITLE: **AFFORDABLE HOUSING PROJECT**
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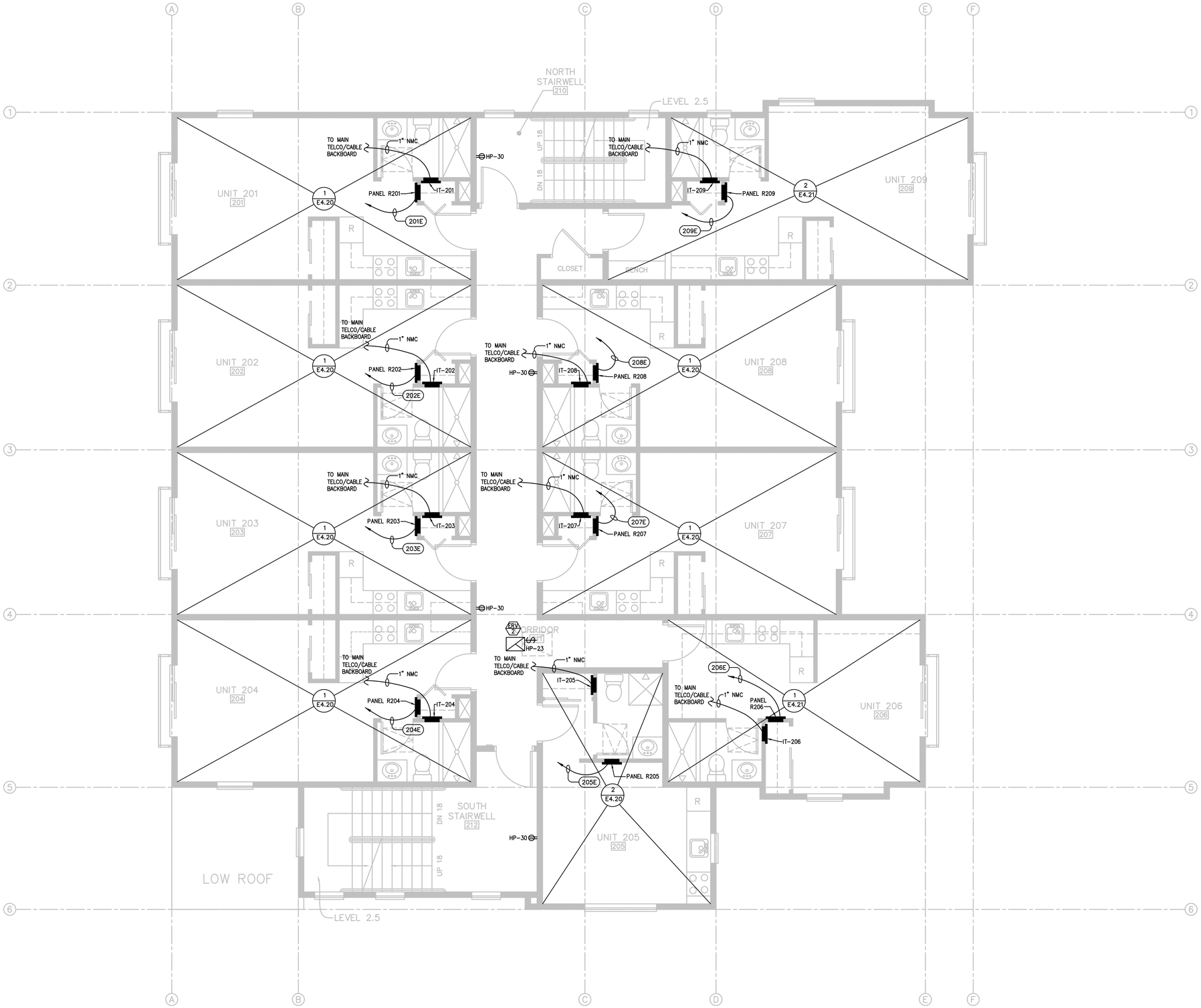
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21–044–0
DWG. NO. **E3.10**
SH 12 OF 32
REV. 1



1 SECOND FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

SECOND FLOOR POWER PLAN

PROPRIETARY DATA

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REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
No. E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA
11-8-22

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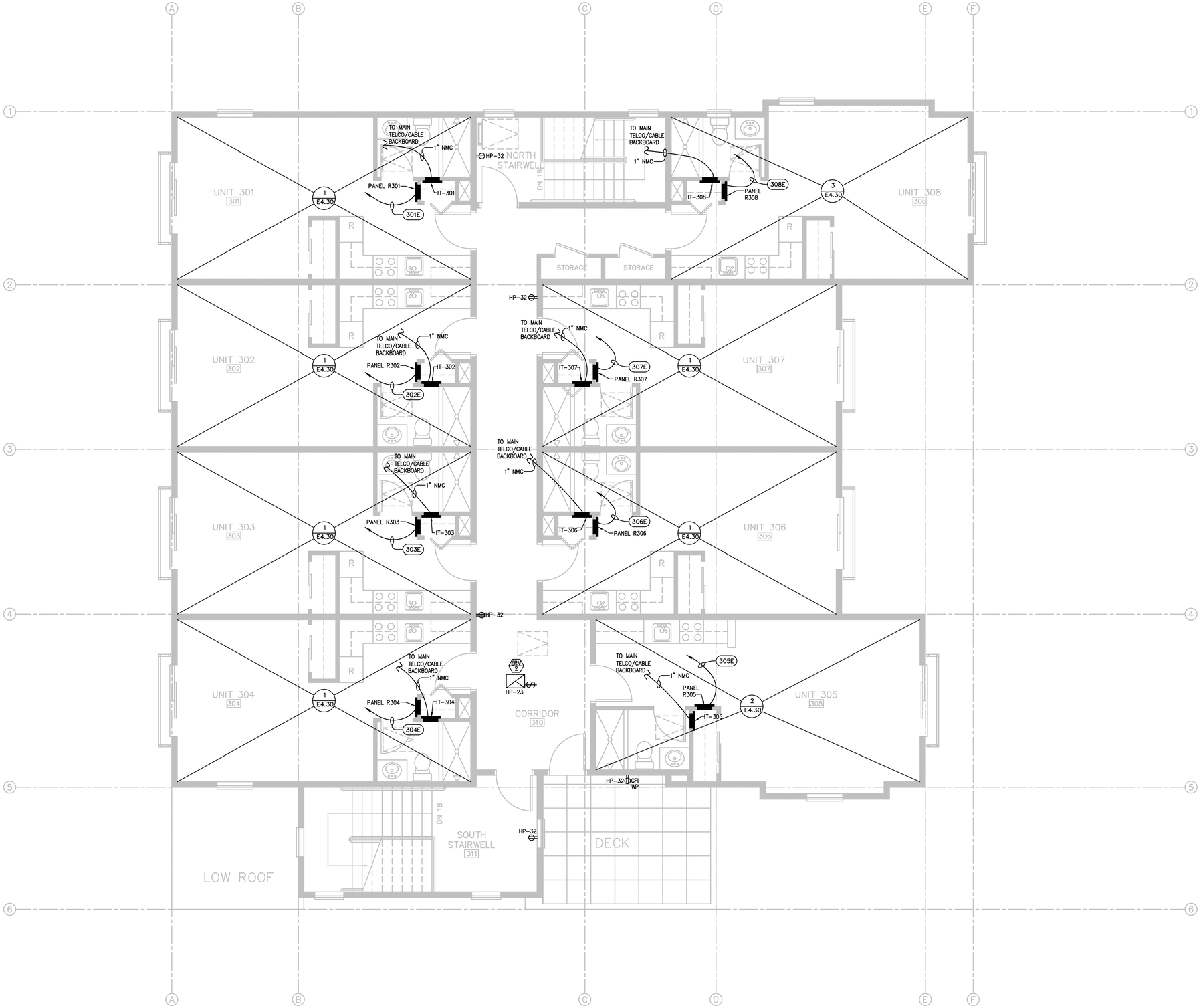
DWG. NO. **E3.20**

SH 13 OF 32

REV. 1



1 THIRD FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

THIRD FLOOR POWER PLAN

REGISTERED PROFESSIONAL ENGINEER
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No. E 13492
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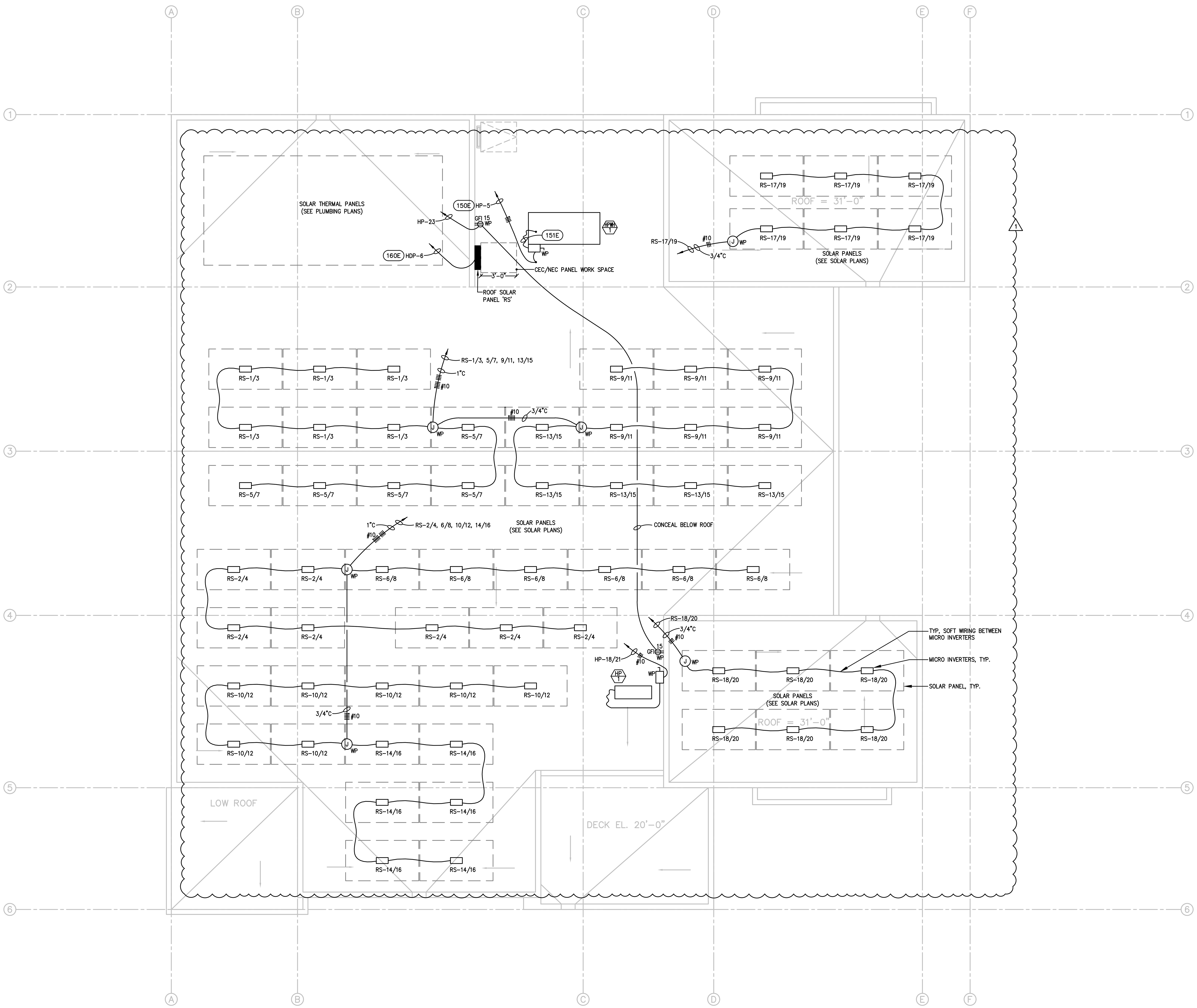
DWG. NO. **E3.30**
SH 14 OF 32
REV. 1



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

SCALE: 1" = 4'-0"

GENERAL NOTES:

1. CAREFULLY FIELD COORDINATE ALL ROOF PENETRATIONS WITH SOLAR PANEL LAYOUT.
2. WIRING AND CIRCUIT DESIGNATIONS SHOWN ON THE ELECTRICAL DRAWINGS SUPERCEDE WIRING SHOWN ON THE PV DRAWINGS.

ROOF POWER PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA
11.18.22

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20/22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. E3.40
SH 15 OF 32
REV. 1

SHEET NOTES:

1. TITLE 24 COMPLIANT VACANCY SWITCH FOR BATH LIGHTS AND ERV CONTROL SWITCH, SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL.
2. FC-1 LINE VOLTAGE T-STAT SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL. FIELD COORDINATE WITH MECHANICAL WORK. COORDINATE IN FIELD EXACT LOCATION OF T-STAT WITH ARCHITECT.
3. USE MAX LENGTH OF UNDER LIGHT TO FIT AVAILABLE CABINET SPACE.
4. SMOKE DETECTORS AND COMBO SMOKE/CO SHALL BE HARDWIRED AND INTERCONNECTED IF MORE THAN ONE PER UNIT.
5. FIRE SMOKE DAMPER(S) FIELD COORDINATE WITH ARCH, MECH AND FIRE ALARM WORK. SEE ARCH, MECH AND FIRE ALARM DWGS.

SHEET LEGEND

1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1–RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE 'IT–XXX'
–2–PORT QUICKPORT WALLPLATE, PART # 41080–2WP
–QUICKPORT F–CONNECTOR COUPLER, PART # 41084–FWF
–HOME 5E QUICKPORT JACK, PART # 5EHOM–RWS

PANEL IT–XXX; LEVITON
–14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605–140
–COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603–DP6
–NON–SURGE J–BOX KIT, PART # 47605–ACN
–UNIVERSAL SHELF BRACKET, PART # 49605–AUB
–SADDLE TIE KIT, PART # 49605–AST

GENERAL NOTES:

1. ALL RECEPTACLES IN THE BEDROOM, THE DINING ROOM, HALLWAY, DEN, LIBRARIES, CLOSET, THE FAMILY ROOM AND SIMILAR ROOMS SHALL BE ARC–FAULT CIRCUIT INTERRUPTER PER CEC ARTICLE 210.12.
2. ALL RECEPTACLES IN UNITS SHALL BE TAMPER–RESISTANT RECEPTACLES PER CEC ARTICLE 406.14.
3. ALL BUILDING EXTERIOR WEATHER PROOF RECEPTACLE COVERS SHALL BE IN–USE TYPE.

1

PANEL NAME: 'R101'; 'R102' LOCATION: RESIDENTIAL UNIT
PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND.
ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM
INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐BOLT–ON ☒PLUG–ON DEVICE FAMILY: ☐ SUB–FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ϕA	AMPS ϕB	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT ϕA	AMPS ϕB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1			2	20	1000			X	GARBAGE DISP
MAIN	X	X			–	3			4	20		1500	X	X	KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5			6	20	1500			X	KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7			8	20		600	X	X	REFER
BATH GFI		X	1500		20	9			10	20	1440			X	PLUGS
HEATER		X		2000	30	11			12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13			14	20	210			X	ERV & FSD
SPACE						15			16						SPACE
SPACE						17			18						SPACE
SPACE						19			20						SPACE
SPACE						21			22						SPACE
SPACE						23			24						SPACE
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						
TOTALS			5700	6000							4150	2500			

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: }
COLOR
COVER: ☐ DOOR–IN–DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

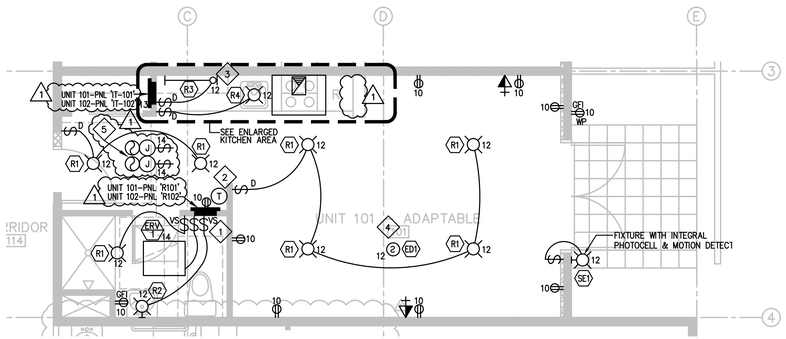
1

PANEL NAME: 'R103' LOCATION: RESIDENTIAL UNIT
PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND.
ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM
INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐BOLT–ON ☒PLUG–ON DEVICE FAMILY: ☐ SUB–FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ϕA	AMPS ϕB	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT ϕA	AMPS ϕB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1			2	20	1000			X	GARBAGE DISP
MAIN	X	X			–	3			4	20		1500	X	X	KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5			6	20	1500			X	KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7			8	20		600	X	X	REFER
BATH GFI		X	1500		20	9			10	20	1440			X	PLUGS
HEATER		X		2000	30	11			12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13			14	20	210			X	ERV & FSD
SPACE						15			16						SPACE
SPACE						17			18						SPACE
SPACE						19			20						SPACE
SPACE						21			22						SPACE
SPACE						23			24						SPACE
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						
TOTALS			5700	6000							4150	2500			

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

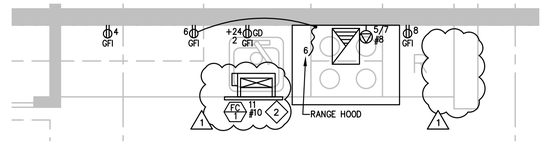
ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: }
COLOR
COVER: ☐ DOOR–IN–DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR



UNITS 101, 102 – TYP.
1 (UNIT 102 REVERSE)
SCALE: 1/4" = 1'–0"

4 0 4 8
SCALE: 1" = 4'–0"

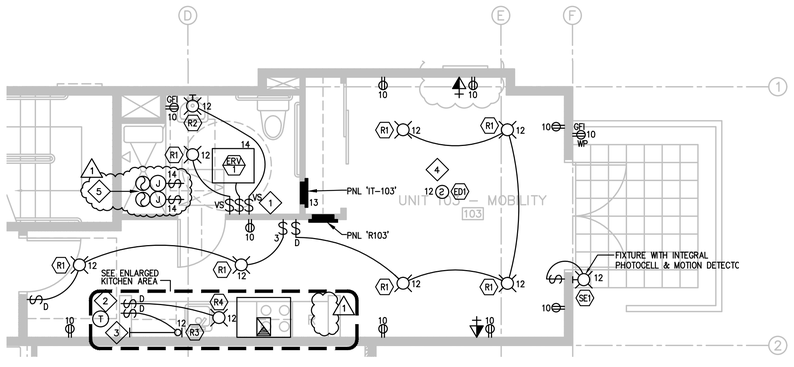
N



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'–0"

2 0 2 4
SCALE: 1" = 2'–0"

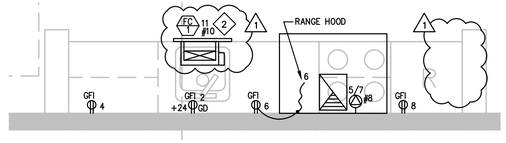
N



2 UNIT 103
SCALE: 1/4" = 1'–0"

4 0 4 8
SCALE: 1" = 4'–0"

N



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'–0"

2 0 2 4
SCALE: 1" = 2'–0"

N

LIGHTING & POWER PLANS – UNITS 101, 102, 103

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09–30–24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831–476–1525
CPE JOB 21–044–0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: AFFORDABLE HOUSING PROJECT
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21–044–0
DWG. NO. E4.10
SH 16 OF 32
REV. 1

SHEET LEGEND

1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1-RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE 'IT-XXX'
- -2-PORT QUICKPORT WALLPLATE, PART # 41080-2WP
- -QUICKPORT F-CONNECTOR COUPLER, PART # 41084-FWF
- -HOME 5E QUICKPORT JACK, PART # 5EHOM-RW5

PANEL IT-XXX; LEVITON
- -14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605-140
- -COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603-DP6
- -NON-SURGE J-BOX KIT, PART # 47605-ACN
- -UNIVERSAL SHELF BRACKET, PART # 49605-AUB
- -SADDLE TIE KIT, PART # 49605-AST

GENERAL NOTES:

1. ALL RECEPTACLES IN THE BEDROOM, THE DINING ROOM, HALLWAY, DEN, LIBRARIES, CLOSET, THE FAMILY ROOM AND SIMILAR ROOMS SHALL BE ARC-FAULT CIRCUIT INTERRUPTER PER CEC ARTICLE 210.12.
2. ALL RECEPTACLES IN UNITS SHALL BE TAMPER-RESISTANT RECEPTACLES PER CEC ARTICLE 406.14.
3. ALL BUILDING EXTERIOR WEATHER PROOF RECEPTACLE COVERS SHALL BE IN-USE TYPE.

SHEET NOTES:

1. TITLE 24 COMPLIANT VACANCY SWITCH FOR BATH LIGHTS AND ERV CONTROL SWITCH, SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL.
2. FC-1 LINE VOLTAGE T-STAT SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL. FIELD COORDINATE WITH MECHANICAL WORK. COORDINATE IN FIELD EXACT LOCATION OF T-STAT WITH ARCHITECT.
3. USE MAX LENGTH OF UNDER LIGHT TO FIT AVAILABLE CABINET SPACE.
4. SMOKE DETECTORS AND COMBO SMOKE/CO SHALL BE HARDWIRED AND INTERCONNECTED IF MORE THAN ONE PER UNIT.
5. FIRE SMOKE DAMPER(S) FIELD COORDINATE WITH ARCH, MECH AND FIRE ALARM WORK. SEE ARCH, MECH AND FIRE ALARM DWGS.
6. UNIT 201 – PNL 'R201'
   UNIT 202 – PNL 'R202'
   UNIT 203 – PNL 'R203'
   UNIT 204 – PNL 'R204'
   UNIT 207 – PNL 'R207'
   UNIT 208 – PNL 'R208'

SHEET LEGEND

1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1-RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE 'IT-XXX'
- -2-PORT QUICKPORT WALLPLATE, PART # 41080-2WP
- -QUICKPORT F-CONNECTOR COUPLER, PART # 41084-FWF
- -HOME 5E QUICKPORT JACK, PART # 5EHOM-RW5

PANEL IT-XXX; LEVITON
- -14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605-140
- -COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603-DP6
- -NON-SURGE J-BOX KIT, PART # 47605-ACN
- -UNIVERSAL SHELF BRACKET, PART # 49605-AUB
- -SADDLE TIE KIT, PART # 49605-AST

PANEL NAME: (see note 6) LOCATION: RESIDENTIAL UNIT PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND. ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY: ____ ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT AMPS ϕA	VOLT AMPS ϕB	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT AMPS ϕA	VOLT AMPS ϕB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1			2	20	1000		X		GARBAGE DISP
MAIN	X	X			–	3			4	20		1500	X		KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5			6	20	1500		X		KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7			8	20		600	X		REFER
BATH GFI		X	1500		20	9			10	20	1440		X		PLUGS
HEATER		X		2000	30	11			12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13			14	20	210		X		ERV & FSD
SPACE						15			16						SPACE
SPACE						17			18						SPACE
SPACE						19			20						SPACE
SPACE						21			22						SPACE
SPACE						23			24						SPACE
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						
TOTALS			5700	6000							4150	2500			

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

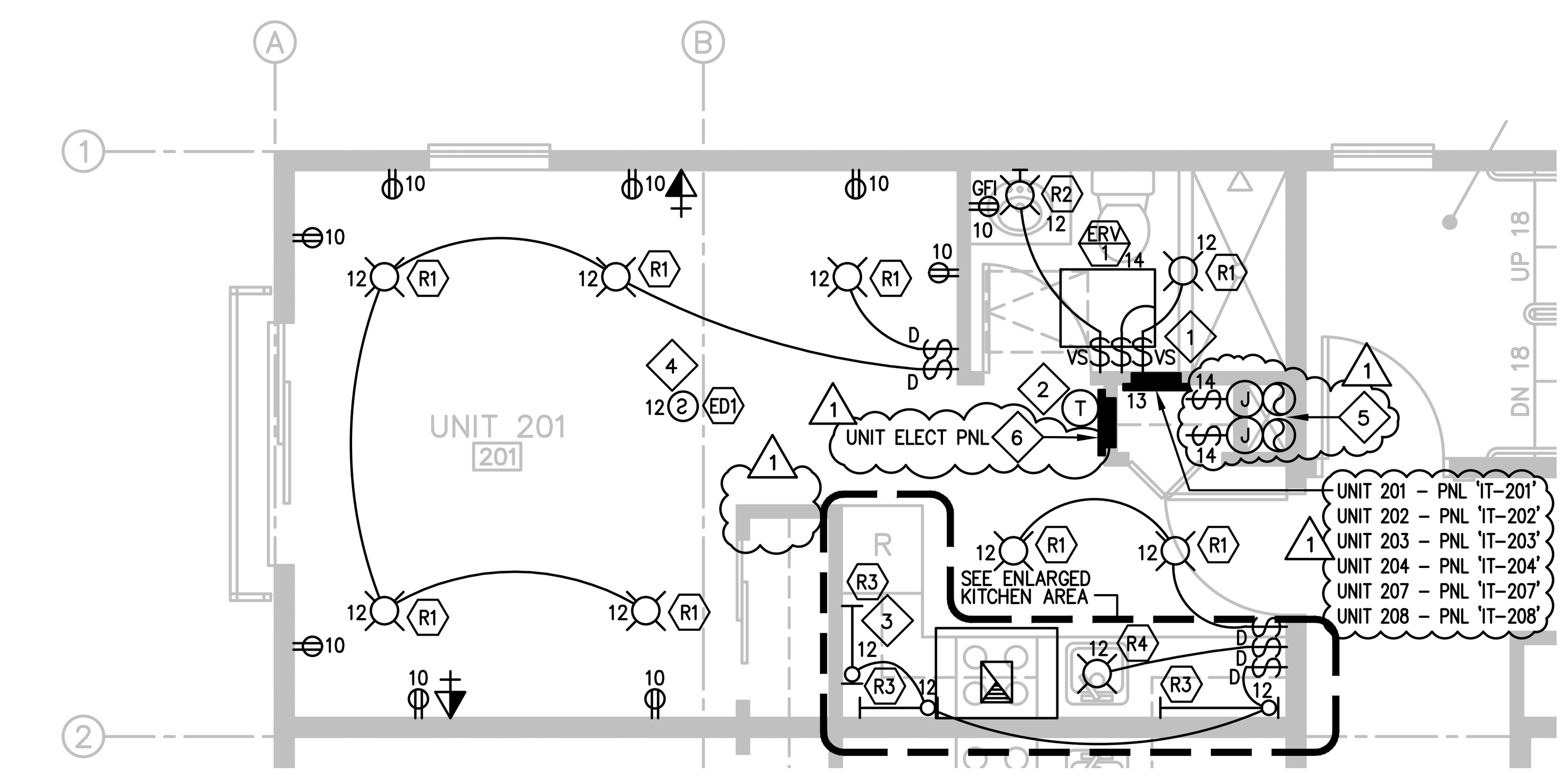
ACCESSORIES:
- COLOR: EITHER ☒ ANSI 61 LT GRAY / ☒ ANSI 49 DK GRAY; ☐ OTHER: ____
- COVER: ☐ DOOR-IN-DOOR; ☐ KEYED LATCH; ☐ OTHER: ____
- NAME PLATES: ☒ 1/4" LETTERS; ☒ WHITE LETTERS ON BLACK; ☒ SCREW MOUNTED
- OTHER: ☒ GROUND BAR; ☒ PNL. DIRECTORY; ☐ ISO GROUND BAR

PANEL NAME: 'R205' LOCATION: RESIDENTIAL UNIT PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND. ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY: ____ ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT AMPS ϕA	VOLT AMPS ϕB	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT AMPS ϕA	VOLT AMPS ϕB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1			2	20	1000		X		GARBAGE DISP
MAIN	X	X			–	3			4	20		1500	X		KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5			6	20	1500		X		KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7			8	20		600	X		REFER
BATH GFI		X	1500		20	9			10	20	1440		X		PLUGS
HEATER		X		2000	30	11			12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13			14	20	210		X		ERV & FSD
SPACE						15			16						SPACE
SPACE						17			18						SPACE
SPACE						19			20						SPACE
SPACE						21			22						SPACE
SPACE						23			24						SPACE
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						
TOTALS			5700	6000							4150	2500			

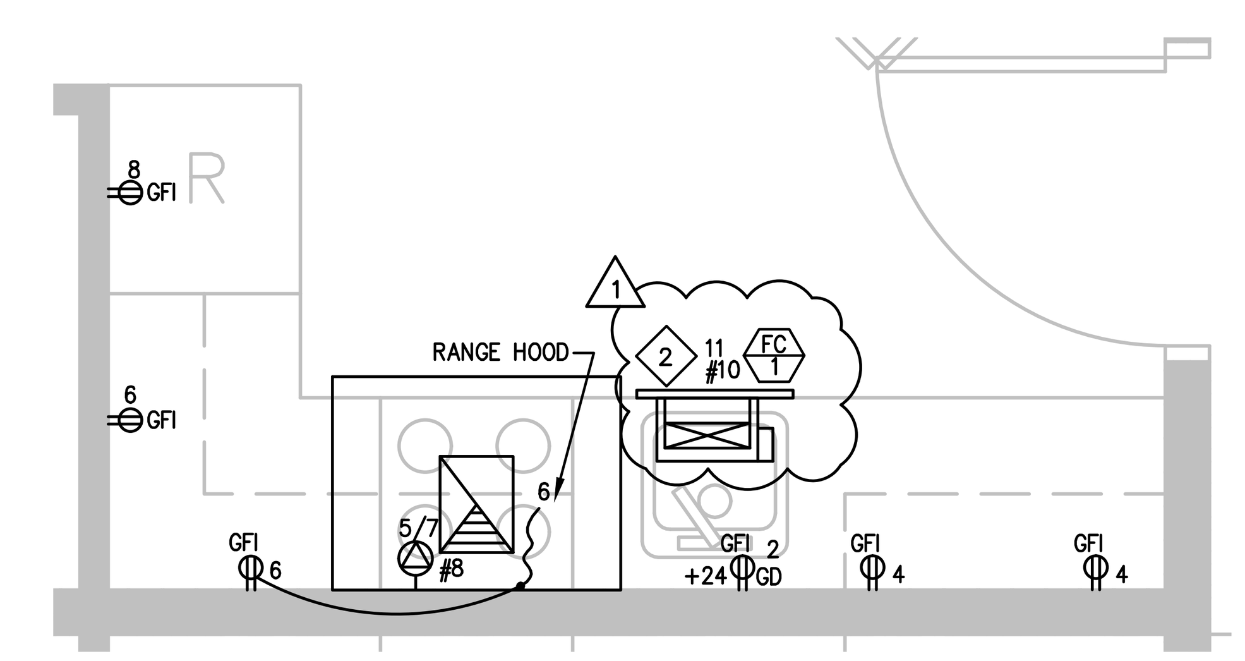
BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

ACCESSORIES:
- COLOR: EITHER ☒ ANSI 61 LT GRAY / ☒ ANSI 49 DK GRAY; ☐ OTHER: ____
- COVER: ☐ DOOR-IN-DOOR; ☐ KEYED LATCH; ☐ OTHER: ____
- NAME PLATES: ☒ 1/4" LETTERS; ☒ WHITE LETTERS ON BLACK; ☒ SCREW MOUNTED
- OTHER: ☒ GROUND BAR; ☒ PNL. DIRECTORY; ☐ ISO GROUND BAR



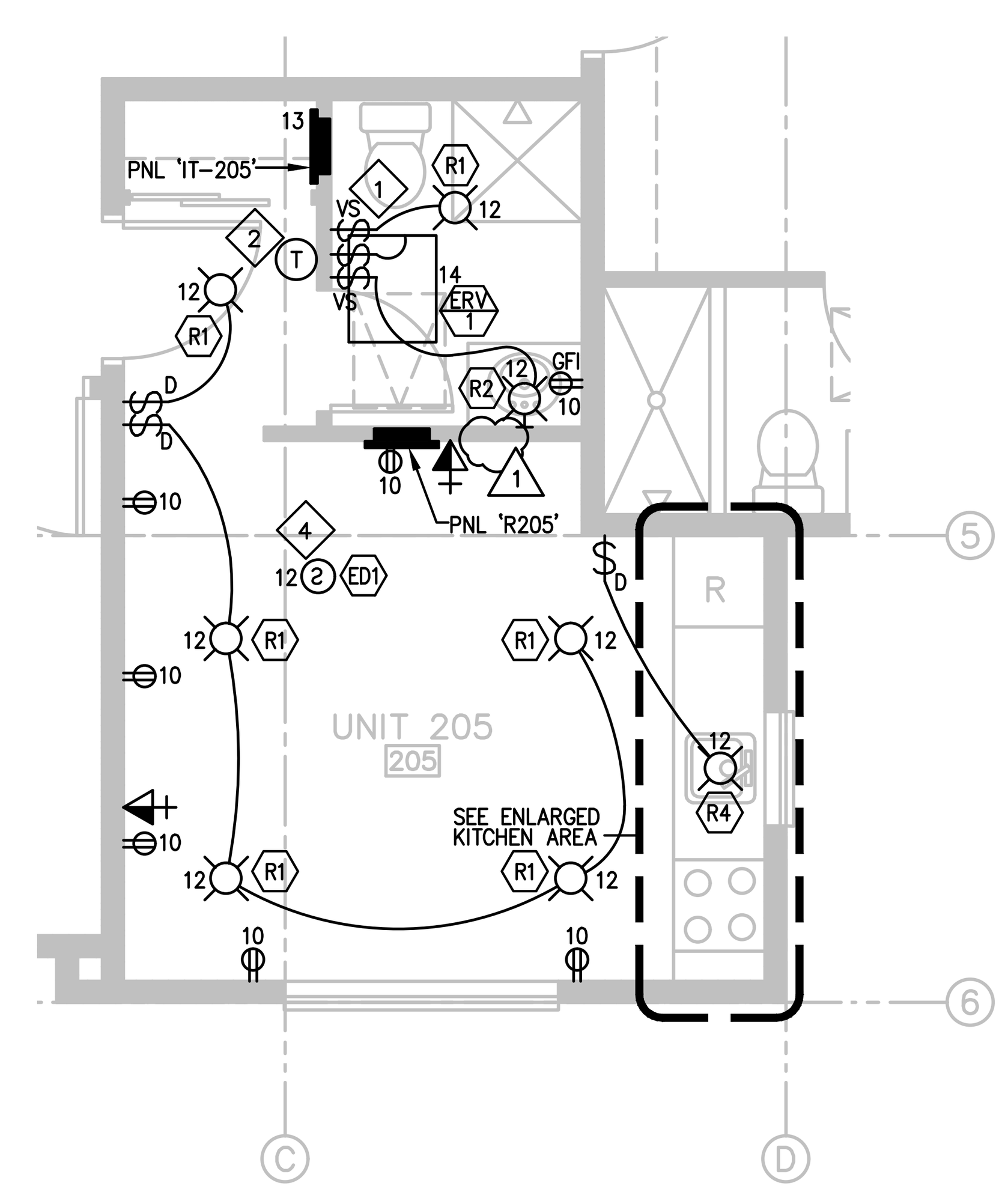
1 UNITS 201, 202, 203, 204, 207, 208 – TYP. (202, 204, 207 REVERSE)
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"



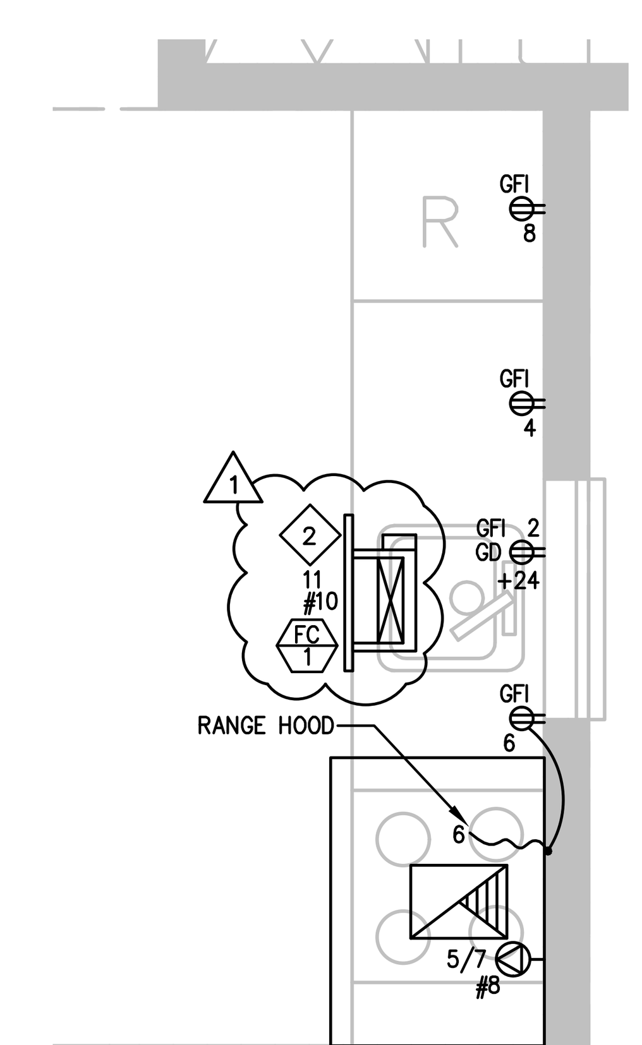
ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"

SCALE: 1" = 2'-0"



2 UNIT 205
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"

SCALE: 1" = 2'-0"

LIGHTING & POWER PLANS - UNITS 201, 202, 203, 204, 205, 207, 208

REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — E 13492 — EXPIRATION DATE: 09-30-24 — ELECTRICAL — STATE OF CALIFORNIA — 11.18.22

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E4.20**
SH 17 OF 32 REV. 1

SHEET LEGEND

- 1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1-RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE 'IT-XXX'
  - –2-PORT QUICKPORT WALLPLATE, PART # 41080-2WP
  - –QUICKPORT F-CONNECTOR COUPLER, PART # 41084-FWF
  - –HOME 5E QUICKPORT JACK, PART # 5EHOM-RW5
- PANEL IT-XXX; LEVITON
  - –14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605-140
  - –COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603-DP6
  - –NON-SURGE J-BOX KIT, PART # 47605-ACN
  - –UNIVERSAL SHELF BRACKET, PART # 49605-AUB
  - –SADDLE TIE KIT, PART # 49605-AST

GENERAL NOTES:

1. ALL RECEPTACLES IN THE BEDROOM, THE DINING ROOM, HALLWAY, DEN, LIBRARIES, CLOSET, THE FAMILY ROOM AND SIMILAR ROOMS SHALL BE ARC-FAULT CIRCUIT INTERRUPTER PER CEC ARTICLE 210.12.
2. ALL RECEPTACLES IN UNITS SHALL BE TAMPER-RESISTANT RECEPTACLES PER CEC ARTICLE 406.14.
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SHEET NOTES:

1. TITLE 24 COMPLIANT VACANCY SWITCH FOR BATH LIGHTS AND ERV CONTROL SWITCH, SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL.
2. FC-1 LINE VOLTAGE T-STAT SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL. FIELD COORDINATE WITH MECHANICAL WORK. COORDINATE IN FIELD EXACT LOCATION OF T-STAT WITH ARCHITECT.
3. USE MAX LENGTH OF UNDER LIGHT TO FIT AVAILABLE CABINET SPACE.
4. SMOKE DETECTORS AND COMBO SMOKE/CO SHALL BE HARDWIRED AND INTERCONNECTED IF MORE THAN ONE PER UNIT.
5. FIRE SMOKE DAMPER(S) FIELD COORDINATE WITH ARCH, MECH AND FIRE ALARM WORK. SEE ARCH, MECH AND FIRE ALARM DWGS.

1

PANEL NAME: 'R206' LOCATION: RESIDENTIAL UNIT PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND. ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY: ☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT AMPS ΦA	ΦB	BRK.	CKT NO.	BUS CONN. A	B	CKT NO.	BRK.	VOLT AMPS ΦA	ΦB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1	●		2	20	1000		X		GARBAGE DISP
MAIN	X	X			–	3		●	4	20		1500	X		KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5	●		6	20	1500		X		KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7		●	8	20		600	X		REFER
BATH GFI		X	1500		20	9	●		10	20	1440		X		PLUGS
HEATER		X		2000	30	11		●	12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13	●		14	20	210		X		ERV & FSD
SPACE						15		●	16						SPACE
SPACE						17	●		18						SPACE
SPACE						19		●	20						SPACE
SPACE						21	●		22						SPACE
SPACE						23		●	24						SPACE
						25	●		26						
						27		●	28						
						29	●		30						
						31		●	32						
						33	●		34						
						35		●	36						
						37	●		38						
						39		●	40						
TOTALS			5700	6000							4150	2500			

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

ACCESSORIES:
COLOR: EITHER ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER:
COVER: ☐ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

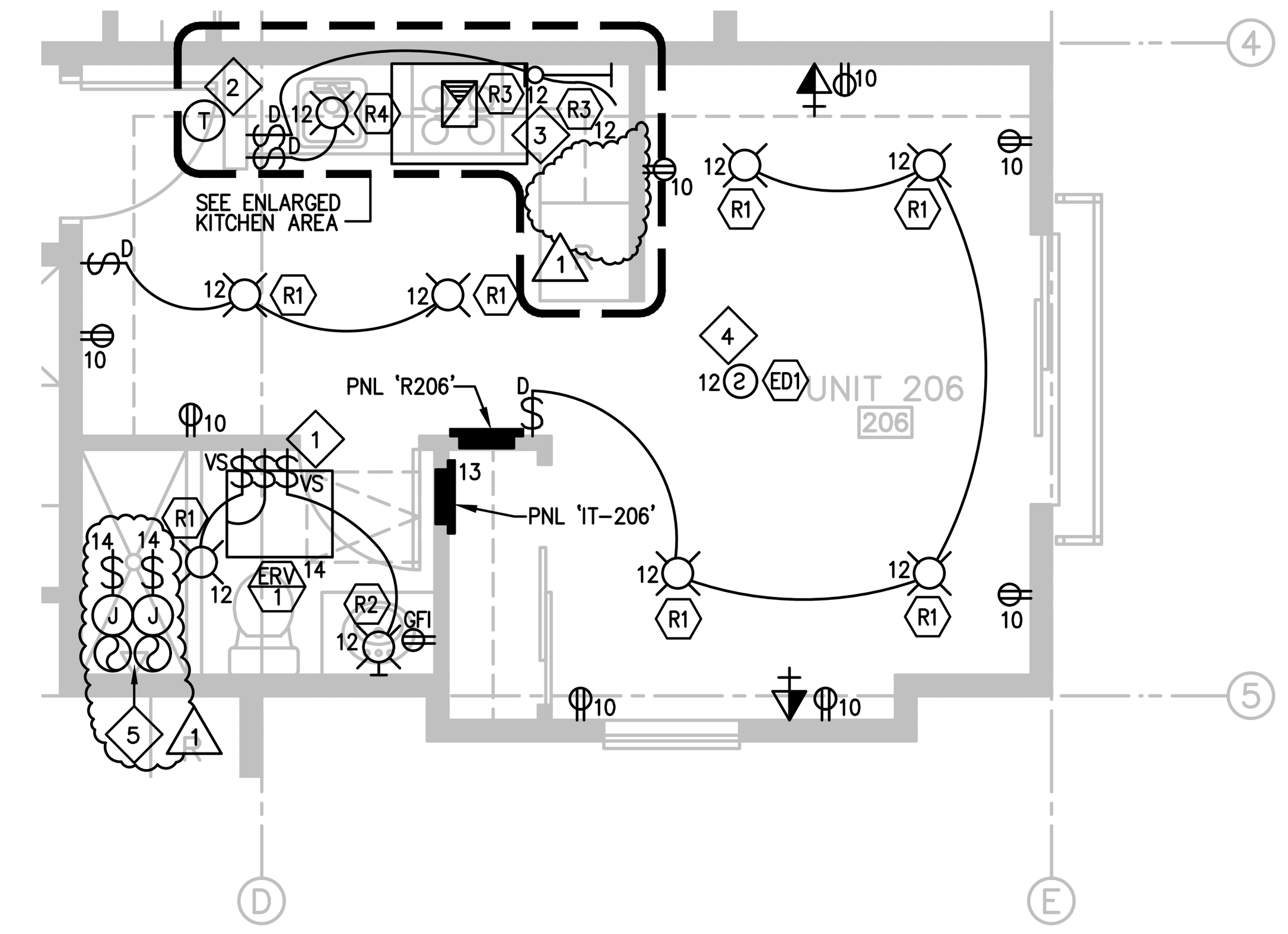
1

PANEL NAME: 'R209' LOCATION: RESIDENTIAL UNIT PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND. ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY: ☐ SUB-FEED CIRCUIT BREAKER

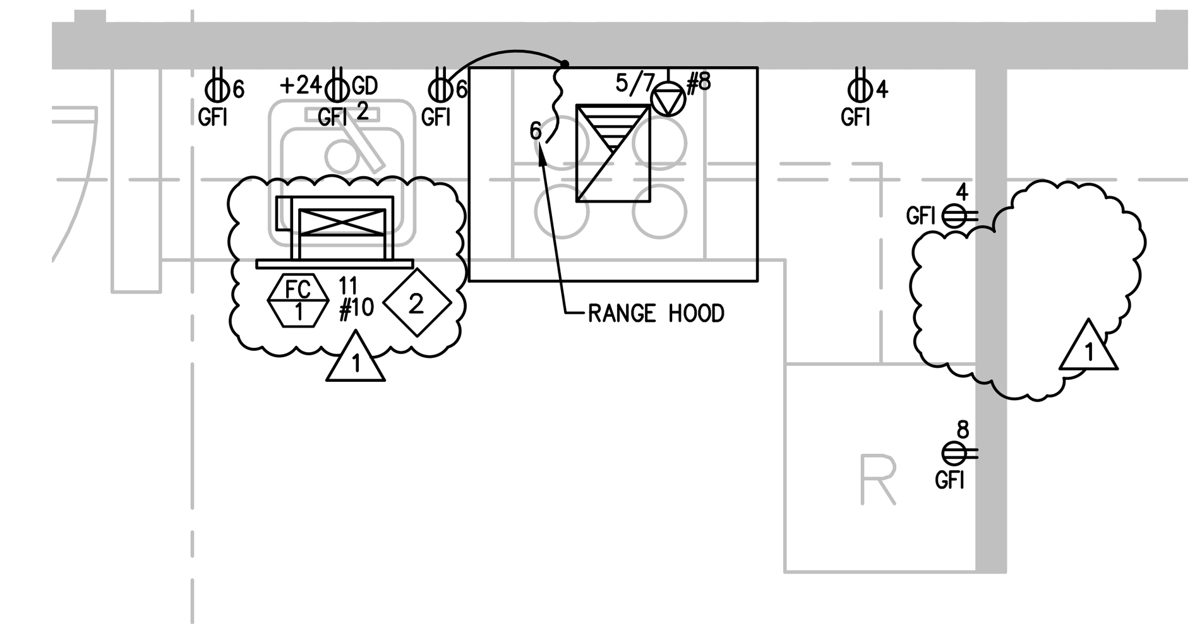
DESCRIPTION	LTG	PWR	VOLT AMPS ΦA	ΦB	BRK.	CKT NO.	BUS CONN. A	B	CKT NO.	BRK.	VOLT AMPS ΦA	ΦB	PWR	LTG	DESCRIPTION
MAIN	X	X			100	1	●		2	20	1000		X		GARBAGE DISP
MAIN	X	X			–	3		●	4	20		1500	X		KIT APPLIANCE
OVEN COOKTOP		X	4000		50	5	●		6	20	1500		X		KIT APPLIANCE
OVEN COOKTOP		X		4000	–	7		●	8	20		600	X		REFER
BATH GFI		X	1500		20	9	●		10	20	1440		X		PLUGS
HEATER		X		2000	30	11		●	12	20		400		X	LIGHTS
LOW VOLTAGE CABNET		X	200		20	13	●		14	20	210		X		ERV & FSD
SPACE						15		●	16						SPACE
SPACE						17	●		18						SPACE
SPACE						19		●	20						SPACE
SPACE						21	●		22						SPACE
SPACE						23		●	24						SPACE
						25	●		26						
						27		●	28						
						29	●		30						
						31		●	32						
						33	●		34						
						35		●	36						
						37	●		38						
						39		●	40						
TOTALS			5700	6000							4150	2500			

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

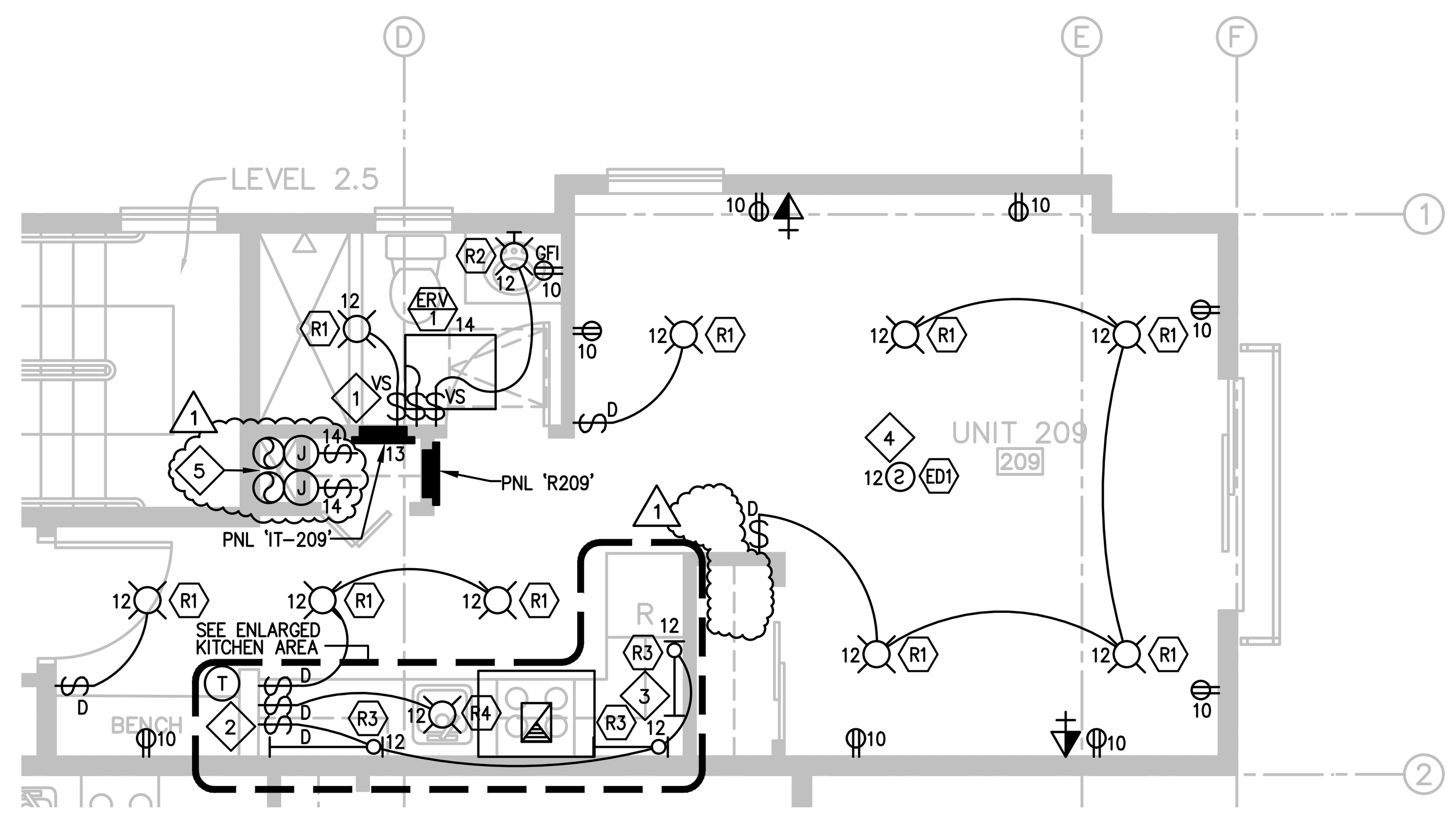
ACCESSORIES:
COLOR: EITHER ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER:
COVER: ☐ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR



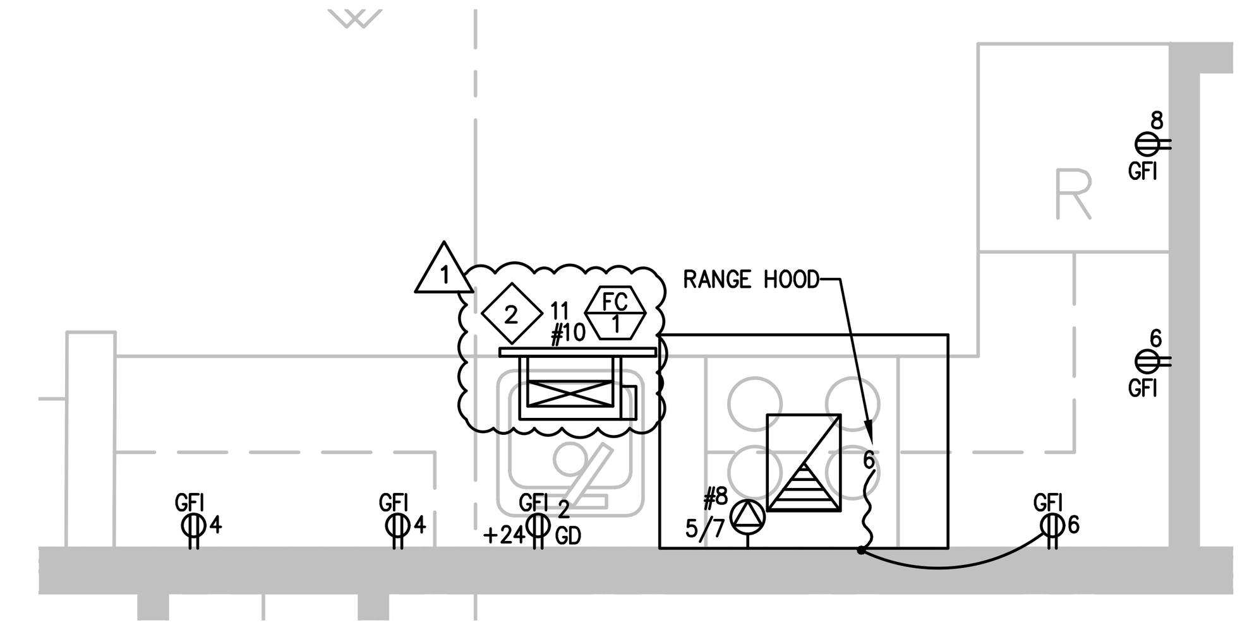
1 UNIT 206
SCALE: 1/4" = 1'-0"
SCALE: 1" = 4'-0"



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"



2 UNIT 209
SCALE: 1/4" = 1'-0"
SCALE: 1" = 4'-0"



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"
SCALE: 1" = 2'-0"

LIGHTING & POWER PLANS - UNITS 206, 209

REGISTERED PROFESSIONAL ENGINEER – DAVID GRANT SMITH – E 13492 – EXPIRATION DATE: 09-30-24 – ELECTRICAL – STATE OF CALIFORNIA – 11-18-22

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E4.21**
SH 18 OF 32
REV. 1

PANEL NAME: 1 6 LOCATION: RESIDENTIAL UNIT
PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND.
ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM
INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY:
☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	VOLT ΦB	AMPS	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT ΦA	VOLT ΦB	AMPS	PWR	LTG	DESCRIPTION
MAIN	X	X				100	1			2	20	1000			X		GARBAGE DISP
MAIN	X	X				–	3			4	20		1500		X		KIT APPLIANCE
OVEN COOKTOP		X	4000			50	5			6	20	1500			X		KIT APPLIANCE
OVEN COOKTOP		X		4000		–	7			8	20		600		X		REFER
BATH GFI		X	1500			20	9			10	20	1440			X		PLUGS
HEATER		X		2000		30	11			12	20		400			X	LIGHTS
LOW VOLTAGE CABNET		X	200			20	13			14	20	210			X		ERV & FSD
SPACE							15			16							SPACE
SPACE							17			18							SPACE
SPACE							19			20							SPACE
SPACE							21			22							SPACE
SPACE							23			24							SPACE
							25			26							
							27			28							
							29			30							
							31			32							
							33			34							
							35			36							
							37			38							
							39			40							
TOTALS			5700	6000								4150	2500				

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

ACCESSORIES: EITHER ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER:
COLOR
COVER: ☐ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

PANEL NAME: 'R305' 1 LOCATION: RESIDENTIAL UNIT
PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND.
ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM
INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY:
☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	VOLT ΦB	AMPS	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT ΦA	VOLT ΦB	AMPS	PWR	LTG	DESCRIPTION
MAIN	X	X				100	1			2	20	1000			X		GARBAGE DISP
MAIN	X	X				–	3			4	20		1500		X		KIT APPLIANCE
OVEN COOKTOP		X	4000			50	5			6	20	1500			X		KIT APPLIANCE
OVEN COOKTOP		X		4000		–	7			8	20		600		X		REFER
BATH GFI		X	1500			20	9			10	20	1440			X		PLUGS
HEATER		X		2000		30	11			12	20		400			X	LIGHTS
LOW VOLTAGE CABNET		X	200			20	13			14	20	210			X		ERV & FSD
SPACE							15			16							SPACE
SPACE							17			18							SPACE
SPACE							19			20							SPACE
SPACE							21			22							SPACE
SPACE							23			24							SPACE
							25			26							
							27			28							
							29			30							
							31			32							
							33			34							
							35			36							
							37			38							
							39			40							
TOTALS			5700	6000								4150	2500				

BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

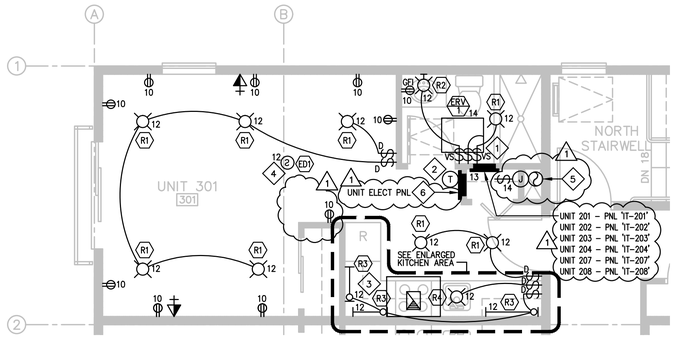
ACCESSORIES: EITHER ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER:
COLOR
COVER: ☐ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

PANEL NAME: 'R308' 1 LOCATION: RESIDENTIAL UNIT
PANEL TYPE: ☐ PANEL BOARD ☒ LOAD CENTER
VOLTAGE: 120/208 BUS RATING: 125 1 PHASE 3 WIRE + GND.
ENCLOSURE TYPE: NEMA 1 MOUNTING: ☐ SURFACE ☒ FLUSH
SHORT CIR RATING: 10 KAIC BUS TYPE: ☒ COPPER ☐ ALUMINUM
INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER
O.C. DEVICES: ☐ BOLT-ON ☒ PLUG-ON DEVICE FAMILY:
☐ SUB-FEED CIRCUIT BREAKER

DESCRIPTION	LTG	PWR	VOLT ΦA	VOLT ΦB	AMPS	BRK.	CKT NO.	BUS CONN. A	BUS CONN. B	CKT NO.	BRK.	VOLT ΦA	VOLT ΦB	AMPS	PWR	LTG	DESCRIPTION
MAIN	X	X				100	1			2	20	1000			X		GARBAGE DISP
MAIN	X	X				–	3			4	20		1500		X		KIT APPLIANCE
OVEN COOKTOP		X	4000			50	5			6	20	1500			X		KIT APPLIANCE
OVEN COOKTOP		X		4000		–	7			8	20		600		X		REFER
BATH GFI		X	1500			20	9			10	20	1440			X		PLUGS
HEATER		X		2000		30	11			12	20		400			X	LIGHTS
LOW VOLTAGE CABNET		X	200			20	13			14	20	210			X		ERV & FSD
SPACE							15			16							SPACE
SPACE							17			18							SPACE
SPACE							19			20							SPACE
SPACE							21			22							SPACE
SPACE							23			24							SPACE
							25			26							
							27			28							
							29			30							
							31			32							
							33			34							
							35			36							
							37			38							
							39			40							
TOTALS			5700	6000								4150	2500				

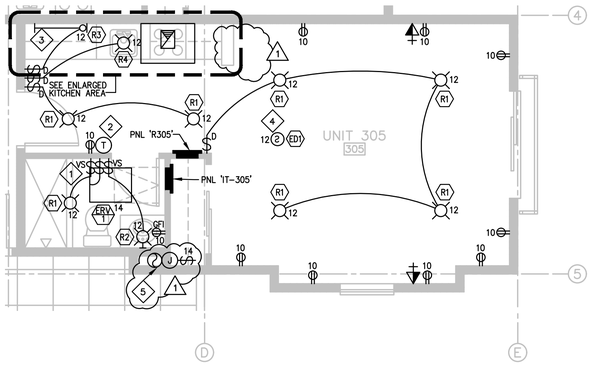
BUS A 9.9 KVA
BUS B 8.5 KVA
TOTAL 18.4 KVA

ACCESSORIES: EITHER ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER:
COLOR
COVER: ☐ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER:
NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED
OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR



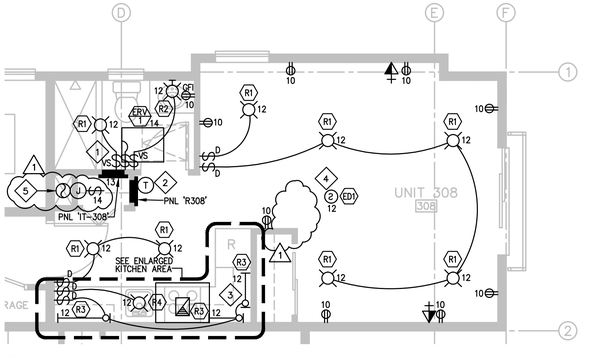
1 UNITS 301, 302, 303, 304, 306, 307 – TYP. (302, 304, 306 REVERSE)
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"



2 UNIT 305
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

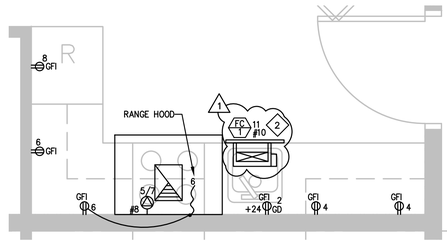


3 UNIT 308
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

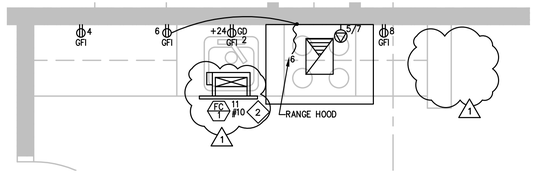
GENERAL NOTES:

1. ALL RECEPTACLES IN THE BEDROOM, THE DINING ROOM, HALLWAY, DEN, LIBRARIES, CLOSET, THE FAMILY ROOM AND SIMILAR ROOMS SHALL BE ARC-FAULT CIRCUIT INTERRUPTER PER CEC ARTICLE 210.12.
2. ALL RECEPTACLES IN UNITS SHALL BE TAMPER-RESISTANT RECEPTACLES PER CEC ARTICLE 406.14.
3. ALL BUILDING EXTERIOR WEATHER PROOF RECEPTACLE COVERS SHALL BE IN-USE TYPE.



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"

SCALE: 1" = 2'-0"



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"

SCALE: 1" = 2'-0"

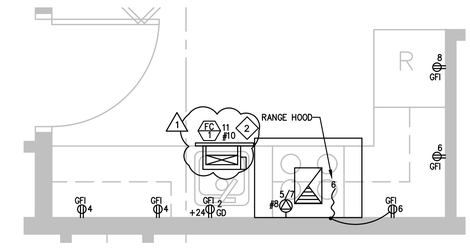
SHEET NOTES:

1. TITLE 24 COMPLIANT VACANCY SWITCH FOR BATH LIGHTS AND ERV CONTROL SWITCH, SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL.
2. FC-1 LINE VOLTAGE T-STAT SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL. FIELD COORDINATE WITH MECHANICAL WORK. COORDINATE IN FIELD EXACT LOCATION OF T-STAT WITH ARCHITECT.
3. USE MAX LENGTH OF UNDER LIGHT TO FIT AVAILABLE CABINET SPACE.
4. SMOKE DETECTORS AND COMBO SMOKE/CO SHALL BE HARDWIRED AND INTERCONNECTED IF MORE THAN ONE PER UNIT.
5. FIRE SMOKE DAMPER(S) FIELD COORDINATE WITH ARCH, MECH AND FIRE ALARM WORK. SEE ARCH, MECH AND FIRE ALARM DWGS.
6. UNIT 201 – PNL 'R201'
   UNIT 202 – PNL 'R202'
   UNIT 203 – PNL 'R203'
   UNIT 204 – PNL 'R204'
   UNIT 207 – PNL 'R207'
   UNIT 208 – PNL 'R208'

SHEET LEGEND

1 – 3/4" NMT WITH 1 – CAT 6 DATA CABLE AND 1–RG11 COAX CABLE TO APT TELCO/CATV ENCLOSURE '1T–XXX'
–2–PORT QUICKPORT WALLPLATE, PART # 41080–2WP
–QUICKPORT F–CONNECTOR COUPLER, PART # 41084–FWF
–HOME SE QUICKPORT JACK, PART # SEHOM–RWS

PANEL 1T–XXX: LEVITON
–14" WIRELESS ENCLOSURE WITH VENTED COVER, PART # 49605–140
–COMBO PANEL WITH 1X4 PHONE, DATA AND 1X6 VIDEO PANEL, PART # 47603–DP6
–NON–SURGE J–BOX KIT, PART # 47605–ACN
–UNIVERSAL SHELF BRACKET, PART # 49605–AUB
–SADDLE TIE KIT, PART # 49605–AST



ENLARGED KITCHEN AREA POWER
SCALE: 1/2" = 1'-0"

SCALE: 1" = 2'-0"

LIGHTING & POWER PLANS - UNITS 301, 302, 303, 304, 305, 306, 307, 308

REGISTERED PROFESSIONAL ENGINEER
DANIEL GRANT SMITH
11-8-22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

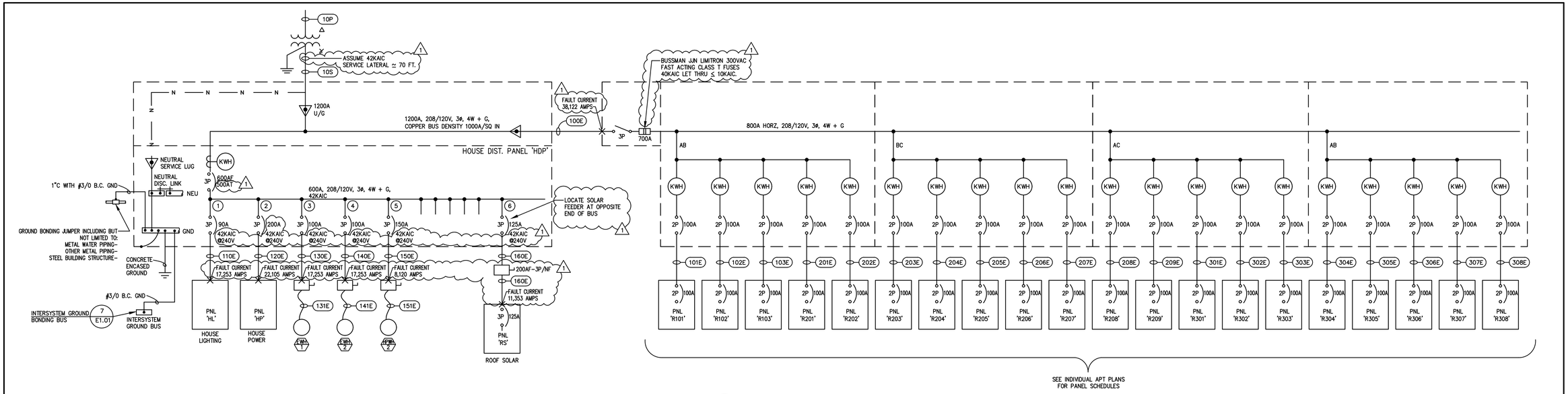
Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB: 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: AFFORDABLE HOUSING PROJECT
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21–044–0
DWG. NO. E4.30
SH 19 OF 32
REV. 1



1 ONE-LINE DIAGRAM
NO SCALE

FEEDER SCHEDULE

MARK	WIRE SIZE	WIRE TYPE	CONDUIT SIZE	CONDUIT TYPE	ESTIMATED FEEDER LENGTH	FEEDER SEGMENT VOLTAGE DROP (V)	FEEDER SEGMENT VOLTAGE DROP (%)
10P	BY PG&E	BY PG&E	1–4"	PVCSCH40	–	–	–
10S	BY PG&E	BY PG&E	4–5"	PVCSCH40	–	–	–
10T	BY AT&T	BY AT&T	1–3"	PVCSCH40	–	–	–
10CA	BY COMCAST	BY COMCAST	1–3"	PVCSCH40	–	–	–
100E	2-(4-#600MCM CU + 1-#3/0CU GND)	THHN/THWN	2–4"	RGS/GUTTER	15	0.13	0.07%
110E	4-#2CU + 1-#6 CU GND	THHN/THWN	1–2"	EMT/PVCSCH40	30	0.16	0.08%
120E	4-#3/0CU + 1-#6 CU GND	THHN/THWN	1–3"	EMT/PVCSCH40	30	0.80	0.39%
130E	3-#2CU + 1-#6 CU GND	THHN/THWN	1-1.5"	EMT/PVCSCH40	30	0.73	0.36%
131E	3-#2CU + 1-#6 CU GND	THHN/THWN	1-1.5"	WP FLEX	10	0.25	0.13%
140E	3-#2CU + 1-#6 CU GND	THHN/THWN	1-1.5"	EMT/PVCSCH40	30	0.73	0.36%
141E	3-#2CU + 1-#6 CU GND	THHN/THWN	1-1.5"	WP FLEX	10	0.25	0.13%
150E	3-#1/0CU + 1-#6 CU GND	THHN/THWN	1-2"	EMT/PVCSCH40	75	1.74	0.84%
151E	3-#1CU + 1-#6 CU GND	THHN/THWN	1-1.5"	WP FLEX	10	0.30	0.15%
160E	4-#1/0CU + 1-#6 CU GND	THHN/THWN	1-2"	EMT/PVCSCH40	75	1.24	0.60%
101E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	75	1.36	0.66%
102E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	60	1.09	0.53%
103E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	65	1.18	0.57%
201E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	50	0.91	0.44%
202E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	65	1.18	0.57%
203E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	85	1.54	0.75%
204E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	105	1.90	0.92%
205E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	115	2.08	1.00%
206E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	125	2.27	1.10%
207E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	95	1.72	0.83%
208E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	75	1.36	0.66%
209E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	80	1.45	0.70%
301E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	65	1.18	0.57%
302E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	100	1.81	0.88%
303E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	115	2.08	1.00%
304E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	135	2.45	1.18%
305E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	145	2.63	1.27%
306E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	120	2.17	1.05%
307E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	105	1.90	0.92%
308E	3-#2CU + #4 CU GND	THHN/THWN	–	SER	105	1.90	0.92%

NOTE: ALL WIRE TO BE CU UNLESS OTHERWISE NOTED.

PANEL NAME: HL — LOCATION: ELECT. ROOM — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 208/120 — BUS RATING: 100 — 3 PHASE 4 WIRE + GND. — ENCLOSURE TYPE: NEMA 1 — MOUNTING: ☒ SURFACE ☐ FLUSH
SHORT CIR RATING: 25 KAIC (1) — BUS TYPE: ☒ COPPER ☐ ALUMINUM — INTERIOR: ☒ MAIN LUGS ☐ MAIN CIRCUIT BREAKER – SEE ONE LINE
O.C. DEVICES: ☒ BOLT-ON ☐ PLUG-ON — DEVICE FAMILY: ____ — ☐ SUB-FEED CIRCUIT BREAKER – SEE ONE LINE

DESCRIPTION	LTG	PWR	VOLT • AMPS ϕA	ϕB	ϕC	BRK.	CKT NO.	BUS CONN. A B C	CKT NO.	BRK.	VOLT • AMPS ϕA	ϕB	ϕC	PWR	LTG	DESCRIPTION
PARKING LOT POLE LTS	X		160			20	1		2	20	405				X	HALLWAY LAUNDRY
EXT BLDG SCONCE LTS	X			270		20	3		4	20		540			X	2ND 3RD FLOOR HALLWAY LIGHTING
BOLLARD LTS	X				150	20	5		6	20			475		X	STAIRWELLS
SPACE							7		8	20	370				X	STORAGE / TRASH
SPACE							9		10	20		295			X	TOILET \ COMMON RM
SPACE							11		12	20			0			SPARE (1)
SPACE							13		14	20	0					SPARE
SPACE							15		16	20		0				SPARE
SPACE							17		18	20			0			SPARE
SPACE							19		20							SPACE
SPACE							21		22							SPACE
SPACE							23		24							SPACE
TOTALS			160	270	150						775	835	475			

BUS A 1.0 KVA
BUS B 1.2 KVA
BUS C 0.7 KVA
TOTAL 2.9 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: ____ } — COLOR — COVER: ☒ DOOR-IN-DOOR ☒ KEYED LATCH ☐ OTHER: ____ — NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED — OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

PANEL NAME: RS — LOCATION: ROOF SOLAR — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 208/120 — BUS RATING: 200 — 3 PHASE 4 WIRE + GND. — ENCLOSURE TYPE: NEMA 3R — MOUNTING: ☒ SURFACE ☐ FLUSH
SHORT CIR RATING: 25 KAIC (1) — BUS TYPE: ☒ COPPER ☐ ALUMINUM — INTERIOR: ☐ MAIN LUGS ☒ MAIN CIRCUIT BREAKER – SEE ONE LINE
O.C. DEVICES: ☒ BOLT-ON ☐ PLUG-ON — DEVICE FAMILY: ____ — ☐ SUB-FEED CIRCUIT BREAKER – SEE ONE LINE

DESCRIPTION	LTG	PWR	VOLT • AMPS ϕA	ϕB	ϕC	BRK.	CKT NO.	BUS CONN. A B C	CKT NO.	BRK.	VOLT • AMPS ϕA	ϕB	ϕC	PWR	LTG	DESCRIPTION
SOLAR PANEL CKT	X		1275			20	1		2	20	1488			X		SOLAR PANEL CKT
SOLAR PANEL CKT	X			1275		–	3		4	–		1488		X		SOLAR PANEL CKT
SOLAR PANEL CKT	X				1063	20	5		6	20			1275	X		SOLAR PANEL CKT
SOLAR PANEL CKT	X		1063			–	7		8	–	1275			X		SOLAR PANEL CKT
SOLAR PANEL CKT	X			1275		20	9		10	20		1488		X		SOLAR PANEL CKT
SOLAR PANEL CKT	X				1275	–	11		12	–			1488	X		SOLAR PANEL CKT
SOLAR PANEL CKT	X		1063			20	13		14	20	1275			X		SOLAR PANEL CKT
SOLAR PANEL CKT	X			1063		–	15		16	–		1275		X		SOLAR PANEL CKT
SOLAR PANEL CKT	X				1275	20	17		18	20			1275	X		SOLAR PANEL CKT
SOLAR PANEL CKT	X		1275			–	19		20	–	1275			X		SOLAR PANEL CKT
SPACE							21		22							SPACE
SPACE							23		24							SPACE
SPACE							25		26							SPACE
SPACE							27		28							SPACE
SPACE							29		30							SPACE
SPACE							31		32							SPACE
SPACE							33		34							SPACE
SPACE							35		36							SPACE
SPACE							37		38							SPACE
SPACE							39		40							SPACE
							41		42							
TOTALS			4676	3613	3613						5313	4251	4038			

BUS A 10.0 KVA
BUS B 7.9 KVA
BUS C 7.7 KVA
TOTAL 25.6 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: ____ } — COLOR — COVER: ☒ DOOR-IN-DOOR ☐ KEYED LATCH ☐ OTHER: ____ — NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED — OTHER: ☒ GROUND BAR ☐ PNL. DIRECTORY ☐ ISO GROUND BAR

PANEL NAME: HP — LOCATION: ELECT. ROOM — PANEL TYPE: ☒ PANEL BOARD ☐ LOAD CENTER
VOLTAGE: 208/120 — BUS RATING: 200 — 3 PHASE 4 WIRE + GND. — ENCLOSURE TYPE: NEMA 1 — MOUNTING: ☒ SURFACE ☐ FLUSH
SHORT CIR RATING: 25 KAIC (1) — BUS TYPE: ☒ COPPER ☐ ALUMINUM — INTERIOR: ☒ MAIN LUGS ☐ MAIN CIRCUIT BREAKER – SEE ONE LINE
O.C. DEVICES: ☒ BOLT-ON ☐ PLUG-ON — DEVICE FAMILY: ____ — ☐ SUB-FEED CIRCUIT BREAKER – SEE ONE LINE

DESCRIPTION	LTG	PWR	VOLT • AMPS ϕA	ϕB	ϕC	BRK.	CKT NO.	BUS CONN. A B C	CKT NO.	BRK.	VOLT • AMPS ϕA	ϕB	ϕC	PWR	LTG	DESCRIPTION
SPARE		X	0			20	1		2	30	2500				X	DRYER #1
SPARE		X		0		20	3		4	–		2500			X	DRYER #1
CIRC PUMP; DHW-1A (1)		X			528	20	5		6	30			2500		X	DRYER #2
CIRC PUMP; DHW-1B		X	528			20	7		8	–	2500				X	DRYER #2
MAIN TELCO BACKBOARD		X		750		20	9		10	30		2500			X	DRYER #3
FACP		X			750	20	11		12	–			2500		X	DRYER #3
FS RISER BELL		X	250			20	13		14	20	1500				X	WASHER #1
ROOF SERVICE PLUGS		X		500		20	15		16	20		1500			X	WASHER #2
ELECT & MECH RM SERVICE PLUGS		X			500	20	17		18	20			1500		X	WASHER #3
COMMON ROOM HP-1		X	1746			30	19		20	20	1200				X	LAUNDRY RM COUNTER PLUG
COMMON ROOM HP-1 (1)		X		1746		–	21		22	20		200			X	IT PANEL COMMON ROOM (1)
EF-2 & ERV 1ST FL, 2ND, 3RD CORR & OFFICE		X			428	20	23		24	20			1260		X	COMMON ROOM PLUGS
LANDSCAPE CONTROLLER		X	250			20	25		26	20	1200				X	COMMON ROOM COUNTER PLUGS
SOLAR PUMP STATION; PS-1		X		240		20	27		28	20		900			X	LOBBY & CORR. PLUGS
SPARE (1)					0	20	29		30	20			720		X	2nd FL CORR. PLUGS
SPARE			0			20	31		32	20	720				X	3rd FL CORR. PLUGS
SPARE				0		20	33		34	20		0				SPARE
EV CHARGER #1					3328	40	35		36	20			0			SPARE
EV CHARGER #1			3328			–	37		38							SPACE
EV CHARGER #2				3328		40	39		40							SPACE
EV CHARGER #2					3328	–	41		42							SPACE
TOTALS			6102	6564	8862						9620	7600	8480			

BUS A 15.8 KVA
BUS B 14.2 KVA
BUS C 17.4 KVA
TOTAL 47.4 KVA

ACCESSORIES: EITHER { ☒ ANSI 61 LT GRAY ☒ ANSI 49 DK GRAY ☐ OTHER: ____ } — COLOR — COVER: ☒ DOOR-IN-DOOR ☒ KEYED LATCH ☐ OTHER: ____ — NAME PLATES: ☒ 1/4" LETTERS ☒ WHITE LETTERS ON BLACK ☒ SCREW MOUNTED — OTHER: ☒ GROUND BAR ☒ PNL. DIRECTORY ☐ ISO GROUND BAR

ONE-LINE DIAGRAM

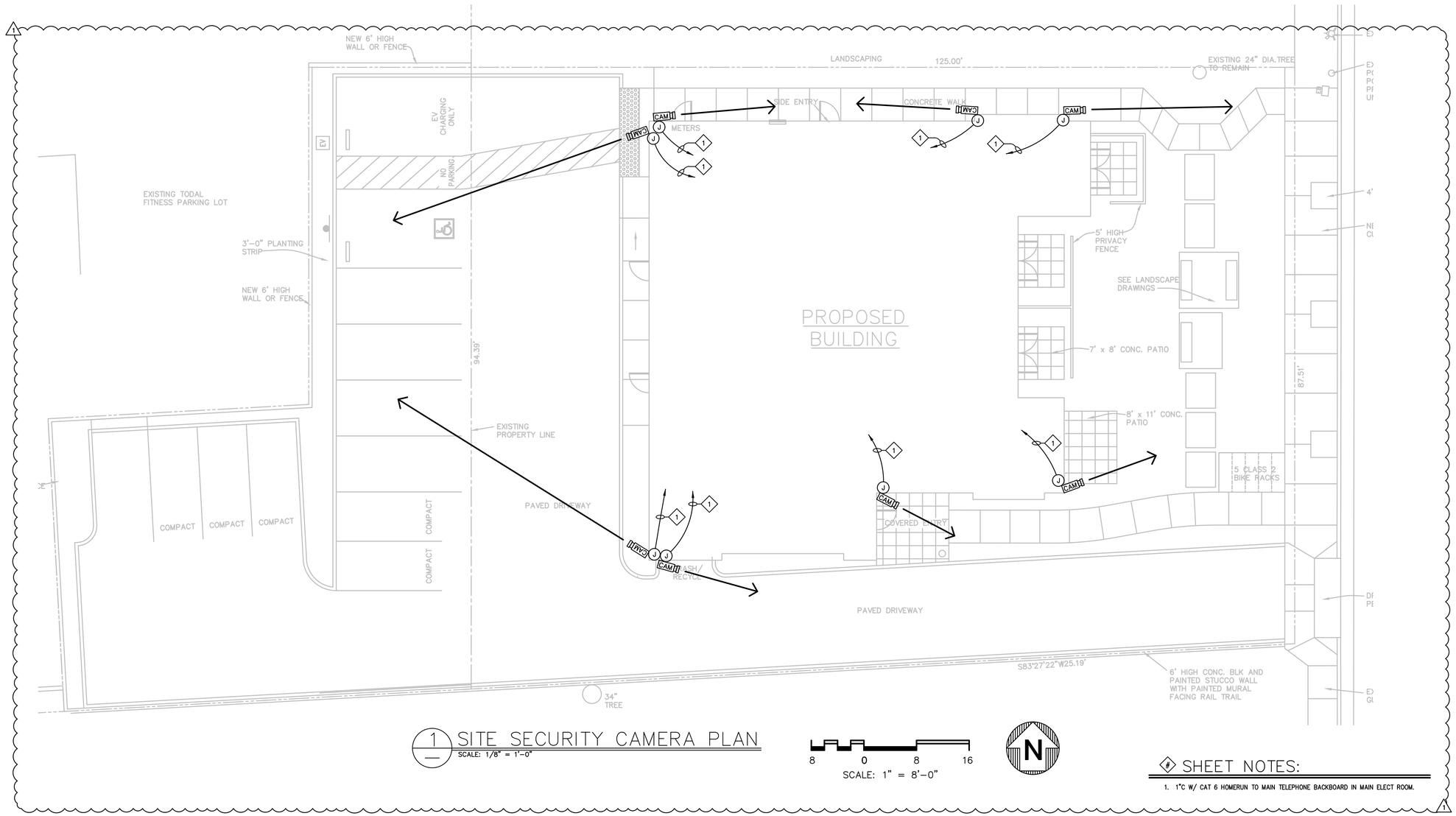
REGISTERED PROFESSIONAL ENGINEER — DAVID GRANT SMITH — No. E 13492 — EXPIRATION DATE: 06-30-24 — ELECTRICAL — STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: AFFORDABLE HOUSING PROJECT
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ
DR. SAK — DATE 04/20//22 — CHK. DGS — APPD. DGS — SCALE AS NOTED

JOB NO. 21-044-0
DWG. NO. E5.00
SH 20 OF 32
REV. 1



1 SITE SECURITY CAMERA PLAN
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"

N

SHEET NOTES:

1. 1"C W/ CAT 6 HOMERUN TO MAIN TELEPHONE BACKBOARD IN MAIN ELECT ROOM.

SITE SECURITY CAMERA PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
11/6/22
EXPIRATION DATE: 06-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
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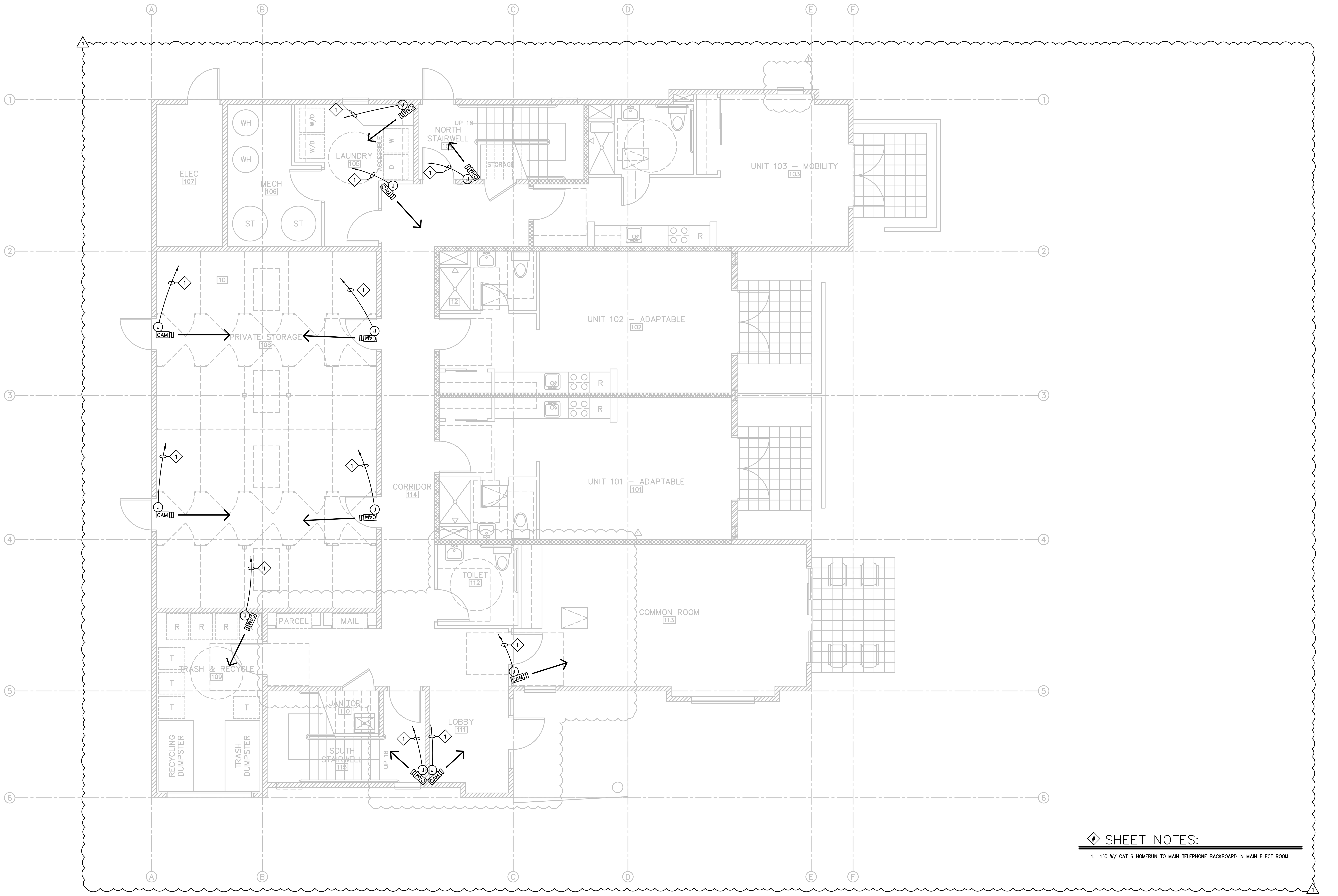
LOCATION: 415 NATURAL BRIDGES DRIVE SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E6.00**
SH 21 OF 32
REV. 1



1 FIRST FLOOR SECURITY CAMERA PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

FIRST FLOOR SECURITY CAMERA PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11.18.22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525

CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **E6.10**

SH 22 OF 32 REV. 1

SHEET NOTES:

1. 1"C W/ CAT 6 HOMERUN TO MAIN TELEPHONE BACKBOARD IN MAIN ELECT ROOM.

1 SECOND FLOOR SECURITY CAMERA PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

SECOND FLOOR SECURITY CAMERA PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11.18.22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

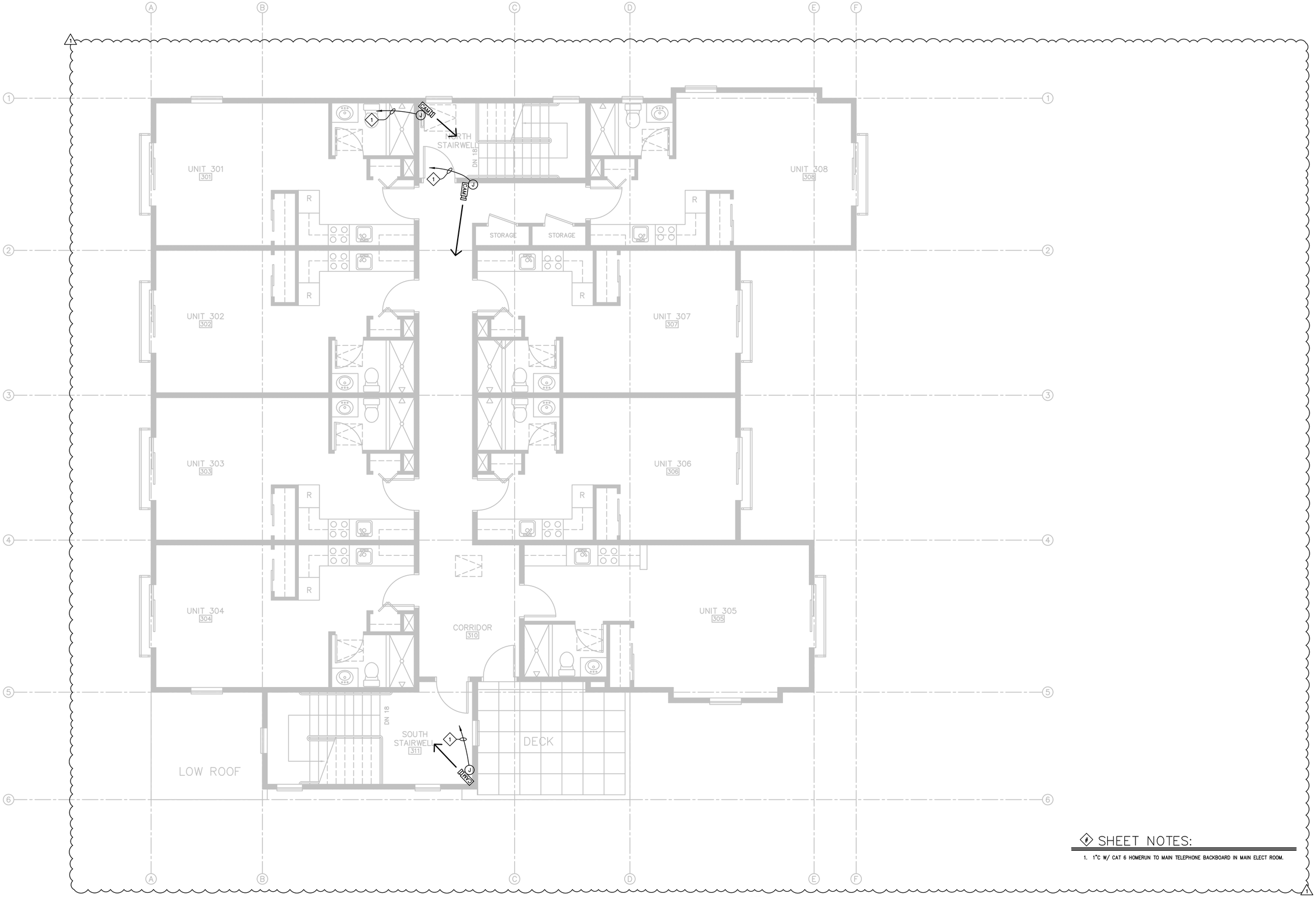
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **E6.20**

 REV. 1



SHEET NOTES:

1. 1"C W/ CAT 6 HOMERUN TO MAIN TELEPHONE BACKBOARD IN MAIN ELECT ROOM.

1 THIRD FLOOR SECURITY CAMERA PLAN
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

THIRD FLOOR SECURITY CAMERA PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID G. KRAFT
No. E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **E6.30**
SH 24 OF 32
REV. 1

BASIC ELECTRICAL REQUIREMENTS

SECTION 260000

1. PART 1 GENERAL

1.1 SECTION INCLUDES

A. BASIC ELECTRICAL REQUIREMENTS SPECIFICALLY APPLICABLE TO DIVISION 16 SECTIONS, IN ADDITION TO DIVISION 1 - GENERAL REQUIREMENTS.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS TOOLS, TRANSPORTATION, EQUIPMENT, SERVICES, AND FACILITIES REQUIRED FOR THE COMPLETE AND PROPER INSTALLATION OF ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS AND/OR OUTLINED IN THESE SPECIFICATIONS. WORK SHALL INCLUDE ALL MATERIALS, APPLIANCES, AND APPARATUS NOT SPECIFICALLY MENTIONED HEREIN OR NOTED ON THE PLANS BUT NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION OF ALL ELECTRICAL SYSTEMS SHOWN OR DESCRIBED HEREIN.

1.2 WORK SEQUENCE

A. INSTALL WORK IN STAGES DURING THE CONSTRUCTION PERIOD AND COORDINATE ELECTRICAL SCHEDULE AND OPERATIONS WITH OTHER CONTRACTORS DOING WORK OF VARIOUS TRADES EMPLOYED IN CONSTRUCTION OF THE BUILDING. REFER TO CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR DETAILS.

1.3 SUBMITTALS

A. SUBMITTAL PROCEDURES

1. SCHEDULE SUBMITTALS TO EXPEDITE THE PROJECT, AND DELIVER TO ARCHITECT/ENGINEER AT BUSINESS ADDRESS.

2. IDENTIFY VARIATIONS FROM CONTRACT DOCUMENTS AND PRODUCT OR SYSTEM LIMITATIONS, THAT MAY BE DETRIMENTAL TO SUCCESSFUL PERFORMANCE OF THE COMPLETED WORK.

3. SUBMITTALS SHALL BE MARKED AND / OR HIGHLIGHTED TO IDENTIFY SPECIFIC PRODUCTS BEING SUPPLIED AND/OR INSTALLED. THE MARKING SHALL MAKE REFERENCE TO REFERENCE TO THE CORRESPONDING EQUIPMENT THAT THE MATERIAL IS RELATED TO. EXAMPLE; A SUBMITTAL FOR DISCONNECT SWITCH WOULD HAVE THE MECHANICAL REFERENCE "EF-1", "SF-5" PLACED ON THE SUBMITTAL SHEET.

WHERE BEING SUPPLIED AND/OR INSTALLED ON THE PROJECT SUBMIT ON THE FOLLOWING ITEMS:

A. GROUND ROD, GROUND CLAMPS
B. OVERHEAD WIREWAY AND MOUNTING HARDWARE
C. DISCONNECT SWITCHES
D. MOTOR STARTERS
E. COMBINATION MOTOR STARTER DISCONNECT SWITCHES
F. FUSES
G. PLUGS, SWITCHES AND COVER PLATES
H. TRANSFORMERS
I. WIRE
J. WIRE PULLING LUBRICANT
K. WIREMOLD RACEWAY, COVER PLATES, DEVICE MOUNTING HARDWARE, FITTINGS
L. CONDUIT
M. CONDUIT FITTINGS, CONNECTORS AND COUPLINGS – WEATHERPROOF AND NON-WEATHERPROOF
N. WIRENUTS
O. COMPRESSION CONNECTORS FOR CONDUCTORS
P. WRAPPING MATERIALS AND TAPE
Q. PANELS
R. CIRCUIT BREAKERS
S. ENCLOSED CIRCUIT BREAKERS
T. BOXES
U. STRUT, HANGERS, BRACKETS, MOUNTING HARDWARE

1.4 QUALITY CONTROL

A. QUALITY ASSURANCE/CONTROL OF INSTALLATION

1. MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK OF SPECIFIED QUALITY.

2. COMPLY FULLY WITH MANUFACTURER'S INSTRUCTIONS, INCLUDING EACH STEP IN SEQUENCE.

3. COMPLY WITH SPECIFIED STANDARDS AS A MINIMUM QUALITY FOR THE WORK EXCEPT WHEN MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.

1.5 SAFETY AND INDEMNITY

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING, MAINTAINING AND SUPERVISING ALL NECESSARY SAFETY PRECAUTIONS WHICH WILL INSURE AGAINST INJURY TO PERSONS OR DAMAGE TO PROPERTY AS A RESULT OF ANY OF HIS WORK, TOOLS OR EQUIPMENT ON OR OFF THE PROJECT, BEFORE, DURING OR AFTER NORMAL WORKING HOURS. NO DRAWING REVIEW, CONSTRUCTION REVIEW OR ANY OTHER ACT OR SERVICE RENDERED BY THE OWNER, ENGINEER, THEIR EMPLOYEES OR CONSULTANTS SHALL BE CONSTRUED TO APPROVE OR JUDGE UPON THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

B. THE CONTRACTOR SHALL HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, ENGINEER, THEIR EMPLOYEES AND CONSULTANTS FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO ARISE FROM THE PERFORMANCE OF THE WORK DESCRIBED HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, ENGINEER, THEIR EMPLOYEES OR CONSULTANTS.

1.6 MATERIALS AND EQUIPMENT

A. PRODUCTS

1. PRODUCTS: MEANS NEW MATERIAL, MACHINERY, COMPONENTS, EQUIPMENT, FIXTURES, AND SYSTEMS FORMING THE WORK. DOES NOT INCLUDE MACHINERY AND EQUIPMENT USED FOR PREPARATION, FABRICATION, CONVEYING AND ERECTION OF THE WORK. PRODUCTS MAY ALSO INCLUDE EXISTING MATERIALS OR COMPONENTS REQUIRED FOR REUSE.

2. DO NOT USE MATERIALS AND EQUIPMENT REMOVED FROM EXISTING PREMISES, EXCEPT AS SPECIFICALLY PERMITTED BY THE CONTRACT DOCUMENTS.

B. SUBSTITUTIONS

1. THE ENGINEER WILL CONSIDER REQUESTS FOR SUBSTITUTIONS ONLY WITHIN 15 DAYS AFTER DATE OF OWNER-CONTRACTOR AGREEMENT.

2. SUBSTITUTIONS MAY BE CONSIDERED WHEN A PRODUCT BECOMES UNAVAILABLE THROUGH NO FAULT OF THE CONTRACTOR.

3. DOCUMENT EACH REQUEST WITH COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH CONTRACT DOCUMENTS.

C. DELIVERY, STORAGE, AND HANDLING

1. DELIVER, STORE, PROTECT, AND HANDLE PRODUCTS TO SITE.

1.7 CONTRACT CLOSEOUT

A. CLOSEOUT PROCEDURES

1. SUBMIT WRITTEN CERTIFICATION THAT CONTRACT DOCUMENTS HAVE BEEN REVIEWED, WORK HAS BEEN INSPECTED, AND THAT WORK IS COMPLETE IN ACCORDANCE WITH CONTRACT DOCUMENTS AND READY FOR ENGINEER'S INSPECTION.

2. RECORD DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD DURING CONSTRUCTION OF AS-BUILT CONDITIONS ON A SET OF CONTRACT DRAWINGS. PROGRESS AS-BUILTS SHALL BE AVAILABLE FOR OWNER REVIEW WITH EACH SUBMISSION FOR PAYMENT APPLICATION. FINAL RED LINE RECORD DRAWING MARK-UPS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE WITHIN 30 DAYS OF COMPLETION OF THE PROJECT. 1

3. OPERATION & MAINTENANCE (O&M) MANUALS: AT COMPLETION OF PROJECT CONTRACTOR SHALL SUBMIT TO THE OWNER UP TO 4 COPIES (QTY TO BE VERIFIED WITH OWNER) OF O&M MANUALS WHICH SHALL INCLUDE:

· MFGR'S. O&M INSTRUCTIONS FOR ALL EQUIPMENT

· COPIES OF APPROVED SUBMITTAL DATA SHOWING EQUIPMENT SPECIFICATIONS, CAPACITIES, ETC.

· 11x17 (FOLDED) COPIES OF ALL SHOP DRAWINGS

· 11x17 (FOLDED) COPIES OF CONTRACT RECORD DRAWINGS

ALL O&M MANUALS SHALL BE INDEXED & BOUND IN 3 RING BINDERS WITH CLEAR LABELING & TABBED DIVIDERS.

4. OWNERS STAFF AND MAINTENANCE STAFF SHALL BE THOROUGHLY INSTRUCTED IN THE USE AND MAINTENANCE OF THE ELECTRICAL SYSTEM EQUIPMENT, LIGHT FIXTURE, LIGHTING CONTROLS, AND COMMUNICATION SYSTEMS BY MANUFACTURES AUTHORIZED DISTRIBUTOR PERSONNEL OR OWNER APPROVED EQUAL. THE INSTRUCTION TO THE STAFF SHALL INCLUDE HANDS ON DEMONSTRATION OF THE VARIOUS FUNCTIONS & OPERATIONS OF THE SYSTEMS AND INCLUDED REQUIRED MAINTENANCE TASKS AND INSTRUCTIONS. TRAINING SHALL INCLUDE A MINIMUM OF EIGHT (8) HOURS.

A. FINAL CLEANING

1. EXECUTE FINAL CLEANING PRIOR TO FINAL INSPECTION.

2. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION.

3. REMOVE WASTE AND SURPLUS MATERIALS, RUBBISH, AND CONSTRUCTION FACILITIES FROM THE SITE.

1.8 REGULATORY REQUIREMENTS

A. CONFORM TO APPLICABLE UNIFORM BUILDING CODE.

B. CONFORM TO NFPA 70.

C. CONFORM TO LOCAL ORDINANCES AND REGULATIONS.

D. OBTAIN PERMITS, AND REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.

E. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES, INC. AND TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.

F. SHOULD THERE BE ANY CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, OR REGULATORY REQUIREMENTS; THE MOST STRINGENT CONDITION SHALL GOVERN, UNLESS APPROVED BY THE ENGINEER.

G. FURNISH WITHOUT EXTRA CHARGE ADDITIONAL MATERIALS AND LABOR WHICH MAY BE REQUIRED FOR COMPLIANCE WITH THESE LAWS, RULES AND REGULATIONS EVEN THOUGH THE WORK IS NOT MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS.

1.9 PROJECT/SITE CONDITIONS

A. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS.

B. PREPARE DRAWINGS SHOWING PROPOSED REARRANGEMENT OF WORK TO MEET PROJECT CONDITIONS, INCLUDING CHANGES TO WORK SPECIFIED IN OTHER SECTIONS. OBTAIN PERMISSION OF ENGINEER BEFORE PROCEEDING.

2. PART 2 PRODUCTS

2.1 CONDUIT REQUIREMENTS

A. MINIMUM SIZE: 1/2 INCH UNLESS OTHERWISE SPECIFIED.

B. UNDERGROUND INSTALLATIONS:

1. USE PVC SCH 40 NONMETALLIC CONDUIT.

2. MINIMUM SIZE: 3/4 INCH.

C. OUTDOOR LOCATIONS, ABOVE GRADE:

1. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT.

2. CONCEALED: USE PVC SCH 40 NONMETALLIC CONDUIT.

D. IN SLAB:

1. USE PVC SCH 40 NONMETALLIC CONDUIT.

2. MINIMUM SIZE CONDUIT IN SLAB: 3/4 INCH, UNLESS OTHERWISE SPECIFIED.

3. MAXIMUM SIZE CONDUIT IN SLAB: 1 INCH, UNLESS OTHERWISE SPECIFIED.

E. WET AND DAMP LOCATIONS:

1. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT.

2. CONCEALED: USE PVC SCH 40 NONMETALLIC CONDUIT.

F. INDOOR DRY LOCATIONS:

1. CONCEALED: USE RIGID GALVANIZED STEEL CONDUIT, ELECTRICAL METALLIC TUBING, PVC SCH 40 NONMETALLIC CONDUIT.

2. EXPOSED: USE RIGID GALVANIZED STEEL CONDUIT, AND ELECTRICAL METALLIC TUBING.

2.2 BUILDING WIRE AND CABLE

A. DESCRIPTION: SINGLE CONDUCTOR INSULATED STRANDED WIRE.

1. CONDUCTOR: COPPER.

2. INSULATION VOLTAGE RATING: 600 VOLTS.

3. INSULATION: ANSI/NFPA 70, TYPE THHN/THWN.

4. SIZE: 12 AWG. MINIMUM UNLESS OTHERWISE NOTED.

B. DESCRIPTION: NON-METALLIC SHEATHED CABLE ("ROMEX").

1. CONDUCTOR:COPPER.

2. INSULATION VOLTAGE RATING: 600 VOLTS.

3. INSULATION: ANSI/NFPA 70, TYPE NMC

4. SIZE: 12 AWG. MINIMUM UNLESS OTHERWISE NOTED.

C. DESCRIPTION: FLEXIBLE METAL CLAD CABLE "MC"

1. CONDUCTOR: SOLID/ STRANDED COPPER.

2. VOLTAGE RATING: 600 VOLTS.

3. TEMPERATURE RATING: 90 DEGREE C. (DRY)

4. CONDUCTOR INSULATION: ANSI/NFPA 70, TYPE THHN/XHHW.

5. CONDUCTOR SIZE: 12 AWG. WITH 10 AWG NEU. FOR SHARED NEUTRAL MINIMUM UNLESS OTHERWISE NOTED.

6. ASSEMBLY COVERING: MYLAR TYPE

7. ARMOR: GALVANIZED OR ALUMINUM STEEL

1

D. DESCRIPTION: TELCOM CABLE CAT 6

1. CONDUCTOR: UTP CABLE SHALL BE 4-PAIR, 23 AWG, SOLID CONDUCTOR UL LISTED OFNP (OPTICAL FIBER NONCONDUCTIVE RISER) CABLING THAT MEETS ANSI/TIA-568 CATEGORY 6 CABLE, TO INCLUDE ALL CURRENT ADDENDUMS AND BULLETINS AND SHALL MEET SPECIFIED SPECIFICATIONS AND PERFORMANCE REQUIREMENTS. USE BERK-TEK LANMARK-6 CMP, BLUE.

E. DESCRIPTION: RG-11 CABLE

1. CONDUCTOR: 75 OHM SDI COAX, RG-11, 14 AWG SOLID BARE COPPER CONDUCTOR, PE INSULATION, FOIL + 95% TINNED COPPER BRAID SHIELD, LSZH JACKET, CMG-LS, SHIPBOARD ABS TYPE APPROVED

2.3 OUTLET BOXES

A. SHEET METAL OUTLET BOXES: ANSI/NEMA OS 1, GALVANIZED STEEL.

1. LUMINAIRE AND EQUIPMENT SUPPORTING BOXES: RATED FOR WEIGHT OF EQUIPMENT SUPPORTED.

B. NONMETALLIC OUTLET BOXES: ANSI/NEMA OS 2.

C. CAST BOXES: NEMA FB 1, TYPE FD, GALVANIZED STEEL. PROVIDE GASKETED COVER By BOX MANUFACTURER. PROVIDE THREADED HUBS.

2.4 PULL AND JUNCTION BOXES

A. SHEET METAL BOXES: NEMA OS 1, GALVANIZED STEEL.

B. SURFACE-MOUNTED CAST METAL BOX: NEMA 250, TYPE 4; FLAT-FLANGED, SURFACE-MOUNTED JUNCTION BOX.

1. MATERIAL: CAST GALVANIZED STEEL.

2. COVER: FURNISH WITH GROUND FLANGE, NEOPRENE GASKET, AND STAINLESS STEEL COVER SCREWS.

2.5 WALL SWITCHES

A. MANUFACTURERS:

1. LEVITON: SPECIFICATION GRADE.

B. DESCRIPTION: HEAVY-DUTY, AC ONLY GENERAL-USE SWITCH.

C. DEVICE BODY: WHITE PLASTIC WITH "DECORA" HANDLE. 1

D. VOLTAGE RATING: 120-277 VOLTS, AC.

E. CURRENT RATING: 20 AMPERES.

2.6 RECEPTACLES

A. MANUFACTURERS:

1. LEVITON; SPECIFICATION GRADE.

B. DESCRIPTION: HEAVY-DUTY, RECEPTACLE - COMMERCIAL UNITS

C. DEVICE BODY: WHITE PLASTIC.; DECORA STYLE 1

D. CONFIGURATION: TYPE AS SPECIFIED AND INDICATED.

E. CONVENIENCE RECEPTACLE: TYPE 5-20R.

F. GFCI RECEPTACLE: CONVENIENCE RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER TO MEET REGULATORY REQUIREMENTS, WITH LED STATUS INDICATOR LIGHT.

2.7 WALL PLATES

A. DECORATIVE COVER PLATE: WHITE SMOOTH, NYLON, DECORA 1

1. LEVITON.

B. WEATHERPROOF COVER PLATE: GASKETED IN USE TYPE WITH METAL HINGED GASKETED DEVICE COVER.

2.8 CORDS AND CAPS

A. MANUFACTURERS:

1. APPLETON

2. HUBBELL

3. SLATER

4. ARROW-HART

B. ATTACHMENT PLUG CONSTRUCTION: CONFORM TO NEMA.

C. CONFIGURATION: MATCH RECEPTACLE CONFIGURATION AT OUTLET PROVIDED FOR EQUIPMENT.

D. CORD CONSTRUCTION: MULTICONDUCTOR FLEXIBLE CORD WITH IDENTIFIED EQUIPMENT GROUNDING CONDUCTOR, SUITABLE FOR USE IN DAMP LOCATIONS.

E. SIZE: SUITABLE FOR CONNECTED LOAD OF EQUIPMENT, LENGTH OF CORD, AND RATING OF BRANCH CIRCUIT OVERCURRENT PROTECTION.

2.9 SUPPORTING DEVICES

A. MATERIALS AND FINISHES: PROVIDE ADEQUATE CORROSION RESISTANCE.

B. PROVIDE MATERIALS, SIZES, AND TYPES OF ANCHORS, FASTENERS AND SUPPORTS TO CARRY THE LOADS OF EQUIPMENT AND CONDUIT. CONSIDER WEIGHT OF WIRE IN CONDUIT WHEN SELECTING PRODUCTS.

C. ANCHORS AND FASTENERS:

1. CONCRETE STRUCTURAL ELEMENTS: USE PRECAST INSERT SYSTEM, EXPANSION ANCHORS, POWDER ACTUATED ANCHORS AND PRESET INSERTS.

2. CONCRETE SURFACES: USE SELF-DRILLING ANCHORS AND EXPANSION ANCHORS.

3. HOLLOW MASONRY, PLASTER, AND GYPSUM BOARD PARTITIONS: USE TOGGLE BOLTS AND HOLLOW WALL FASTENERS.

4. SOLID MASONRY WALLS: USE EXPANSION ANCHORS AND PRESET INSERTS.

5. SHEET METAL: USE SHEET METAL SCREWS.

6. WOOD ELEMENTS: USE WOOD SCREWS.

2.10 NAMEPLATES AND LABELS

A. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON BLACK BACKGROUND.

B. LOCATIONS:

1. EACH ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT ENCLOSURE.

C. LETTER SIZE:

1. USE 1/4 INCH (6 MM) LETTERS FOR IDENTIFYING INDIVIDUAL EQUIPMENT AND LOADS.

D. LABELS: EMBOSSED ADHESIVE TAPE, WITH 3/16 INCH (5 MM) WHITE LETTERS ON BLACK BACKGROUND. USE ONLY FOR IDENTIFICATION OF INDIVIDUAL WALL SWITCHES AND RECEPTACLES.

2.11 WIRE MARKERS

A. DESCRIPTION: CLOTH, TAPE, SPLIT SLEEVE, OR TUBING TYPE WIRE MARKERS.

B. LOCATIONS: EACH CONDUCTOR AT PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND EACH LOAD CONNECTION.

C. LEGEND:

1. POWER AND LIGHTING CIRCUITS: BRANCH CIRCUIT OR FEEDER NUMBER INDICATED ON DRAWINGS.

2. CONTROL CIRCUITS: CONTROL WIRE NUMBER INDICATED ON SCHEMATIC AND INTERCONNECTION DIAGRAMS ON DRAWINGS/ SHOP DRAWINGS.

2.12 PANELBOARDS/LOADCENTERS (AS SCHEDULED)

A. MANUFACTURE:

1. SQUARE "D"

2. CUTLER-HAMMER

3. SIEMENS

4. GENERAL ELECTRIC.

B. ENCLOSURE: GENERAL PURPOSE, NEMA 1; UNLESS OTHERWISE NOTED.

C. PROVIDE FLUSH/SURFACE (AS SCHEDULED) BOX, AND LATCH ON DOOR. FINISH IN MANUFACTURER'S STANDARD GRAY ENAMEL.

D. PROVIDE BUS RATINGS AND MATERIALS AS SCHEDULED.

E. MINIMUM INTEGRATED SHORT CIRCUIT RATING: 10,000 AMPERES RMS SYMMETRICAL.

F. MOLDED CASE CIRCUIT BREAKERS: BOLT-ON/PLUG-ON (AS SCHEDULED) TYPE THERMAL MAGNETIC TRIP CIRCUIT BREAKERS, WITH COMMON TRIP HANDLE FOR ALL POLES. PROVIDE UL CLASS A GROUND FAULT INTERRUPTER CIRCUIT BREAKERS WHERE SCHEDULED.

G. DO NOT USE TANDEM CIRCUIT BREAKERS.

2.13 LUMINAIRES

A. FURNISH PRODUCTS AS SPECIFIED IN SCHEDULE ON DRAWINGS.

B. SUBSTITUTIONS: UNDER PROVISIONS OF THE CONTRACT.

C. INSTALL DRIVERS, LEDS, AND SPECIFIED ACCESSORIES AT FACTORY.

D. SPECIFY AN IN-LINE DISCONNECT TO MEET NEC. FURTHER REQUIRE THAT THE LIGHTING MANUFACTURER PROVIDE A "WIRE NUT" CONNECTION ON THE LOAD SIDE OF THE DISCONNECT TO FACILITATE LIGHT FIXTURE SERVICING.

E. COLOR TEMPERATURE & CRI: U.O.N. 3500K, CRI ≥ 80.

F. LED DRIVERS SHALL HAVE THE FOLLOWING CHARACTERISTICS (UNLESS APPROVED BY ENGINEER):

1. MAXIMUM DRIVE CURRENT: 350MA.
2. MINIMUM EFFICIENCY: 85%.
3. OPERATING TEMPERATURE RANGE: -40°C TO 50°C.
4. MINIMUM RATED LIFE: 50,000 HOURS.
5. DIMMING RANGE: 100% TO 10%
6. UL CLASS I OR II OUTPUT.
7. POWER FACTOR: 90%.
8. TOTAL HARMONIC DISTORTION: 20%.
9. COMPLY WITH FCC 47 CFR PART 15 NON-CONSUMER RFI/EMI STANDARDS.

G. ACCESSORIES: PROVIDE LUMINAIRE ACCESSORIES AS INDICATED.

2.14 ENCLOSED SWITCHES

A. FUSIBLE SWITCH ASSEMBLIES: NEMA 1 - INDOOR, NEMA 3R - OUTDOOR, TYPE HD (HEAVY DUTY) LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. FUSE CLIPS: DESIGNED TO ACCOMMODATE CLASS R FUSES.

B. NONFUSIBLE SWITCH ASSEMBLIES: NEMA 1- INDOOR, NEMA 3R - OUTDOOR, TYPE HD LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION.

2.15 FUSES

A. MANUFACTURERS:

1. BUSSMAN.

2. GOULD - SCHAWMUT.

B. DESCRIPTION: DUAL ELEMENT, CURRENT LIMITING, ONE-TIME FUSE, 250 OR 600 VOLT AS APPLICATION REQUIRES.

C. INTERRUPTING RATING: 200,000 RMS AMPERES.

3. PART 3 EXECUTION

3.1 CONDUIT

A. INSTALL CONDUIT IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION."

B. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT NEAT APPEARANCE.

C. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS.

D. MAINTAIN 12 INCH (300 MM) CLEARANCE BETWEEN CONDUIT AND SURFACES WITH TEMPERATURES EXCEEDING 104 DEGREES F (40 DEGREES C).

E. CUT CONDUIT SQUARE USING SAW OR PIPECUTTER; DE-BURR CUT ENDS.

F. BRING CONDUIT TO SHOULDER OF FITTINGS; FASTEN SECURELY.

G. JOIN NON-METALLIC CONDUIT USING CEMENT AS RECOMMENDED BY MANUFACTURER. WIPE NONMETALLIC CONDUIT DRY AND CLEAN BEFORE JOINING. APPLY FULL EVEN COAT OF CEMENT TO ENTIRE AREA INSERTED IN FITTING. ALLOW JOINT TO CURE FOR 20 MINUTES, MINIMUM.

H. USE CONDUIT HUBS OR SEALING LOCKNUTS TO FASTEN CONDUIT TO SHEET METAL BOXES IN DAMP AND WET LOCATIONS AND TO CAST BOXES.

I. INSTALL NO MORE THAN EQUIVALENT OF THREE 90-DEGREE BENDS BETWEEN BOXES. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS. USE HYDRAULIC ONE-SHOT BENDER TO FABRICATE FACTORY ELBOWS FOR BENDS IN METAL CONDUIT LARGER THAN 2 INCH (50 MM) SIZE.

3.2 BUILDING WIRE & CABLE

A. PULL ALL CONDUCTORS INTO RACEWAY AT SAME TIME.

B. USE SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE.

C. USE SUITABLE CABLE FITTINGS AND CONNECTORS.

D. NEATLY TRAIN AND LACE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.

E. CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS.

F. MAKE SPLICES,TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITH NO PERCEPTIBLE TEMPERATURE RISE.

G. USE COMPRESSION CONNECTORS FOR COPPER CONDUCTOR SPLICES AND TAPS, 8 AWG AND LARGER. TAPE UNINSULATED CONDUCTORS AND CONNECTOR WITH ELECTRICAL TAPE TO 150 PERCENT OF INSULATION RATING OF CONDUCTOR.

H. USE INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR COPPER CONDUCTOR SPLICES AND TAPS, 10 AWG AND SMALLER.

I. UNLESS OTHERWISE NOTED BRANCH CIRCUIT WIRING MAXIMUM 50 AMPS, MAY BE "ROMEX" OR FLEXIBLE METAL CLAD CABLE "MC" WHERE CONCEALED IN WOOD FRAMED SPACES,

LIGHTING CONTROL CAT 5E WIRING WHERE CONCEALED IN WOOD FRAMED SPACES MAY BE RUN WITHOUT CONDUIT.

ALL OTHER LOW-VOLTAGE WIRING INCLUDING TELCOM & CABLE WIRING, SHALL BE INSTALLED IN CONDUIT.

3.3 BOXES

A. INSTALL ELECTRICAL BOXES AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND COMPLIANCE WITH REGULATORY REQUIREMENTS.

B. INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.

C. INSTALL BOXES TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND METHODS UNDER THE PROVISIONS IN THE SPECIFICATIONS.

D. SUPPORT BOXES INDEPENDENTLY OF CONDUIT EXCEPT CAST BOX THAT IS CONNECTED TO TWO RIGID METAL CONDUITS BOTH SUPPORTED WITHIN 12 INCHES (300 MM) OF BOX.

E. USE GANG BOX WHERE MORE THAN ONE DEVICE IS MOUNTED TOGETHER. DO NOT USE SECTIONAL BOX.

F. USE GANG BOX WITH PLASTER RING FOR SINGLE DEVICE OUTLETS.

G. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO THE WEATHER AND WET LOCATIONS.

3.4 WIRING DEVICES

A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. INSTALL DEVICES PLUMB AND LEVEL.

C. INSTALL SWITCHES WITH OFF POSITION DOWN.

D. INSTALL RECEPTACLES WITH GROUNDING POLE ON BOTTOM.

E. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR WHEN INSTALLED PER DRAWINGS.

F. CONNECT WIRING DEVICES BY WRAPPING CONDUCTOR AROUND SCREW TERMINAL.

G. COORDINATE LOCATIONS OF OUTLET BOXES TO OBTAIN MOUNTING HEIGHTS SPECIFIED AND INDICATED ON DRAWINGS.

H. INSTALL WALL SWITCH 46 INCHES (1.2 M) ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.

I. INSTALL CONVENIENCE RECEPTACLE 15 INCHES (381 MM) ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.

J. INSTALL CONVENIENCE RECEPTACLE 6 INCHES (153 MM) ABOVE COUNTER, UNLESS OTHERWISE NOTED.

3.5 EQUIPMENT WIRING AND SYSTEMS

A. MAKE ELECTRICAL CONNECTIONS IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

B. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEXIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT WITH WATERTIGHT CONNECTORS IN DAMP OR WET LOCATIONS.

C. MAKE WIRING CONNECTIONS USING WIRE AND CABLE WITH INSULATION SUITABLE FOR TEMPERATURES ENCOUNTERED IN HEAT PRODUCING EQUIPMENT.

D. INSTALL DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES AS INDICATED.

E. MODIFY EQUIPMENT CONTROL WIRING WITH TERMINAL BLOCK JUMPERS AS INDICATED.

F. PROVIDE INTERCONNECTING CONDUIT AND WIRING BETWEEN DEVICES AND EQUIPMENT WHERE INDICATED.

3.6 SUPPORTING DEVICES

A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. PROVIDE ANCHORS, FASTENERS, AND SUPPORTS IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION".

C. DO NOT FASTEN SUPPORTS TO PIPES, DUCTS, MECHANICAL EQUIPMENT, AND CONDUIT.

D. OBTAIN PERMISSION FROM ARCHITECT/ENGINEER BEFORE DRILLING OR CUTTING STRUCTURAL MEMBERS.

3.7 ELECTRICAL IDENTIFICATION

A. DEGREASE AND CLEAN SURFACES TO RECEIVE NAMEPLATES AND LABELS.

B. INSTALL NAMEPLATE AND LABEL PARALLEL TO EQUIPMENT LINES.

C. SECURE NAMEPLATE TO EQUIPMENT FRONT USING SCREWS, OR RIVETS.

3.8 PANELBOARDS/LOADCENTERS (AS SCHEDULED)

A. INSTALL PLUMB AND FLUSH WITH WALL FINISHES, IN CONFORMANCE WITH NEMA PB 1.1.

B. HEIGHT: 6 FT (2 M), TO TOP OF BOX.

C. PROVIDE FILLER PLATES FOR UNUSED SPACES.

D. PROVIDE TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD/LOADCENTER. REVISE DIRECTORY TO REFLECT CIRCUITING CHANGES REQUIRED TO BALANCE PHASE LOADS.

E. MEASURE STEADY STATE LOAD CURRENTS AT EACH PANELBOARD/LOADCENTERS FEEDER. SHOULD THE DIFFERENCE BETWEEN PHASES EXCEED 20 PERCENT, REARRANGE CIRCUITS IN THE PANELBOARD/LOADCENTER TO BALANCE THE PHASE LOADS WITHIN 20 PERCENT. TAKE CARE TO MAINTAIN PROPER PHASING FOR MULTI-WIRE BRANCH CIRCUITS.

F. VISUAL AND MECHANICAL INSPECTION: INSPECT FOR PHYSICAL DAMAGE, PROPER ALIGNMENT, ANCHORAGE, AND GROUNDING. CHECK PROPER INSTALLATION AND TIGHTNESS OF CONNECTIONS FOR CIRCUIT BREAKERS, FUSIBLE SWITCHES, AND FUSES.

3.9 LUMINAIRES

A. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

B. INSTALL SURFACE MOUNTED LUMINAIRES AND PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PROHIBIT MOVEMENT.

C. INSTALL WALL MOUNTED LUMINAIRES, AT HEIGHT AS INDICATED ON DRAWINGS.

D. INSTALL SPECIFIED LAMPS / LED COLOR, OUTPUT AND DRIVERS IN EACH LUMINAIRE.

E. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETERIOUS MATERIALS.

F. REMOVE DIRT AND DEBRIS FROM ENCLOSURE.

G. CLEAN PHOTOMETRIC CONTROL SURFACES AS RECOMMENDED BY MANUFACTURER.

H. CLEAN FINISHES AND TOUCH UP DAMAGE.

3.10 ENCLOSED SWITCHES

A. INSTALL DISCONNECT SWITCHES WHERE INDICATED.

B. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES.

C. PROVIDE ADHESIVE LABEL ON INSIDE DOOR OF EACH SWITCH `INDICATING UL FUSE CLASS AND SIZE FOR REPLACEMENT.

END OF SECTION 260000

1

ELECTRICAL SPECIFICATIONS

PROPRIETARY DATA

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
11.18.22
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

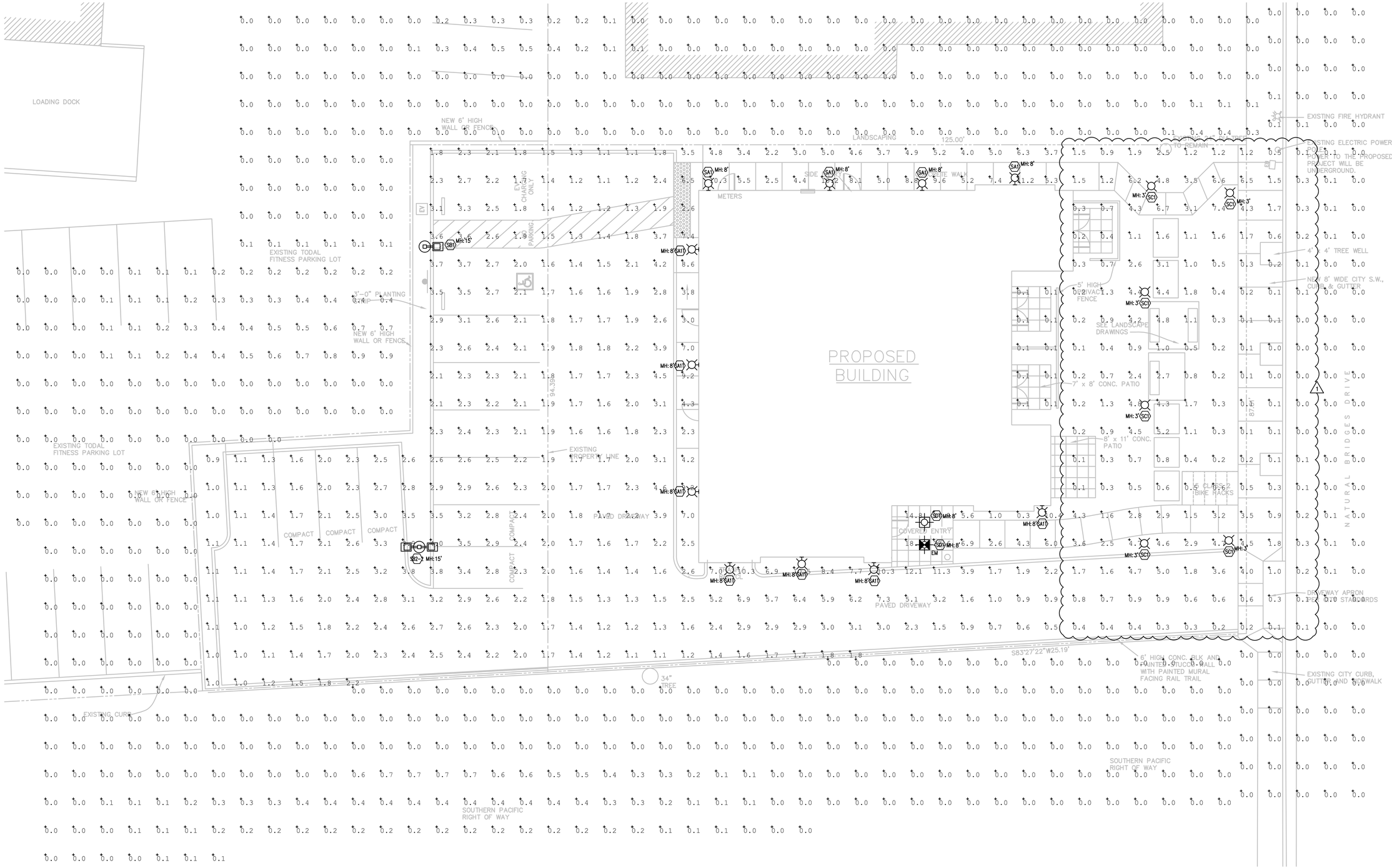
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **E7.00**

SH 25 OF 32 REV. 1



1 SITE LIGHTING PLAN
SCALE: 1/8" = 1'-0"

8 0 8 16
SCALE: 1" = 8'-0"

N

SITE LIGHTING PHOTOMETRICS - NORMAL

REGISTERED PROFESSIONAL ENGINEER
DAVID G. SWARTZ
No. E 13492
EXPIRATION DATE: 09-30-24
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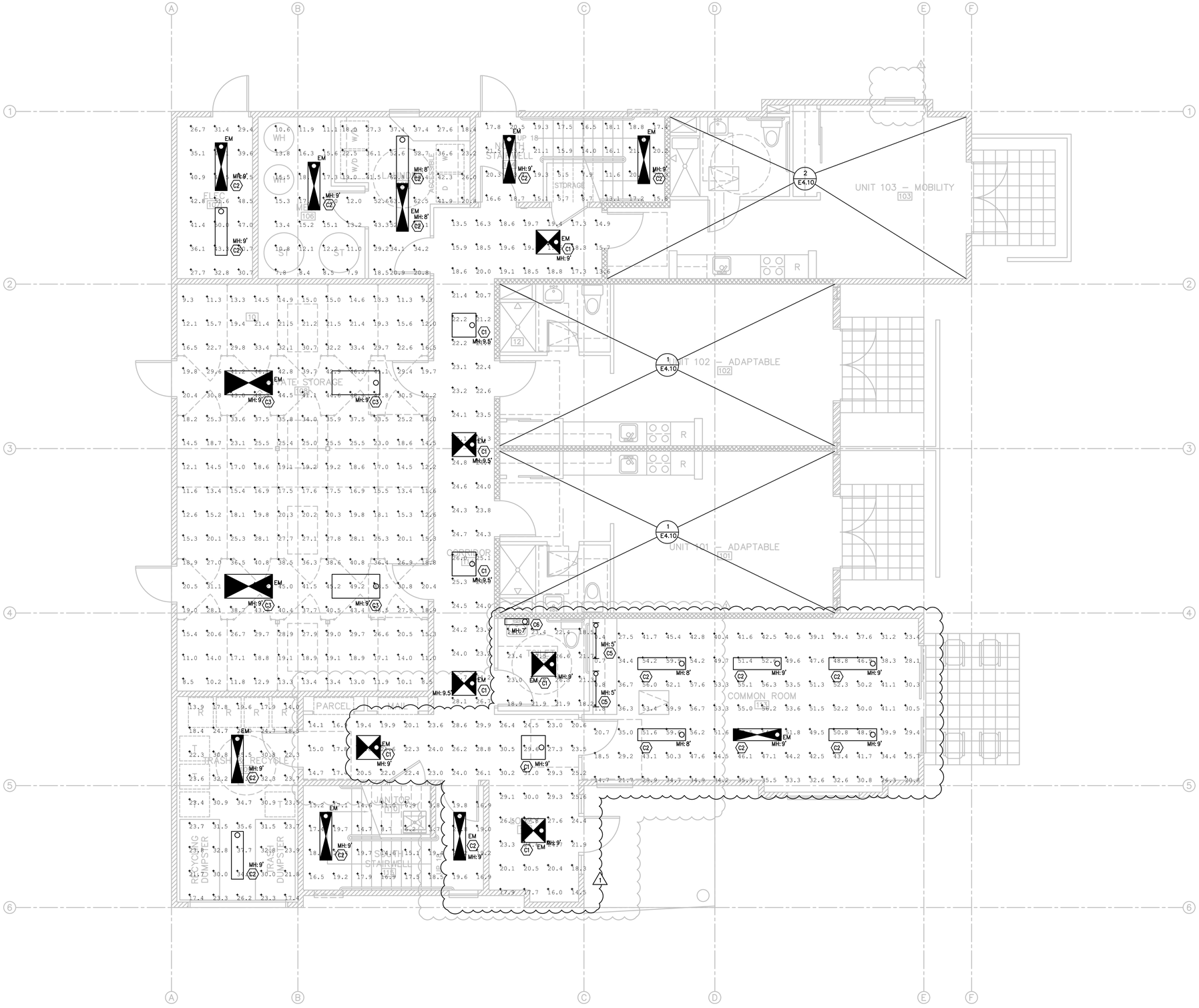
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ
DR. SAK | DATE 04/20//22 | CHK. DGS | APPD. DGS | SCALE AS NOTED

JOB NO. 21-044-0
DWG. NO. **EL1.10**
SH 26 OF 32
REV. 1



1 FIRST FLOOR PHOTOMETRICS – NORMAL
SCALE: 1/4" = 1'–0"

4 0 4 8
SCALE: 1" = 4'–0"

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FIRST FLOOR PHOTOMETRICS - NORMAL

PROPRIETARY DATA

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REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-24
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831-476-1525
CPE JOB 21-044-0

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3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

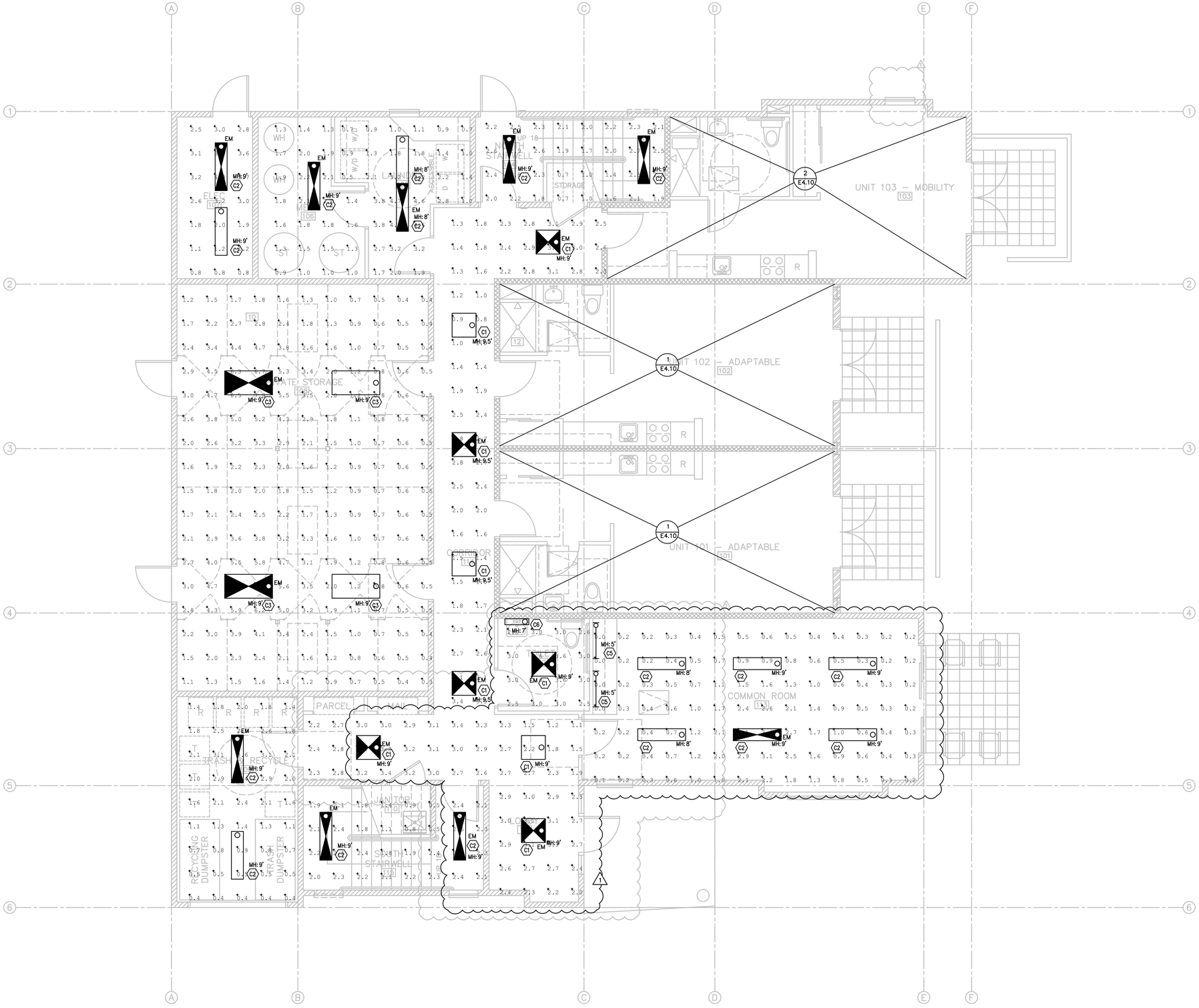
DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **EL2.10**

SH 27 OF 32

REV. 1



1 FIRST FLOOR PHOTOMETRICS – EMERG
SCALE: 1/4" = 1'–0"

4 0 4 8
SCALE: 1" = 4'–0"

N

FIRST FLOOR PHOTOMETRICS - EMERG

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 06-30-24
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TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
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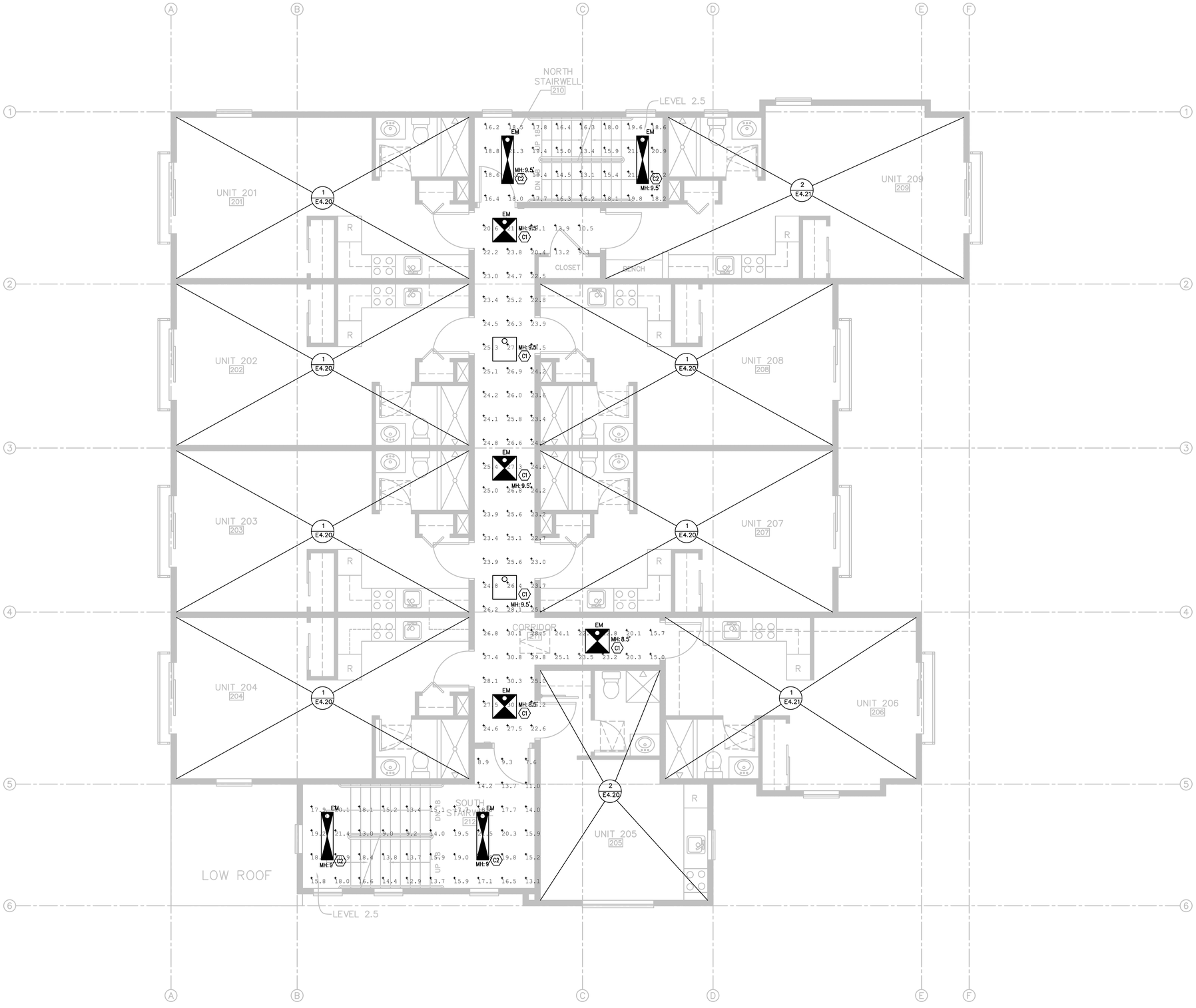
DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **EL2.10E**
SH 28 OF 32
REV. 1



1 SECOND FLOOR PHOTOMETRICS – NORMAL
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

SECOND FLOOR PHOTOMETRICS - NORMAL

REGISTERED PROFESSIONAL ENGINEER
DANIEL G. KRAMER
11-30-22
13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

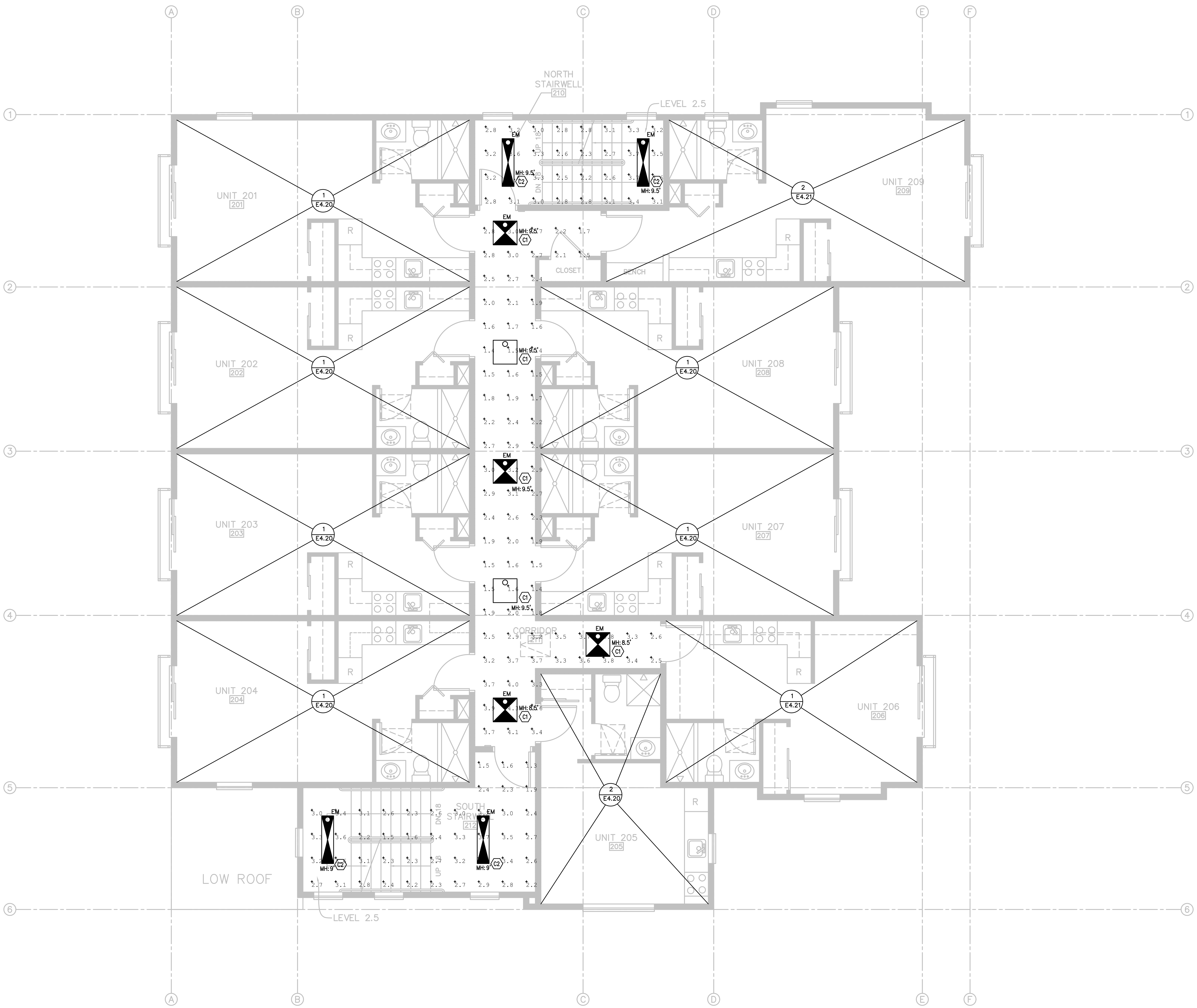
Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **EL2.20**
SH 29 OF 32
REV. 1



1 SECOND FLOOR PHOTOMETRICS – EMERG
SCALE: 1/4" = 1'-0"

SCALE: 1" = 4'-0"

N

SECOND FLOOR PHOTOMETRICS - EMERG

PROPRIETARY DATA

REGISTERED PROFESSIONAL ENGINEER
DAVID GRANT SMITH
E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
Santa Cruz, CA 95062
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
0	ISSUED FOR PLAN CHECK	08/27/22
1	PLAN CHECK & OWNER COMMENTS	10/14/22
2		
3		
4		
5		

TITLE: **AFFORDABLE HOUSING PROJECT**

LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA

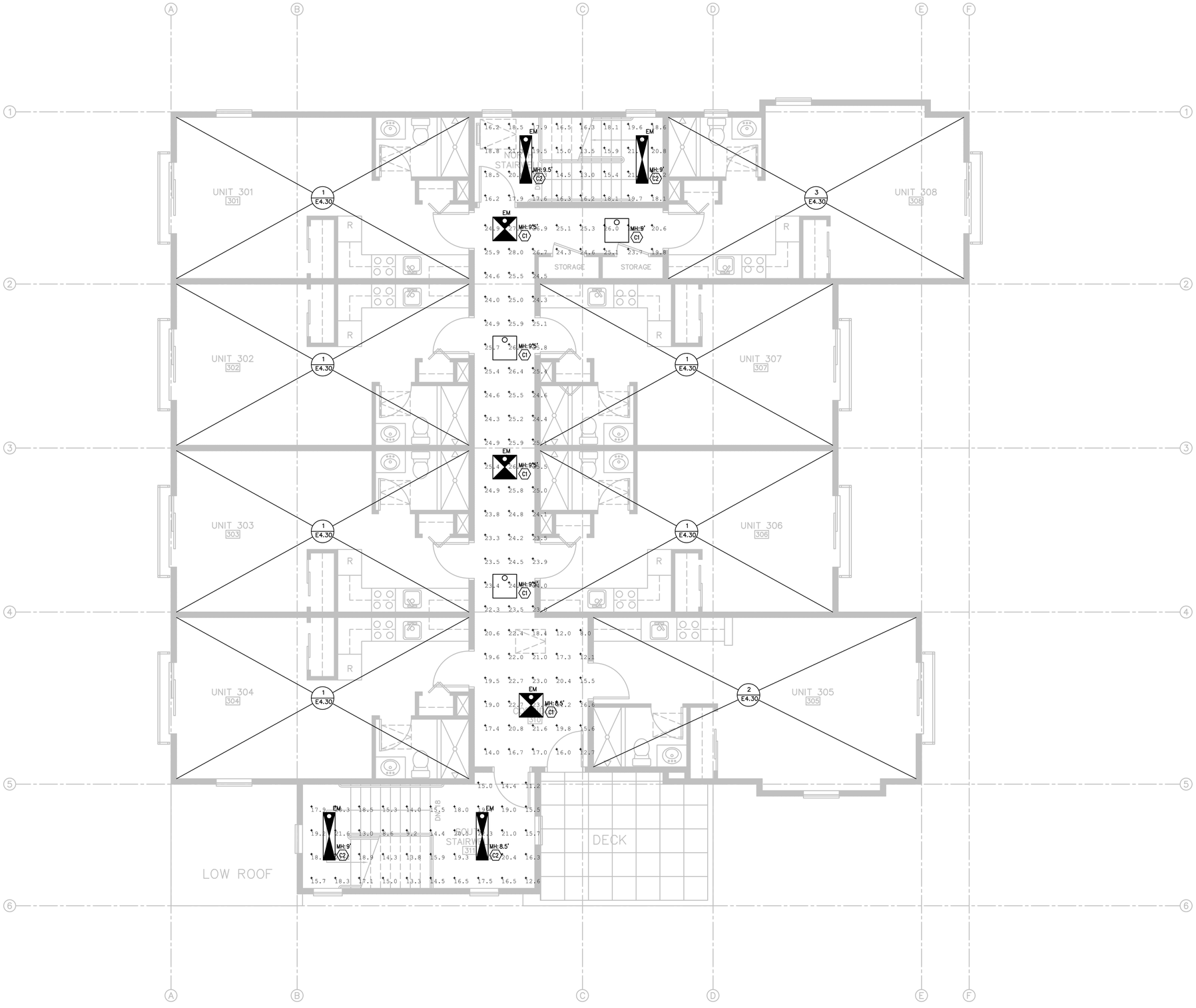
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20/22	DGS	DGS	AS NOTED

JOB NO. 21-044-0

DWG. NO. **EL2.20E**

SH 30 OF 32 | REV. 1



1 THIRD FLOOR PHOTOMETRICS – NORMAL
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

THIRD FLOOR PHOTOMETRICS - NORMAL

REGISTERED PROFESSIONAL ENGINEER
DAVID G. KRAMER
No. E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

Central Pacific Engineering, Inc.
Professional Engineers
9035 Soquel Avenue, Suite 205
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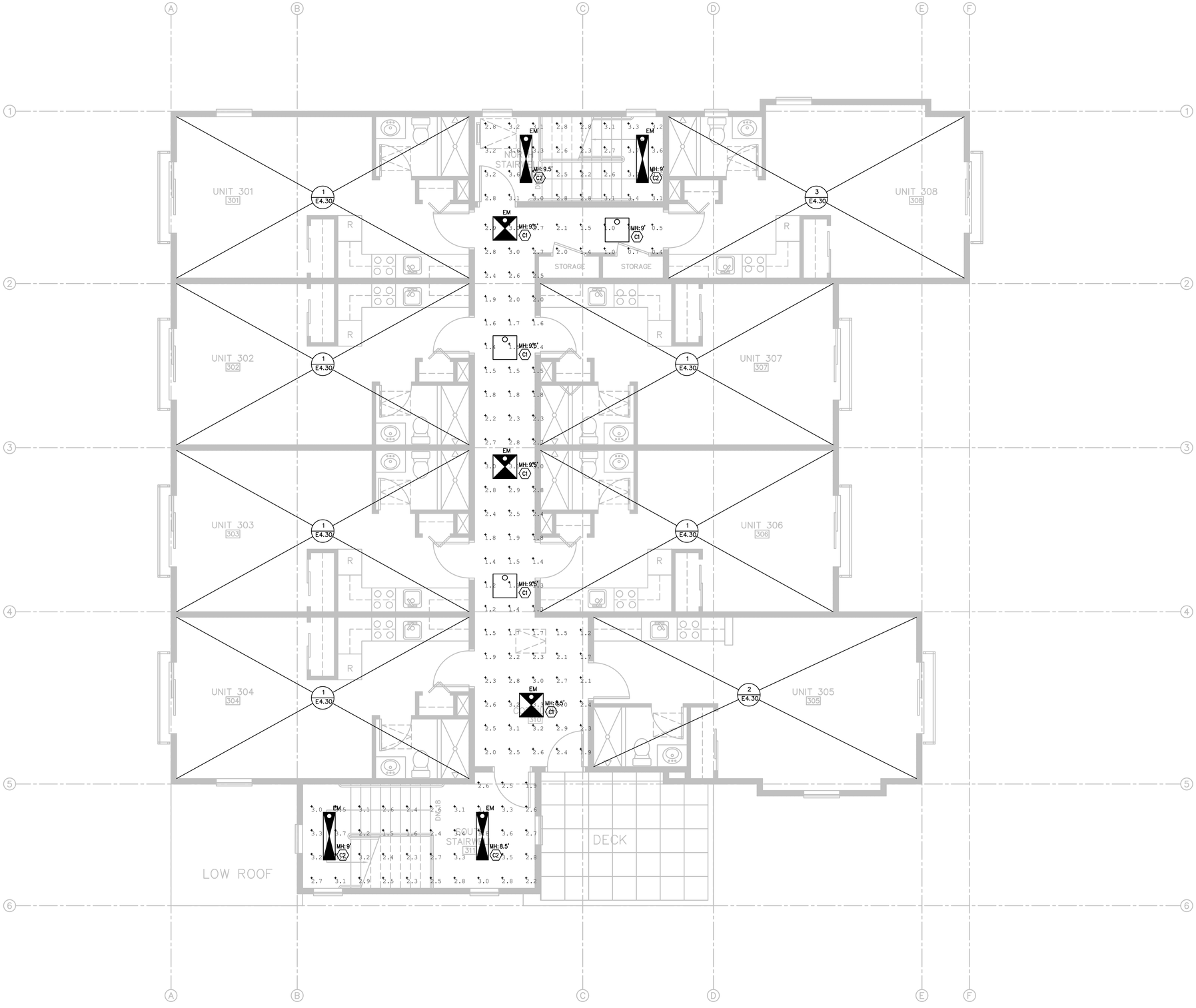
831-476-1525
CPE JOB 21-044-0

REV.	DESCRIPTION	DATE
1	ISSUED FOR PLAN CHECK	08/27/22
2	PLAN CHECK & OWNER COMMENTS	10/14/22

TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
SANTA CRUZ, CALIFORNIA
OWNER: THE HOUSING AUTHORITY OF THE COUNTY OF SANTA CRUZ

DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **EL2.30**
SH 31 OF 32
REV. 1



1 THIRD FLOOR PHOTOMETRICS – EMERG
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1" = 4'-0"

N

THIRD FLOOR PHOTOMETRICS - EMERG

REGISTERED PROFESSIONAL ENGINEER
DAVID G. KRAFT
No. E 13492
EXPIRATION DATE: 09-30-24
ELECTRICAL
STATE OF CALIFORNIA

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TITLE: **AFFORDABLE HOUSING PROJECT**
LOCATION: 415 NATURAL BRIDGES DRIVE
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DR.	DATE	CHK.	APPD.	SCALE
SAK	04/20//22	DGS	DGS	AS NOTED

JOB NO. 21-044-0
DWG. NO. **EL2.30E**
SH 32 OF 32
REV. 1