PANEL BOARD SCHEDULE "A'

MAIN: 200A MCB | FIRST FLOOR LOAD (KVA) | VOLTAGE: 240/120 | PHASE: 1 | WIRE: 3 | MOUNTING: SURFACE | AIC: 22,000

CKT #	TRIP POLE	DESCRIPTION	LTG	REC	MTR	A/C	HTG	KIT	MISC	PHASE A	PHASE B	LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	TRIP POLE	CKT #
1	20/1	LIGHTING BEDROOM+BATH+CLOSET	0.4										0.9						REC_MASTER BEDROOM	20/1	2
3	20/1	LIGHTING FAMILY + KITCHEN + EXTERIOR	0.5										0.9						REC_FAMILY ROOM	20/1	4
5	20/1	LIGHTING OFFICE + BATH	0.5										0.7						REC_OFFICE	20/1	6
7	20/1	COMBINATION SMOKE & CARBON											0.7						REC_GFCI_KITCHEN	20/1	8
9	20/1	MONOXIDE ALARM											0.5						REC_GFI_BATH	20/1	10
11	20/1	TOILET EXHAUST FAN, TEF-1											0.5						REC_FGCWP_EXTERIOR	20/1	12
13	20/1	TOILET EXHAUST FAN, TEF-2															0.8		REFRIGERATOR	20/1	14
15	20/1	FURNANCE UNIT, FU-1				0.5											1.5		DISHWASHER	20/1	16
17	20/1	(3#12, #12G, 3/4" C)				0.5											1.0		MICROWAVE	20/1	18
19	20/1	CONDENSING UNIT, CU-1				1.5											0.8		GARBAGE DISPOSAL	20/1	20
21	20/1	(3#10, #10G, 3/4" C)				1.5											1.5		SMALL APPLIANCE	20/1	22
23	20/1	KITCHEN EXHAUST FAN, KEF-1				0.5											1.5		SMALL APPLIANCE	20/1	24
25	20/1	KITCHEN EXHAUST FAN, KEF-2				0.5								1.5					WASHER	20/1	26
27	20/1	WATER HEATER, TWH-1					0.4							1.0					DRYER	20/1	28
29		SPACE																	SPACE		30
31		SPACE												1.5					LAUNDRY CIRCUIT	20/1	32
33		SPACE																	SPACE		34
35		SPACE																	SPACE		36
37		SPACE																	SPACE		38
39		SPACE																	SPACE		40
41		SPACE																	SPACE		42
			1.4	0.0	0.0	5.0	0.4	0.0	0.0			0	4.2	4	0	0	7.1	0			

LIGHTING (KVA):	1.4			CONNECTED LOAD (KVA):	22.1
RECEPTACLES (KVA):	4.2	PHASE A	10.3	85.8	DEMAND LOAD (KVA): 19.7
MOTORS (KVA):	4.0	PHASE B	11.8	98.3	
A/C (KVA):	5.0		KVA	AMPS	CONNECTED LOAD (AMPS): 92.6
HEATING (KVA):	0.4				DEMAND LOAD (AMPS): 82.2
KITCHEN (KVA):	7.1				
MISCELANEOUS (KVA):	0.0				AMPACITY REQUIRED: 83.7

NOTES: PROVIDE FEED THRU LUG KIT(S)
BREAKERS PROTECTING MULTI-WIRE BRANCH CIRCUITS SHALL BE FIELD-EQUIPPED WITH A MANUALLY OPERATED HANDLE-TIE DEVICE TO ENSURE THAT ALL UNGROUNDED CONDUCTORS ARE SIMULTANEOUSLY DISCONNECTED PER NEC 240.15

SCHEDULE OF FEEDERS & SERVICES

Feeder/Service Decription				Number	Conductor Size			Conduit	Calculated
DESIGNATION	Equipment Served	Conductor Ampacity	Copper or Aluminum	of Runs	Phase Conductor	Neutral Conductor	Equipment Ground	Diameter (in)	Fault Value
S O	MAIN METER	200	CU	1 set	2# 3/0	1# 3/0		2"	38,083
F 1	PANEL A	200	CU	1 set	2# 3/0	1# 3/0	1 #4	2"	25,279
KEY:	"CU" - COOPER "AL" - ALUMINUM								
NOTES:	COPPER OR ALUMINUM REFERS TO ALL CONDUCTORS (PHASE, NEUTRAL, AND GROUND)								

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MODEL NUMBER	MANUFACTURER	VOLT	LAMPS	NOTES
S	LED 6-INCH APERTURE DOWN LIGHT	PD6-15-ED010-PDM6A-840-61V-BB	HALO COMERCIAL	120	1-17W LED	LED 6", 1500 LUMENS, 80CRI, 4000K, 0-10V DIMMING, BLACK BAFFLE.
V	1 BULB VANITY LIGHT	Pitchford 1, ST20	WAYFAIR	120	1-60W LED	Dimmable Light blub, Vintage yellow (2200K) E26/Medium(Standard)Base
P	PENDANT LIGHT	12396GYPC	MAXIM LIGHTING	120	1-16W LED	LED, 600 lumens, 3000K, dimmable
E	ENTRANCE DOWN LIGHT 6-IN	P187-TG	PROGRESS LIGHTING	120	1-120W LED	LED 4000K, 1200 lumens

LEGENDS

- CAN RECESSED DOWNLIGHT
- WALL MOUNTED LIGHT
- 1 BULB VANITY LIGHT
- EXTERIOR DOWNLIGHT
- MEDIUM PENDANT
- MEDIUM PENDANT
- CEILING FAN
- ELECTRICAL CABLE
- OCCUPANCY SENSOR
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE.
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DOUBLE DUPLEX RECEPTACLE,
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE. —(CEILING MOUNTED)
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE. (FLOOR MOUNTED)
- COMBINATION SMOKE & CARBON MONOXIDE ALARM

RECEPTACLE SUBSCRIPTS:

"2"	INDICATES CIRCUIT NUMBER
"GFCI"	INDICATES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
"AFCI"	ARC-FAULT CIRCUIT INTERRUPTER
"WP"	INDICATES WATHERPROOF
"IG"	INSOLATED GROUND
"C"	COMPUTER

Subscript — Symbol (e.g. 2)

- INDICATES TYPICAL SWITCH
- INDICATES DIMMER SWITCH
- 4-WAY DIMMER SWITCH
- 3-WAY DIMMER SWITCH
- 2-WAY DIMMER SWITCH
- BATCH-FAN TIMER SWITCH

EQUIPMENT LEGEND

- PANEL-A — 240/120 VOLT, 1Ø, 3 WIRE PANEL
- PANEL-H2 — 480/277 VOLT, 3Ø, 4 WIRE PANEL
- J — JUNTION AND/OR PULL BOX
- M — MOTOR
- EXHAUST FAN
- DISCONNECT SWITCH (FUSED); COORDINATE FUSE SIZE WITH MECHANICAL.
- OC — OCCUPANCY SENSOR

30/20/3
- POLES
- FUSE SIZE (NF = NON FUSED)
- FRAME SIZE

CIRCUITRY, RACEWAYS AND FEEDERS LEGEND

LP2B-12,14,16 — CIRCUIT HOMERUN TO PANELBOARD. PANEL DESIGNATION IS "LP2B", CIRCUIT BREAKER DESIGNATION IS CIRCUIT #1,3,5.

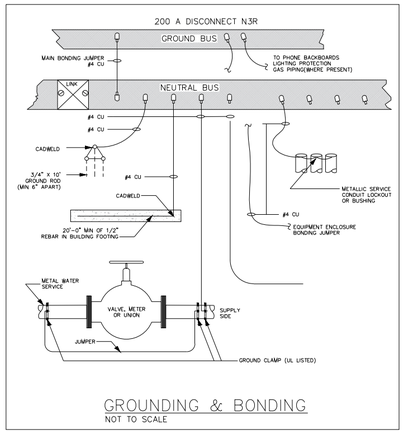
GENERAL POWER BRANCH CIRCUIT HOMERUN TO PANELBOARD.
WITHOUT EXCEPTION, ALL BRANCH CIRCUIT WIRING AND HOMERUNS RELATED TO GENERAL POWER AND LIGHTING CIRCUITS
SHALL INCLUDE A SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR.

ALL CONDUCTORS SHALL BE SIZED IN ACCORADANCE WITH SCHEDULES, NEC AND SPECIFICATIONS.

- CIRCUITRY TURNING UP
- CIRCUITRY TURNING DOWN
- FEEDER SIZE TAG SYMBOL. REFER TO "LEGEND OF FEEDER SIZES".

ELECTRICAL LOAD CALCULATIONS (RESIDENTIAL)

	UNIT	FLOOR
	AREA (SQFT)	1,197
RESIDENTIAL LOAD - TABLE		
GENERAL LIGHTING (3W/SF)		3,591
SMALL APPLIANCES		3,000
LAUNDRY CIRCUITS		1,500
LIGHTING AND APPLIANCES LOAD TOTAL		8,091
WATER HEATER		400
MICROWAVE		1,000
FRIDGE/REFRIGERATOR		800
KITCHEN HOOD FANS		1,000
BATHROOM FANS		400
GARBAGE DISPOSAL		1,000
DISHWASER		15,000
FIRE ALARM		200
DRYER		1,000
WASHER		1,500
SUBTOTAL - LIGHTING LOAD + APPLIANCE LOAD TOTAL		16,891
DEMAN FACTOR LOAD		
FIRST 10,000 VA AT 100% (PER NEC SECTION 200.82(b))		10,000
REMAINING AT 40% (PER NEC SECTION 200.82(b))		2,756
TOTAL DEMAND LOAD		12,756
MECANICAL LOADS	EQUIP-1	FU-1
	VA LOAD	1,000
	EQUIP-2	CU-1
	VA LOAD	3,000
TOTAL MECHANICAL LOAD		4,000
IT LOADS W/O DEMAND FACTOR (DEMAND LOAD + MECHANICAL LOAD)		20,891
TOTAL UNIT LOADS (DEMAND LOAD + MECHANICAL LOAD)		16,759
AMPS @120/240V, 1PH, 3W		70
RECOMMENDED PANEL LOAD (AMPS)		200



GROUNDING & BONDING
NOT TO SCALE

AMPACITY REQD CALCS

LIGHTING	1.4 KVA: 125% =	1.8 KVA
RECEPTAL TOTAL	4.32 KVA	
1ST	4.32 KVA: 100% =	4.3 KVA
REMAIN	0 KVA: 50% =	0.0 KVA
MOTORS TOTAL	4 KVA: 100% =	4.0 KVA
LARGEST	0 KVA: 125% =	0.0 KVA
REMAIN	4 KVA: 100% =	4.0 KVA
A/C	5 KVA: 100% =	5.0 KVA
HEATING	0.4 KVA: 100% =	0.4 KVA
NON-COINCIDENT LOAD	0 KVA: 100% =	0.0 KVA
KITCHEN	7.1 KVA: 65% =	4.6 KVA
MISCELLANEOUS	0 KVA: 100% =	0.0 KVA
TOTAL	=	**24.1 KVA**

DEMAN LOAD CALCS

LIGHTING	1.4 KVA: 100% =	1.4 KVA
RECEPTAL TOTAL	4.32 KVA	
1ST	10 KVA: 100% =	4.3 KVA
REMAIN	0 KVA: 100% =	0 KVA
MOTORS	4 KVA: 100% =	4 KVA
A/C	5 KVA: 100% =	5 KVA
HEATING	0.4 KVA: 100% =	0.4 KVA
NON-COINCIDENT LOAD	0 KVA: 100% =	0 KVA
KITCHEN	7.1 KVA: 65% =	4.6 KVA
MISCELLANEOUS	0 KVA: 100% =	0 KVA
TOTAL	=	**19.7 KVA**

GENERAL ABBREVIATIONS

1. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
2. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
3. ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS, BUT NOT ON THE PLANS OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH.
4. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.
5. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
6. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES. IF DISCREPANCIES OCCUR, CONTRACTOR MUST NOTIFY ARCHITECT.
8. BRANCH CIRCUIT WIRING MAY NOT BE SHOWN GRAPHICALLY ON DRAWINGS AND MAY BE INDICATED BY CIRCUIT NUMBERS BESIDE FIXTURES, DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT INDICATED GRAPHICALLY. PHASE BALANCE ALL PANELBOARDS IN THE FIELD.
9. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. THE DRAWINGS ARE NOT INTENDED TO BE ABSOLUTELY PRECISE. THE DRAWINGS ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, JUNCTION BOX, FITTING AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEMS CONCEPT, THE MAIN COMPONENTS OF THE SYSTEM AND THE APPROXIMATE GEOMETRICAL RELATIONSHIP, BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS. THE CONTRACTOR SHALL PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.
10. ALL SYMBOLS MAY NOT BE USED IN THIS DRAWING.

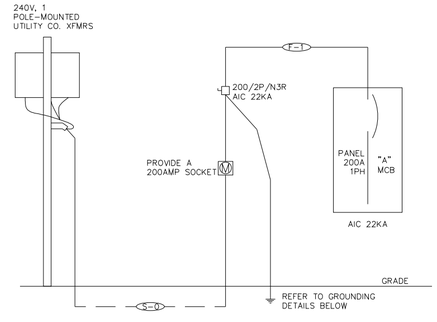
BRANCH CIRCUIT SCHEDULE

CIRCUIT TYPE	CIRCUIT BREAKER	CONDUCTORS	CONDUIT
1 POLE - 1 PHASE 2 WIRE + GROUND	20A-1P	2 #12 + 1 #12 G.	3/4"
	30A-1P	2 #10 + 1 #10 G.	3/4"
	40A-1P	2 #8 + 1 #10 G.	3/4"
	50A-1P	2 #6 + 1 #10 G.	3/4"
	60A-1P	2 #4 + 1 #10 G.	1-1/4"
2 POLE - 1 PHASE 2 WIRE + GROUND	20A-2P	2 #12 + 1 #12 G.	3/4"
	30A-2P	2 #10 + 1 #10 G.	3/4"
	40A-2P	2 #8 + 1 #10 G.	3/4"
	50A-2P	2 #6 + 1 #10 G.	3/4"
	60A-2P	2 #4 + 1 #10 G.	1-1/4"
2 POLE - 1 PHASE 3 WIRE + GROUND	20A-2P	3 #12 + 1 #12 G.	3/4"
	30A-2P	3 #10 + 1 #10 G.	3/4"
	40A-2P	3 #8 + 1 #10 G.	3/4"
	50A-2P	3 #6 + 1 #10 G.	3/4"
	60A-2P	3 #4 + 1 #10 G.	1-1/4"

Schedule Notes:

1. TYPE MC CABLE SHALL INCLUDE FULL SIZE INSULATED GROUND CONDUCTOR, SIZES AS INDICATED IN SCHEDULE. REFER TO SPECIFICATIONS FOR PERMITTED APPLICATION.
2. REFER TO FEEDER SCHEDULE ON ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.
3. ALL CONDUCTER SIZES ARE BASED ON CONDUIT LENGTHS OF 60 FEET FOR 120 VOLT BRANCH CIRCUITS AND 150 FEET FOR 277 VOLT BRANCH CIRCUITS. IF LENGTH EXCEEDS 60 FEET (120V, 20A CIRCUITS) OR 150 FEET (277V, 20A CIRCUITS), THEN USE WIRE SIZE DENOTED BELOW AND INCREASE CONDUNT SIZE AS REQUIRED BY NEC.
4. TREAT 15A CIRCUIT SIMILAR TO 20A CIRCUIT AND 25A CIRCUIT SIMILAR TO 30A CIRCUIT.

WIRE SIZE	CIRCUIT LENGTH	
	120V CIRCUIT	277V CIRCUIT
#10	60' TO 120'	150' TO 240'
#8	120' TO 180'	ABOVE 240'
#6	180' AND ABOVE	-

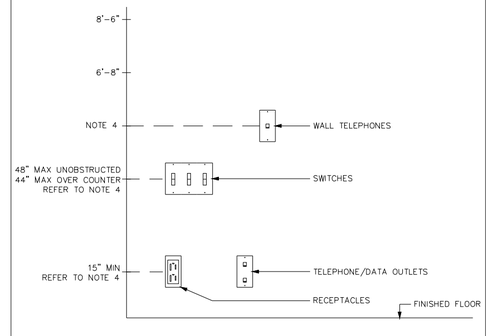


ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

GENERAL ABBREVIATIONS

A	AMPERES	KVA	KILOVOLT AMPERES
ADA	AMERICANS WITH DISABILITIES ACT	KW	KILOWATTS
AF	AMPERE FRAME	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
AFG	ABOVE FINISHED GRADE	MC	METAL CLAD CABLE
AHJ	AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AHU	AIR HANDLING UNIT	MCC	MOTOR CONTROL CENTER
AIC	AMPERE INTERRUPTING CAPACITY	MCP	MOTOR CIRCUIT PROTECTOR
AL	ALUMINUM	MH	MOUNTING HEIGHT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MISC	MISCELLANEOUS
ARCH	ARCHITECT	MLO	MAIN LUGS ONLY
AT	AMPERE TRIP	MOCP	MAXIMUM OVERCURRENT PROTECTION
ATS	AUTOMATIC TRANSFER SWITCH	MTG	MOUNTING
ATS	AUTOMATIC TRANSFER SWITCH	N	NEUTRAL
ATC	AUTOMATIC TEMPERATURE CONTROL	NC	NORMALLY CLOSED
AWG	AMERICAN WIRE GAUGE	NEC	NATIONAL ELECTRICAL CODE
BFG	BELOW FINISH GRADE	NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
BLDG	BUILDING	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
C	CONDUIT	NFSS	NON-FUSED SAFETY SWITCH
CAT	CATALOG	NO	NORMALLY OPEN OR NUMBER
CB	CIRCUIT BREAKER	NTS	NOT TO SCALE
CBM	CERTIFIED BALLASTS MANUFACTURERS	P	POLE
CKT	CIRCUIT	PB	PUSHBUTTON
CL	CENTERLINE	PH	PHASE
CLF	CURRENT LIMITING FUSE	PNL	PANELBOARD
COL	COLUMN	POS	PROVIDED UNDER OTHER SECTIONS
CPT	CONTROL POWER TRANSFORMER	PVC	POLYVINYL CHLORIDE
CU	COPPER	PWE	POWER
(D)	DEMOLITION	QTY	QUANTITY
DWG	DRAWING	REQ'D	REQUIRED
(E)	EXISTING	RMC	RIGID METAL CONDUIT
(ER)	EXISTING TO REMAIN	RMS	ROOT MEAN SQUARED
EC	EMPTY CONDUIT	RNMC	RIGID NON-METAL CONDUIT
EF	EXHAUST FAN	RTU	ROOF TOP UNIT
EM	EMERGENCY	SP	SPARE
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EPO	EMERGENCY POWER OFF	SYM	SYMMETRICAL
ESB	ENERGY SAVING BALLAST	TEL	TELEPHONE
EWC	ELECTRIC WATER COOLER	TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
F	FUSE	UG	UNDERGROUND OR UNDERGRADE
FA	FIRE ALARM	UL	UNDERWRITERS LABORATORIES
FB	FAN BOX	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPERES	V	VOLT
FMC	FLEXIBLE METAL CONDUIT	VAV	VOLUME AIR TERMINAL BOX
FSS	FUSED SAFETY SWITCH	VT	VOLTAGE TRANSFORMER
FT	FEET	W	WIRE
FGI	GROUND FAULT INTERRUPTER	WH	WATER HEATER
FGCI	GROUND FAULT CIRCUIT INTERRUPTER	WP	WEATHERPROOF
GND,G	GROUND OR GROUNDING	XFMR	TRANSFORMER
GRMC	GALVANIZED RIGID METALLIC CONDUIT	Δ	DELTA
HOA	HAND, OFF, AUTOMATIC SWITCH	Y	WYE
HP	HORSEPOWER	Ø	PHASE
HPF	HIGH POWER FACTOR	#	NUMBER
IEEE	INSTITUTE OF ELECTRICAL AN ELECTRONIC ENGINEERS		
IG	ISOLATED GROUND		
IMC	INTERMEDIATE METAL CONDUIT		
INT	INTERLOCK		
K	KELVIN		
KCMIL	THOUSAND CIRCULAR MILS		

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL



NOTES:

1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
4. COORDINATED EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

ELECTRICAL NOTES, LEGENDS, PANEL SCHEDULES, CLACULATION

CODES ANALYSIS

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES

2019 CALIFORNIA RESIDENTIAL CODE WHICH INCLUDES:
2019 CALIFORNIA ELECTRICAL CODE,
2019 CALIFORNIA GREEN BUILDING CODE,
2019 CALIFORNIA MECHANICAL CODE,
2019 CALIFORNIA PLUMBING CODE,
2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS,
2019 CALIFORNIA BUILDING CODE,
2019 CALIFORNIA FIRE CODE.