ABBREVIATIONS

&	AND	MAX.	MAXIMUM
∠	ANGLE	M.C.	MEDICINE CABINET
@	AT	MECH.	MECHANICAL
℄	CENTERLINE	MEMB.	MEMBREANE
⌀	DIAMETER OR ROUND	MET.	METAL
#	POUND OR NUMBER	MFR.	MANUFACTURER
(E)	EXISTING	MH.	MANHOLE
		MIN.	MINIMUM
ACOUS.	ACCOUSTICAL	MIR.	MIRROR
AD.	AREA DRAIN	MISC.	MISCELLANEOUS
ADJ.	ADJUSTABLE	M.O.	MASONRY OPENING
AGGR.	AGGREGATE	MTD.	MOUNTED
AL.	ALUMINUM	MUL.	MULLION
APPROX.	APPROXIMATE		
ASB.	ASBESTOS	NC	NOT IN CONTRACT
ARCH.	ARCHITECTURAL	NO. #	NUMBER
ASPH.	ASPHALT	NOM.	NOMINAL
		NTS.	NOT TO SCALE
BD.	BOARD		
BITUM.	BITUMINOUS	O.A.	OVERALL
BLDG.	BUILDING	OBS.	OBSCURE
BLK.	BLOCK	O/C	ON CENTER
BLKG.	BLOCKING	OD	OUTSIDE DIAMETER
BOT.	BOTTOM	OFF.	OFFICE
		OPNG.	OPENING
CAB.	CABINET	OPP.	OPPOSITE
CB.	CATCH BASIN		
CER.	CERAMIC	PL.	PLATE
CI.	CAST IRON	PLAM.	PLASTIC LAMINATE
CLG.	CEILING	PLAS.	PLASTER
CLO.	CLOSET	PLYWD.	PLYWOOD
CLR.	CLEAR	PR.	PAIR
COL.	COLUMN	PT.	POINT
CONC.	CONCRETE	PTD	PAPER TOWEL DISPENSER
CONN.	CONNECTION	PL	PROPERTY LINE
CONST.	CONSTRUCTION	PRCST.	PRE-CAST
CORR.	CORRIDOR	PTN.	PARTITION
CJ.	CONTROL JOINT	PTR	PAPER TOWEL RECEPTICLE
CNTR.	COUNTER		
CTR.	CENTER	QT	QUARRY TILE
CTD.	CENTERED (ON SPACE)		
DBL.	DOUBLE	R.	RISER
DF.	DRINKING FOUNTAIN	RAD.	RADIUS
DET.	DETAIL	REF.	REFERENCE
DIA. Ø	DIAMETER	REFR.	REFRIGERATOR
DIM.	DIMENSION	REGTR.	REGISTER
DISP.	DISPENSER	REINF.	REINFORCED
DN.	DOWN	REQ.	REQUIRED
DR.	DOOR	RESIL.	RESILIENT
DWR.	DRAWER	RM.	ROOM
DS.	DOWN SPOUT	RO	ROUGH OPENING
DSP.	DRY STANDPIPE	RWD.	REDWOOD
DWG.	DRAWING	RWL.	RAIN WATER LEADER
EA.	EACH	SC	SOLID CORE
E.J.	EXPANSION JOINT	SCD	SEAT COVER DISPENSER
EL.	ELEVATION	SCHED.	SCHEDULE
ELEC.	ELECTRICAL	SD	SOAP DISPENSER
ELEV.	ELEVATOR	SECT.	SECTION
EMER.	EMERGENCY	S	SHELF
ENCL.	ENCLOSURE	SHR.	SHOWER
EP	ELECTRICAL PANEL	SHT.	DRAWING
EQ.	EQUAL	SIM.	SIMILAR
EQPT.	EQUIPMENT	SPB	SPLIT FACE BLOCK
ETR.	EXISTING TO REMAIN	SHT. VIN.	SHEET VINYL
EWC.	ELECTRIC WATER COOLER	SPEC.	SPECIFICATION
EXST.	EXISTING	SQ.	SQUARE
EXPO.	EXPOSED	SST.	STAINLESS STEEL
EXP.	EXPANSION	SS	SERVICE SINK
EXT.	EXTERIOR	STA.	STATION
		STD.	STANDARD
FB	FLAT BAR	STL.	STEEL
FD	FLOOR DRAIN	STOR.	STORAGE
FDN.	FOUNDATION	STRL.	STRUCTURAL
FE	FIRE EXTINGUISHER	SUSP.	SUSPENDED
FEC	FIRE EXTINGUISHER CABINET	SYM.	SYMETRICAL
F.H.C.	FIRE HOSE CABINET	TRD.	TREAD
FIN.	FINISH	TB	TOWEL BAR
FL.	FLOOR	TBD	TO BE DETERMINED
FLASH.	FLASHING	TC	TOP OF CURB
FLUOR.	FLUORESCENT	TEL.	TELEPHONE
F/C	FACE OF CONCRETE	TER.	TERRAZZO
F/F	FACE OF FINISH	T & G	
F/S	FACE OF STUDS	THK.	THICK
FX.	FIXED	TP	TOP OF PAVEMENT
FS	FULL SIZE	TPD	TOILET PAPER DISPENSER
FT.	FOOT OR FEET		
FTG.	FOOTING	TV.	TELEVISION
FURR.	FURRING	TW	TOP OF WALL
FUT.	FUTURE	TYP.	TYPICAL
GA.	GAUGE	UNF.	UNFINISHED
GALV.	GALVANIZED	UNO.	UNLESS NOTED OTHERWISE
GB.	GRAB BAR	UR.	URINAL
GL.	GLASS		
GND.	GROUND		
GR.	GRADE	VERT.	VERTICAL
GWB	GYPSUM WALL BOARD	VEST.	VESTIBULE
GYP.	GYPSUM		
		W/	WITH
H.B.	HOSE BIBB	WC	WATER CLOSET
H.C.	HOLLOW CORE	WD.	WOOD
HDWD.	HARDWOOD	W/O	WITHOUT
HDWE.	HARDWARE	WP	WATERPROOF
HM	HOLLOW METAL	WSCT.	WAINSCOT
HORIZ.	HORIZONTAL	WT.	WEIGHT
H.R.	HAND RAIL		
HT.	HEIGHT		
I.D.	INSIDE DIAMETER		
INSUL.	INSULATION		
INT.	INTERIOR		
JAN.	JANITOR		
JT.	JOINT		
KIT.	KITCHEN		
LAB.	LABORATORY		
LAM.	LAMINATE		
LAV.	LAVATORY		
LKR.	LOCKER		
LT.	LIGHT		

MATERIALS LEGEND

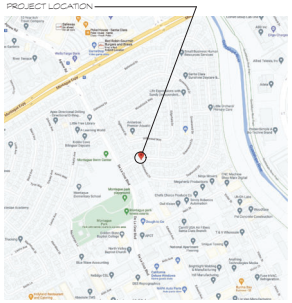
NOTE:
DESIGNATIONS BELOW INDICATE MATERIAL TYPES, GENERALLY SHOWN AT DETAIL SCALE

- EARTH (UNDISTURBED)
- EARTH (BACKFILL)
- CONCRETE
- GRAVEL
- SAND/GROUT/PLASTER
- MASONRY
- WOOD FRAMING (ROUGH)
- WOOD (FINISH) - MILLED
- WOOD BLOCKING
- STONE
- PLYWOOD
- METAL
- GYPSUM BOARD
- GLASS

GENERAL NOTES

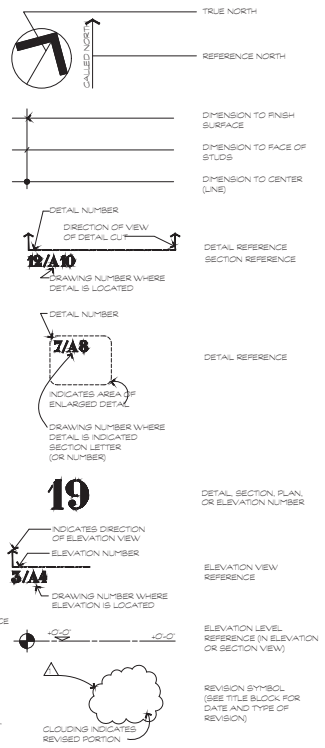
1. APPLICABLE CODES:
   CALIFORNIA BUILDING CODE 2022
   CALIFORNIA MECHANICAL CODE 2022
   CALIFORNIA PLUMBING CODE 2022
   CALIFORNIA ELECTRIC CODE 2022
   2022 CALIFORNIA ENERGY EFFICIENCY STANDARDS
   CITY OF SANTA CLARA MUNICIPAL CODE: CURRENT CODE REFERENCE
   2022 CALIFORNIA RESIDENTIAL CODE
2. DO NOT SCALE THESE DRAWINGS. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. WHEREVER DIMENSIONS INDICATE OR DIMENSIONS TIE INTO EXISTING WORK, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ETC. AND SHALL REPORT ANY DISCREPANCY TO THE DESIGNER BEFORE PROCEEDING WITH THE WORK.
4. REGARDLESS OF DIMENSIONS SHOWN, ALL NEW WORK SHALL ALIGN EXACTLY WITH THE EXISTING WORK WITH RESPECT TO FLOOR ELEVATIONS, COLUMN CENTER LINES, WALL FACES, ETC.
5. ALL MATERIALS ARE NEW UNLESS NOTED EXISTING.
6. OFCI OWNER FURNISHED, OWNER INSTALLED
   OFCI OWNER FURNISHED, CONTRACTOR INSTALLED
7. PARTITIONS:
   - WOOD FRAME WALLS (2x4 STUDS @ 16" O/C, 1/2" GYPSUM BOARD EACH SIDE), OR 2x4 STUD EXTERIOR WALL
   - WOOD FRAME WALLS (2x4 STUDS @ 16" O/C, 1/2" GYPSUM BOARD EACH SIDE), WITH ACOUSTIC BATTS.
8. SYMBOLS:
   - 1 — DOOR SYMBOL, SEE SCHEDULE
   - A — WINDOW SYMBOL, SEE SCHEDULE
   - 3 — PARTITION TYPE, SEE INTERIOR DETAILS

PROJECT LOCATION



LOCATION MAP

SYMBOLS LEGEND



DRAWING INDEX

SCOPE OF WORK

ADDITION AND REMODEL TO AN EXISTING SINGLE FAMILY RESIDENCE TO INCLUDE:

1. CONSTRUCT 491SF ADDITION AT THE FIRST FLOOR TO EXPAND NEW GREAT ROOM, RELOCATE KITCHEN AND NEW BEDROOM WITH BATHROOM
2. CONSTRUCT 1,230SF OF NEW SECOND FLOOR ADDITION WITH NEW MASTER SUITE, TWO BEDROOMS AND BATHROOM
3. CONSTRUCT 465SF OF COVER DECK AT THE REAR YARD
4. NEW LIGHTING THROUGHT OUT THE HOUSE

PLANNING DATA

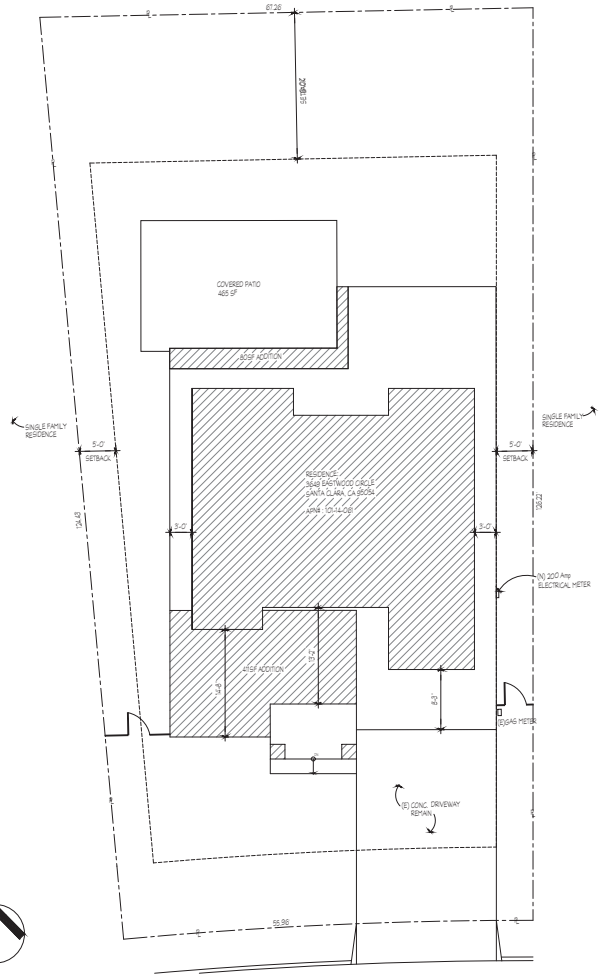
HOUSE ADDITION/REMODEL

APN #: 101-14-081
ZONE: R1-6L
OCCUPANCY GROUP: R3/U
LOT AREA: 7,684 SF
TYPE OF CONSTRUCTION: V-B

	EXISTING	ADDITION	PROPOSED
FIRST FLOOR	1,567	491	2,058
SECOND FLOOR	-	1,230	1,230
TOTAL	1,567	1,717	3,288

(E) ATTACHED GARAGE 453 SF
(N) PROPOSED PORCH: 88 SF
(N) COVERED DECK: 465 SF
BUILDING COVERAGE: 2,058 + 453 + 88 (PORCH) + 465 (COVERED DECK) = 3,064/7,684 = .40

F.A.R. 3,288/7,684 = .43



CALLED NORTH

15 SITE PLAN

1/8" = 1'-0"

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SAN JOSE, CA 95157
TEL: (408) 318-8782
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Project Designer

PRINTING	ISSUED
01/31/22	01/31/22
03/21/22	03/21/22
03/28/23	03/28/23
05/16/23	05/16/23

REVISIONS

IF THIS DRAWING IS NOT 24" x 36" IT HAS BEEN REDUCED, USE GRAPHIC SCALE

0 2 4 8 16
1/8" = 1'-0"

ABBREVIATIONS
MATERIALS LEGEND
SYMBOLS LEGEND
GENERAL NOTES
TITLE 24 COMPLIANCE
DRAWING INDEX
SCOPE OF WORK
PLANNING DATA
SITE PLAN

DRAWING NUMBER

1

OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE:
January 31, 2022

City of Santa Clara
The Center of What's Possible

Building Division: 408-615-2440
Email: Building@santaclaraca.gov
Permit Center: 408-615-2420
Email: PermitCenter@santaclaraca.gov
Automated Inspection Scheduling System: 408-615-2400

2022 CALIFORNIA GREEN BUILDING STANDARD CODE (CGC) RESIDENTIAL CHECKLIST

New residential buildings shall be designed to include the green building mandatory measures specified in this checklist. This checklist shall also be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to the specific area of the addition or alteration.

BUILDING PERMIT NO.: BLD2
ADDRESS: [redacted] 3649 Eastwood Cir

Feature or Measure	MANDATORY MEASURES SPECIFIED (Please check boxes below) Yes
SITE DEVELOPMENT (CGC 4.106)	
Storm water drainage and retention during construction. A plan shall be developed and shall be implemented to manage storm water drainage during construction per CGC 4.106.2.	☐
Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings per CGC 4.106.3.	☐
Electric vehicle (EV) charging for new one- and two- family dwellings and town-houses with attached private garages and/or parking spaces not assigned to a dwelling unit, and ADU/JADU without additional parking but with electrical panel upgrades or new panels. Provide capability for electric vehicle charging with minimum required Level 1 EV Ready, Level 2 EV Ready, Low Power Level 2 EV Ready as specified in CGC 4.106.4.1 as amended by City of Santa Clara Reach Code Ordinance No.2056 (CSC 2023 Reach Code) section 15.38.040. ***Identification***: The raceway termination location shall be permanently and visibly marked as "Level 2 EV-READY" per CGC 4.106.4.1.1 as amended by CSC 2023 Reach Code section 15.38.040.	☐
Electric vehicle (EV) charging for new multifamily dwellings, affordable housing, hotels, motels, and new residential parking facilities. Provide electric vehicle infrastructure and capability for electric vehicle charging with minimum required Level 2 EV Charger, Level 1 EV Ready, Level 2 EV Ready, Low Power Level 2 EV Ready, EV Capable as specified in CSC 2023 Reach Code section 15.38.040 and *2022 California Green Code* section 4.106.4.2, whichever is more stringent.	☐
110v Electrical Outlet at Bicycle Parking: All multifamily residential developments shall include secured bicycle parking with 110v electrical outlets per CSC 2023 Reach Code section 15.38.040.	☐
Location: EVCS shall be located adjacent to an accessible parking space, and/or on an accessible route, per CGC 4.106.4.2.2.1.1.	☐
Dimension: Each EV ready space or EVCS shall be minimum 18 ft long and 9 ft wide. One in every 25 charging spaces, but not less than one, shall have an 8 ft wide access aisle. A 5 ft wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet. Surface slope for this EV space and the aisle shall not exceed 2.083% slope in any direction, per CGC 4.106.4.2.2.1.2.	☐
Accessibility: EV Ready and EVCS spaces shall comply with the accessibility provision for EV Charging stations in *California Building Code* Chapter 11A (section 1109A) and Chapter 11B, per CGC 4.106.4.2.2.1.3.	☐
EV Ready Space Signage: EV ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Marking) or its successor(s), per CGC 4.106.4.2.5.	☐
Automatic load management system (ALMS) may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The option does not allow for installing less electrical panel capacity than would be required without ALMS, per CGC 4.106.4.2.2 as amended by CSC 2023 Reach Code section 15.38.040.	☐

Electric vehicle (EV) charging for additions or alterations of parking facilities serving existing multifamily buildings. When new parking facilities are added, no electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, minimum 10% of total added/altered parking spaces shall be electrical vehicle charging spaces capable of supporting future Level 2 electric vehicle supply equipment (EVSE) per CGC 4.106.4.3.	☐
ENERGY EFFICIENCY (CGC 4.201)	
California Energy Code. The building's construction shall meet or exceed the requirements of the *2022 California Building Energy Efficiency Standards* per CGC 4.201.1.	☐
WATER EFFICIENCY AND CONSERVATION	
INDOOR WATER USE (CGC 4.303)	
Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets, showerheads, pre-rinse spray valves) shall comply with the prescriptive requirements of Section 4.303.1.1 through 4.303.1.4.5.	☐
Water closets: The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (CGC 4.303.1.1).	☐
Urinals: The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush, and all other urinals shall not exceed 0.5 gallons per flush (CGC 4.303.1.2).	☐
Showerheads. The flow rate for single showerhead and multiple showerheads serving one shower shall not exceed 1.8 gallons per minute at 80 psi and shall be certified to the performance criteria of the U.S. EPA WaterSense Specification (CGC 4.303.1.3).	☐
Residential lavatory faucets. The flow rate shall not be more than 1.2 gallons per minute at 60 psi, and not less than 0.8 gallons per minute at 20 psi (CGC 4.303.1.4.1).	☐
Lavatory faucets in common and public use areas. The flow rate shall not exceed 0.5 gallons per minute at 60 psi (CGC 4.303.1.4.2).	☐
Metering Faucets. The flow rate shall not deliver more than 0.2 gallons per cycle (CGC 4.303.1.4.3).	☐
Kitchen Faucets. The flow rate shall not exceed 1.8 gallons per minute at 60 psi (CGC 4.303.1.4.4).	☐
Pre-rinse Spray Valves. When installed, shall meet the requirements of Title 20 of the *California Code of Regulations*, and shall be equipped with an integral automatic shutoff (CGC 4.303.1.4.5).	☐
Submeters for multifamily buildings and dwelling units in mixed-use residential/commercial buildings. Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code* per CBC 4.303.2.	☐
Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code* per CGC 4.303.3.	☐
OUTDOOR WATER USE (CGC 4.304)	
Outdoor potable water use in landscape areas. Residential developments shall comply with the City's Water Service and Use Rules and Regulations, Item No. 24, as adopted by Santa Clara City Code Section 13.15.180, or the California Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent, per CGC 4.304.1.	☐
ENHANCED DURABILITY AND REDUCED MAINTENANCE (CGC 4.406)	
Rodent proofing. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be rodent proofed by closing such openings with cement mortar, concrete masonry, or similar method acceptable to the City per CGC 4.406.1.	☐
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (CGC 4.408)	
Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of nonhazardous construction and demolition waste in accordance with Section 4.408.2, 4.408.3, or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance (CGC 4.408.1).	☐
BUILDING MAINTENANCE AND OPERATION (CGC 4.410)	
An operation and maintenance manual shall be provided to the building occupant or owner per CGC 4.410.1.	☐

Recycling by occupants. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve all buildings on the site and are identified for depositing, storage and collection of nonhazardous materials for recycling per CGC 4.410.2.	☐
ENVIRONMENTAL QUALITY (CGC 4.503)	
Gas fireplace. Any installed gas fireplaces shall be a direct-vent sealed-combustion type per CGC 4.503.1.	☐
Woodstoves. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance standards (NSPS) emission limits as applicable and shall have a permanent label indicating they are certified to meet the emission limits per CGC 4.503.1. Woodstoves and pellet stoves shall also comply with Santa Clara City Code Chapter 15.65.	☐
POLLUTANT CONTROL (CGC 4.504)	
Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal, or other methods acceptable to the City to reduce the amount of water, dust or debris, which may enter the system per CGC 4.504.1.	☐
Adhesives, sealants and caulks shall meet the VOC or other toxic compound limits per CGC 4.504.2.1.	☐
Paints, stains and other coatings shall comply with VOC limits per CGC 4.504.2.2.	☐
Aerosol paints and coatings shall meet the product-weighted MIR limits for ROC and other requirements per CGC 4.504.2.3.	☐
Verification. Documentation shall be provided, at the request of the Building Division, to verify that compliant VOC-limit finish materials have been used per CGC 4.504.2.4.	☐
Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of CGC 4.504.3.	☐
Resilient flooring systems. Where resilient flooring is installed, at least 80% of the floor area receiving resilient flooring shall comply with the requirements of CGC 4.504.4.	☐
Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall comply with low formaldehyde emissions standards and requirements per CGC 4.504.5.	☐
INTERIOR MOISTURE CONTROL (CGC 4.505)	
Concrete slab foundations. Vapor retarder and capillary break shall be installed if a slab-on-grade foundation system is used. The use of a 4" thick base of ½" or larger clean aggregate under a 10-mil vapor retarder with joints lapped not less than 6" shall be provided per CGC 4.505.2, CRC R506.2.2, CRC R506.2.3 and CBC Section 1805.	☐
Moisture content of building material. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be checked prior to final material being applied per CGC 4.505.3.	☐
INDOOR AIR QUALITY AND EXHAUST (CGC 4.506)	
Bathroom exhaust fans. Each bathroom shall be mechanically ventilated using ENERGY STAR compliant fans ducted to the exterior and equipped with humidity controls system per CGC 4.506.1.	☐
ENVIRONMENTAL COMFORT (CGC 4.507)	
Heating and air-conditioning system shall be sized, designed and have their equipment selected using the following methods per CGC 4.507.2: 1. Heat Loss/Heat Gain values in accordance with ANSI/ACCA 2 Manual J-2016, ASHRAE handbook or equivalent. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D-2016, ASHRAE handbook or equivalent. 3. Select heating and cooling equipment in accordance with ANSI/ACCA 3 Manual S-2014 or equivalent.	☐
INSTALLER AND SPECIAL INSPECTOR QUALIFICATION (CGC 702)	
Installer training. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a recognized training or certification program per CGC 702.1.	☐
Special inspection. Special inspectors employed by the City must be qualified and able to demonstrate competence in the discipline they are inspecting per CGC 702.2.	☐

VERIFICATION (CGC 703)	
Documentation. Upon request, verification of compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the building department which will show substantial conformance per CGC 703.1.	☐

Responsible Designer's Declaration Statement	**Contractor Declaration Statement**
I hereby certify that this project has been designed to meet the requirements of the 2022 California Green Building Standards Code.	I hereby certify, as the builder or installer under the permit listed herein, that this project will be constructed to meet the requirements of the California Green Building Standards Code.
Name: Jimmy Chang	Name:
Signature:	Signature:
Date: 5/24/23	Date:
Company:	License:
Address: P.O.Box 9375	Address:
City: San Jose State: Ca Zip: 95157	City: State: Zip:

R a d d
P. O. BOX 9375
SAN JOSE, CA 95157
TEL: (408) 316-8782
Email: raddarch1@gmail.com

Lee Residence

Jonathan Lee
Nichole Lee

3649 Eastwood Cir
Santa Clara, Ca 95054

Jimmy J. Chang
Project Designer

PRINTING 05/14/23
ISSUED 05/14/23

REVISIONS

IF THIS DRAWING IS NOT 24" x 36" IT HAS BEEN REDUCED. USE GRAPHIC SCALE

0 2 4 8 16
1/8" = 1'-0"

GREEN BUILDING CHECKLIST

DRAWING NUMBER
1.1
OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

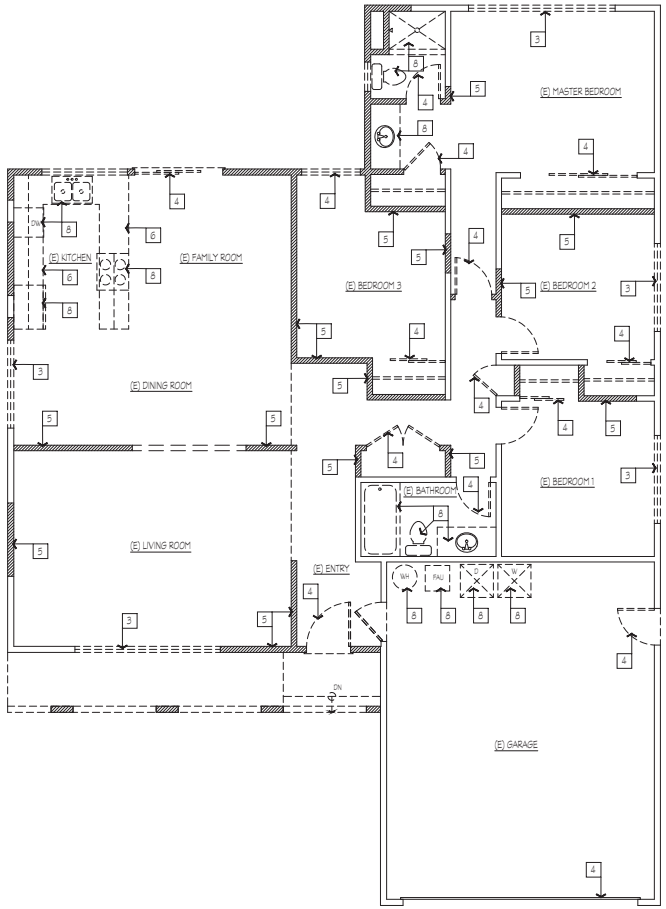
DATE:
January 31, 2022

DEMOLITION NOTES

1. DEMOLITION INCLUDES WORK NOTED BELOW AND ALL OTHER WORK AFFECTED OR EFFECTED BY WORK INCLUDED IN THE DEMOLITION, SYSTEMS, SUBSYSTEMS AND ITEMS RELATED TO THE COMPLETED CONSTRUCTION.
2. PROVIDE DUST BARRIER TO PROTECT REMAINDER OF THE RESIDENCE FROM ANY CONSTRUCTION DIRT OR DUST.
3. REMOVE EXISTING WINDOW AND WALL BRACE AS REQUIRED.
4. REMOVE DOOR AND FRAME, REUSE AS SCHEDULED, BRACE AS REQUIRED.
5. REMOVE EXISTING WALL BRACE UNTIL NEW FRAMING IS COMPLETE.
6. REMOVE EXISTING CABINETS/COUNTERS/SHELVES.
7. REMOVE EXISTING FURNACE
8. REMOVE/DISCONNECT SINK, PLUMBING FIXTURES.
9. REMOVE EXISTING SLAB.
10. REMOVE FRAMING AS NECESSARY TO ALIGN WALL FACES.
11. PROVIDE SHORING AND BRACING TO ACCOUNT FOR ALL LOADS INCURRED DURING THE DEMOLITION AND FRAMING PROCESS.
12. REMOVE EXISTING FIRE PLACE

DEMOLITION LEGEND

- REMOVE WALL
- WALL - EXISTING TO REMAIN (ETR)
- REMOVE WINDOW



CALLED NORTH

NORTH

22 EXISTING/DEMOLITION FIRST FLOOR PLAN

1/4" = 1'-0"

Radd

3570 GLEASON AVENUE
SAN JOSE, CA 95130

TEL: (408) 318-8782
Email: raddarch13@gmail.com

Lee Residence

Jonathan Lee
Nichole Lee

3649 Eastwood Cir
Santa Clara, Ca 95054

Jimmy J. Chang
Project Designer

PRINTING	ISSUED
01/31/22	01/31/22
03/28/23	03/28/23

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1/4" = 1'-0" 0 1' 2' 4' 8'

EXISTING/DEMOLITION FLOOR PLANS
DEMOLITION NOTES
DEMOLITION LEGEND

DRAWING NUMBER

A1

OF - DRAWING(S)

PROJECT:
Lee 2130

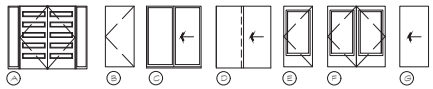
DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE:
January 31, 2022

DOOR SCHEDULE

NO	WIDTH	HT.	THICK	MATERIAL	TYPE	MODEL
1	3'-6"	7'-0"	1 3/4"	WOOD/GLASS	A	W/ 1'-2" SIDELIGHT AT BOTH SIDES
2	16'-0"	7'-0"	1 3/4"	FIBERGLASS	-	AUTOMATIC GARAGE DOOR
3	2'-6"	6'-8"	1 3/4"	WOOD/GLASS	E	-
4	9'-0"	6'-8"	1 3/4"	FIBERGLASS	C	
5	12'-0"	6'-8"	1 3/4"	WOOD/GLASS	F	FRENCH DOOR W/ 3'-0" SIDELIGHT AT BOTH SIDES
6	2'-8"	6'-8"	1 3/4"	WOOD/GLASS	E	
7	2'-8"	6'-8"	1 3/4"	WOOD	B	SELF CLOSING & LATCHING, 20 MIN. RATED DOOR
8	6'-0"	6'-8"	1 3/4"	WOOD/GLASS	-	SLIDING
9	2'-6"	6'-8"	1 3/8"	WOOD	B	
10	2'-6"	6'-8"	1 3/8"	WOOD	G	POCKET DOOR
11	5'-0"	6'-8"	1 3/8"	WOOD	D	CLOSET
12	5'-0"	6'-8"	1 3/8"	WOOD	D	CLOSET
13	2'-4"	6'-8"	1 3/8"	WOOD	B	
14	2'-4"	6'-8"	1 3/8"	WOOD	B	
15	2'-4"	6'-8"	1 3/8"	WOOD	B	
16	2'-8"	6'-8"	1 3/8"	WOOD	B	
17	6'-0"	6'-8"	1 3/8"	WOOD	D	CLOSET
18	1'-8"	6'-8"	1 3/8"	WOOD	B	
19	2'-8"	6'-8"	1 3/8"	WOOD	B	-
20	2'-8"	6'-8"	1 3/8"	WOOD	B	
21	2'-6"	6'-8"	1 3/8"	WOOD	B	
22	3'-0"	6'-8"	1 3/8"	WOOD	-	SLIDING BARN DOOR
23	2'-8"	6'-8"	1 3/4"	WOOD/GLASS	E	
24	2'-8"	6'-8"	1 3/4"	WOOD/GLASS	E	
25	2'-6"	6'-8"	1 3/8"	WOOD	-	
26	2'-8"	6'-8"	1 3/8"	WOOD	B	-
27	2'-4"	6'-8"	1 3/8"	WOOD	B	
28	2'-6"	6'-8"	1 3/8"	WOOD	B	
29	2'-8"	6'-8"	1 3/8"	WOOD	B	
30	6'-0"	6'-8"	1 3/8"	WOOD	D	CLOSET
31	4'-8"	6'-8"	1 3/8"	WOOD	G	POCKET DOOR
32	2'-8"	6'-8"	1 3/8"	WOOD	B	
33	2'-4"	6'-8"	1 3/8"	WOOD	B	
34	2'-6"	6'-8"	1 3/8"	WOOD	B	

DOOR TYPES



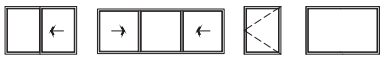
WINDOW SCHEDULE

LH SWING x RH SWING G. GLIDE DH DOUBLE HUNG

NO	MATERIAL	SIZE	SWING	TYPE	MFR.	MODEL	REMARKS
A	VINYL	6'-0"x5'-0"		A	MILGARD	TUSCANY	* EGRESS
B	VINYL	2'-8"x2'-8"		A	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
C	VINYL	5'-0"x3'-8"		A	MILGARD	TUSCANY	
D	VINYL	6'-0"x5'-0"		A	MILGARD	TUSCANY	
E	VINYL	8'-0"x5'-0"		A	MILGARD	TUSCANY	
F	VINYL	8'-0"x5'-0"		A	MILGARD	TUSCANY	
G	VINYL	3'-0"x2'-8"		A	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
H	VINYL	6'-0"x4'-0"		A	MILGARD	TUSCANY	* EGRESS
I	VINYL	6'-0"x4'-0"		A	MILGARD	TUSCANY	* EGRESS
J	VINYL	8'-0"x5'-0"		A	MILGARD	TUSCANY	
K	VINYL	2'-0"x2'-0"		C	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
L	VINYL	4'-0"x3'-0"		A	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
M	VINYL	3'-0"x3'-8"		A	MILGARD	TUSCANY	* EGRESS
N	VINYL	3'-0"x3'-8"		A	MILGARD	TUSCANY	* EGRESS
O	VINYL	7'-8"x2'-0"		B	MILGARD	TUSCANY	
P	VINYL	6'-6"x2'-0"		A	MILGARD	TUSCANY	
Q	VINYL	8'-0"x2'-0"		A	MILGARD	TUSCANY	
R	VINYL	6'-0"x3'-8"		A	MILGARD	TUSCANY	
S	VINYL	5'-0"x3'-8"		A	MILGARD	TUSCANY	* EGRESS
T	VINYL	9'-0"x5'-0"		B	MILGARD	TUSCANY	
U	VINYL	3'-0"x3'-0"		A	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
V	VINYL	2'-0"x2'-0"		C	MILGARD	TUSCANY	● TEMPERED GLASS, FROSTED
W	WOOD	2'-0"x4'-0"	F	-	VELUX	FIXED	

NOTE: ALL GLAZING TO BE SEALED, INSULATING GLASS U.N.O. ● TEMPERED GLASS * EGRESS

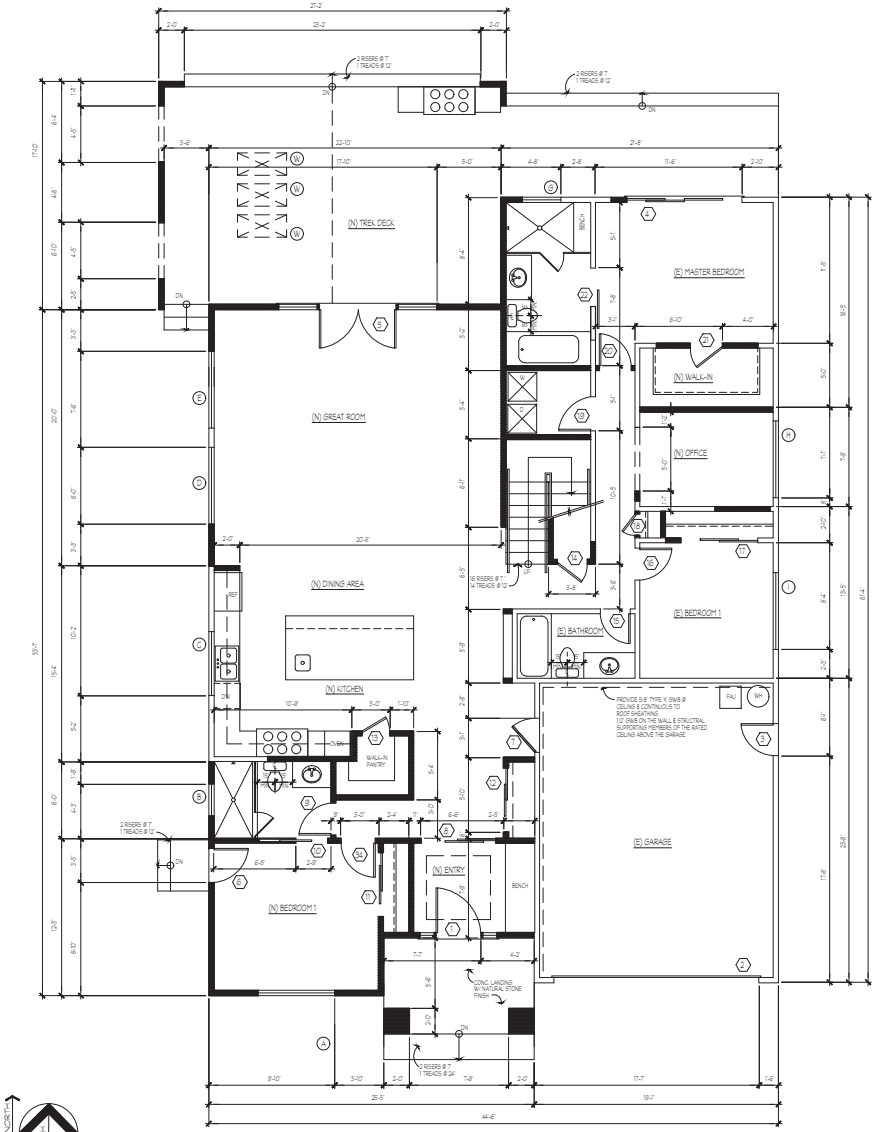
WINDOW TYPES



WALL LEGEND

EXISTING WALL TO REMAIN

TYPICAL WALL PARTITION SHALL BE 2x4 @ 16" O.C. W/ 1-LAYER OF 1/2" GP. BD. ON EACH SIDE



CALLED NORTH

NORTH

22 PROPOSED FIRST FLOOR PLAN

1/4" = 1'-0"

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Project Designer

PRINTING	ISSUED
01/31/22	01/31/22
02/04/22	02/04/22
03/21/22	03/21/22
03/23/22	03/23/22
03/28/23	03/28/23
05/14/23	05/14/23

REVISIONS

IF THIS DRAWING IS NOT 24" x 36" IT HAS BEEN REDUCED; USE GRAPHIC SCALE

1/4" = 1'-0" 0 1 2 4 8

EXISTING/DEMOLITION FLOOR PLANS
DEMOLITION NOTES
DEMOLITION LEGEND

DRAWING NUMBER

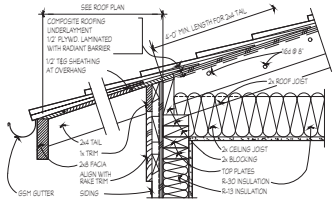
A2.1

OF - DRAWING(S)

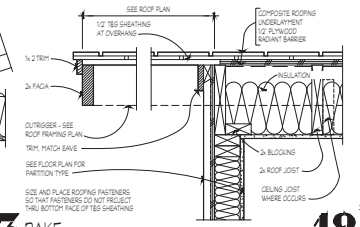
PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

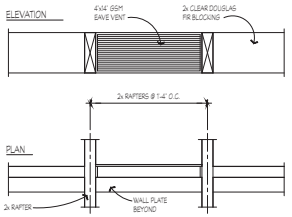
DATE:
January 31, 2022



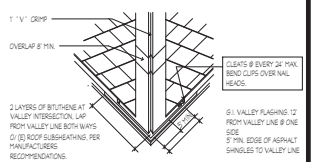
14 EAVE 1-1/2"=1'-0"



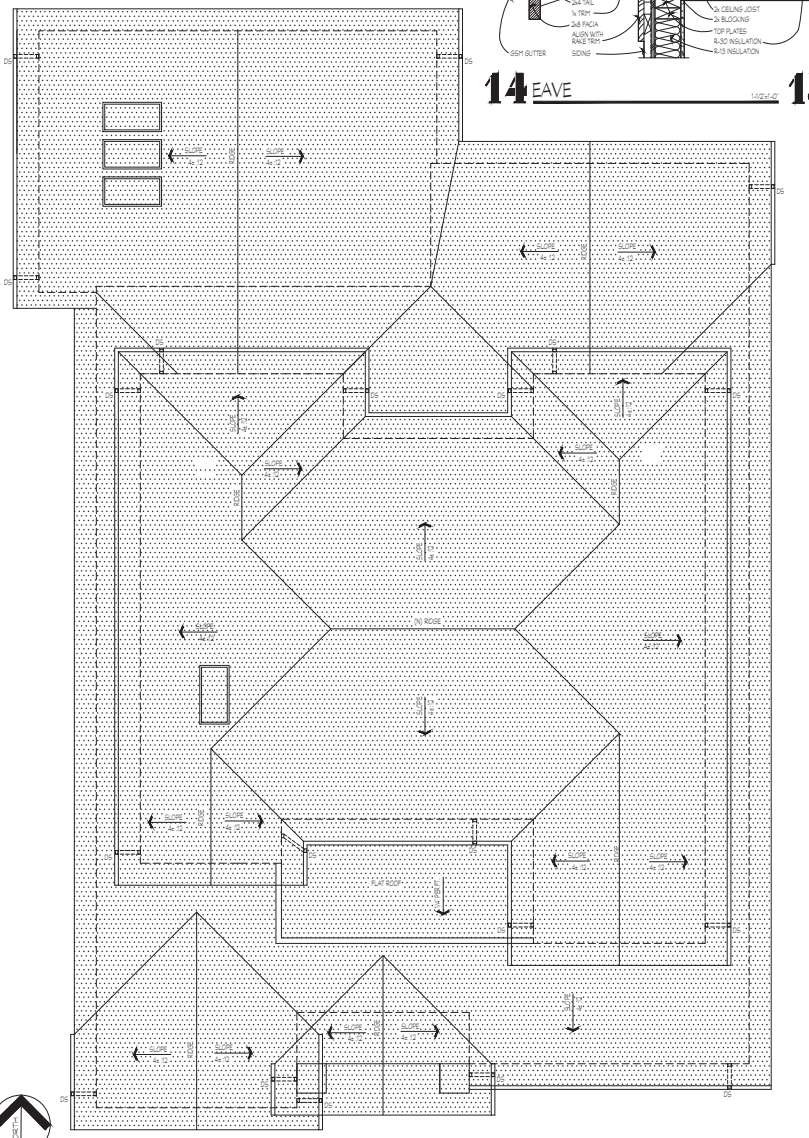
13 RAKE 1-1/2"=1'-0"



12 EAVE VENTING 1-1/2"=1'-0"

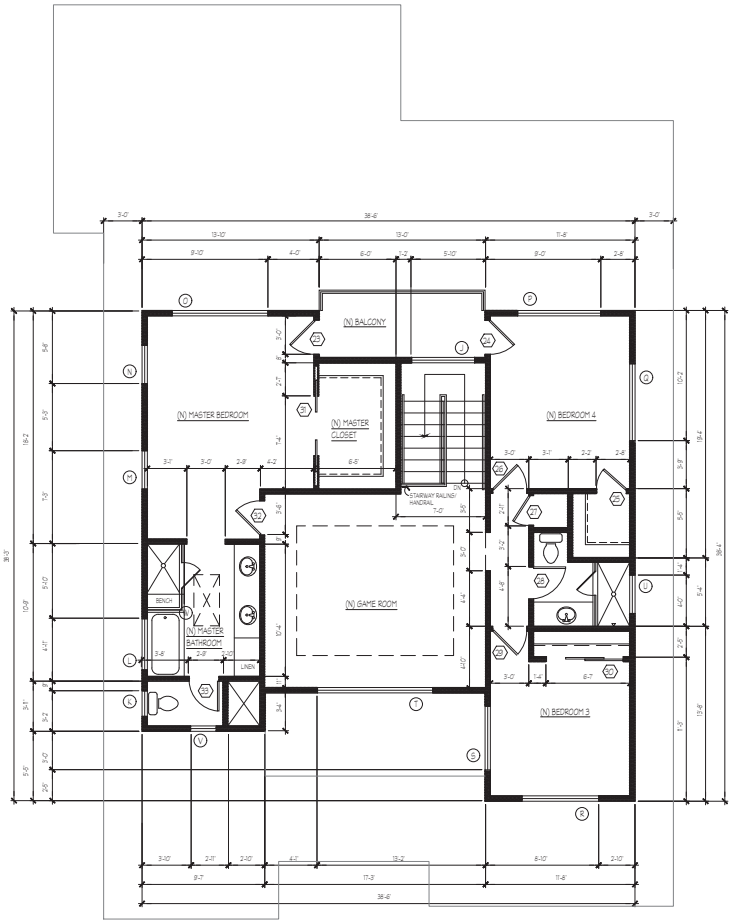


11 VALLEY 1-1/2"=1'-0"



CAL.LED NORTH NORTH

22 PROPOSED ROOF PLAN 1/4" = 1'-0"



CAL.LED NORTH NORTH

21 PROPOSED SECOND FLOOR PLAN 1/4" = 1'-0"

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05/14/23	05/14/23
05/16/23	05/16/23

REVISIONS

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1/4" = 1'-0" 0 1 2 4 8

PROPOSED ROOF PLAN
PROPOSED SECOND FLOOR PLAN
DETAILS

DRAWING NUMBER

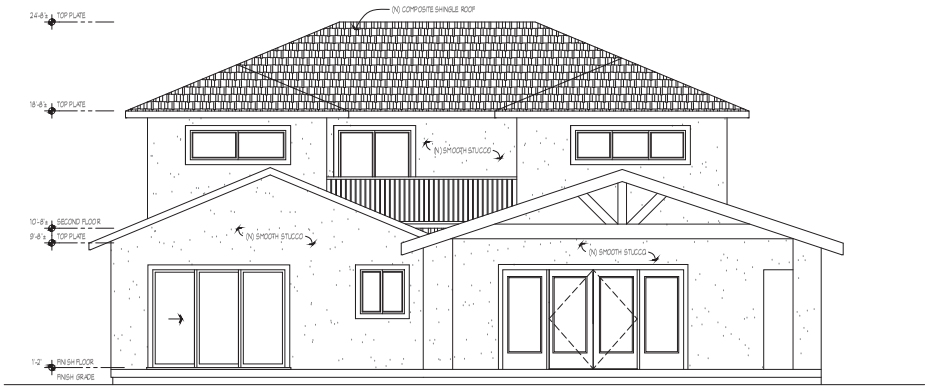
A2.2

OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE:
January 31, 2022



22 NORTH ELEVATION

1/4" = 1'-0"

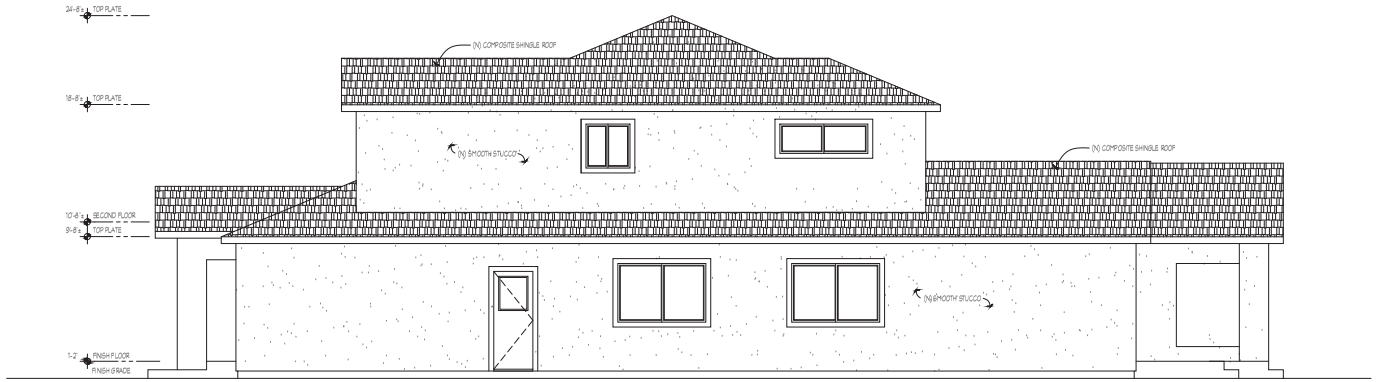
21 SOUTH ELEVATION

1/4" = 1'-0"

FOUNDATION VENT CALCUATION:

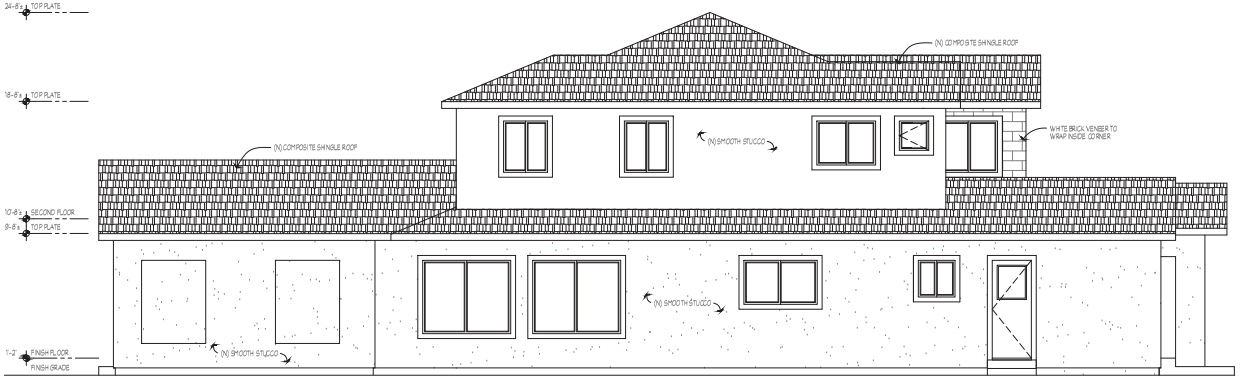
PROPOSED ADDITION ROOF AREA:	542 SF
REQUIRED VENT AREA:	575 SF/150 = 3.6
PROPOSED VENT AREA:	4x14 EAVE VENT @ 17 = 6.6

TOTAL VENT AREA PROVIDED: 6.6 SF



23 EAST ELEVATION

1/4" = 1'-0"



25 WEST ELEVATION

1/4" = 1'-0"

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05/16/23	05/16/23

REVISIONS

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USE GRAPHIC SCALE

1/4" = 1'-0" 0 1' 2' 4' 8'

EXTERIOR ELEVATION

DRAWING NUMBER

A3.1

OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE
January 31, 2022

MECHANICAL NOTES

1. EXHAUST AIR SHALL NOT BE DIRECTED ONTO WALKWAYS. AIR EXHAUST AND INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED WITH CORROSION-RESISTANCE SCREENS, LOUVERS OR GRILLES HAVING A MINIMUM OPENING SIZE OF 1/4" AND A MAXIMUM OPENING SIZE OF 1/2" IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS. OUTDOOR AIR EXHAUST AND INTAKE OPENINGS SHALL MEET THE PROVISIONS FOR EXTERIOR WALL OPENING PROTECTIVES IN ACCORDANCE WITH CRC R303.4.2 AND R303.5
2. MECHANICAL AND GRAVITY OUTDOOR AIR INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ANY HAZARDOUS OR NOXIOUS CONTAMINANT, SUCH AS VENTS, CHIMNEYS, PLUMBING VENTS, STREETS, ALLEYS, PARKING LOTS AND LOADING DOCKS, EXCEPT AS OTHERWISE SPECIFIED IN THE CMC 2022. WHERE A SOURCE OF A CONTAMINANT IS LOCATED WITHIN 10 FEET OF AN INTAKE OPENING, SUCH OPENING SHALL BE LOCATED A MINIMUM OF 2 FEET BELOW THE CONTAMINANT SOURCE. FOR THE PURPOSE OF THIS SECTION, THE EXHAUST FROM DWELLING UNIT TOILET ROOMS, BATHROOMS AND KITCHENS SHALL NOT BE CONSIDERED AS HAZARDOUS OR NOXIOUS.
3. THE EXHAUST AIR SHALL NOT BE DIRECTED ONTO WALKWAYS. AIR EXHAUST AND INTAKE OPENINGS THAT TERMINATE UTDOORS SHALL BE PROTECTED WITH CORROSION-RESISTANT SCREENS, LOUVERS OR GRILLES HAVING A MINIMUM OPENING SIZE OF 1/4 INCH AND A MAXIMUM OPENING SIZE OF 1/2 INCH, IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS. OUTDOOR AIR INTAKE OPENING SHALL MEET THE PROVISIONS FOR EXTERIOR WALL OPENING PROTECTIVES IN ACCORDANCE WITH CRC R303.4.2 AND R303.5
4. THE EXISTING RELOCATED FURNACE UNIT IS ADEQUATE TO SUPPORT THE ADDITIONAL FLOOR AREAS
5. PROVIDE THE HABITABLE SPACE WITH A HEATING SYSTEM CAPABLE OF MAINTAINING A MINIMUM INDOOR TEMPERATURE OF 68°F AT A POINT 3 FEET ABOVE THE FLOOR AND 2 FEET FROM EXTERIOR WALLS IN ALL HABITABLE ROOMS AT THE DESIGN TEMPERATURE.
6. THE DRYER VENT DUCT SHALL BE 4" WITH A MAXIMUM RUN OF 14', INCLUDING TWO 90-DEGREE ELBOWS AND SHALL HAVE A BACK DRAFT DAMPER ADDITIONALLY, CLOTHES DRYER EXHAUST DUCTS, SHALL TERMINATE 3 FEET FROM PROPERTY LINES AND 3 FEET FROM ANY OPENINGS INTO THE BUILDING

SMOKE DETECTORS NOTE

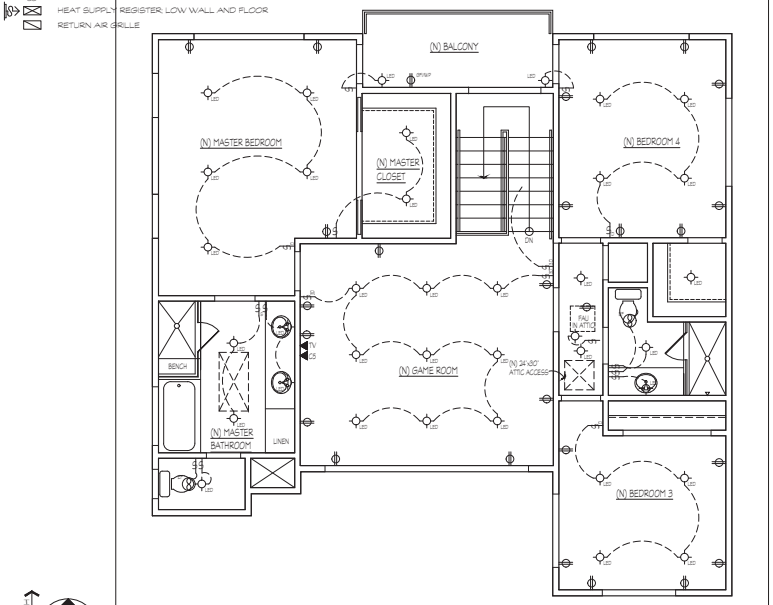
1. SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHEN SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTER BACKUP. THE DETECTOR SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW.

MECHANICAL SYMBOLS

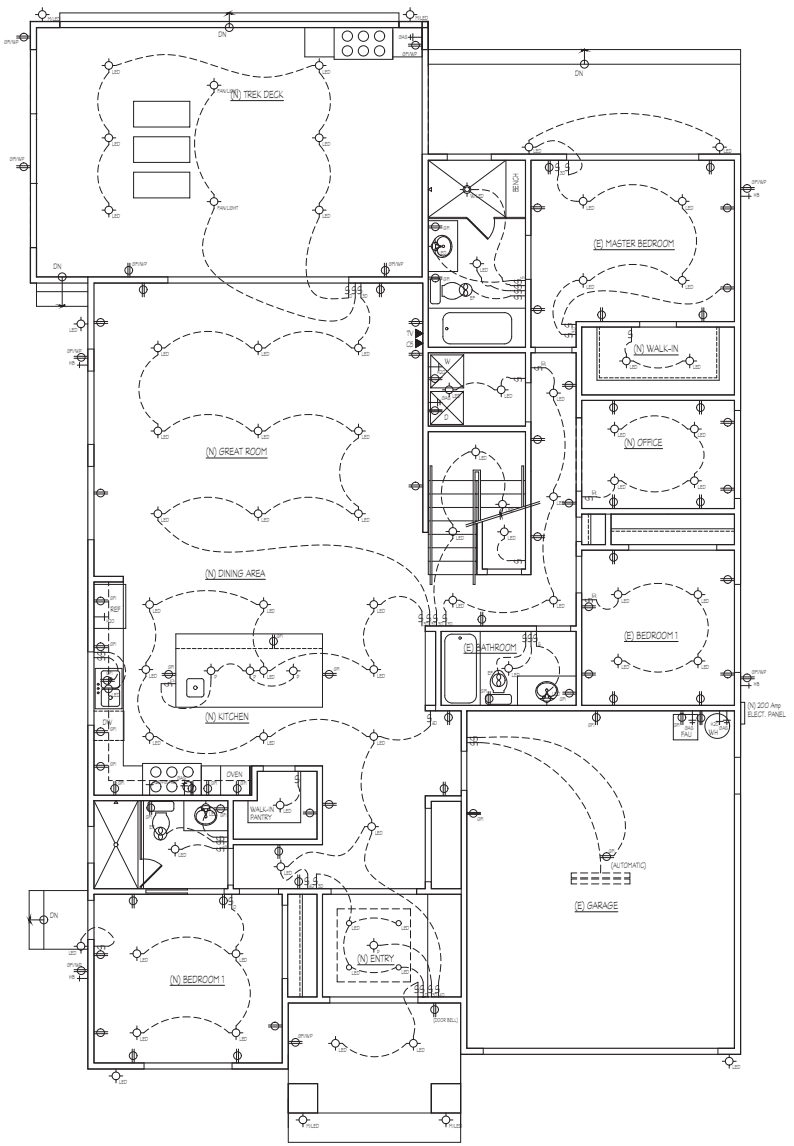
- EF — EXHAUST FAN
- EFL — EXHAUST FAN WITH LIGHT
- HB — HOSE BIBB- PROVIDE LISTED, NON-REMOVABLE HOSE BIBB TYPE BACKFLOW PREVENTER
- SD — SMOKE DETECTOR- HARDWIRED TO ELECTRICAL SYSTEM
- T — THERMOSTAT
- CO — CO DETECTOR
- HEAT SUPPLY REGISTER: LOW WALL AND FLOOR
- RETURN AIR GRILLE

ELECTRICAL NOTES

1. AN ARC-FAULT CIRCUIT INTERRUPTER IS REQUIRED IN ALL FAMILY ROOMS, DINING ROOMS, BEDROOMS, LIVING ROOMS, PARLORS AND SIMILAR AREAS. CEC 210.12 (B)
2. ALL AREAS SPECIFIED IN CEC 210.52, ALL 125 VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT RECEPTACLES. CEC 406.11
3. THE PERMANENTLY INSTALLED LUMINAIRES IN BATHROOMS, ATTACHED AND DETACHED GARAGES, LAUNDRY ROOMS, CLOSETS AND UTILITY ROOMS SHALL BE HIGH EFFICACY LUMINAIRES.
4. THE PERMANENTLY INSTALLED LUMINAIRES LOCATED IN ROOMS OR AREAS OTHER THAN IN KITCHENS, BATHROOMS, GARAGES, LAUNDRY ROOMS, CLOSETS AND UTILITY ROOMS SHALL BE HIGH EFFICACY LUMINAIRES.
5. LUMINAIRES RECESSED INTO INSULATED CEILINGS SHALL MEET ALL OF THE FOLLOWING CONDITIONS:
   - A. BE LISTED, AS DEFINED IN SECTION 101, FOR ZERO CLEARANCE INSULATION CONTACT BY UNDERWRITERS LABORATORIES OR OTHER NATIONALLY RECOGNIZED TESTING RATING LABORATORIES
   - B. PROVIDE LABEL, THAT CERTIFIES THAT THE LUMINAIRES AIRTIGHT WITH AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS WHEN TESTED IN ACCORDANCE WITH ASTM E283
   - C. BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINAIRE HOUSING AND CEILING, AND SHALL HAVE ALL AIR LEAK PATHS BETWEEN CONDITIONED AND UNCONDITIONED SPACES SEALED WITH A GASKET OR CAULK.
   - D. FOR RECESSED LUMINAIRES WITH BALLASTS TO QUALITY AS HIGH EFFICACY FOR COMPLIANCE WITH SECTION 150 (k), THE BALLASTS SHALL BE CERTIFIED TO THE COMMISSION TO COMPLY WITH SECTION 119 (r)
   - E. ALLOW BALLAST MAINTENANCE AND REPLACEMENT TO BE READILY ACCESSIBLE TO BUILDING OCCUPANTS FROM BELOW THE CEILING WITHOUT REQUIRING THE CUTTING OF HOLES IN THE CEILING
6. PERMANENTLY INSTALLED OUTDOOR LIGHTING ATTACHED TO THE BUILDING SHALL CONSIST OF HIGH EFFICACY LUMINAIRES UNLESS CONTROLLED BY AN APPROVED MOTION SENSOR. SENSORS CANNOT HAVE AN OVERRIDE ALLOWING THE LIGHT FIXTURE TO BE CONTINUOUSLY ON
7. THE COMBUSTIBLE INSULATION SHALL BE SEPARATED A MINIMUM OF 3" FROM RECESSED LUMINAIRES, FAN MOTORS AND OTHER HEAT-PRODUCING DEVICES. HOWEVER, WHERE HEAT-PRODUCING DEVICES ARE LISTED FOR LESSER CLEARANCES, COMBUSTIBLE INSULATION COMPLYING WITH THE LISTING REQUIREMENTS SHALL BE SEPARATED IN ACCORDANCE WITH THE CONDITIONS STIPULATED IN THE LISTING.
8. RECESSED LUMINAIRES INSTALLED IN THE BUILDING ENVELOPE SHALL MEET OR EXCEED THE REQUIREMENTS SPECIFIED IN THE CALIFORNIA ENERGY CODE FOR RECESSED LUMINAIRES INSTALLED IN INSULATED CEILINGS.
9. THE NFRC LABEL WHICH STATES THE REQUIRED U-VALUE AND SGHC FOR ALL FENESTRATION PRODUCTS SHALL NOT BE REMOVED PRIOR TO INSPECTION OR REMOVAL BY A BUILDING INSPECTOR, AND SHALL REFLECT THE VALUES LISTED IN THE ENERGY REPORT.



25 ELECTRICAL/MECHANICAL/REFLECTED CEILING PLAN: SECOND FLOOR 1/4" = 1'-0"



22 ELECTRICAL/MECHANICAL/REFLECTED CEILING PLAN: FIRST FLOOR 1/4" = 1'-0"

R a d d

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REVISIONS

1 REVISIONS 08/04/16

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1/4" = 1'-0" 0 1 2 4 8

ELECTRICAL/MECHANICAL REFLECTED CEILING PLAN
ELECTRICAL SYMBOLS
MECHANICAL SYMBOLS

DRAWING NUMBER

A4

OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE
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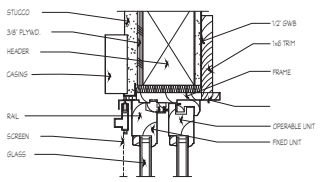
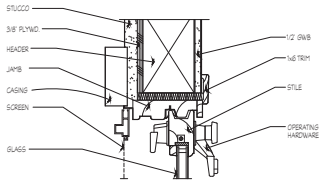


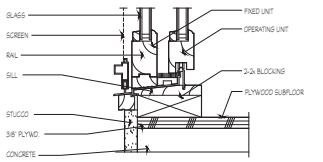
21 SLIDING DOOR - HEAD

3"=1'-0"



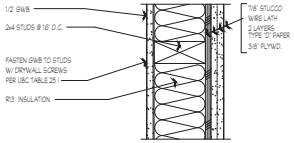
22 SLIDING DOOR - JAMB

3"=1'-0"



23 SLIDING DOOR - SILL

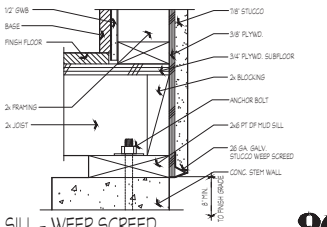
3"=1'-0"



(TYPICAL EXTERIOR WALL)

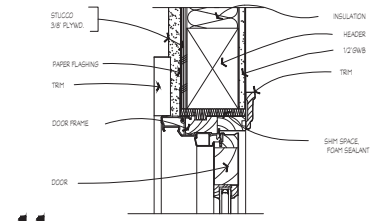
24 WALL TYPE B

3"=1'-0"



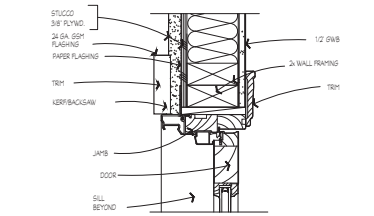
25 SILL - WEEP SCREED

3"=1'-0"



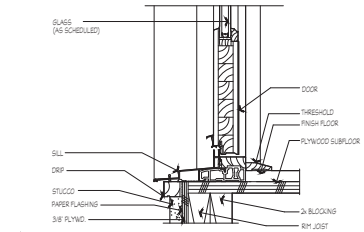
11 ENTRY DOOR - HEAD

3"=1'-0"



12 ENTRY DOOR - JAMB

3"=1'-0"



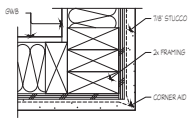
13 ENTRY DOOR - SILL

3"=1'-0"

ALL EXTERIOR CEMENT PLASTER PATCHING SHALL BE DONE SUCH THAT DEMOLISHED PLASTER AREAS WILL REMAIN EXISTING REINFORCING LATH AND BUILDING PAPER TO ACCOMODATE MINIMUM 12" LAPPING AND TIE-IN OF NEW LATH AND PAPER WITH EXISTING

14 TYP. STUCCO PATCH & REPAIR

N.T.S.



20 WALL AT CORNER

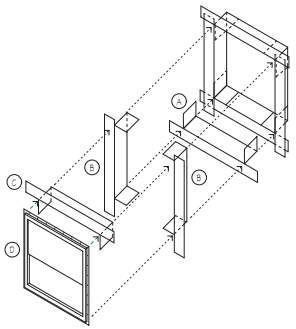
3"=1'-0"

(A) CONTINUOUS PIECE. LAP INTO SILL & BACK ON WALL MIN. 4". LEAVE BACKING PAPER ON WALL PORTION

(B) CONTINUOUS PIECE. LAP INTO JAMB & ON WALL MIN. 4" & OVER BITUTHENE ON SILL

(C) CONTINUOUS PIECE. LAP INTO HEAD & ON WALL MIN 4" & OVER BITUTHENE ON JAMB

(D) INSTALL FLANGED WINDOW UNIT OVER BITUTHENE



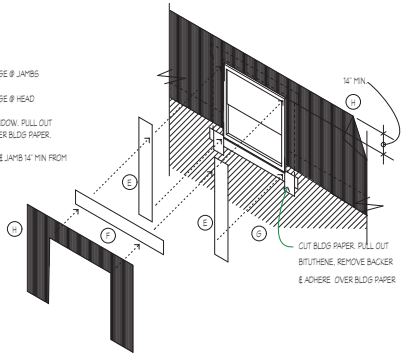
(E) INSTALL 6" WIDE BITUTHENE STRIP OVER FLANGE @ JAMBS

(F) INSTALL 6" WIDE BITUTHENE STRIP OVER FLANGE @ HEAD

(G) APPLY BLDG PAPER @ LOWER PORTION OF WINDOW. PULL OUT BITUTHENE @ SILL & REMOVE BACKER. LAP OVER BLDG PAPER.

(H) APPLY BLDG PAPER OVER BITUTHENE @ HEAD & JAMB 14" MIN. FROM ROUGH OPENING

NOTE:
G AND H COULD BE ONE SINGLE PIECE OF BLDG. PAPER



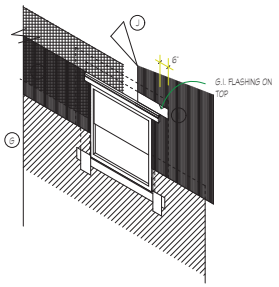
(I) INSTALL HEAD TRIM & G.I. FLASHING

(J) APPLY BLDG PAPER OVER HEAD TRIM (G.I FLASHING) & JAMB.

(K) INSTALL JAMB & SILL TRIMS TO FINISH WINDOW INSTALLATION. APPLY NEW SIDING OVER BLDG PAPER. CAULK JOINTS BETWEEN WINDOW TRIMS & (N) SIDING. DO NOT CAULK AT SILL.

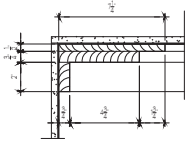
NOTES:

1. THIS FLASHING SEQUENCE IS A GENERAL GUIDE TO THE APPLICATION OF BITUTHENE & BLDG PAPER IN THE INSTALLATION OF THE WINDOW UNIT. ACTUAL CONDITIONS @ SITE MAY DIFFER & FLASHING SEQUENCES COULD BE MODIFIED. CONTRACTOR SHALL CONSULT ARCHITECT FOR SUCH CONDITIONS.
2. BLDG PAPER OVERLAPS MAY OCCUR @ VARIOUS LOCATIONS & NOT ONLY AS SHOWN. CONTRACTOR SHALL CONSULT ARCHITECT FOR SOLUTIONS ON VARYING CONDITIONS.
3. FOR BLDG PAPER OVERLAPS, INSTALL PER MANUFACTURER'S INSTRUCTIONS.



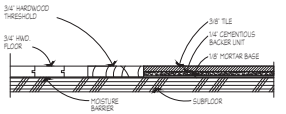
15 TYP. FLASHING DETAIL SEQUENCE(DOOR SIM.)

N.T.S.



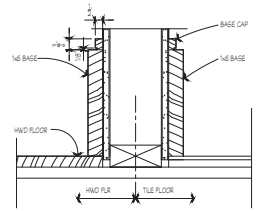
1 CROWN MOLDING

3"=1'-0"



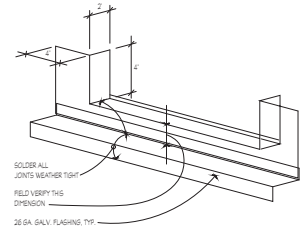
2 HARDWOOD FLOOR/ TILE TRANSITION

3"=1'-0"



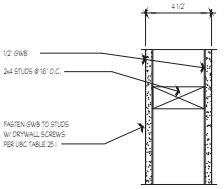
3 BASE

3"=1'-0"



4 EXT. DOOR THRESHOLD G.I. FLASHING

N.T.S.



(TYPICAL INTERIOR WALL)

5 PARTITION TYPE

3"=1'-0"

R a d d

P. O. BOX 8375
SAN JOSE, CA 95157

TEL: (408) 316-8782
Email: raddarchitect@gmail.com

Lee Residence

Jonathan Lee
Nichole Lee

3649 Eastwood Cir
Santa Clara, Ca 95054

Jimmy J. Chang
Project Designer

PRINTING	ISSUED
01/31/22	01/31/22
05/14/23	05/14/23

REVISIONS:

IF THIS DRAWING IS NOT 24" x 36" IT HAS BEEN REDUCED; USE GRAPHIC SCALE

3" = 1'-0" 0 1' 2' 4' 8'

DETAILS:

DRAWING NUMBER

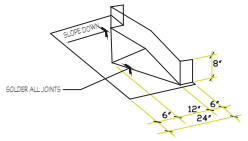
A5

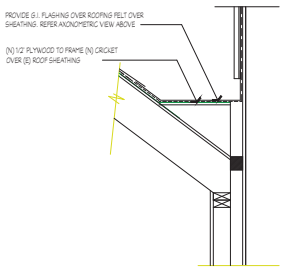
OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

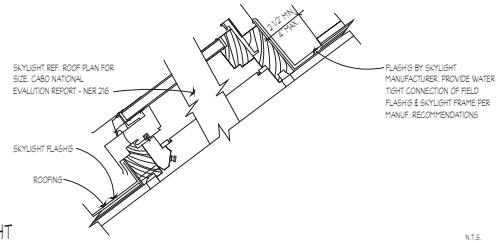
DATE:
January 31, 2022





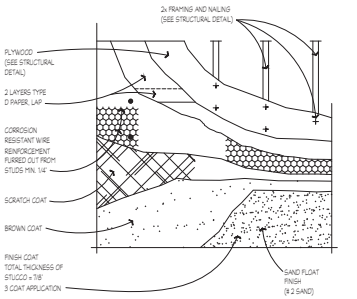
20 ROOF TO WALL

N.T.S.



10 SKYLIGHT

N.T.S.

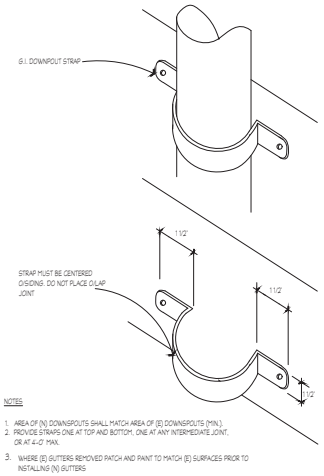


PORTLAND CEMENT PLASTER

COAT	VOLUME CEMENT	MAXIMUM WEIGHT OR VOLUME LIME PER VOLUME CEMENT	MAXIMUM VOLUME SAND PER VOLUME CEMENT	APPROXIMATE MINIMUM THICKNESS	MINIMUM PERIOD MOIST CURING	MINIMUM INTERVAL BETWEEN COATS
FIRST	1	20 lbs	4	3/8"	48 HOURS	48 HOURS
SECOND	1	20 lbs	5	1st and 2nd Coats total 3/4"	48 HOURS	7 DAYS
THIRD	1	1	3	1st, 2nd and Finish Coats 7/8"	—	—

15 STUCCO

NTS

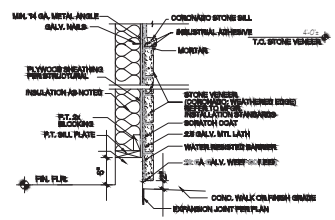


NOTES

1. AREA OF (N) DOWNSPOUTS SHALL MATCH AREA OF (E) DOWNSPOUTS (MIN.).
2. PROVIDE STRAPS ONE AT TOP AND BOTTOM, ONE AT ANY INTERMEDIATE JOINT, OR AT 4'-0" MAX.
3. WHERE (E) GUTTERS REMOVED PATCH AND PAINT TO MATCH (E) SURFACES PRIOR TO INSTALLING (N) GUTTERS

12 DOWNSPOUT

NTS



4 STONE VENEER DETAIL

N.T.S.

Lee Residence

Jonathan Lee
Nichole Lee

3649 Eastwood Cir
Santa Clara, Ca 95054

Jimmy J. Chang
Project Designer

PRINTING	ISSUED
03/29/22	03/29/22
05/14/23	05/14/23

REVISIONS

IF THIS DRAWING IS NOT 24" x 36" IT HAS BEEN REDUCED. USE GRAPHIC SCALE

3/4" = 1'-0" 0 1' 2' 4' 8'

DETAILS

DRAWING NUMBER

A6

OF - DRAWING(S)

PROJECT:
Lee 2130

DRAWN BY: J. CHANG
DESIGNED BY: J. CHANG

DATE:
January 31, 2022

FRI Energy Consultants, LLC
21 N. Harrison Avenue, Suite 210
Campbell, Ca. 95008
Phone: 408-866-1620 Fax: 408-866-6832

EASTWOOD CIR RESIDENCE
3649 EASTWOOD CIR
SANTA CLARA, CA 95054

T24-1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 1 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

GENERAL INFORMATION			
01	**Project Name**	Eastwood Cir Residence	
02	**Run Title**	Title 24 Analysis	
03	**Project Location**	3649 Eastwood Cir	
04	**City**	Santa Clara	05 **Standards Version** 2022
06	**Zip code**	95054	07 **Software Version** EnergyPro 9.1
09	**Climate Zone**	4	09 **Front Orientation (deg/ Cardinal)** 335
10	**Building Type**	Single family	11 **Number of Dwelling Units** 1
12	**Project Scope**	Addition and/or Alteration	13 **Number of Bedrooms** 4
14	**Addition Cond. Floor Area (ft²)**	1203	15 **Number of Stories** 2
16	**Existing Cond. Floor Area (ft²)**	1907	17 **Fenestration Average U-factor** 0.34
18	**Total Cond. Floor Area (ft²)**	3400	19 **Glazing Percentage (%)** 18.80%
20	**ADU Bedroom Count**	n/a	

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

Registration Number: 223-P019099894A-000-000-0000000-0000 — Registration Date/Time: 2023-04-03 14:28:37 — HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance — Report Version: 2022.0.000 — Schema Version: rev 20220901 — Report Generated: 2023-04-03 09:06:19

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 2 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²-yr)	Standard Design TDV Energy (EDR2) (kTDV/ft²-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²-yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft²-yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0	34.61	0	30.4	0	4.21
Space Cooling	0	26.83	0	31.61	0	-4.79
IAQ Ventilation	0	7.48	0	8.8	0	-1.32
Water Heating	0	15.02	0	12.59	0	2.43
Self Utilization/Flexibility Credit						
Efficiency Compliance Total	0	**83.94**	0	**83.41**	0	**0.53**
Photovoltaics		0		0		
Battery				0		
Flexibility						
Indoor Lighting	0	6.28	0	6.28		
Appl. & Cooking	0	12.85	0	12.88		
Plug Loads	0	25.17	0	25.17		
Outdoor Lighting	0	1.65	0	1.65		
TOTAL COMPLIANCE	**0**	**129.89**	**0**	**129.39**		

Registration Number: 223-P019099894A-000-000-0000000-0000 — Registration Date/Time: 2023-04-03 14:28:37 — HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance — Report Version: 2022.0.000 — Schema Version: rev 20220901 — Report Generated: 2023-04-03 09:06:19

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 3 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	21.36	20.01	1.35	6.32
Net EUI[2]	21.36	20.01	1.35	6.32

Notes:
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Indoor air quality balanced fan
- IAQ Ventilation System Heat Recovery: minimum 55 SRE and 57 ASRE
- IAQ Ventilation System: supply outside air HVAL Filter, and MERV core assessible per RACM Reference Manual
- Insulation below roof deck
- Ducts in crawl space

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Duct leakage test
- Fan Efficacy Watts/CFM
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01 Project Name	02 Conditioned Floor Area (ft²)	03 Number of Dwelling Units	04 Number of Bedrooms	05 Number of Zones	06 Number of Ventilation Cooling Systems	07 Number of Water Heating Systems
Eastwood Cir Residence	3400	1	4	3	0	1

Registration Number: 223-P019099894A-000-000-0000000-0000 — Registration Date/Time: 2023-04-03 14:28:37 — HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance — Report Version: 2022.0.000 — Schema Version: rev 20220901 — Report Generated: 2023-04-03 09:06:19

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 4 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

ZONE INFORMATION

01 Zone Name	02 Zone Type	03 HVAC System Name	04 Zone Floor Area (ft²)	05 Avg. Ceiling Height	06 Water Heating System 1	07 Status
Existing 1st Floor	Conditioned	HVAC System1	1587	9.06	DHW Sys 1	Existing Unchanged
Addition 1st Floor	Conditioned	HVAC System1	570	9.06	DHW Sys 1	New
Addition 2nd Floor	Conditioned	HVAC System2	1263	8	DHW Sys 1	New

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window and Door Area (ft2)	08 Tilt (deg)	09 Wall Exceptions	10 Status	11 Verified Existing Condition
Left Wall	Existing 1st Floor	R-0 Wall	65	Left	288	92.5	90	none	Existing	No
Rear Wall	Existing 1st Floor	R-0 Wall	155	Back	245	47.5	90	none	Existing	No
Right Wall	Existing 1st Floor	R-0 Wall	245	Right	369	68	90	none	Existing	No
Front Wall	Addition 1st Floor	R-15 Wall	335	Front	228	70.8	90	none	New	n/a
Left Wall 2	Addition 1st Floor	R-15 Wall	65	Left	279	24.05	90	Extension	New	n/a
Rear Wall 2	Addition 1st Floor	R-15 Wall	155	Back	206	80	90	none	New	n/a
Right Wall 2	Addition 1st Floor	R-15 Wall	245	Right	50	0	90	none	New	n/a
Front Wall 2	Addition 2nd Floor	R-15 Wall	335	Front	316	80	90	none	New	n/a
Left Wall 3	Addition 2nd Floor	R-15 Wall	65	Left	360	65.8	90	none	New	n/a
Rear Wall 3	Addition 2nd Floor	R-15 Wall	155	Back	316	53	90	none	New	n/a

Registration Number: 223-P019099894A-000-000-0000000-0000 — Registration Date/Time: 2023-04-03 14:28:37 — HERS Provider: CalCERTS Inc.
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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 5 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window and Door Area (ft2)	08 Tilt (deg)	09 Wall Exceptions	10 Status	11 Verified Existing Condition
Right Wall 3	Addition 2nd Floor	R-15 Wall	245	Right	360	50.8	90	none	New	n/a
Roof 2	Existing 1st Floor	R-19 Roof Attic	n/a	n/a	549	n/a	n/a		Existing	No
Roof 3	Addition 1st Floor	R-30 HP Attic	n/a	n/a	513	n/a	n/a		New	n/a
Roof 4	Addition 2nd Floor	R-30 HP Attic	n/a	n/a	1255	n/a	n/a		New	n/a
Raised Floor (sub)	Addition 2nd Floor	R-19 Floor No Crawlspace	n/a	n/a	190	n/a	n/a		New	n/a
Raised Floor	Existing 1st Floor	R-0 Floor Crawlspace	n/a	n/a	1567	n/a	n/a		Existing	No
Raised Floor 2	Addition 1st Floor	R-19 Floor Crawlspace	n/a	n/a	570	n/a	n/a		New	n/a
Interior Surface	Existing 1st Floor	R-0 Roof No Attic	n/a	n/a	1038	n/a	n/a		Existing	No
Interior Surface 2	Addition 1st Floor	R-0 Roof No Attic	n/a	n/a	55	n/a	n/a		New	n/a

OPAQUE SURFACES - CATHEDRAL CEILINGS

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Area (ft²)	07 Skylight Area (ft²)	08 Roof Rise (x in 12)	09 Roof Reflectance	10 Roof Emittance	11 Cool Roof	12 Status	13 Verified Existing Condition	14 Existing Construction
Roof	Addition 2nd Floor	R-30 HP Attic1	260	n/a	8.1	8	4	0.1	0.85	No	New	n/a	

Registration Number: 223-P019099894A-000-000-0000000-0000 — Registration Date/Time: 2023-04-03 14:28:37 — HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance — Report Version: 2022.0.000 — Schema Version: rev 20220901 — Report Generated: 2023-04-03 09:06:19

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E (Page 6 of 15)

Project Name: Eastwood Cir Residence — **Calculation Date/Time:** 2023-04-03T09:03:48-07:00
Calculation Description: Title 24 Analysis — **Input File Name:** 0230219 Eastwood Cir Residence.ribd22x

ATTIC

01 Name	02 Construction	03 Type	04 Roof Rise (x in 12)	05 Roof Reflectance	06 Roof Emittance	07 Radiant Barrier	08 Cool Roof	09 Status	10 Verified Existing Condition
Attic Existing 1st Floor	Attic RoofExisting 1st Floor	Ventilated	4	0.1	0.85	No	No	Existing	No
Attic Addition 1st Floor	Attic RoofAddition 1st Floor	Ventilated	4	0.1	0.85	No	No	New	n/a
Attic Addition 2nd Floor	Attic RoofAddition 2nd Floor	Ventilated	4	0.1	0.85	No	No	New	n/a

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window	Window	Left Wall	Left	65			1	17.5	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 2	Window	Left Wall	Left	65			1	25	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 3	Window	Left Wall	Left	65			1	25	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 4	Window	Left Wall	Left	65			1	35	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 5	Window	Rear Wall	Back	155			1	7.5	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Door	Window	Rear Wall	Back	155			1	60	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 6	Window	Right Wall	Right	245			1	24	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Window 7	Window	Right Wall	Right	245			1	24	0.34	NFRC	0.23	NFRC	Bug Screen	Altered	No
Door/Sidelight	Window	Front Wall	Front	335			1	40.8	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 8	Window	Front Wall	Front	335			1	30	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Door 2	Window	Left Wall 2	Left	65			1	17.8	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA

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FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window 9	Window	Left Wall 2	Left	65			1	6.25	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Door&Sidelites 2	Window	Rear Wall 2	Back	155			1	80	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 10	Window	Front Wall 2	Front	335			1	15	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 11	Window	Front Wall 2	Front	335			1	56	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 12	Window	Front Wall 2	Front	335			1	9	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 13	Window	Left Wall 3	Left	65			1	6	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 14	Window	Left Wall 3	Left	65			1	12	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 15	Window	Left Wall 3	Left	65			1	7	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 16	Window	Left Wall 3	Left	65			1	13	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Door 3	Window	Left Wall 3	Left	65			1	17.8	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 17	Window	Rear Wall 3	Back	155			1	15	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 18	Window	Rear Wall 3	Back	155			1	25	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 19	Window	Rear Wall 3	Back	155			1	13	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Door 4	Window	Right Wall 3	Right	245			1	17.8	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 20	Window	Right Wall 3	Right	245			1	24	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Window 21	Window	Right Wall 3	Right	245			1	9	0.34	NFRC	0.23	NFRC	Bug Screen	New	NA
Skylight	Skylight	Roof		260			1	8	0.42	NFRC	0.32	NFRC		New	NA

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OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco
R-30 HP Attic1	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-30	13 / None	0.024	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/Sheathing/decking Cavity / Frame: R-30 / 2x4 Sheathing / Insulation: R-13 Sheathing Inside Finish: Gypsum Board
Attic RoofExisting 1st Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofAddition 1st Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-19	None / 0	0.078	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.5 / 2x4 Around Roof Joists: R-0.0 insul.
Attic RoofAddition 2nd Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-13	None / 0	0.078	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.5 / 2x4 Around Roof Joists: R-0.0 insul.

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OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers
R-0 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O. C.	R-0	None / None	0.22	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x6
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O. C.	R-19	None / None	0.049	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-19 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / None	0.049	Over Ceiling Joists: R-0.0 Insul. Cavity / Frame: R-19 / 2x4 Inside Finish: Gypsum Board
R-30 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-30	None / None	0.032	Over Ceiling Joists: R-20.0 Insul. Cavity / Frame: R-13 / 2x4 Inside Finish: Gypsum Board
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x6 @ 16 in. O. C.	R-19	None / None	0.052	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

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BUILDING ENVELOPE - HERS VERIFICATION

01 Quality Insulation Installation (QII)	02 High-R-value Spray Foam Insulation	03 Building Envelope Air Leakage	04 CFM50	05 CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater Name	05 Number of Units	06 Solar Heating System	07 Compact Distribution	08 HERS Verification	09 Water Heater Name (#)	10 Status	11 Verified Existing Condition	12 Existing Water Heating System
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)	New	NA	

WATER HEATERS

01 Name	02 Heating Element Type	03 Tank Type	04 # of Units	05 Tank Vol. (gal)	06 Heating Efficiency Type	07 Efficiency	08 Rated Input Type	09 Input Rating or Flow	10 Tank Insulation R-value (Int/Ext)	11 Standby Loss or Recovery Eff	12 1st Hr. Rating or Flow Rate	13 Tank Location	14 Status	15 Verified Existing Condition
DHW Heater 1	Gas	Commercial Storage	1	75	TE	0.9	Btu/hr	100000	0	0.001000	n/a		New	n/a

WATER HEATING - HERS VERIFICATION

01 Name	02 Pipe Insulation	03 Parallel Piping	04 Compact Distribution	05 Compact Distribution Type	06 Recirculation Control	07 Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

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SPACE CONDITIONING SYSTEMS

01 Name	02 System Type	03 Heating Unit Name	04 Heating Equipment Count	05 Cooling Unit Name	06 Cooling Equipment Count	07 Fan Name	08 Distribution Name	09 Required Thermostat Type	10 Status	11 Verified Existing Condition	12 Existing HVAC System
HVAC System1	Heating and cooling system other	Heating Component 1	1	Cooling Component 1	1	HVAC Fan 1	Air Distribution System 1	Setback	New	No	
HVAC System2	Heating and cooling system other	Heating Component 2	1	Cooling Component 2	1	HVAC Fan 2	Air Distribution System 2	Setback	New	No	

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Heating Efficiency
Heating Component 1	Central gas furnace	1	AFUE=95
Heating Component 2	Central gas furnace	1	AFUE=95

HVAC - COOLING UNIT TYPES

01 Name	02 System Type	03 Number of Units	04 Efficiency Metric	05 Efficiency EER/EER2/CEER	06 Efficiency SEER/SEER2	07 Zonally Controlled	08 Multi-speed Compressor	09 HERS Verification
Cooling Component 1	Central split AC	1	EER/SEER	11.7	14	Not Zonal	Single Speed	Cooling Component 1 hers cool
Cooling Component 2	Central split AC	1	EER/SEER	11.7	14	Not Zonal	Single Speed	Cooling Component 2 hers cool

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HVAC COOLING - HERS VERIFICATION

01 Name	02 Verified Airflow	03 Airflow Target	04 Verified EER/EER2	05 Verified SEER/SEER2	06 Verified Refrigerant Charge
Cooling Component 1 hers cool	Required	350	Not Required	Not Required	Not Required
Cooling Component 2 hers cool	Required	350	Not Required	Not Required	Not Required

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Design Type	04 Duct Ins. R-value		05 Duct Location		06 Surface Area		07 Bypass Duct	08 Duct Leakage	09 HERS Verification	10 Status	11 Verified Existing Condition	12 Existing Distribution system	13 New Ducts 25 ft
			Supply	Return	Supply	Return	Supply	Return							
Air Distribution System 1	Uncondition ed crawl space	Non-Verified	R-6	R-6	Crawlspace	Crawlspace	n/a	n/a	No Bypass Ducts	Sealed And Tested	Air Distribution System 3 hers dist	New	n/a		No
Air Distribution System 2	Uncondition ed attic	Non-Verified	R-6	R-6	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 3 hers dist	New	n/a		No

HVAC DISTRIBUTION - HERS VERIFICATION

01 Name	02 Duct Leakage Verification	03 Duct Leakage Target (%)	04 Verified Duct Location	05 Verified Duct Design	06 Buried Ducts	07 Deeply Buried Ducts	08 Low-leakage Air Handler	09 Low Leakage Ducts Entirely In Conditioned Space
Air Distribution System 1 hers dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

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HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 2-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.4	HVAC Fan 1-hers-fan
HVAC Fan 2	HVAC Fan	0.4	HVAC Fan 2-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.4
HVAC Fan 2-hers-fan	Required	0.4

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt 1-1	160	0.71875	Balanced	Yes	57	No	Yes	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E

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HERS RATER VERIFICATION OF EXISTING CONDITIONS

INDOOR AIR QUALITY (IAQ) FANS - VERIFIED AND ALTERED

01	02	03	04	05	06	07
Name	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASREIAQ Recovery Effectiveness - ASRE
Dwelling Unit 0/0	160	0.71875	Balanced	Yes	51	57

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01E

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Adam Bailey	Documentation Author Signature: Adam Bailey
Company: FRI Energy Consultants, LLC.	Signature Date: 2023-04-03 14:26:10
Address: 21 N. Harrison Ave,	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Campbell, CA 95008	Phone: 408-866-1620

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for thebuilding design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliancere 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.

Responsible Designer Name: Jimmy Chang	Responsible Designer Signature: Jimmy Chang
Company: Jimmy Chang	Date Signed: 2023-04-03 14:26:37
Address: 3570 Gleason Avenue	License: N/A
City/State/Zip: San Jose, CA 95130	Phone: 408-316-6782

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. Theymust be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emitance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and controlled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

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§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/offswitch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. *
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, *or* a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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