

# MAHA MOHAMED & AHMED ELHASSAN

## ADDITION

### PROPOSED REMODEL

#### SITE PLAN NOTES

PROVIDE POSITIVE DRAINAGE AWAY FROM NEW FOUNDATION.  
(SLOPE FINISH GRADE AWAY MINIMUM 2% TYPICAL).

IF REQUIRED, ALL ROOF DOWNSPOUTS SHALL BE CONNECTED TO AN APPROVED UNDERGROUND DRAINAGE SYSTEM WITH TERMINATION TO STORM DRAIN OR A DRYWELL.

VERIFICATION OF EXISTING OR NEW LOT STAKES SHALL BE PROVIDED PRIOR TO ISSUANCE OF A BUILDING PERMIT. EXISTING LOT STAKES MUST BE EXPOSED, VERIFIED, AND INDICATED ON BUILDING PLANS; OR NEW LOT STAKES MUST BE SET BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR. IF REQUIRED BY STATE LAW, CIVIL ENGINEER OR LICENSED LAND SURVEYOR SHALL FILE A RECORD-OF-SURVEY MAP.

IF ANY EARTH WORK AND/OR GRADING IS DONE ON THE PROPERTY OR ANY ACCESS ROADS, OWNER OR CONTRACTOR SHALL MAINTAIN AN UNINTERRUPTED FLOW OF WATER IN SWALES AND NATURAL COURSES, UPON COMPLETION OF THE PROJECT. PROPERTY OWNER IS RESPONSIBLE FOR THE ADEQUACY OF ANY DRAINAGE FACILITIES AND FOR THE CONTINUED MAINTENANCE THEREOF IN A MANNER WHICH WILL PRECLUDE ANY HAZARD TO LIFE, HEALTH, OR DAMAGE TO ADJOINING PROPERTY.

CONSULTING GEOLOGIST SHALL OBSERVE AND PROVIDE APPROVAL LETTER PRIOR TO FINAL INSPECTION.

ALL NEW ON-SITE UTILITIES, MAINS, AND SERVICES (IF APPLICABLE) SHALL BE PLACED UNDERGROUND AND EXTENDED TO SERVE THE PROPOSED RESIDENCE. OFF-SITE WORK SHALL BE COORDINATED WITH ANY UNDERGROUNDING TO SERVE OTHER PROPERTIES IN THE IMMEDIATE AREA.

#### BUILDING CODES AND REGULATIONS

2022 CRC CALIFORNIA RESIDENTIAL CODE  
2022 CPC CALIFORNIA PLUMBING CODE  
2022 CMC CALIFORNIA MECHANICAL CODE  
2022 CEC CALIFORNIA ELECTRIC CODE  
2022 CALIFORNIA CODE FOR BUILDING CONSERVATION  
2022 BUILDING ENERGY EFFICIENCY STANDARDS  
2022 CGBC CALIFORNIA GREEN BUILDING STANDARDS CODE  
2022 CFC CALIFORNIA FIRE CODE  
ALONG WITH ANY OTHER LOCAL AND STATE LAWS AND REGULATIONS

#### SCOPE OF WORK

- A TOTAL OF 157.0 S.F. ADDITION ENLARGING EXISTING BEDROOM
- NEW MASTER BATHROOM

#### SHEET INDEX

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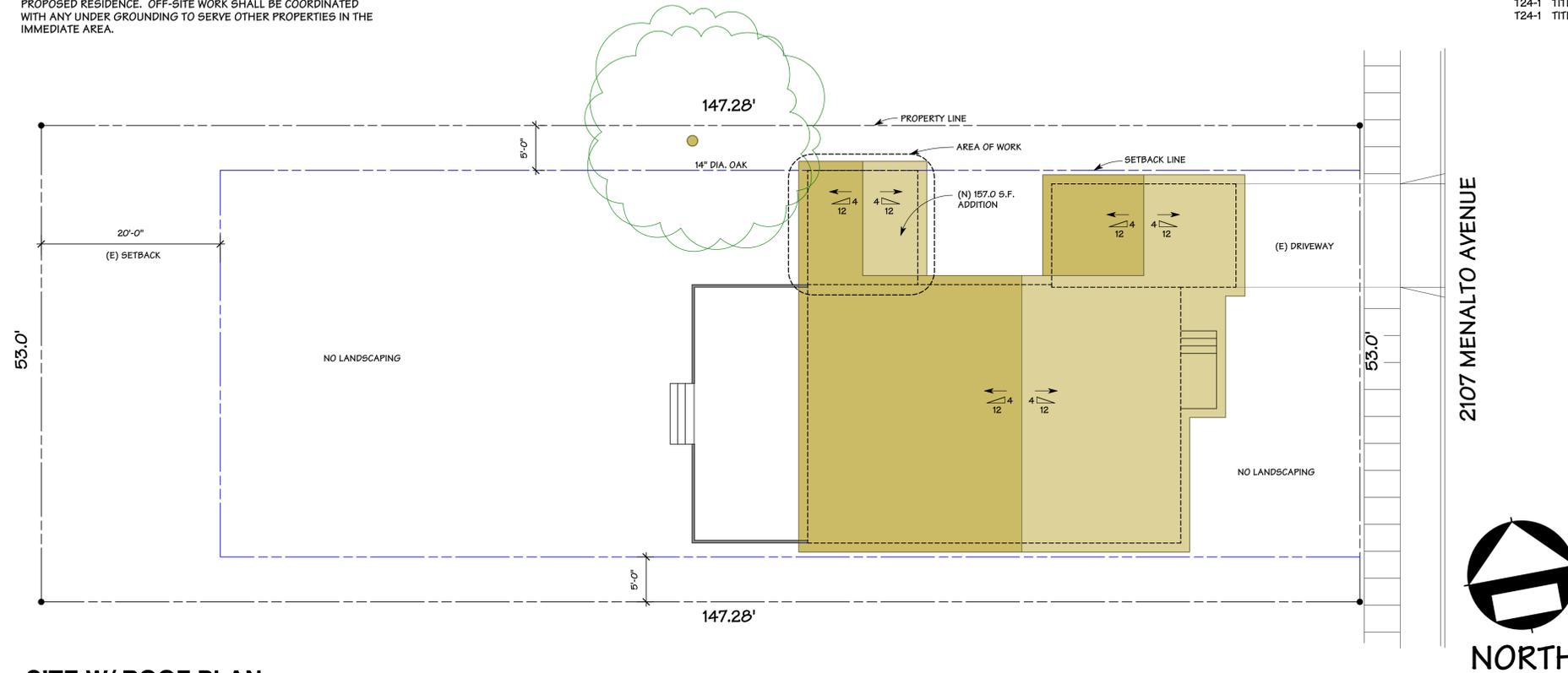
#### SITE DATA

A.P.N.	062-223-520
LOT SIZE	7,805.84 S.F.
ZONING	R-1-B
SLOPE IS <10%	YES
FIRE SPRINKLERS	NO
(E) LIVING AREA	1,198.0 S.F.
(E) GARAGE	234.0 S.F.
(E) PROCH	54.0 S.F.
(N) LIVING AREA	157.0 S.F.
TOTAL LIVING AREA	1,355.0 S.F.

#### APPROVAL AND STAMP AREA

All work within the public right-of-way, which is to be performed by the Developer/Owner, the general contractor, and all subcontractors shall be included within a Single Street Opening Permit issued by the City Engineering Department.

Issuance of the Street Opening Permit and payment of all appropriate fees shall be completed by the developer prior to commencement of work, and all work under the permit shall be completed prior to issuance of occupancy permit.



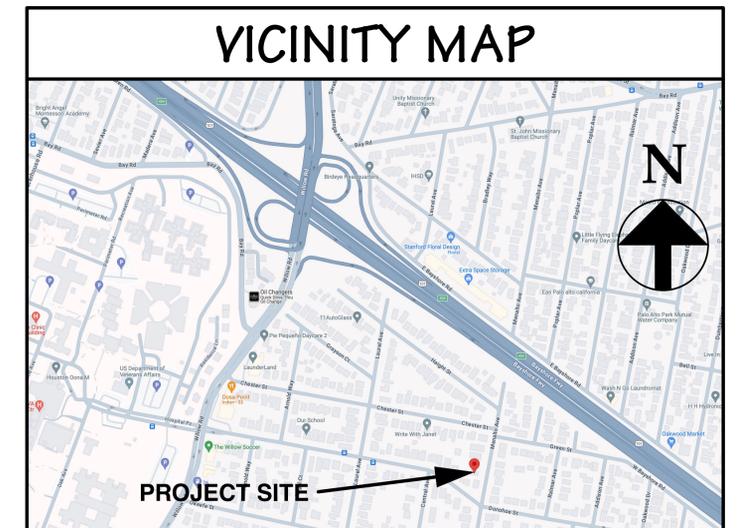
SCALE: 1/8" = 1'-0"

#### SITE W/ ROOF PLAN



#### APN MAP

622-23-520



#### VICINITY MAP

OWNER: MAHA MOHAMED & AHMED ELHASSAN  
2107 MENALTO AVENUE  
MENLO PARK, CA. 94025

DESIGN BY: PACIFIC BLUE DEVELOPMENTS  
38 Colton Way  
Cambridge, CA. 95608  
(408) 504-6656 Cell



REVISION:

SITE W/ ROOF PLAN  
VICINITY MAP  
PLAN NOTES

DRAWN BY  
Michael S. Radu

CHECKED BY  
PBD

JOB NO.  
24-20

DATE  
11/24/2024

SCALE  
AS SHOWN

SHEET

A-1



**FLOOR PLAN NOTES**

PROVIDE EMERGENCY EGRESS WINDOWS WITH MINIMUM NET CLEAR OPENABLE AREA OF 5.7 SQUARE FEET. DIMENSIONS SHALL BE 24" MIN. HIGH BY 20" MIN. WIDE, WITH A MAXIMUM FINISH SILL HEIGHT OF 44" ABOVE THE SUBFLOOR. C.R.C.

GLAZING SUBJECT TO HUMAN IMPACT SHALL BE TEMPERED, LABELED "SAFETY GLASS", AND COMPLY WITH C.R.C. AS FOLLOWS:

- GLAZING IN DOORS AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS, AND GLAZING IN ANY PORTION OF A WALL ENCLOSED THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A STANDING SURFACE AND DRAIN INLET.

- GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE.

- GLAZING IN INDIVIDUALLY FIXED OR OPERABLE PANELS (OTHER THAN ABOVE) THAT MEET ALL OF THE FOLLOWING CONDITIONS: GLAZING GREATER THAN 9 SQ. FT. IN AREA; BOTTOM EXPOSED EDGE LESS THAN 18" & TOP EXPOSED EDGE GREATER THAN 36" ABOVE THE FLOOR; AND WITHIN 36" HORIZONTALLY OF ANY WALKING SURFACE.

PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF) AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS.

VAPOR RETARDER AND CAPILLARY BREAK IS INSTALLED AT SLAB-ON-GRADE FOUNDATIONS.

SLIDING GLASS WINDOWS SHALL BE DESIGNED AND INSTALLED SO AS TO PREVENT THEIR REMOVAL BY RAISING THE MOVABLE PANEL FROM THE TRACK WHILE IN THE CLOSED POSITION. SLIDING UNITS SHALL ALSO HAVE AN APPROVED PRIMARY AND AUXILIARY LOCKING DEVICE PERMANENTLY MOUNTED AND NOT ACCESSIBLE FROM THE EXTERIOR OF THE BUILDING. THE MOVABLE SECTION OF THE SLIDING UNITS SHALL BE MOUNTED ON THE INSIDE TRACK.

ALL DOORS AND WINDOWS ARE TO BE FULLY WEATHER-STRIPPED PER TITLE 24 REQUIREMENTS.

ALL JOINTS AND PENETRATIONS ARE TO BE PROPERLY CAULKED AND SEALED PER TITLE 24 REQUIREMENTS.

PROVIDE 26 GA. GI. FLASHING AT ALL NEW CONCRETE PORCH/STOOP AREAS WHERE CONTACT WITH WOOD FRAMING WILL OCCUR.

ALL STEPS AND STAIRWAYS RISERS SHALL NOT BE LESS THAN 4" MIN. OR GREATER THAN 7.75" MAX. ALL TREADS SHALL BE 13" WIDE (BUT, NOT LESS THAN 9" MIN.) TYPICAL UNLESS NOTED OTHERWISE ON THE PLANS. C.R.C.

SHOWER AND TUB WALLS SHALL BE FINISHED WITH A NON-ABSORBENT SURFACE, SUCH AS TILE OR OTHER APPROVED MATERIAL, TO A MINIMUM HEIGHT OF 72" ABOVE THE DRAIN INLET. APPLY NON-ABSORBENT MATERIAL TO WATER-PROOF BUILDING PAPER AND WIRE LATH, INSTALLED OVER WATER-RESISTANT GYP. BOARD APPLIED DIRECTLY TO STUDS. C.R.C.

PROVIDE MIN. 24" CLEAR AT FRONT AND MIN. 30" CLEAR WIDTH AT ALL WATER CLOSETS.

SEISMIC STRAP WATER HEATER TO BUILDING AND INSTALL A MIN. R-12 INSULATION BLANKET. C.F.C. SECTION 510.5, & TITLE 24 REQUIREMENTS.

EXHAUST FANS IN BATHROOMS, LAUNDRY ROOMS, AND SIMILAR ROOMS SHALL BE VENTED DIRECTLY TO THE OUTSIDE AND CAPABLE OF PROVIDING A MINIMUM OF FIVE COMPLETE AIR CHANGES PER HOUR. C.R.C.

MECHANICAL AND PLUMBING PENETRATIONS PASSING ENTIRELY THROUGH BOTH PROTECTIVE MEMBRANES OF BEARING WALLS REQUIRED TO HAVE A FIRE-RESISTANCE RATING, AND WALLS REQUIRING PROTECTED OPENINGS SHALL BE PROTECTED WITH THROUGH-PENETRATION FIRE BLOCKS SUITABLE FOR THE METHOD OF PENETRATION. PER C.R.C.

PROVIDE FIREBLOCKING IN THE FOLLOWING LOCATIONS PER C.R.C.

(A) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS AND AT 10 FT. INTERVALS BOTH VERTICAL AND HORIZONTAL.

(B) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILING, AND COVE CEILING.

(C) IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN, AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF THE STAIRS IF THE WALLS UNDER THE STAIRS ARE UNFINISHED.

(D) IN OPENINGS OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS AT CEILING AND FLOOR LEVELS, WITH NON-COMBUSTIBLE MATERIALS.

(E) AT OPENINGS BETWEEN ATTIC SPACES & CHIMNEY CHASES FOR FACTORY-BUILT CHIMNEYS.

5/8" TYPE 'X' ONE HOUR FIRE RATED GYP. BOARD SHALL BE INSTALLED ON ALL WALLS AND CEILING AT GARAGE SIDE WHICH ARE COMMON TO ANY LIVING AREAS. ALSO INSTALL FIRE RATED GYPSUM BOARD AT UNDERSIDE OF ANY ENCLOSED STAIRWAYS. PER C.R.C.

ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE. ANY INSTALLED WOODSTOVE OR PELLET STOVE SHALL COMPLY WITH US EPA PHASE II EMISSION LIMITS WHERE APPLICABLE. WOODSTOVE, PELLET STOVES AND FIREPLACES SHALL ALSO COMPLY WITH APPLICABLE LOCAL ORDINANCES.

CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS.

80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH THE VOC-EMISSION LIMITS DEFINED IN THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS), HIGH PERFORMANCE PRODUCTS DATABASE OR BE CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (FRCI) FLOORSCORE PROGRAM, OR MEET CALIFORNIA DEPARTMENT OF PUBLIC HEALTH SPECIFICATION 01350.

SHOWER AND OR TUB/SHOWER WALLS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE (E.G. CERAMIC TILE, FIBERGLASS ECT.) OVER MOISTURE RESISTANT UNDERLAYMENT (E.G. WATER RESISTANT GYPSUM BOARD, GREEN BOARD ECT.) TO A HEIGHT OF NOT LESS THAN 6" ABOVE THE FLOOR. PER C.R.C. 307.2, R702.4 AND R702.3.7

ALL EGRESS DOORS SHALL BE READILY OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. PER C.R.C. SECTION R311.2

ALL EXTERIOR WINDOWS AND SLIDING DOORS SHALL BE TESTED BY AN APPROVED INDEPENDENT LABORATORY, AND BEAR A LABEL IDENTIFYING MANUFACTURE, PERFORMANCE CHARACTERISTICS AND APPROVED INSPECTION AGENCY TO INDICATE COMPLIANCE WITH AAMA/WDMA/CSA 1011.5.2/A440

EXTERIOR SIDED-HINGED DOORS SHALL BE TESTED AND LABELED AS CONFORMING TO AAMA/WDMA/CSA 1011.5.2/A440 OR COMPLY WITH SECTION R609.1 AND R609.3 OR COMPLY WITH C.R.C. SECTION R609.

**WALL LEGEND**

- EXISTING WALL
- NEW WALL
- REMOVAL WALL
- PATCH / CLOSE WALL

**OWNER:** MAHA MOHAMED & AHMED ELHASSAN  
2107 MENALTO AVENUE  
MENLO PARK, CA. 94025

**DESIGN BY:** PACIFIC BLUE DEVELOPMENTS  
32 Colleen Way  
Camarillo, CA. 93008  
(805) 304-6626 Cell



**REVISION:**


**EXISTING FLOOR PLAN  
PROPOSED FLOOR PLAN  
PLAN NOTES**

**DRAWN BY**  
Michael S. Radu

**CHECKED BY**  
PBD

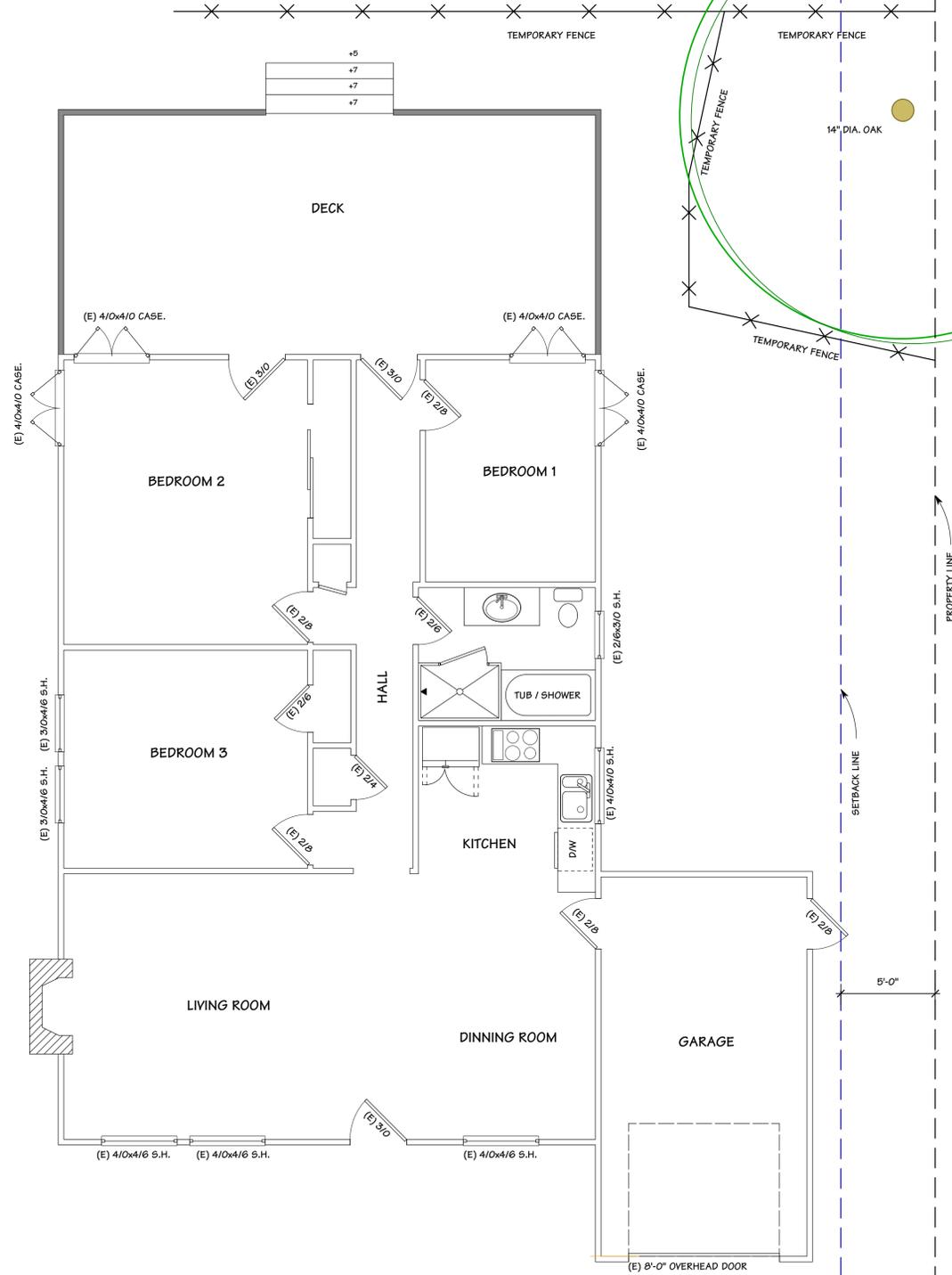
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**A-3**





**ELECTRICAL / MECHANICAL / PLUMBING NOTES**

PROVIDE ELECTRICAL SYSTEM GROUNDING PER SECTION 250 OF THE CALIFORNIA ELECTRICAL CODE TYPICAL.

SMOKE DETECTORS IN DWELLING UNITS SHALL BE HARDWIRED AND MOUNTED ON THE CEILING OR WALL AT A POINT CENTRALLY LOCATED IN THE CORRIDOR OR AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA. IF THE DWELLING UNIT HAS MORE THAN ONE STORY A DETECTOR SHALL BE INSTALLED ON EACH STORY AND IN ANY BASEMENT IF APPLICABLE. WHEN SLEEPING ROOMS ARE ON AN UPPER LEVEL, A DETECTOR SHALL BE PLACED AT THE CEILING OF THE UPPER LEVEL IN CLOSE PROXIMITY TO THE STAIRWAY. DETECTORS SHALL SOUND AN AUDIBLE ALARM IN ALL SLEEPING AREAS OF THE DWELLING UNIT IN WHICH THEY ARE LOCATED. REFER TO C.E.C.

IN EVERY HABITABLE ROOM, RECEPTACLE OUTLETS SHALL BE INSTALLED SO THAT NO POINT ALONG THE FLOOR LINE IN ANY WALL SPACE IS MORE THAN SIX FEET MEASURED HORIZONTALLY, FROM AN OUTLET IN THAT SPACE. INCLUDING ANY WALL SPACE TWO FEET OR MORE IN WIDTH AND THE WALL SPACE OCCUPIED BY FIXED PANELS IN EXTERIOR WALLS, BUT EXCLUDING SLIDING PANELS IN EXTERIOR WALLS. THE WALL SPACE AFFORDED BY FIXED ROOM DIVIDERS, SUCH AS FREE-STANDING BAR-TYPE COUNTERS, SHALL BE INCLUDED IN THE SIX FOOT MEASUREMENT. C.E.C.

ATTICS AND ROOF AREAS THAT ARE ACCESSIBLE, THE ELECTRICAL CABLE WITHIN SEVEN (7) FEET OF OPENING SHALL BE PROTECTED PER C.E.C. 320.23

**CARBON MONOXIDE ALARMS**

- (A) SPECIFY THAT CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN THIS DWELLING PER C.R.C. R315
- (B) SPECIFY THAT CARBON MONOXIDE ALARMS SHALL BE "LISTED" AS COMPLYING WITH UL2034 AND UL2075 PER C.R.C. R315.3

**RECEPTACLES SHALL,**

(A) NOT BE OVER 6' FROM OPENINGS INCLUDING ANY WALL SPACE 2' OR WIDER.

(B) NOT BE MORE THAN 12' O.C. INCLUDING SLIDING GLASS DOORS.

(C) BE G.F.I. CIRCUITS WHEN INSTALLED WITHIN 6' OF SINKS AND WHEN INSTALLED OUTDOORS PER C.E.C. ARTICLE 210-8(a).

(D) HAVE WATERPROOF COVERS WHEN INSTALLED OUTDOORS.

A 22" x 30" MINIMUM ACCESS TO FURNACE LOCATED IN THE ATTIC IS REQUIRED. IN ADDITION THE OPENING AND PASSAGEWAY MUST BE AS LARGE AS THE LARGEST COMPONENT OF THE APPLIANCE.

A SOLID 24" MIN. WIDE PLATFORM PATH FROM THE ACCESS OPENING TO THE FURNACE, WITH A RECEPTACLE AT THE FAU AND LIGHT, SWITCHED FROM THE ACCESS OPENING. PER C.M.C. 904.11

PROVIDE AN ADDITIONAL WATERTIGHT CORROSION RESISTANT METAL PAN BELOW CONDENSATE PRODUCING EQUIPMENT (IE. FURNACE) INSTALLED IN ATTIC. A SECONDARY DRAIN LINE MUST BE LOCATED AT A POINT WHERE IT CAN BE READILY OBSERVED. PER C.M.C. 310.2

ACCESS DOOR TO THE FURNACE/COOLING EQUIPMENT / COMPARTMENT SHALL BE A MINIMUM OF 24" WIDE AND A MINIMUM OF 30" CLEAR WORKING SPACE (OF A HEIGHT EQUAL TO THAT OF THE EQUIPMENT OR 6.5 FEET) ON THE FIREBOX SIDE.

PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) INSTALLED IN RESIDENTIAL BUILDINGS SHALL COMPLY WITH THE PRESCRIPTIVE REQUIREMENTS OF CGBC SECTION 4.303.1.1 THROUGH 4.303.1.4.4

PLUMBING FIXTURES AND FITTINGS REQUIRED IN CGBC SECTION 4.303.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE C.P.C AND SHALL MEET THE APPLICABLE REFERENC STANDARDS.

ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OR RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.

HVAC SYSTEM INSTALLERS ARE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS.

SMOKE DETECTORS SHALL BE INTERCONNECTED 110V WITH BATTERY BACKUP, WHICH ARE AUDIBLE IN ALL SLEEPING AREAS AT THE FOLLOWING LOCATIONS:

- (1) ALL BEDROOMS; (2) HALLWAYS LEADING TO BEDROOMS, (4) AT LEAST ONE AT EVERY LEVEL AND (5) FARTHER THAN 3 FEET HORIZONTAL DISTANCE FROM THE BATHROOM DOOR CONTAINING A BATHTUB OR SHOWER. PER C.R.C. R314.3, R314.4, R314.5.

AN ARC-FAULT CIRCUIT INTERRUPTER SHALL PROTECT ALL 120-VOLT, SINGLE PHASE, 15- AND 20-AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS. PER C.E.C. 210.12(A)

TWO SMALL APPLIANCE BRANCH CIRCUITS ARE REQUIRED FOR THE KITCHEN AND ARE LIMITED TO SUPPLYING WALL AND COUNTER SPACE OUTLETS FOR THE KITCHEN, PANTRY, BREAKFAST ROOM, DINING ROOM, OR SIMILAR AREAS. NOTE: THESE CIRCUITS CANNOT SERVE OUTSIDE PLUGS, RANGE HOOD, DISPOSALS, DISHWASHERS OR MICROWAVES — ONLY THE REQUIRED COUNTERTOP/WALL OUTLETS INCLUDING THE REFRIGERATOR. PER C.E.C. 210-11(C)(1) AND 210-52 (B)

A DEDICATED 20-AMP CIRCUIT IS REQUIRED TO SERVE THE REQUIRED BATHROOM OUTLETS. THIS CIRCUIT CANNOT SUPPLY ANY OTHER RECEPTACLES, LIGHTS, FANS, ETC. (EXCEPTION-WHERE THE CIRCUIT SUPPLIES A SINGLE BATHROOM, OUTLETS FOR OTHER EQUIPMENT WITHIN THE SAME BATHROOM SHALL BE PERMITTED TO BE SUPPLIED.) PER C.E.C. 210.52 (C)(3) AND EXCEPTION: CEC210.23(A)(1) AND (A)(2).

A DEDICATED 20-AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET. PER C.E.C. 210.11(C)(2) AND 210.52(F)

A PRESSURE ABSORBING DEVICE (OR APPROVED MECHANICAL DEVICE), LOCATED AS CLOSE AS POSSIBLE TO QUICK ACTING VALVES, THAT WILL ABSORB HIGH PRESSURES RESULTING FROM THE QUICK CLOSING OF QUICK-ACTING VALVES (I.E., DISHWASHER, WASHING MACHINE, ETC.). PER C.P.C. 609.10

EXHAUST OUTLETS SHALL BE LOCATED A MINIMUM OF 10-FT FROM DOORS, OCCUPIED AREAS AND OPERABLE WINDOWS. PER C.M.C. 407.2.2

NOTE:  
ALL LIGHTING FIXTURES SHALL BE OF HIGH EFFICACY.

Recessed luminaries with the following features per CA Energy Code 150.0(k)1C:

- a. IC-rated.
- b. Airtight (AT) per ASTM E283.
- c. Sealed with gasket or caulk.
- d. Accessible ballast or drivers from below the ceiling.
- e. Without screw base sockets, and
- f. Light sources compliant with JC8-2016-E.

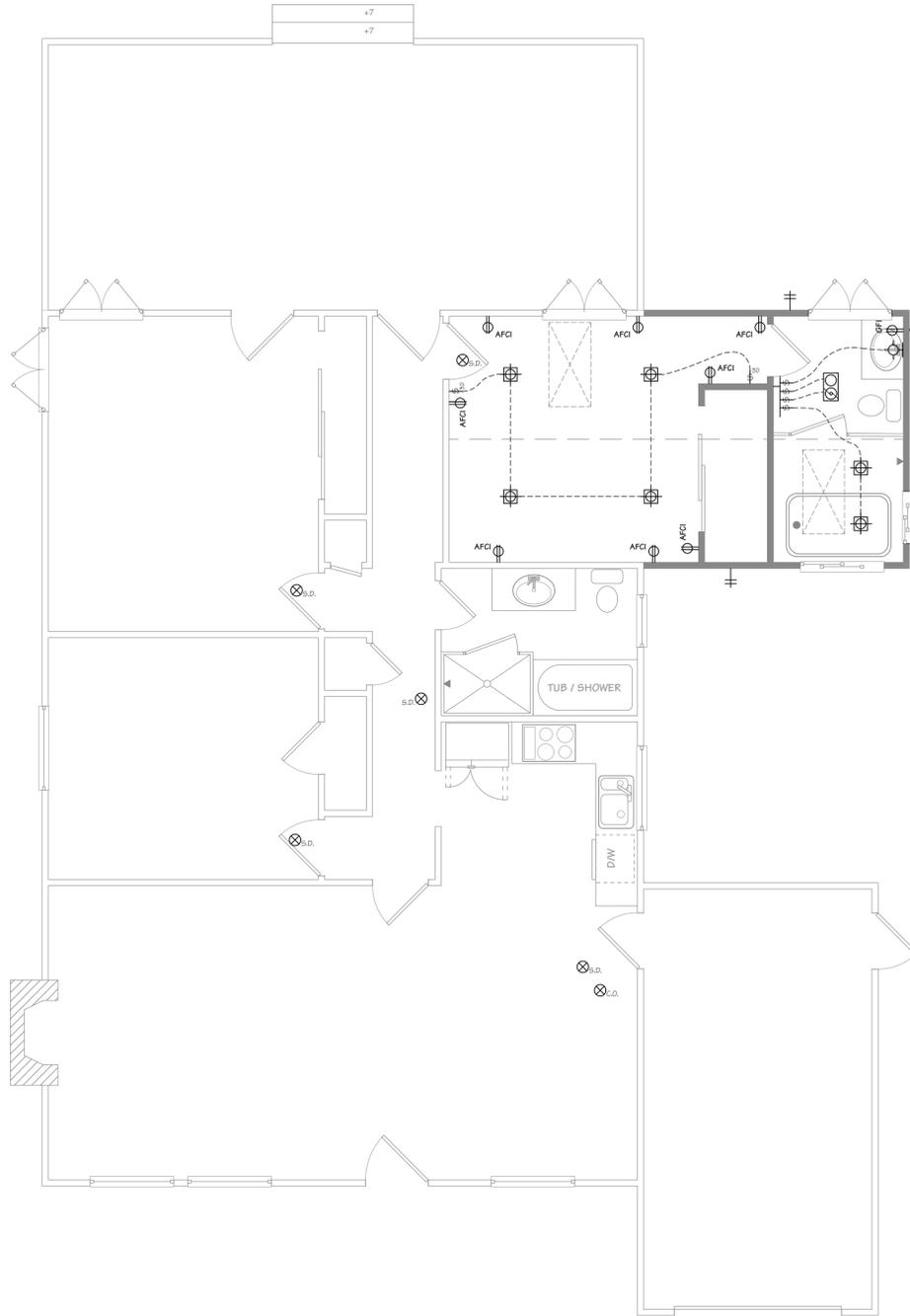
**NOTES FOR HIGH EFFICACY LIGHTING:**

A. BATHROOM LIGHTING SHOWN ON SHEET A-2, TO HAVE HIGH EFFICACY LIGHTING, OR ARE PROVIDED WITH A MANUAL-ON MOTION SENSOR. IF THE MANUAL-ON MOTION SENSOR IS PROVIDED, IT SHOULD FURTHER BE INDICATED TO TURN-OFF AUTOMATICALLY WHEN NO ONE IS PRESENT AND BE CAPABLE OF BEING TURNED ON MANUALLY WITH A SWITCH. CA ENERGY CODE 150.0(K)2J

B. GARAGE, LAUNDRY ROOM AND/OR UTILITY ROOM LIGHTING SHALL BE HIGH EFFICACY, OR HAVE A MANUAL-ON MOTION SENSOR. IF THE MANUAL-ON MOTION SENSOR IS PROVIDED, IT SHOULD FURTHER BE INDICATED TO TURN-OFF AUTOMATICALLY WHEN NO ONE IS PRESENT AND BE CAPABLE OF BEING TURNED ON MANUALLY WITH A SWITCH. CA ENERGY CODE 150.0(K)2J

C. INDICATE THAT OTHER AREAS IN THE HOME, I.E., BEDROOMS, HALLWAYS, STAIRS, DINING ROOMS, ETC., SHALL HAVE HIGH EFFICACY LIGHTING CONTROLLED BY DIMMERS OR VACANCY SENSOR FOR LIGHTING CONTROL, EXCEPT CLOSETS SMALLER THAN 70 SQUARE FEET AND HALLWAYS. CA ENERGY CODE 150.0(K)1A, 2K AND TABLE 150.0-A

D. OUTDOOR LIGHTING ATTACHED TO THE BUILDING, MUST BE HIGH EFFICACY, OR CONTROLLED BY BOTH MOTION SENSOR AND PHOTO-CONTROL DEVICES. NOTE THAT LIGHTING NOT ATTACHED TO THE BUILDING (I.E., LANDSCAPER LIGHTING) IS EXEMPT. CA ENERGY CODE 150.0(K)3A



**ELEC. /MECH. /PLUMB. PLAN**

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

**ELECTRICAL/MECHANICAL SYMBOL LEGEND**

	LIGHT SWITCH, SINGLE POLE; +48" U.O.N.
	LIGHT SWITCH, 3-WAY; +48" U.O.N.
	LIGHT SWITCH, DIMMABLE; +48" U.O.N.
	LIGHT SWITCH, VACANCY SENSOR; +48" U.O.N.
	CEILING FAN/LIGHT CONTROL
	OUTLET, DUPLEX CONVENIENCE - 20A, 120V; +12" U.O.N.
	OUTLET, SAME AS ABOVE EXCEPT GFI TYPE
	OUTLET, SAME AS ABOVE EXCEPT GFI & WATER PROOF
	OUTLET, ARC-FAULT CIRCUIT INTERRUPTER
	OUTLET, IN CAB FACE, GFI IN KITCHEN
	SWITCHED OUTLET, 1/2 HOT - 20A, 120V; +12" U.O.N.
	OUTLET, FOURPLEX CONVENIENCE - 20A, 120V +12" U.O.N.
	OUTLET, INDIVIDUAL APPLIANCE - 20A, 220V
	UNDER-COUNTER OUTLET
	COUNTER-TOP OUTLET
	FLOOR OUTLET - 20A, 120V
	DOT ADJACENT TO SYMBOL INDICATES MOUNTING ABOVE COUNTER TOP
	PENDANT MOUNTED LIGHT FIXTURE
	SURFACE MOUNTED LIGHT FIXTURE
	LOW VOLTAGE RECESSED FIXTURE
	RECESSED CEILING LIGHT FIXTURE
	RECESSED FLOURESCENT CEILING LIGHT FIXTURE
	ACCENT LIGHT
	WALL MOUNTED LIGHT FIXTURE
	WALL SCONCE
	FLOURESCENT FIXTURE, UNDER CAB MNTD. DIRECT WIRE, LENGTH VARIES
	SURFACE MOUNTED FLOURESCENT FIXTURE
	FAN/FLOURESCENT LIGHT
	EXHAUST FAN (CEILING UNIT U.O.N.)
	DISPOSAL
	TELEPHONE OUTLET +12" U.O.N.
	FLOOR MOUNTED TELEPHONE JACK
	TELEVISION HOOKUP
	PUSH BUTTON
	DOORBELL CHIME
	THERMOSTAT
	JUNCTION BOX
	MOTOR CONNECTION
	APPROVED SMOKE DETECTOR - CEILING MOUNTED & WIRED TO MAIN SERVICE WITH BATTERY BACK-UP
	APPROVED CARBON MONOXIDE DETECTOR - CEILING MOUNTED & WIRED TO MAIN SERVICE WITH BATTERY BACK-UP
	GARAGE DOOR OPENER
	GAS OUTLET
	F.G. KEY
	H.B. HOSE BIB w/ VACUUM BREAKER
	AIR RETURN
	AIR REGISTER AT FLOOR
	AIR REGISTER @ WALL
	AIR REGISTER @ CEIL.
	MOTION / SOLAR FLOOD LIGHT
	CEILING FAN

**OWNER:**  
MAHA MOHAMED & AHMED ELHASSAN  
2107 MENALTO AVENUE  
MENLO PARK, CA. 94025

**DESIGN BY:**  
PACIFIC BLUE DEVELOPMENTS  
39 Colleen Way  
Camarillo CA. 93008  
(805) 304-6626 Cell



**REVISION:**


**ELEC. / MECH. / PLUMB. PLANS PLAN NOTES**

**DRAWN BY**  
Michael S. Radu

**CHECKED BY**  
PBD

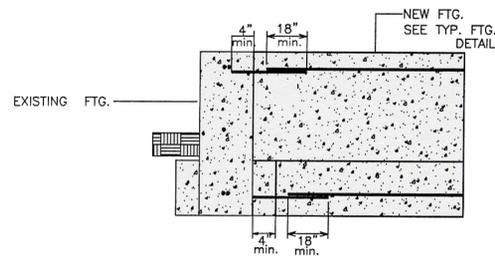
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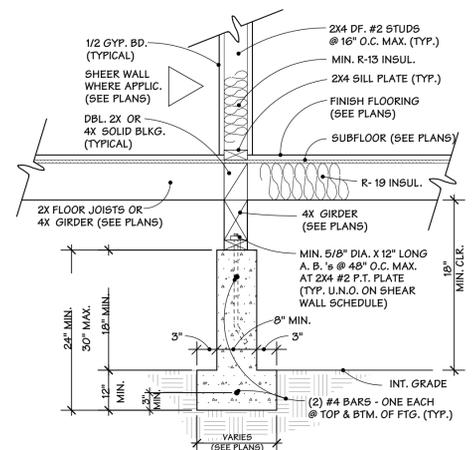
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**A-5**



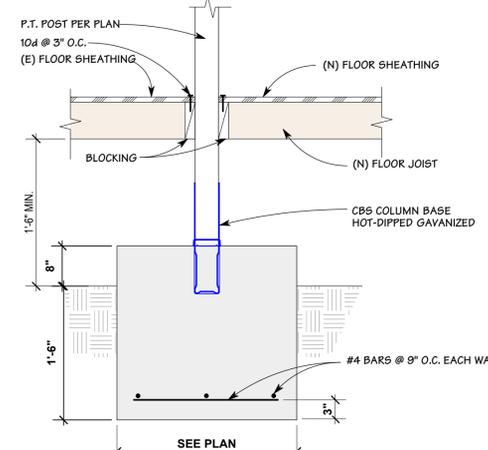
1 JOINT DETAIL

NTS.



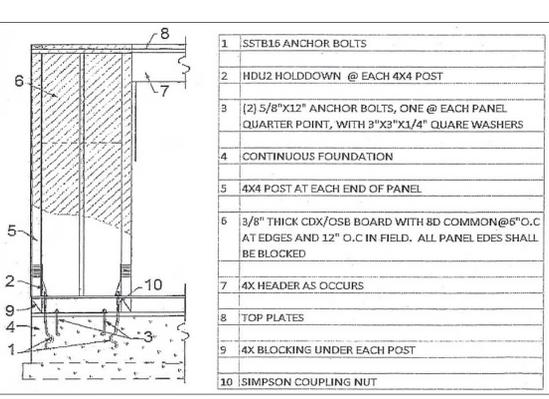
2 NEW / EXISTING FLOOR TRANSITION

NTS.



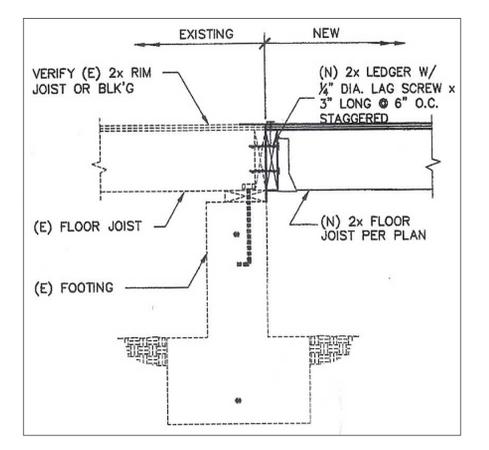
3 ISOLATED PAD FOOTING

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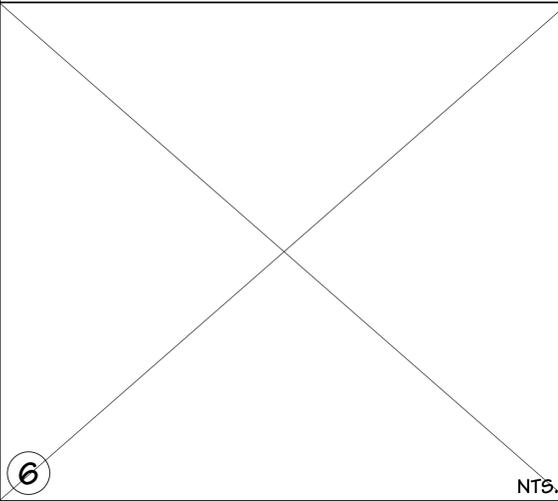
4 ALTERNATE BRACED WALL

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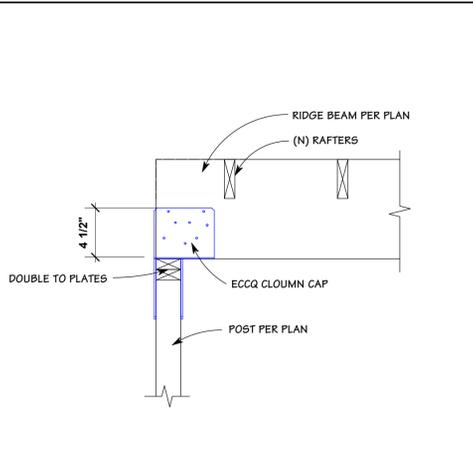
5 LEDGER ATTACHMENT

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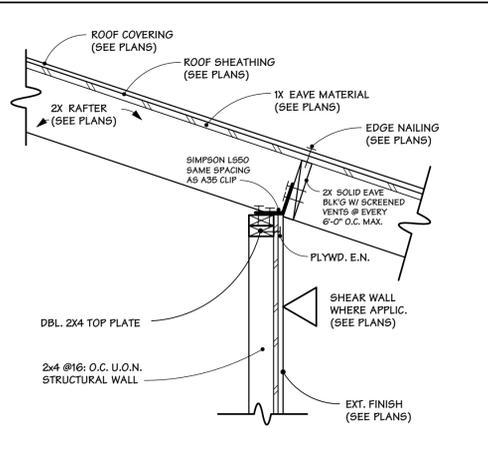
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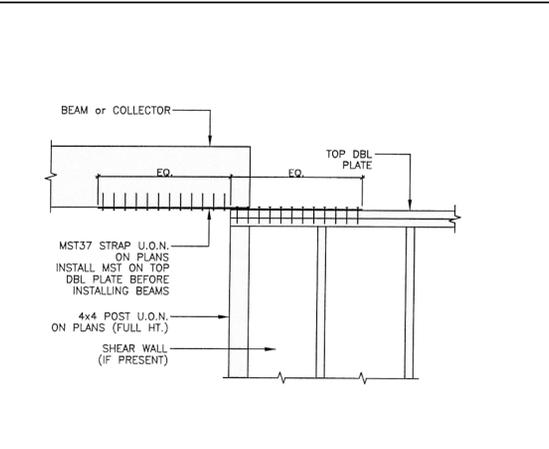
7 END OF CEILING BEAM

NTS.



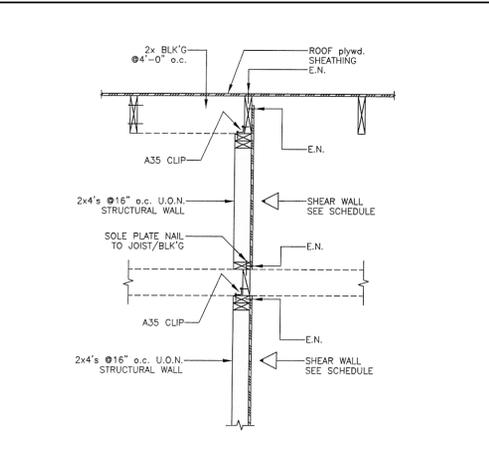
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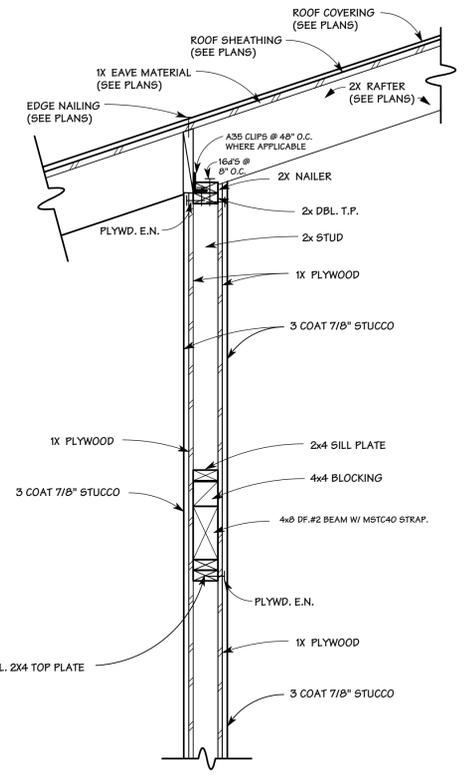
9 DRAG STRUT CONNECTION

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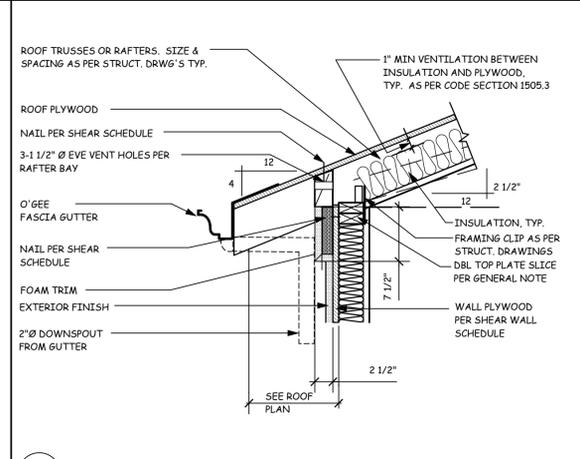
10 BRACE TRANSFER AT ROOF

NTS.



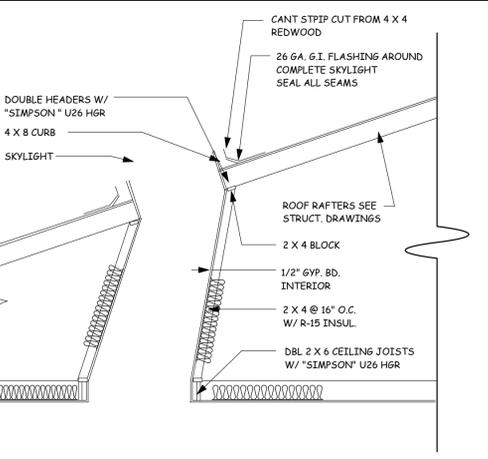
11 CRIPPLE WALL W/ BEAM DETAIL

NTS.



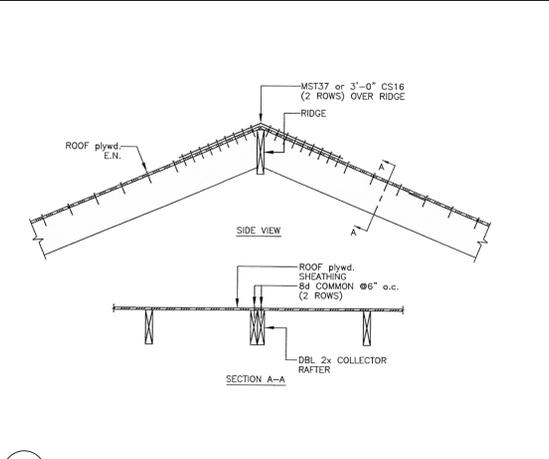
12 EAVE DETAIL

NTS.



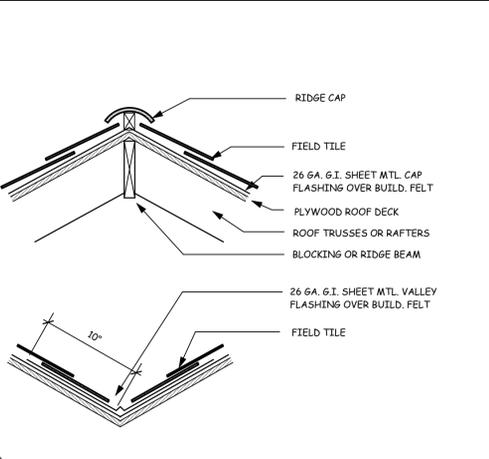
13 SKYLIGHT DETAIL

NTS.



14 RIDGE SECTION DETAIL

NTS.



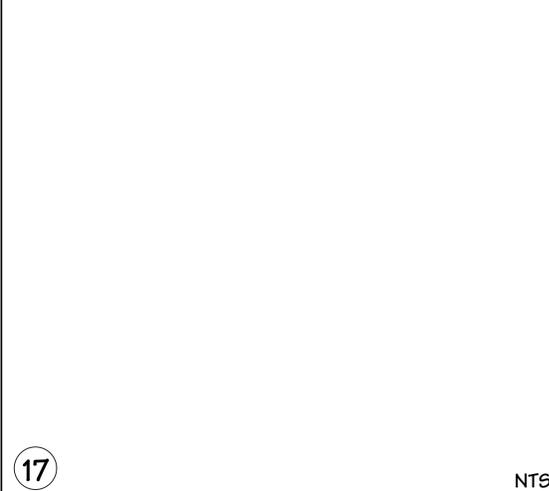
15 ROOF / VALLEY FLASHING DETAIL

NTS.



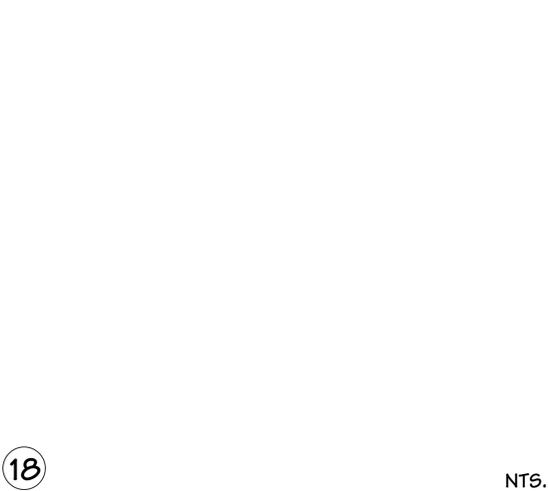
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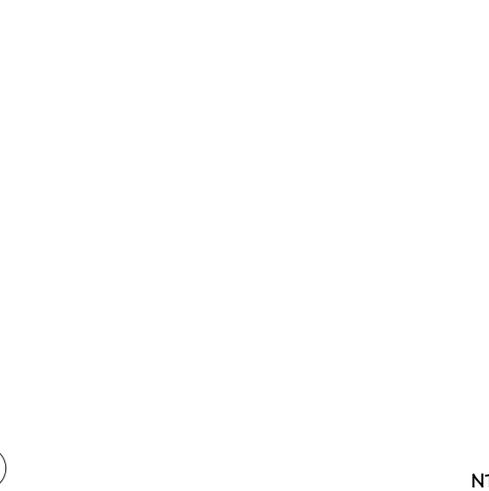
17

NTS.



18

NTS.



19

NTS.

OWNER: MAHA MOHAMED & AHMED ELHASSAN  
2107 MENALTO AVENUE  
MENLO PARK, CA. 94025

DESIGN BY:  
PACIFIC BLUE DEVELOPMENTS  
32 Colleen Way  
Campbell, CA. 95008  
(408) 504-6626 Cell



REVISION:	

DRAWN BY	Michael S. Radu
CHECKED BY	PBD
JOB NO.	24-20
DATE	11/24/2024
SCALE	AS SHOWN
SHEET	A-6

DETAILS	
DRAWN BY	Michael S. Radu
CHECKED BY	PBD
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DATE	11/24/2024
SCALE	AS SHOWN
SHEET	A-6

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 1 of 11

Table with 11 columns: Q1-Q11. Rows include Project Name, City, Zip code, Climate Zone, Building Type, Project Scope, Addition Cond. Floor Area, Existing Cond. Floor Area, Total Cond. Floor Area, ADU Bedroom Count, Fuel Type.

Table with 3 columns: Q1-Q3. Rows include Building Complex with Computer Performance, Building does not require field testing or HERS verification, Building does not incorporate Special Features.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 2 of 11

Table with 7 columns: Energy Use, Standard Design Source Energy, Proposed Design Source Energy, Compliance Margin (EDR1), Compliance Margin (EDR2).

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 3 of 11

Table with 5 columns: Gross EU1, Net EU1, Standard Design (kBtu/ft² · yr), Proposed Design (kBtu/ft² · yr), Compliance Margin (kBtu/ft² · yr), Margin Percentage.

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

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.

Table with 7 columns: Q1-Q7. Rows include Project Name, Conditioned Floor Area, Number of Dwelling Units, Number of Bedrooms, Number of Zones, Number of Ventilation Cooling Systems, Number of Water Heating Systems.

Table with 7 columns: Q1-Q7. Rows include Zone Name, Zone Type, HVAC System Name, Zone Floor Area, Avg. Ceiling Height, Water Heating System 1, Status.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 4 of 11

Table with 11 columns: Q1-Q11. Rows include Name, Zone, Construction, Azimuth, Orientation, Gross Area, Window and Door Area, Tilt, Wall Exceptions, Status, Verified Existing Condition.

Table with 14 columns: Q1-Q14. Rows include Name, Zone, Construction, Azimuth, Orientation, Area, Skylight Area, Roof Reflectance, Roof Emittance, Cool Roof, Status, Verified Existing Condition.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 5 of 11

Table with 10 columns: Q1-Q10. Rows include Name, Construction, Type, Roof Slope, Roof Reflectance, Radiant Barrier, Cool Roof, Status, Verified Existing Condition.

Table with 16 columns: Q1-Q16. Rows include Name, Type, Surface, Orientation, Azimuth, Width, Height, Area, U-factor, SHGC, SHGC Source, Exterior shading, Status, Verified Existing Condition.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 6 of 11

Table with 16 columns: Q1-Q16. Rows include Name, Type, Surface, Orientation, Azimuth, Width, Height, Mult., Area, U-factor, U-factor Source, SHGC, SHGC Source, Exterior shading, Status, Verified Existing Condition.

Table with 8 columns: Q1-Q8. Rows include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, Assembly Layers.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 7 of 11

Table with 8 columns: Q1-Q8. Rows include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, Assembly Layers.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 8 of 11

Table with 8 columns: Q1-Q8. Rows include Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, Assembly Layers.

Table with 5 columns: Q1-Q5. Rows include Quality Insulation Installation, High R-value Spray Foam Insulation, Building Envelope Air Leakage, CFMSO, CFMSO.

Table with 12 columns: Q1-Q12. Rows include Name, System Type, Distribution Type, Water Heater Name, Number of Units, Solar Heating System, Compact Distribution, HERS Verification, Water Heater Name, Status, Verified Existing Condition, Existing Water Heating System.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 9 of 11

Table with 15 columns: Q1-Q15. Rows include Name, Heating Element Type, Tank Type, # of Units, Tank Vol., Heating Efficiency, Efficiency, Rated Input, Input Rating, Tank Insulation, Standby Loss, 1st HC Rating, Tank Location, Status, Verified Existing Condition.

Table with 7 columns: Q1-Q7. Rows include Name, Pipe Insulation, Parallel Piping, Compact Distribution, Compact Distribution Type, Recirculation Control, Shower Drain Water Heat Recovery.

Table with 12 columns: Q1-Q12. Rows include Name, System Type, Heating Equipment Name, Heating Equipment Count, Cooling Unit Name, Cooling Equipment Count, Fan Name, Distribution Name, Required Thermostat Type, Status, Verified Existing Condition, Existing HVAC System.

Table with 5 columns: Q1-Q5. Rows include Name, System Type, Number of Units, Heating Efficiency, Heating Unit Brand.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 10 of 11

Table with 16 columns: Q1-Q16. Rows include Name, Type, Design Type, Duct Ins. R-value, Duct Location, Supply Return, Surface Area, Bypass Duct, Duct Leakage, HERS Verification, Status, Verified Existing Condition, Existing Distribution System, New Ducts >= 25 R.

Table with 4 columns: Q1-Q4. Rows include Name, Type, Fan Power (Watts/CFM), Name.

HERS RATER VERIFICATION OF EXISTING CONDITIONS

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Menalto Ave Residence Calculation Date/Time: 2024-11-19T12:37:25-08:00 Page 11 of 11

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

Documentation Author Name: Nicholas Bignardi, Signature Date: 11/19/2024, Address: 5770 Winfield Blvd #15, San Jose, CA 95123, Phone: 408-866-1620.

RESPONSIBLE PERSON'S DECLARATION STATEMENT: I, I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.

Responsible Designer Name: Ascending Awareness, Signature Date: 11/19/2024, Address: 5770 Winfield Blvd #15, San Jose, CA 95123, Phone: 877-637-5267.

Registration Number: CA Building Energy Efficiency Standards - 2022 Residential Compliance Registration Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220901

FRI Energy Consultants, LLC 5770 Winfield Blvd #15 San Jose, CA 95123 Phone: 408-866-1620

MENALTO AVE RESIDENCE 2107 MENALTO AVENUE MENLO PARK, CA 94025

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. (04/02/22)	
<b>Building Envelope:</b>	
§ 110.6(a)1:	<b>Air Leakage.</b> 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-W00M/CSA 1011.5/2/A440-2014.*
§ 110.6(a)5:	<b>Labeling.</b> Fenestration products and exterior doors must have a label meeting the requirements of § 110.111(a).
§ 110.6(b):	<b>Field-fabricated exterior doors and fenestration products</b> must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or 110.6-C for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	<b>Air Leakage.</b> 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):	<b>Insulation Certification by Manufacturers.</b> Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHSG).
§ 110.8(b):	<b>Insulation Requirements for Heated Slab Floors.</b> Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(c):	<b>Roofing Products Solar Reflectance and Thermal Emittance.</b> The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(d) and be labeled per § 110.113 when the installation of a cool roof is specified on the CPD.
§ 110.8(d):	<b>Radiant Barrier.</b> When required, radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	<b>Roof Deck, Ceiling and Rafter R-Value.</b> Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-1.154. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling, or area-weighted average U-factor must not exceed 0.403. 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):	<b>Loose-fill Insulation.</b> Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	<b>Wall Insulation.</b> 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):	<b>Raised-floor Insulation.</b> Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	<b>Slab Edge Insulation.</b> 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 perms 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):	<b>Vapor Retarder.</b> In climate zones 1 through 16, the earth floor or 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:	<b>Vapor Retarder.</b> 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(h):	<b>Fenestration Products.</b> 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.*
<b>Fireplaces, Decorative Gas Appliances, and Gas Log:</b>	
§ 110.5(c):	<b>Pilot Light.</b> Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	<b>Closable Doors.</b> Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	<b>Combustion Intake.</b> 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 light-tight damper or combustion-air control device.
§ 150.0(e)3:	<b>Flue Damper.</b> Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
<b>Space Conditioning, Water Heating, and Plumbing System:</b>	
§ 110.4-§ 110.3:	<b>Certification.</b> 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):	<b>HVAC Efficiency.</b> Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N.*
§ 110.2(b):	<b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> 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-off 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):	<b>Thermostats.</b> All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.
§ 110.3(c)3:	<b>Tank.</b> Electric 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:	<b>Isolation Valves.</b> 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.

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary	
§ 110.5:	<b>Pilot Lights.</b> 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(n)1:	<b>Building Cooling and Heating Loads.</b> 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(m)3A:	<b>Clearances.</b> 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(m)3B:	<b>Liquid Line Drier.</b> 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(m)1:	<b>Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.</b> All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code.*
§ 150.0(m)2:	<b>Insulation Protection.</b> 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(m)1:	<b>Gas or Propane Water Heating Systems.</b> 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(m)3:	<b>Solar Water-heating Systems.</b> 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.
<b>Ducts and Fans:</b>	
§ 110.8(d)3:	<b>Ducts.</b> 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:	<b>CMC Compliance.</b> All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSIS/MACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition Portions of supply-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 (RAS 1.4.3.3) 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 other mesh or tapes must be used to seal openings greater than 1/4". 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:	<b>Factory-Fabricated Duct Systems.</b> 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 tapes are used in combination with mastic and draw bands.
§ 150.0(m)3:	<b>Field-Fabricated Duct Systems.</b> 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:	<b>Backdraft Damper.</b> Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	<b>Gravity Ventilation Dampers.</b> 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:	<b>Protection of Insulation.</b> Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation protection 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:	<b>Porous Inner Core Flex Duct.</b> 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:	<b>Duct System Sealing and Leakage Test.</b> 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 RA.3.1.
§ 150.0(m)12:	<b>Air Filtration.</b> 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 6000 pcf Equations 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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2022 Single-Family Residential Mandatory Requirements Summary	
§ 150.0(m)13:	<b>Space Conditioning System Airflow Rate and Fan Efficiency.</b> 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 efficiency ≥ 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 efficiency ≥ 0.2 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA.3.1.
<b>Ventilation and Indoor Air Quality:</b>	
§ 150.0(o)1:	<b>Requirements for Ventilation and Indoor Air Quality.</b> 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:	<b>Central Fan Integrated (CFI) Ventilation Systems.</b> 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)1B(iii). 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:	<b>Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and Townhouses.</b> 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)1C-iii.
§ 150.0(o)1G:	<b>Local Mechanical Exhaust.</b> Kitchens and bathrooms must have local mechanical exhaust; nonvented kitchens must have demand-controlled exhaust systems meeting § 150.0(o)1G-i. Airflow must be measured by the installer per § 150.0(o)1G-ii, and rated for sound per § 150.0(o)1G-i.
§ 150.0(o)1H8:	<b>Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.</b> 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 RA.3.1. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 § 7.2 at no less than the minimum airflow rates required by § 150.0(o)1C.
§ 150.0(o)2:	<b>Field Verification and Diagnostic Testing.</b> Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficiency must be verified in accordance with Reference Residential Appendix RA.3.7. Vented range hoods must be verified per Reference Residential Appendix RA.3.7.4 to confirm it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per § 150.0(o)1G.
<b>Pool and Spa Systems and Equipment:</b>	
§ 110.4(a):	<b>Certification by Manufacturers.</b> 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 MACDBS; 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:	<b>Piping.</b> Any pool or spa heating system or equipment must be installed with at least 3/8 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:	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	<b>Directional Inlets and Time Switches for Pools.</b> 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:	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	<b>Pool Systems and Equipment Installation.</b> Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.
<b>Lighting:</b>	
§ 110.9:	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	<b>Luminaire Efficacy.</b> 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 integral to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	<b>Screw based luminaires.</b> Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1C:	<b>Recessed Downlight Luminaires in Ceilings.</b> 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:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> 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:	<b>Blank Electrical Boxes.</b> 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:	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(p).

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§ 150.0(k)1G:	<b>Screw based luminaires.</b> Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> 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:	<b>Light Sources in Drawers, Cabinets, and Linen Closets.</b> Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or to 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:	<b>Interior Switches and Controls.</b> All forward phase out dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	<b>Interior Switches and Controls.</b> Exhaust fans must be controlled separately from lighting systems.*
§ 150.0(k)2C:	<b>Accessible Controls.</b> Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off.*
§ 150.0(k)2D:	<b>Multiple Controls.</b> 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:	<b>Mandatory Requirements.</b> Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	<b>Energy Management Control Systems.</b> 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:	<b>Automatic Shutoff Controls.</b> In bedrooms, 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:	<b>Dimmers.</b> 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 out dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	<b>Independent Controls.</b> 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:	<b>Residential Outdoor Lighting.</b> 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/off switch 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:	<b>Internally Illuminated Address Signs.</b> Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	<b>Residential Garages for Eight or More Vehicles.</b> Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 135.1, 139.4, 140.6, and 141.0.
<b>Solar Readiness:</b>	
§ 110.10(a)1:	<b>Single-Family Residences.</b> 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(a)1e.
§ 110.10(a)2:	<b>Minimum Solar Zone Area.</b> 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(a)2:	<b>Azimuth.</b> All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(a)3:	<b>Shading.</b> The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(a)3B:	<b>Shading.</b> 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(a)4:	<b>Structural Design Loads on Construction Documents.</b> 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(a)5:	<b>Interconnection Pathways.</b> 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(a)6:	<b>Documentation.</b> A copy of the construction documents or comparable document indicating the information from § 110.10(a)1-c) must be provided to the occupant.
§ 110.10(a)6:	<b>Main Electrical Service Panel.</b> The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(a)6:	<b>Main Electrical Service Panel.</b> 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."
<b>Electric and Energy Storage Ready:</b>	

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2022 Single-Family Residential Mandatory Requirements Summary	
§ 150.0(i)6:	<b>Energy Storage System (ESS) Ready.</b> All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backup 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(i), 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(i):	<b>Heat Pump Space Heater Ready.</b> 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(i):	<b>Electric Cooktop Ready.</b> 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(i):	<b>Electric Clothes Dryer Ready.</b> 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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HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY			
Project Name	Menalto Ave Residence	Date	11/19/2024
System Name	HVAC System	Floor Area	1,427
<b>ENGINEERING CHECKS</b>		<b>SYSTEM LOAD</b>	
Number of Systems	1		
<b>Heating System</b>		<b>COIL COOLING PEAK</b>	
Output per System	80,000	CFM	Sensible
Total Output (Btu/h)	80,000	1,278	24,975
Output (Btu/h)att	56.1	Latent	529
		CFM	870
<b>Cooling System</b>		<b>COIL HTG. PEAK</b>	
Output per System	0.0	Return Vented Lighting	2,181
Total Output (Btu/h)	0.0	Return Air Ducts	0.0
Total Output (Tons)	0.0	Return Fan	0.0
Total Output (Btu/h)eqt	0.0	Ventilation	0.0
Total Output (eqt/Ton)	0.0	Supply Fan	0.0
		Supply Air Ducts	2,181
<b>TOTAL SYSTEM LOAD</b>		<b>TOTAL SYSTEM LOAD</b>	
		27,863	529
<b>Air System</b>		<b>37,175</b>	
CFM per System	0	<b>HVAC EQUIPMENT SELECTION</b>	
Airflow (cfm)	0.0	2013 - Present Fan	0
Airflow (cfm/sqft)	0.0		0
Airflow (cfm/Ton)	0.0		80,000
Outside Air (%)	0.0%	Total Adjusted System Output	80,000
Outside Air (cfm/sqft)	0.00	(Adjusted for Peak Design conditions)	
Note: values above given at ARI conditions			
<b>TIME OF SYSTEM PEAK</b>			
		Aug 3 PM	Jan 1 AM
<b>HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)</b>			
<b>COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)</b>			

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