Curningham Residence Title 24 Energy Compliance Require The requirements listed below reflect the requirements in the energy compliance documents made during construction should be reviewed with Red Tape Express to confirm energy compliance made during construction should be reviewed with Red Tape Express to confirm energy compliance setting 1. PV System The house shall have a PV system rated at 1.94 kWdc min. PV panels True North. 11. Heating & Cooling Split System Heat Pump Cooling SER: 16.0 min. EER: 12.5 min. Heating Hill. Water Heater Heat Pump Water Heater Energy Factor: 3.2 Location: Garage Make: Rheen Model: PROPH50 T2 RH375-15 (No substitution allowe calculations. Capacity: 50 gallons IV. Insulation Floor: R-30 Wals: R-21 Boof: R-30 at the ceiling plus R-19 between trusses, below the ro V. Windows VI. Insulation Floor: R-30 Wals: R-21 Boof: R-33 at the ceiling plus R-19 between trusses, below the ro V. Windows VI. Doors with Glass Doors of Voil plane glass Suncoat Low E coating Viii. Solid Core Doors Generic Default Solid Core VII. Solid Core Doors Generic Default Solid Core U-Factor: 0.21 Bool SHGC: VIII. Kitchen Hood Must be listed in the HVI Certified products Directory. Will be verified https://www.hvi.nor/n/www.hvi.nor/n/wicertified-products.directory/ VIII. Kitchen Hood Must plisteen Airing an Africo and Fan Watage	ed without updated energy and the statistical states and the statistical statistical states and the states and the statistical states and the stat	SORY DWELLIN Shellie cunningham 290 grandview ave Novato, ca	IG UNIT FOR
	CODE COMPLIANCE	SHEET INDEX	SQUARE FOOTAGE SU
	COMPLIES WITH THE 2019 CBC, CRC, CMC, CPC, CEC, AND TITLE 24 ENERGY REQUIRMENTS & CAL GREEN.	DRAWING LIST CS COVER SHEET SP SITE PLAN BMP BEST MANAGEMENT PRACTICES 1 ELEVATIONS 2 FLOOR PLAN 3 FOUNDATION / ROOF FRAMING	TOTAL LIVING SPACE COVERED PORCH
	DIFERRED SUBMITTAL:	4 FOUNDATION NOTES 5 SECTION / DETAILS	ASSESSORS PARCEL
	- PV SYSTEM	SC1a STANDARD NOTES (STRUCTURAL) SC2 STANDARD NOTES (STRUCTURAL) SD1 STANDARD DETAILS (STRUCTURAL) T24-1 TITLE 24 T24-2 TITLE 24 T24-3 CAL GREEN T24-4 CAL GREEN T24-5 CAL GREEN	157—103—56
	OCCUPANC	CY GROUP R-3 TYPE OF (CONSTRUCTION V-B
	STRUCTURAL OBSE BE REQUIRED BY T FOR SEISMIC RESIS REQUIREMENTS	RVATION SHALL The engineer Stance & Wind	A SPECIAL INSPEC Required for all drilled piers, pil cassons.

ANTHONY B. COLBERT

DESIGN Pacific Modern Homes, Inc. PO Box 670 Elk Grove CA 95759 916 685-9514

SITE PLAN Bill Bagby Drafting 81 Purrington Road Petaluma, CA 94952 707-765-9113

STRUCTURAL ENGINEER Norman Scheel 5022 Sunrise Blvd. Fair Oaks CA 95628 916 536-9585

ENERGY CONSULTANT Red Tape Express 6015 Bear Creek Court Elk Grove CA 95758 916 684-6687

GEOLOGIST Reese & Associates 134 Lystra Court Santa Rosa CA 95403 707 528- 2837

AGE SUMMARY

902 S.F. 118 S.F.

PARCEL NO.



REVI	SIONS	BY
PACIFIC MODERN HOMES	P.O. BOX 670 Elk grove, ca.	95759 PHONE:(916) 685-9514
<		PACIFIC MODERN HOMES, INC.
SHEET	COVER SHEET	
SHELLIE CUNNINGEN #9773	290 GRANDVIEW AVE. Novato ca	
DATE: SCALE: N DRAWN B PLAN NO.	ОЦИ И И И И И И И И И И И И И И И И И И	PORTOLA



Water Pollution **Prevention Program**

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project. Please note: the wet season begins on October 1 and continues through April 30.

Clean Water. Healthy Community.

Materials & Waste Management



Non-Hazardous Materials

- Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- □ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- □ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Maintenance and Parking

- Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- □ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- □ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, steam cleaning equipment, etc.

Spill Prevention and Control

- □ Keep spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- □ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- Clean up spills or leaks immediately and dispose of cleanup materials properly.
- Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- □ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Construction Best Management Practices (BMPs)

Equipment Management & Spill Control







Erosion Control

- □ Schedule grading and excavation work for dry weather only.
- □ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- Seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.

Sediment Control

- □ Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, fiber rolls, berms, etc.
- □ Prevent sediment from migrating offsite by installing and maintaining sediment controls, such as fiber rolls, silt fences, or sediment basins.
- □ Keep excavated soil on the site where it will not collect into the street.
- □ Transfer excavated materials to dump trucks on the site, not in the street.
- Contaminated Soils □ If any of the following conditions are
- observed, test for contamination and contact the Regional Water Quality Control Board:
- Unusual soil conditions, discoloration, or odor.
- Abandoned underground tanks.
- Abandoned wells
- Buried barrels, debris, or trash.





- Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- □ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- Completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- □ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- □ If sawcut slurry enters a catch basin, clean it up immediately.



- storm drain.



- may be required.
- off-site for proper disposal.

Storm drain polluters may be liable for fines of up to \$10,000 per day!

Concrete, Grout & Mortar Application

□ Store concrete, grout and mortar under cover, on pallets and away from drainage areas. These materials must never reach a

□ Wash out concrete equipment/trucks offsite or in a contained area, so there is no discharge into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage. □ Collect the wash water from washing exposed aggregate concrete and remove it

for appropriate disposal offsite.

Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site. Divert run-on water from offsite away from all disturbed areas or otherwise ensure compliance. □ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap

□ In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer to determine whether testing is required and how to interpret results. Contaminated groundwater must be treated or hauled



Painting & Paint Removal

ANTHONY B. COLBERT



Painting cleanup

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or surface waters.
- □ For water-based paints, paint out brushes to the extent possible. Rinse to the sanitary sewer once you have gained permission from the local wastewater treatment authority. Never pour paint down a drain.
- □ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of residue and unusable thinner/solvents as hazardous waste.

Paint removal

- Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyltin must be disposed of as hazardous waste.
- □ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.

Landscape Materials



- Contain stockpiled landscaping materials by storing them under tarps when they are not actively being used.
- □ Stack erodible landscape material on pallets. Cover or store these materials when they are not actively being used or applied.
- Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.









KEY NOTES:

1. NOT IN USE.

- 2. SMOKE AND CARBON MONOXIDE COMBO DETECTORS (KIDDLE MODEL #21008046 OR SIMILAR) SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. THE ALARM SHALL BE AUDIBLE IN ALL SLEEPING AREAS OF THE DWELLING, AND ALL SMOKE/CARBON MONOXIDE DETECTORS SHALL BE INTERCONNECTED IN A MANNER THAT THE ACTIVATION OF ONE WILL ACTIVATE ALL. ALARMS SHALL BE INSTALLED IN EACH SLEEPING ROOM, OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS PER CRC 314.3. ALARMS SHALL BE LISTED AS COMPLYING WITH UL 2034 & UL 2075.
- 3. KITCHEN LIGHTING TO HAVE AN EFFICACY OF AT LEAST 40 LUMENS PER WATT, AND CONTROLLED BY THE MOST ACCESSIBLE SWITCH(ES) IN THE KITCHEN.
- 4. FULL BATH MUST HAVE AT LEAST ONE LUMINARE WITH LAMPS WITH AN EFFICACY OF AT LEAST 40 LUMENS PER WATT AND AN OCCUPANCY SENSOR.
- 5. SHOWER AND/OR TUB-SHOWER COMBINATIONS ARE TO BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING VALVE TYPE. THE WATER TEMPERATURE MAXIMUM IS A SETTING OF 120 DEGREES F. SHOWER WALLS SHALL BE FINISHED WITH A HARD, NON-ABSORBENT SURFACE TO A HEIGHT NOT LESS THAN 6'-0"ABOVE THE FLOOR.(CRC R307.2) "GREEN BOARD" CAN NO LONGER BE USED. FIBER CEMENT, FIBERMAT REINFORCED CONCRETE, GLASS MAT GYPSUM BACKERS, OR FIBER REINFORCED GYPSUM BACKERS SHALL BE USED AS A BASE FOR CERAMIC WALL TILES IN TUB & SHOWER AREAS AS WELL AS WALL PANELS IN SHOWER AREAS.(CRC R702.4.2).
- 6. A 22" X 30" ATTIC ACCESS IS REQUIRED FOR ALL ATTICS WHICH ARE MORE THAN 30" IN HEIGHT. THE ATTIC ACCESS NEEDS TO BE IN AN ACCESSIBLE LOCATION AND IS NOT TO BE LOCATED ABOVE A CLOSET SHELF OR POLE 30" MINIMUM HEADROOM IS REQUIRED ABOVE THE ACCESS. ATTICS WITH EQUIPMENT NEED A 30" X 30" ACCESS. EXCEPTIONS: THE ACCESS MAY BE 22" X 30" WHEN TRUSSES ARE USED, PROVIDED THE LARGEST PIECE OF EQUIPMENT CAN BE REMOVED THROUGH THE OPENING.
- 7. WATER HEATER TO HAVE SEISMIC BRACING AS PER MANUFACTURERS INSTRUCTIONS OR STATE ARCHITECT OFFICE GUIDELINES. ALL STORAGE TYPE WATER HEATERS NEED A TEMPERATURE/PRESSURE RELIEF VALVE WITHIN A 3/4" HARD PIPE DRAIN WHICH TERMINATES 6" TO 24" ABOVE GRADE AND POINTING DOWNWARD. THE DRAIN PIPE SHALL MAINTAIN A DOWNWARD SLOPE TO THE EXTERIOR.
- 8. THE CLOTHES DRYER EXHAUST DUCT IS LIMITED TO 14' TOTAL LENGTH, INCLUDING ELBOWS, FROM THE CLOTHES DRYER TO THE POINT OF TERMINATION REDUCE THIS LENGTH BY 2' FOR EVERY ELBOW IN ESCESS OF 2. IF RUN IS OVER LENGTH, VENT THROUGH ROOF USING A VENT BOOSTER SUCH AS: ACME MIAMI "DRYER JET" MODEL #9460 TESTED TO CSA STANDARD C22.2 113-M 1984.
- 9. ANTI-SIPHON DEVICES ARE REQUIRED AT ALL HOSE BIBS. THIS IS TO PREVENT THE POSSIBLE BACKFLOW OF CONTAMINATED WATER INTO THE POTABLE WATER SYSTEM.
- 10. 4" CONCRETE LANDING MINIMUM DOOR WIDTH BY 36" IN THE DIRECTION OF TRAVEL.
- 11. ALL RECEPTACLE OUTLETS INSTALLED IN BEDROOMS TO BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER.
- 12. MECHANICAL DEVICE CAPABLE OF PROVIDING (5) FIVE AIR CHANGES PER/HR.
- 13. KOBE CX-183 SERIES HOOD VENT W/7" DUCT TO THE EXTERIOR. RE-CIRCULATING RANGE HOODS CANNOT BE USED.
- 14. CONTINUOUS OPERATING FAN TO COMPLY WITH INDOOR AIR QUALITY VENTILATION. SHALL BE LABELED TO STATE "FAN SHOULD BE ON WHENEVER THE HOME IS OCCUPIED", WITH A MINIMUM 44 CFM WITH A FOUR(4) INCH DUCT. FAN MUST BE LISTED AT ONE(1) SONE OR LESS. HOME DEPOT MODEL # QTRN080 OR SIMILAR.
- 15. EXHAUST FANS ARE REQUIRED IN ALL BATHROOMS AND KITCHENS, FOLLOWING STANDARDS EXHAUST FANS IN BATHROOMS SHALL BE MIN. 50cfm. EXHAUST FANS IN KITCHENS SHALL BE MIN. 100 cfm. EXHAUST FANS IN KITCHEN AND BATHROOMS SHALL BE DUCTED TO THE OUTSIDE.

general notes

1. PLUMBING FIXTURES AND PLUMBING FITTINGS SHALL MEET THI FOLLOWING SANDARDS LAVATORY FAUCETS 1.2 GPM @ 60 PSI (MAX) 0.8 GPM @ 20 PSI (MIN) KITCHEN FAUCETS 1.8 GPM @ 60 PSI WATER CLOSETS 1.28 GAL/FLUSH SHOWER HEADS 1.8 GPM @ 80 PSI

2. BATHROOM BRANCH CIRCUITS: IN ADDITION TO OTHER BRANCH CIRCUIT REQUIRMENTS, AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE REQUIRED TO SUPPLY BATHROOM RECEPTACLE OUTLETS. OTHER EQUIPMENT (LIGHTING, FANS), WITHIN THE SAME BATHROOM MAYBE SUPPLIED BY THE SAME BRANCH CIRCUIT WHERE THE BRANCH CIRCUIT SUPPLIES A SINGLE BATHROOM ONLY.

HEADERS UNLESS OTHERWISE NOTED:

OPENING	HEADER	TRIMMER	KING STUDS		
0'-0" TO 6'-0"	4X12 #2 DF	SINGLE 2X	SINGLE 2X		
OVER 6'-0" TO 8'-0"	4X12 #2 DF	DOUBLE 2X	DOUBLE 2X		
HEADERS FOR 2X6 WALLS UNLESS OTHERWISE NOTED:					
OPENING	HEADER	TRIMMER	KING STUDS		

0'-0" TO 6'-0" | 6X12 #1 DF | SINGLE 2X | SINGLE 2X

OVER 6'-0" TO 8'-0" 6X12 #1 DF DOUBLE 2X DOUBLE 2X HORIZONTAL & VERTICAL WOOD STRUCTURAL SUPPORTS MEMBERS USED ALL 125 VOLT, 15 AND 20 AMP RECEPTACLES INSTALLED IN A IN EXPOSED DECK, BALCONIES, PORCHES, OR SUPPORTING MOISTURE PERMEABLE FLOOR OR ROOF WHERE SUCH MEMBERS ARE EXPOSED TO THE WEATHER WITHOUT ADEQUATE PROTECTION SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD MAMBERS

RESIDENTIAL LIGHTING REQUIRMENTS

LIGHTING CONTROLS & COMPONENTS, ALL LIGHTING CONTROL DEVICES & SYSTEMS, BALLASTS & LUMINAIRES MUST MEET THE APPLICABLE REQUIREMENTS OF 110.9

JA8 HIGH EFFICACY LIGHT SOURCES, TO QUALIFY AS A JA8 HIGH EFFICACY LIGHT SOURCE FOR COMPLIANCE WITH 150.0(K), A RESIDENTIAL LIGHT SOURCE MUST BE CERTIFIED TO THE ENERGY COMMISSION ACCORDING TO THE JOINT APPENDIX JA8.

LUMINAIRE EFFICACY, ALL INSTALLED LUMINAIRES MUST BE HIGH EFFICACY IN ACCORDANCE WITH TABLE 150.0-A.

<u>BLANK ELECTRICAL BOXS.</u> THE NUMBER OF ELECTRICAL BOXES THAT ARE MORE THAN 5 FEET ABOVE FINISHED FLOOR & DO NOT CONTAIN A LUMINAIRE OR OTHER DEVICE MUST BE NO GREATER THAN THE NUMBER OF BEDROOMS. THESE ELECTRICAL BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR CONTROL, OR FAN SPEED CONTROL.

RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS, LUMINAIRES RECESSED INTO CEILINGS MUST MEET ALL OF THE REQUIREMENTS FOR: INSULATION CONTACT, (IC) LABELING, AIR LEAKAGE, SEALING MAINTENANCE, & SOCKET & LIGHT SOURCE AS DESCRIBED IN 150.0(K) 1C, A JA8-2016-E LIGHT SOURCE RATED FOR ELEVATED TEMPERATURE MUST BE INSTALLED BY

FINAL INSPECTION IN ALL RECESSED DOWN LIGHT LUMINAIRES IN CEILINGS. ELECTRONIC BALLASTS, BALLASTS FOR FLOURESCENT LAMPS RATED 13 WATTS OR GREATER MUST BE ELECTRONIC AND MUST HAVE AN OUTPUT FREQUENCY NO LESS THAN 20KHZ.

NIGHT LIGHTS. PERMANENTLY INSTALLED NIGHT LIGHTS AND NIGHT LIGHTS INTEGRAL TO INSTALLED LUMINAIRES OR EXHAUST FANS MUST BE RATED TO CONSUME NO MORE THAN 5 WATTS OF POWER PER LUMINAIRE OR EXHAUST FAN AS DETERMINED IN ACCORDANCE WITH 130.0(c). NIGHT LIGHTS DO NOT NEED TO BE CONTROLLED BY VACANCY SENSORS.

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)

SCREW BASED LUMINAIRES. SCREW BASED LUMINAIRES MUST NOT BE RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS AND MUST CONTAIN LAMPS THAT COMPLY WITH REFERENCE JAINT APPENDIX JA8. INSTALLED LAMPS MUST BE MARKED WITH "JA8-2016" OR JA8-2016-E" AS SPECIFIED IN REFERENCE JOINT APPENDIX JA8.

ENCLOSED LUMINAIRES. LIGHT SOURCES INSTALLED IN ENLOSED LUMINAIRES MUST BE JA8 COMPLIANT AND MUST BE MARKED WITH 'JA8-2016-E."

INTERIOR SWITCHES AND CONTROLS. ALL FORWARD PHASE CUT DIMMERS USED WITH LED LIGHT SOURCES MUST COMPLY WITH NEMA SSL 7A. EXHAUST FANS MUST BE SWITCHED SEPARATELY FROM LIGHTING SYSTEMS. LUMINAIRES MUST BE SWITCHED WITH READILY ACCESSIBLE CONTROLS THAT PERMIT THE LUMINAIRES TO BE

MANUALLY SWITCHED ON AND OFF. CONTROLS AND EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. NO CONTROL MUST BYPASS A DIMMER OR VACANCY SENSOR FUNCTION IF THE CONTROL IS INSATLLED TO

COMPLY WITH 150.0(k)LIGHTING CONTROLS MUST COMPLY WITH THE APPLICABLE REQUIREMENTS OF 110.9 AN ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) MAY BE USED TO COMPLY WITH DIMMER

REQUIREMENTS IF IT FUNCTIONS AS A DIMMER ACCORDING TO 110.9; MEETS THE INSTALLATION CERTIFICATE REQUIREMENTS OF 130.4; MEETS THE EMCS REQUIREMENTS OF 130.5(f); AND MEETS ALL OTHER REQUIREMENTS IN 150.0(k)2. AN EMCS MAY BE USED TO COMPLY WITH VACANCY SENSOR REQUIREMENTS IN 150.0(k) IF IT MEETS ALL

OF THE FOLLOWING: IT FUNMCTIONS AS A VACANCY SENSOR ACCORDING TO 110.9; THE INSTALLATION CERTIGICATE REQUIREMENTS OF 130.4; THE EMCS REQUIREMENTS OF 130.5(f); AND ALL OTHER REQUIREMENTS IN 150.0(k)2 A MULTISCENE PROGRAMMABLE CONTROLLER MAY BE USED TO COMPLY WITH DIMMER REQUIREMENTS IN

150.0(k) IF IT PROVIDES THE FUNCTIONALITY OF A DIMMER ACCORDING TO 110.9, AND COMPLIES WITH ALL OTHER APPLICABLE REQUIREMENTS IN 150.0(k)2. IN BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS, AT LEAST ONE LUMINARIE IN EACH OF

THESE SPACES MUST BE CONTROLLED BY A VACANCY SENSOR. DIMMERS OR VACANCY SENSORS MUST CONTROL ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCE JOINT APPENDIX JA8, EXCEPT LUMINAIRES IN CLOSETS LESS THAN 70 SQUARE FEET AND LUMINAIRES IN HALLWAYS. UNDERCABINET LIGHTING MUST BE SWITCHED SEPARATELY FROM OTHER LIGHTING SYSTEMS.

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 MEET THE REQUIREMENT IN ITEM 150.0(k)3AI(ON AND OFF SWITCH) AND THE REQUIREMENTS IN EITHER ITEM 150.0(k)3Aiii(PHOTOCELL AND MOTION SENSOR) OR ITEM 150.0(k)3Aiii(PHOTO CONTROL AND AUTOMATIC TIME SWITCH CONTROL, ASTRONOMICAL TIME CLOCK, OR EMCS.)

NOTE:

A MINIMUM OF TWO 20 AMP SMALL APPLIANCE BRANCH CIRCUITS SHALL BE PROVIDED FOR ALL RECEPTACLE OUTLETS IN THE KITCHEN, DINING ROOM, PANTRY, OR OTHER SIMILAR AREAS.(CEC 210.11(C)(1) AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY LAUNDRY RECEPTACLE OUTLETS. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS.(CEC210.11(C)(2)) AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY BATHROOM RECEPTACLE OUTLETS. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS.(CEC 210.11(C)(3)) 125- AND 250-VOLT RECEPTACLES INSTALLED OUTDOORS IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED.(CEC 406.8(B)(1)) ALL 15A OR 20A, 120V BRANCH CIRCUITS THAT SUPPLY OUTLETS (INCLUDE LUMINARIES) INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, KITCHENS, LAUNDRY AREAS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILIAR AREAS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER LISTED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT(CEC 210.12(A)) GFCI PROTECTION IS REQUIRED FOR ALL 15A AND 20A, 125V RECEPTACLES INSTALLED IN THE FOLLOWING LOCATIONS: SINKS-GFCI PROTECTION FOR RECEPTACLES IS REQUIRED WITHIN AN ARC MEASUREMENT OF 6 FEET FROM THE OUTSIDE EDGE OF A SINK. BATH TUBS OR SHOWER STALLS-GFCI PROTECTION IS REQUIRED FOR RECEPTACLES LOCATED WITHIN 6 FEET OF THE OUTSIDE EDGE OF A BATHTUB OR SHOWER STALL. _AUNDRY AREAS-RECEPTACLES INSTALLED IN LAUNDRY AREAS OF A DWELLING UNIT SHALL BE GFCI PROTECTED.

DWELLING UNIT DISHWASHERS-OUTLETS SUPPLYING DISHWASHERS IN A DWELLING UNIT MUST BE GFCI PROTECTED.

NOTE:

AIR MOVING EQUIPMENT USED TO MEET EITHER THE WHOLE BUILDING VENTILATION REQUIREMENT OR THE LOCAL VENTILATION EXHAUST REQUIREMENT SHALL BE RATED IN TERMS OF AIR FLOW & SOUND. A) ALL CONTINUOUSLY OPERATING FANS SHALL BE RATED AT A

- MAXIMUM OF 1.0 SONES. B) INTERMITTENTLY OPERATED WHOLE-BUILDING VENTILATION FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONES.
- C) INTERMITTENTLY OPERATED LOCAL EXHAUST FANS SHALL BE RATED AT A MAXIMUM OF 3.0 SONES.
- REMOTELY LOCATED AIR-MOVING EQUIPMENT (MOUNTED OUTSIDE OF HABITABLE SPACES) NEED NOT MEET SOUNDS REQUIREMENTS IF THERE IS AT LEAST 4' OF DUCTWORK BETWEEN THE FAN & INTAKE GRILL.

RESIDENCE OR ACCESSORY STRUCTURE SHALL BE LISTED TAMPER-RESISTANT RECEPTICALS. NO EXCEPTIONS FOR RECEPTACLES ON CEILINGS, ABOVE COUNTERS OR BEHIND APPLIANCES. CEC 406.11





SEISMIC	WIND
CAPACITY	CAPACITY
490	685

	FIRST FLO	DOR HOLDOW	/N TABLE				
WN TYPE	1,2 HOLDOWN NAME	3 MIN. REQ'D POST	4 REQ'D BOLT	d _e	F	CAPACITY	
$\hat{\mathbf{Y}}$	HDU2-SDS2.5	(2)2X4 OR (2)2X6	PAB5	5 1/2"	8 1/2"	3,075#	
\Rightarrow	HDU4-SDS2.5	(2)2X4 OR (2)2X6	PAB5	5 1/2"	8 1/2"	4,565#	
\rightarrow	HDU5-SDS2.5	(2)2X4 OR (2)2X6	PAB5	5 1/2"	8 1/2"	5,645#	
\rangle	HDU8-SDS2.5	4X6	PAB7	8 1/2"	13"	7,870#	
	HDU11-SDS2.5	4X6	PAB8	10"	15"	9,535#	
\rightarrow	HDU14-SDS2.5	4X8 OR 6X6	PAB8	10"	15"	14,445#	



FOUNDATION VENT CALCULATIONS

AREA OF UNDERFLOOR SPACE TO BE VENTED: 902 SQ FT SQ FT OF VENT REQUIRED 902/150=6 SQ FT VENT REQ.

6/.81=7.41 NEED 8 8X14 VENTS DISTRUBUTED EQUALLY

FOUNDATION NOTES:

- 1. PROVIDE MINIMUM 5/8" DIAMETER X 10" ANCHOR BOLTS EMBEDDED AT LEAST 7 INCHES INTO CONCRETE OR MASONRY, AND SPACED NOT MORT THAN 6 FEET APART WITH WASHERS THROUGH MINIMUM 2X P.T. D.F. SILL PLATES AT ALL PERIMETER AND BEARING WALLS AND AS NOTED AT SHEARWALL LOCATIONS. PROVIDE A MINIMUM OF TWO BOLTS PER SILL AND ONE BOLT WITHIN 6" OF
- INTO UNDISTURBED SOIL BELOW ADJACENT GRADE WITH
- 4. PLATES, SILLS AND SLEEPERS TO BE FOUNDATION GRADE OR PRESSURE TREATED WOOD.
- PRESSURE TREATED OR DECAY RESISTANT WOOD IS USED.
- 6. CONTINUOUS FOOTINGS TO BE MINIMUM 12" WIDE X 12" DEEP (INTO UNDISTURBED SOIL BELOW ADJACENT GRADE) WITH A MINIMUM OF ONE (1) #4 BAR TOP AND BOTTOM, 3" CLEAR AT BOTTOM ALL REBAR TO BE GRADE 40 MINIMUM ASTM A615. UNLESS NOTED OTHERWISE.
- 7. HOLDOWN LOCATIONS SHOWN ON THE FOUNDATION PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION BASED ON THE LENGTH OF BRACED WALLS, THE TYPE OF HOLDOWNS, AND THE MANUFACTURERS SPECIFICATIONS.
- 8. WHERE SSTB HOLDOWN ANCHORS ARE USED, DEEPEN AND WIDEN FOOTING FOR 8" SQUARE OR DIAMETER AROUND SSTB ANCHOR TO PROVIDE 3" OF CLEAR CONCRETE COVER BELOW BOTTOM OF ANCHOR.

HEADERS FOR 2X6 WALLS UNLESS OTHERWISE NOTED:

OPENING	HEADER	TRIMMER	KING STUDS
0'-0" TO 6'-0"	6X12 #1 DF	SINGLE 2X	SINGLE 2X
OVER 6'-0" TO 8'-0"	6X12 #1 DF	DOUBLE 2X	DOUBLE 2X

HEADERS FOR 2	X4 WALLS UNL	ESS OTHERWI	SE NOTED:
OPENING	HEADER	TRIMMER	KING STUDS
0'-0" TO 6'-0"	4X12 #2 DF	SINGLE 2X	SINGLE 2X
OVER 6'-0" TO 8'-0"	4X12 #2 DF	DOUBLE 2X	DOUBLE 2X



TABLE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS TOP EDGE BOTTOM EDGE ENDS ROW SPACING Ledger^a 2 inches^d $^{3}/_{4}$ inch 2 inches^b $1^{5}/_{8}$ inches^b Band Joist^e 3/4 inch 2 inches 2 inches^b $1^{5}/_{8}$ inches^b For SI: 1 inch = 25.4 mm. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1). Maximum 5 inches. For engineered rim joists, the manufacturer's recommendations shall govern. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.9.1.3(1). STAGGER FASTENERS IN 2 ROWS 5.5" MIN. FOR 2 X 8" 6.5" MIN. FOR 2 X 10 7.5" MIN. FOR 2 X 12 7.5" MIN. FOR 2 X 12 ARE USED OR BOLT SPACING IS REDUCED TO THAT OF LAG SCREWS ARE USED OR BOLT SPACING IS REDUCED TO THAT OF LAG SCREWS TO ATTACH 2 X 8 LEDGERS TO 2 X 8 BAND. IOISTS —o 0 0---5" MAX 0 0-2" MIN. BAND JOISTS. LAG SCREW OR BOLT 3/4" MIN. LEDGER For SI: 1 inch = 25.4 mm. FIGURE R507.9.1.3(1) PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS

of allowable sheathing thickness where combined with wood structural panel or lumber

sheathing

HORIZONTAL & VERTICAL WOOD STRUCTURAL SUPPORTS MEMBERS USED IN EXPOSED DECK, BALCONIES, PORCHES, OR SUPPORTING MOISTURE PERMEABLE FLOOR OR ROOF WHERE SUCH MEMBERS ARE EXPOSED TO THE WEATHER WITHOUT ADEQUATE PROTECTION SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD MAMBERS

NOTE: EACH SEGMENT OF ENCLOSED & UNOCCUPIED SPACES OF THE UNDER-FLOOR AREA SHALL BE ACCESSIBLE WITH A MINIMUM OF AN 18"X24" CLEAR OPENING. PIPES& OTHER NON-STRUCTURAL CONSTRUCTION SHALL NOT INTERFERE WITH THE ACCESSIBILITY TO OR WITHIN THE UNDER FLOOR AREAS.

FRE- SHELLE CUNNINGHAM #9773 ***********************************	Image: State of the state o	ANTHONY B. COLB (PET	REVISIONS BY
PRE- SHELLE CUNNINGHAM #9773 Month (1000) PACIFIC MODERN HOMES PRE- SHELLE CUNNINGHAM #9773 FOUNDATION NOTES PACIFIC MODERN HOMES PRE- SHELLE CUNNINGHAM #9773 FOUNDATION NOTES PACIFIC MODERN HOMES PRE- SHELLE CUNNINGHAM #9773 FOUNDATION NOTES PACIFIC MODERN HOMES	Reserver rest Restorer rest Restorer rest Restorer rest Restorer rest Rest Restorer rest Restorer rest Restorer rest Restorer rest Rest Rest Rest Rest Res Re		
PRE- BRGINEERED 290 GRANDVIEW AVE. PORTOLA NOVATO, CA PORTOLA NOVATO, CA	RE- REGENERED 290 GRANDVIEW AVE. BORTOLA NOVEO, CA PORTOLA NOVEO, CA FOUNDATION NOTES		PACIFIC MODERN HOMES <pre>P.O. BOX 670 ELK GROVE, CA. 95759-9514 PHONE:(916) 685-9514</pre>
PRE- SHELLE CUNNINGHAM #9773 FOUNDATION NOTES FOUNDATION NOTES FOUNDATION NOTES FOUNDATION NOTES	PRE- ENGINEERED 290 GRANDVIEW AVE. PORTOLA NOVATO, CA FOUNDATION NOTES		HOMES by PACIFIC SUILDING
PRE- ENGINEERED SHELLE CUNNINGHAM #9773 ENGINEERED 290 GRANDVIEW AVE. NOVATO, CA NOVATO, CA	PRE- PORTOLA PORTOL		FOUNDATION NOTES
	DRAWN BY: HV PLAN NO.: 9773 SHEET: 4		PRE- FRELLE CUNNINGHAM #9773 FNGINEERED 290 GRANDVIEW AVE. PORTOLA NOVATO, CA NOVATO, CA PORTOLA NOVATO, CA

10.0 psf 1.5 psf 2.5 psf 3.5 psf 3.5 psf 3.0 psf 2.0 psf 5.0 psf 16.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Floor Material Weights (D)Sheathing=2.5Framing=3.0Insulation=3.5Ceiling=3.5Decking Material=2.0Deck Soffit=0.0Misc.=2.5Wall (Seismic only)=10.0Floor Loading (psf)Floor Live Load (L)=40.0Floor Dead Load (D)=10.0Floor Ceiling Dead Load (D)=5.0Deck Live Load (L)=60.0Deck Live Load (D)=10.0Floor Ceiling Dead Load (D)=0.0Deck Soffit Dead Load (D)=25.0Minute Load FloorsFloor Level Seismic (D)=25.0	psf psf psf psf psf psf psf psf psf psf	
10.0 psf 1.5 psf 2.5 psf 3.5 psf 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Floor Material Weights (D)Sheathing=2.5Framing=3.0Insulation=3.5Ceiling=3.5Decking Material=2.0Deck Soffit=0.0Misc.=2.5Wall (Seismic only)=10.0Floor Loading (psf)Floor Live Load (L)=40.0Floor Dead Load (D)=10.0Floor Ceiling Dead Load (D)=5.0Deck Live Load (L)=60.0Deck Live Load (L)=60.0Deck Load Load (D)=10.0Deck Soffit Dead Load (D)=0.0Deck Soffit Dead Load (D)=25.0Mend Load FloorsFloor Level Seismic (D)=Deck Load Seismic (D)=25.0	psf psf psf psf psf psf psf psf psf psf	
10.0 psf 1.5 psf 2.5 psf 3.5 psf 3.5 psf 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Sheatning = 2.5 Framing = 3.0 Insulation = 3.5 Ceiling = 3.5 Decking Material = 2.0 Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Load (L) = Floor Dead Load (L) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Live Load (L) = Peck Loading (psf)	psf psf psf psf psf psf psf psf psf psf	
1.5 psi 2.5 psf 3.5 psf 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Fraining = 3.0 Insulation = 3.5 Ceiling = 3.5 Decking Material = 2.0 Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) Floor Dead Load (L) = 40.0 Floor Ceiling Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Live Load (L) = 60.0 Deck Load Load (D) = 10.0 Deck Load Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors = 0.0 Floor Level Seismic (D) = 25.0	psi psf psf psf psf psf psf psf psf psf psf	
2.5 psf 3.5 psf 3.5 psf 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Insulation = 3.5 Ceiling = 3.5 Decking Material = 2.0 Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) Floor Dead Load (L) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Load (L) = Deck Load (D) = 60.0 Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors = 25.0	psf psf psf psf psf psf psf psf psf psf	
3.5 psi 3.5 psi 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf	Ceiling – 5.5 Decking Material = 2.0 Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) Floor Live Load (L) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Live Load (L) = 60.0 Deck Live Load (D) = 10.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors = 25.0	psi psf psf psf psf psf psf psf psf psf psf	
3.0 psf 3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 10.0 psf 10.0 psf	Decking Material - 2.0 Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) Floor Dead Load (D) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Live Load (L) = 60.0 Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 25.0	psi psf psf psf psf psf psf psf psf psf psf	
3.0 psf 2.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Deck Soffit = 0.0 Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) Floor Dead Load (D) = 40.0 Floor Ceiling Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Loading (psf)	psf psf psf psf psf psf psf psf psf psf	
20.0 psf 5.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Misc. = 2.5 Wall (Seismic only) = 10.0 Floor Loading (psf) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Loading (psf) Deck Loading (psf) Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors = 0.0	psi psf psf psf psf psf psf psf psf	
20.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Valit (Seismic only) = 10.0 Floor Loading (psf) Floor Live Load (L) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Loading (psf) Deck Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf psf psf psf psf psf	
20.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Floor Live Load (L) = 40.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Loading (psf) Deck Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Dead Load (D) = 0.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf psf psf psf psf	
20.0 psf 0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Floor Dead Load (D) = 10.0 Floor Dead Load (D) = 10.0 Floor Ceiling Dead Load (D) = 5.0 Deck Loading (psf) Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf psf psf psf	
0.0 psf 16.0 psf 10.0 psf 10.0 psf 31.0 psf	Floor Ceiling Dead Load (D) = 5.0 Deck Load (D) = 5.0 Deck Load (D) = 60.0 Deck Dead Load (D) = 10.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf psf psf	
16.0 psf 10.0 psf 10.0 psf 31.0 psf	Deck Loading (psf) Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf	
10.0 psf 10.0 psf 31.0 psf	Deck Live Load (L) = 60.0 Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf psf	
10.0 psf	Deck Dead Load (D) = 10.0 Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf psf	
31.0 psf	Deck Soffit Dead Load (D) = 0.0 Seismic Dead Load Floors Floor Level Seismic (D) = 25.0	psf	
31.0 psf	Seismic Dead Load Floors Floor Level Seismic (D)	por	
31.0 psf	Floor Level Seismic (D) = 25.0		
		psf	
	Wind Loads ASCE7-16	P	
	Basic Wind Speed = 92 mph (V ultima	ate)	
	Exposure Category = C		
	Risk Category = II		
	λ = 1.258		
1.3	K _r = 1.00		
021	~		
	 A particular de la construcción de la		
18 in	$P_{e} = \lambda K_{+} P_{e_{20}}$ (28.5-1)		
12 in	5 21 350		
1500 psf			
eismic Lo	oads ASCE7-16		
=	C ASCE 7-16 Section 11.4.3		
=	II ASCE 7-16 Table 1.5-1		
=	D ASCE 7-16 Section 11.6		
=	1 ASCE 7-16 Section 11.5		
= \$	6.500 ASCE 7-16 Table 12.2-1 Bearing wall System#15	5	
2 _o =	3.000 ASCE 7-16 Table 12.2-1 Bearing wall System#15	5	
2 _d =	4.000 ASCE 7-16 Table 12.2-1 Bearing wall System#15	\$	
. =	1.300 ASCE 7-16 Section 12.3.4 Reliability Redundancy	Factor	
s =	1.884 ASCE 7-16 Chapter 22 ASCE 7 Hazard Report		
S ₁ =	0.719 ASCE 7-16 Chapter 22 ASCE 7 Hazard Report		
a =	0.17 ASCE 7-16 Section 11.4.6		
. =	8.00 ASCE 7-16 Figure 22-14 to 22-17 ASCE 7 Hazard	Report	
• =	0.09 ASCE 7-16 Section 11.4.6		
s =	0.45 ASCE 7-16 Section 11.4.6		
S _{MS} =	2.26 ASCE 7-16 Section 11.4.4 Site Coefficients MCE _R		
S _{M1} =	1.01 ASCE 7-16 Section 11.4.4 Site Coefficients MCE_R		
Spectral Response Short Period S _{DS} =		eration	
S _{D1} =	0.67 ASCE 7-16 Section 11.4.5 Design Spectral Accel	eration	
≥ _s =	0.23 ASCE 7-16 Eq. 12.8-2 Seismic Response Coeffici	ent	
=	0.591 ASCE 7-16 Eq. 12.8-3 Maximum		
smax	0.06 ASCE 7-16 Eq. 12.8-5 or 12.8-6 Minimum		
s max s min =	ic around motion analysis is not required per ASCE 7-16.5	ection	
	= $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$	$ \begin{array}{llllllllllllllllllllllllllllllllllll$	

<u> </u>	NCRETE AND REINFORCING STEEL	WOOD
1.	CONCRETE CONSTRUCTION SHALL CONFORM TO CBC 2019 AND ACI-318-14.	1. ALL STRUCTURAL WOOD SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS.
2.	THE WEIGHT AND MINIMUM 28 DAY STRENGTH OF CONCRETE SHALL BE AS FOLLOWS: SLAB ON GRADE AND FOOTINGS 150 PCF $F'C = 2500$ PSI (U.N.O. ON FOUNDATION PLANS)	DOUGLAS FIR LARCH WEST COAST LUMBER INSPECTION BUREAU GRADING RULES #17.
3.	CEMENT SHALL CONFORM TO ASTM C150 TYPE 1 OR 2. PROVIDE TYPE 5 CEMENT FOR	REDWOOD CALIFORNIA REDWOOD ASSOCIATION GRADING RULES.
4.	CONCRETE AGGREGATES: NATURAL SANDS AND ROCK AGGREGATES SHALL CONFORM TO ASTM C33.	GLUED LAMINATED BEAMS GLUED LAMINATED FABRICATION SHALL BE PERFORMED IN AN APPROVED FABRICATOR'S SHOP IN ACCORDANCE WITH 2019 CBC 1704.2 STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED TIMBER ANSI/AITC A 100 L 02 GLUE LAM BEAMS SHALL
5.	REINFORCING STEEL SHALL BE DETAILED FABRICATED AND INSTALLED ACCORDING	BE INSPECTED AND A CERTIFICATE PROVIDED TO FIELD INSPECTOR AT THE TIME OF FRAMING INSPECTION
<i>.</i>	TO "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" BY WCRSI.	OSB PLYWOOD U.S. PRODUCT STANDARDS P.S. 2-92 FOR WOOD BASED STRUCTURAL USE PANELS.
7.	DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF MAIN AND DENOTE CLEAR COVERAGE. UNLESS OTHERWISE NOTED, CONCRETE SHALL BE AS FOLLOWS:	MICROLLAM LVL BEAMS NATIONAL EVALUATION REPORT NO. NER-126 BEAM SHALL BE 1 3 /4" STANDARD WIDTH.
	CONCRETE DEPOSITED DIRECTLY AGAINST GROUND (EXCEPT SLABS)3" CONCRETE EXPOSED TO GROUND BUT PLACED IN FORMS	PARALLAM PSL BEAMS NATIONAL EVALUATION REPORT NO. NER-292.
3.	LAP SPLICE FOR CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH	2. MINIMUM GRADES SHALL BE:
_	ACI318-14 SECTION 12.14. REBAR LAP SPLICES FOR PLANE CONCRETE FOOTING SHALL BE 40 BAR DIAMETERS MINIMUM.	HORIZONTAL FRAMING 2x FRAMING : #2 D.F.L. 4X FRAMING : #2 D.F.L. 6X AND LARGER #1 D.F.L.
•	REMOVE ALL DEBRIS FROM THE FORMS BEFORE PLACING ANY CONCRETE.	WALL FRAMING 2x4 FRAMING : STANDARD OR BETTER D.F.L.
).	REINFORCING DOWELS, BOLTS, ANCHORS, SLEEVES, ETC., TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY POSITIONED BEFORE PLACING CONCRETE.	2X0 AND LARGER FRAMING: #2 D.F.L.
	MAXIMUM FREE FALL OF CONCRETE SHALL BE 4'-0".	GLUED LAMINATED MEMBERS COMBINATION 24F-V4 3000 RADIUS
	NO WOOD SPREADERS ARE ALLOWED.	MICPOLLAMINU DEAMS DOUGLAS EID 1 0E
	REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND FLOOR PLANS FOR LOCATION OF ALL PIPES, CONDUITS, ETC.	PARALLAM PSL BEAMS DOUGLAS FIR 2.0E
1.	PIPE OR DUCTS EXCEEDING ONE-THIRD THE SLAB OR WALL THICKNESS SHALL NOT BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED.	3. BEARING AND SHEAR WALLS HAVE DOUBLE TOP PLATES, LAPPED AT WALL AND PARTITION INTERSECTIONS w/ (3)16d NAILS. SPLICE UPPER AND LOWER PLATES BY LAPPING 48" MINIMUM WITH (24) 16d NAILS IN LAP
5.	PIPE MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT NOT BE EMBEDDED THEREIN.	 PROVIDE SOLID BLOCKING BETWEEN RAFTERS OR JOISTS AT ALL SUPPORTS.
6.	THE STRENGTH LEVEL OF THE CONCRETE WILL BE CONSIDERED SATISFACTORY IF THE AVERAGE OF THE STRENGTH TESTS OF A GIVEN AREA OR PANEL EQUALS OR EXCEEDS THE SPECIFIED STRENGTH AT 28 DAYS, WITH NO INDIVIDUAL STRENGTH TEST OF SUCH AREA OR PANEL LESS THAN 5% BELOW THAT SPECIFIED. CONCRETE THAT DOES NOT MEET OR EXCEED THESE CRITERIA WILL BE REMOVED BY THE CONTRACTOR AND REPLACED WITH CONCRETE WHICH CONFORMS TO THESE CRITERIA.	 HOLES FOR BOLTS IN WOOD SHALL BE BORED OF THE SAME NOMINAL DIAMETER AS THE BOLT + 1/16". LAG SCREWS AND WOOD SCREWS SHALL BE SCREWED AND NOT DRIVEN INTO PLACE. ALL BOLTS SHALL BE PROVIDED WITH METAL WASHERS UNDER HEADS AND NUTS WHICH
7.	PROVIDE 3/4" CHAMFERS AT ALL EXPOSED CORNERS.	BEAR ON WOOD. APPLIES ALSO TO INSERTED EXPANDING FASTENERS, RED HEADS, ETC.
8.	REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS OR GROUNDS REQUIRED TO BE CAST IN CONCRETE, AND FOR LOCATIONS OF FLOOR FINISHES AND SLAB DEPRESSIONS.	BOLT DIAMETER M.I. WASHER STEEL WASHER 1/2" Ø 2-1/2"Øx 1/4" 2" x 2" x 1/4"
9.	CONCRETE SHALL NOT BE ALLOWED TO CURE IN TEMPERATURES LESS THAN 40 DEGREES FAHRENHEIT FOR THE FIRST THREE DAYS.	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
0.	CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR COLD WEATHER CONCRETING WHERE REQUIRED.	8. ALL BOLT AND LAG SCREWS SHALL BE TIGHTENED AT THE TIME OF INSTALLATION AND RE-TIGHTENED BEFORE CLOSING IN OR AT COMPLETION OF JOB
1.	NO. 5 OR LARGER REINFORCING BARS SHALL NOT BE RE-BENT WITHOUT APPROVAL BY THE STRUCTURAL ENGINEER. DOWELS SHALL HAVE A MINIMUM PROJECTION EQUAL TO STANDARD LAP SPLICE UNLESS OTHERWISE SHOWN.	9. INSTALL ALL STRUCTURAL PLYWOOD ON ROOF AND FLOORS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.
2.	ALL CONTINUOUS BARS OR DOWELS SHALL LAP 40 DIAMETERS.	10. ALL JOIST HANGERS, STRAPS, HOLDOWNS, CLIPS, ANCHORS TO BE SIMPSON STRONG-TIE
3.	WELDING OF REBAR IS NOT PERMITTED UNLESS PROCEDURE APPROVED BY THE STRUCTURAL ENGINEER.	OK EQUAL. 11. ALL WOOD STRUCTURAL MEMBERS, WHEN DESIGNED TO BE EXPOSED IN OUTDOOR APPLICATIONS, SHALL BE WOOD OF NATURAL RESISTANCE TO DECAY OR TREATED WOOD. 2019 CBC 2304.12.2.3.

ENGINEERING AND LOADING DATA

VOOD cont'd

WOOD IN PERMANENT CONTACT WITH CONCRETE TO BE PRESSURE TREATED LUMBER PER CBC 2304.12.1. MOISTURE CONTENT OF LUMBER NOT TO EXCEED 19% AT TIME OF FABRICATION OR CONSTRUCTION.

IANUFACTURED TRUSS DESIGN NOTES

TRUSS MANUFACTURER TO PROVIDE SHOP DRAWINGS TO THE PROJECT ENGINEER ND BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION OF THE {USSES.

. TRUSSES SHALL NOT BE MODIFIED IN THE FIELD WITHOUT A ENGINEERED TRUSS REPAIR DRAWING PROVIDED BY EITHER THE TRUSS MANUFACTURER'S ENGINEER OR ENGINEER OF RECORD.

3. TRUSS SHOP DRAWINGS SHALL MEET THE REQUIREMENTS OF SECTION 2303.4 OF THE 2019 CBC.

4. TRUSS SPACING AND LOADING TO BE AS SPECIFIED ON THE ROOF FRAMING PLAN, SECTION 1607, AND TABLE 1607.1 OF THE 2019 CBC.

. GABLE END TRUSSES SHALL BE DESIGNED FOR THE EFFECTS OF OUT-OF-PLANE OADS DUE TO WIND. AT A MINIMUM, NON-STRUCTURAL GABLE END TRUSSES HALL HAVE 2X4 GABLE STUDS @ 16" O.C. AS NOTED BELOW.

2x4 STD. D.F.L. UP TO 78" LONG. 2x4 NO.2 D.F.L. 78" TO 96" LONG. 2x4 NO.1 D.F.L. 96" TO 124" LONG.

5. STRUCTURAL GABLE END TRUSSES SHAL BE DESIGNED AS NOTED ABOVE WITH THE DIAGONAL WEBS BRACED FOR OUT-OF-PLANE WIND LOADING. 7. SHOP DRAWING, PLACEMENT PLANS, BRACING, AND ERECTION DETAIL TO BE PROVIDED TO THE CONTRACTOR BY THE TRUSS MANUFACTURER.

ALL TRUSS MEMBERS TO BE 2x4 MINIMUM. ALL LUMBER TO BE DOUGLAS FIR LARCH, RADE TO BE DETERMINED BY THE TRUSS MANUFACTURER. HEM FIR IS NOT TO BE JSED IN THE FABRICATION OF THE TRUSSES UNLESS APPROVED BY THE PROJECT ENGINEER PRIOR TO FABRICATION.

. ALL HIP TRUSS SYSTEMS TO HAVE A MINIMUM 8'-0" SET BACK FROM EXTERIOR END VALLS FOR SLOPES 4/12 AND LESS. SLOPES GREATER THAN 4/12 MAY HAVE A 6'-0" SETBACK ALL TRUS JOIST TJI FLOOR AND ROOF FRAMING MEMBERS TO COMPLY WITH ICC ESR-1153.

PV PANEL NOTES:

. PV PANELS SHALL BE PARALLEL TO THE ROOF SURFACE, WITH A TOLERANCE OF 2" AND THE MAXIMUM HEIGHT ABOVE THE ROOF SURFACE, NOT EXCEEDING 10 INCHES. A MINIMUM GAP OF 0.25 INCHES SHALL BE PROVIDED BETWEEN ALL PANELS, WITH THE SPACING OF GAPS BETWEEN THE PANELS NOT EXCEEDING 6.7 FEET.

THE ARRAY SHALL BE LOCATED AT LEAST 20" FROM THE ROOF EDGE, A GABLE RIDGE, OR A HIP RIDGE.

. RAIL STANDOFF CONNECTIONS SHALL BE STAGGERED AND CONNECTED TO THE ROOF FRAMING MEMBERS. RAIL TANDOFF CONNECTIONS SHALL BE NO GREATER THAN 6'-0" O.C.

. DESIGN OF SOLAR INSTALLATION SHALL BE PROVIDED BY THE SOLAR INSTALLER IN ACCORDANCE WITH ASCE7-16, SECTION 29.4.4.

orman cheel tructural ngineer **Sacramento Office** 5022 Sunrise Blvd. air Oaks, CA 95628 20 (916) 536-9585 (916) 536-0260 (fax) TT SIDEN L $\boldsymbol{\geq}$ RE \sim JR A K r T) \checkmark NOVATC M PC GR (91(\mathbf{N} TT PROJ. MGR.: SS NGINEER: NS DRAWN BY: SH CHECKED BY: SS SSUE DATE: 9/9/2021 **EVISIONS**: $\sqrt{9/9/2021}$ INT. CLIENT SUB. 2567 Exp. 12/31/2021 This seal and signature have been electronically applied. 9/09/2021 SHEET COVER SHEET **јов no**. 21361

Footing Specifications Allow able Soil Bearing Pressure = 12 in 1500 psf Footing Width 1500 plf 18 in Maximum allow able load on footing Footing Depth = = = 2 Top and Bottom Minimum # Bars Maximum point load on continuous footing 12631 # Size of Bars = 5 Area of steel used for calculations 0.61 in2 =

Header Specifications 1st Floor				
Size	Grade and Type	Length	Trimmer	King Stud
6x12	No. 1 D.F.L.	6'-0"	2x	2x

Beam Specifications			
Beam #	Size	Grade and Type	Location
Beam#1	6x 10	No. 1 D.F.L.	FRONT PORCH BEAMS
Beam#2	6x 10	No. 1 D.F.L.	FRONT DECK BEAMS

STANDARD NOTES AND SPECIFICATIONS

HOUTING RUP: DEFINI- 12° WOTH- 12° NUTH- 12° STEM	FOUNDATION SPECIFICATIONS	FLOOR JOIST SPECIFICATIONS	TRUSS ROOF SPECIFICATIONS	CONVEN
Def II- 12* WDTI- 12* STRE - AUMING STREET AND INCREASE PART - TOOR DIAD IOAD 19* STRE - AUMING STREET AND IOAD 21* FLOOR LIVE LOAD 10* STRE - STREET AT FLOOR DIAD IOAD 21* FLOOR DIAD IOAD 21* DURATION INCREASE 0* STREET AT STREET AND IOAD 20* FLOOR DIAD IOAD 21* DURATION INCREASE 0* STREET AND IOAD 20* FLOOR DIAD IOAD 21* DURATION INCREASE 0* STREET AND IOAD 20* FLOOR NEARING DIAD 20* CHENDRING DO RESSURE FLOOR NEARING DIAD 20* PROFESSION FLOOR NEARING DIAD 20* CHENDRING DO RESSURE FLOOR NEARING DIAD 20* PROFESSION FLOOR NEARING DIAD 20* PLOOR NEARING DO RESSURE FLOOR NEARING DIAD 20* PLOOR NEARING DO RESSURE FLOOR NEARING DO RESSURE PLOOR NEARING DO RESSURE FLOOR NEARING DO RESSURE CONTENDED TO RESSURE FLOOR NEARING DO RESSURE PLOOR NEARING DO RESSURE FLOOR NEARING DO RESSURE PLOOR NEARD DO RESSURE FLOOR NEARING DO RESSURE PLOOR NEARD DO RESSURE FLOOR NEARING DO RESSURE PLOOR NEARD DO RESSURE FLOOR NEARD DO	FOOTING SIZE:	ALL JOIST TO BE " O.C. TYP. U.N.O. 16" O.C.	ALL TRUSSES TO BE 24" O.CTYPICAL	ALL CEILING
FOLDARION DISIGNAD PER 2019 CIIC MINIMUMS OR SOLLS REPORT FOUNDED BY FOUNDED BY FOUNDED BY FOUNDED BY FOUNDED BY FOUNDES FOUNDES FOUNDED BY FOUNDES FOUNDED BY FOUNDES FOUNDES FOUNDED BY FOUNDES FOUN	DEPTH=12"WIDTH=12"STEM= (RAISED FLOOR ONLY)8"STEM AT GARAGE=8"SOIL BEARING PRESSURE=1500 psf	LOADING FLOOR LIVE LOAD 40 PSF FLOOR DEAD LOAD 10 PSF CEILING DEAD LOAD 5 PSF DURATION INCREASE 0%	LOADINGROOF LIVE LOAD20 PSFROOF DEAD LOAD14 PSFCEILING LIVE LOAD10 PSFCEILING DEAD LOAD7 PSFCEILING LIVE LOAD NON CONCURENT WITHROOF LIVE LOAD.DURATION INCREASE25%	LOADING F
SC-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. IT IS STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THEY CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THEY CONSTRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THE CONSTRUCTURE. IS STRUCTURE. IS STRUCTURE AND THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOT	FOUNDATION DESIGNED PER 2019 CBC MINIMUMS OR SOILS REPORT PROVIDED BY: REPORT #: DATE: 2500 PSI DESIGN MIX MINIMUM. USE (1) #4 BAR TOP & BOTTOM IN ALL CONTINUOUS FOOTINGS AND AS NOTED AT SPECIAL LOADS. ALL DEPTH DIMENSIONS ARE INTO UNDISTURBED SOIL BELOW ADJACENT GRADE AND / OR ANY FILL. MAINTAIN MIN. 8" BETWEEN WOOD AND EARTH AROUND BUILDING. OBSERVATION OF SITE PREPARATION, GRADING, PLACEMENT AND COMPACTION OF FILL OPERATIONS BY THE GEOTECHNICAL ENGINEER. PROVIDE 5/8" DIA. x 10" ANCHOR BOLTS AND 3" x 3" x 1/4" PLATE WASHERS AT PRESSURE TREATED SILL PLATE. MIN. 2-BOLTS PER SILL AND 1 BOLT WITHIN 12" OF END OF SILL, MAX. 6' O.C. BOLT SPACING. MIN 7" INTO CONC. AND PER SHEAR WALL SPECIFICATIONS. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 40. PAD FOOTINGS GREATER THAN 24" SQ. REQUIRE #4 BARS @ 8" O.C. EACH WAY 3" CLEAR FROM THE BOTTOM OF THE FOOTING. ALL HANGERS, HOLDOWNS, CLIPS, AND STRAPS TO BE SIMPSON STRONG-TIE OR SILVER / KANT-SAG SILVER WITH REF. # MATCHING SIMPSON SPECIFICATIONS. DENOTES STRUCTURAL DETAILS ON SHEET SD.1 THRU SD FOR ADDITIONAL SPECIFICATIONS AND TYPICAL DETAILS SEE SHEET SC-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE.	 FLOOR SHEATHING TO BE 3/4" T & G OR 23/32" APA RATED SHEATHING PANEL ID 48/24. NAIL Sd @ 6" O.C. EDGE AND Sd @ 12" O.C. FIELD. INSTALL FACE GRAIN PERPENDICULAR TO FRAMING, AND AS NOTED ON PLAN. NAIL FLOOR SHEATHING AT ALL DRAG JOIST WITH 8d @ 6" O.C. TYP. U.NO. FOR NAILING NOT SHOWN, SEE NAILING SCHEDULE ON SHEET SC-1 OR TABLE 2304.10.1, 2019 CBC. FLOOR JOIST MANUFACTURER TO SUPPLY LICENSED, ENGINEERED, SEALED DRAWINGS TO THE PROJECT ENGINEER PRIOR TO JOIST PLACEMENT. DO NOT CUT OR MODIFY ANY FLOOR JOIST WITHOUT WRITTEN CONSENT OF THE JOIST MANUFACTURER AND PROJECT ENGINEER. DOUBLE TOP PLATE, MIN. 48" SPLICES. NAIL WITH (12) 16d NAILS EACH SIDE OF LAP. ALL HEADERS AND BEAMS TO BE AS SPECIFIED ON THIS SHEET, INTERIOR NON BEARING HEADERS TO BE 4x4 OR DBL. 2x4 NO.2 D.F.L. ALL NAILS TO BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE. MISTALL 2x. / 4x HOLDOWN POST AT ENDS OF ALL SHEAR WALLS PER PLAN. SEE TABLE AND CALCULATIONS FOR HOLDOWN STUD SIZE REQUIRED. ALL HANGERS, HOLDOWNS, CLIPS, AND STRAPS TO BE SIMPSON STRONG-TIE OR SILVER / KANT-SAG SILVER WITH REF. # MATCHING SIMPSON SPECIFICATIONS. DENOTES STRUCTURAL DETAILS ON SHEET SO.1 THR USD FOR ADDITIONAL SPECIFICATIONS AND TYPICAL DETAILS SEE SHEET SC-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL ON STRUCTION OF THIS STRUCTURE. 	 ROOF SHEATHING TO BE 15/32" MIN. APA RATED SHEATHING. NAIL 84 @ 6" OC EDGE AND 84 @ 12" OC FIELD MINIMUM. PANEL ID 32/16. FACE GRAIN PERPENDICULAR TO FRAMING, AND AS NOTED ON PLAN. FOR NAILING NOT SHOWN, SEE NAILING SCHEDULE SHEET SC-1 OR TABLE 2304.10.1, 2019 CBC. NAIL ROOF SHEATHING AT ALL DRAG TRUSSES WITH 8d @ 6" O.C. TYP. U.N.O. ROOF DESIGNED FOR TILE LOADS (10 PSF MAX). TRUSS MANUFACTURER TO SUPPLY TRUSS DRAWINGS AND LAYOUTS TO THE PROJECT ENGINEER AND BUILDING DEPARTMENT PRIOR TO CONSTRUCTION AS PART OF DEFERRED SUBMITTAL PER SECTION 107.3.4.1, 2019 CBC. DOUBLE TOP PLATE, MIN. 48" SPLICES. NAIL WITH (12) 16d NAILS EACH SIDE OF LAP. ALL HEADERS AND BEAMS TO BE AS SPECIFIED ON THIS SHEET, INTERIOR NON BEARING HEADERS TO BE 4x4 OR DBL. 2x4 NO.2 D.F.L. ALL NAILS TO BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE. INSTALL 2x /4x HOLDOWN POST AT ENDS OF ALL SHEAR WALLS PER PLAN. SEE TABLE AND CALCULATIONS FOR HOLDOWN STUD SIZE REQUIRED. ALL HANGERS, HOLDOWNS, CLIPS, AND STRAPS TO BE SIMPSON STRONG-TIE OR SILVER / KANT-SAG SILVER WITH REF. # MATCHING SIMPSON SPECIFICATIONS. DENOTES STRUCTURAL DETAILS ON SHEET SD.1 THRU SD FOR ADDITIONAL SPECIFICATIONS AND TYPICAL DETAILS SEE SHEETS SC-1. TI ST THE CONTRACTORS RESPONSIBILITY TO REVIEW ALL OF THE NOTES AND TYPICAL DETAILS ON SHEET SC-1 SO THAT THEY MAY BE INCORPORATED INTO THE CONSTRUCTION OF THIS STRUCTURE. ALL GABLE STUDS LONGER THAN 6-0" TO BE 2x4 #1 & BTR. D.F.L. IF STUDS ARE LONGER THAN 10-0" USE 2x6 #2 J.E. STRUCTURAL GABLE NTUPS AND TYPICAL DETAILS ON SHEET SC-1. ALL GABLE STUDS LONGER THAN 6-0" ON THE VERTICAL PROJECTION REQUIRE BRACES PER STRUCTURAL GABLE END DETAIL ON SHEET SC-1. 2x BLOCKING AT RIDGE BETWEEN EACH TRUSS. 	ROOF SHEATH NAIL 8d @ 6" O PANEL ID 32/1 AND AS NOTE FOR NAILING OR TABLE 230 AT CEILING JO PROVIDE WAI ROOF DESIGN PROVIDE STR SEE DETAIL S DOUBLE TOP EACH SIDE OH ALL HEADERS INTERIOR NO DBL. 2x4 NO.2 ALL NAILS TO OTHERWISE. INSTALL 2x / 4 PER PLAN. SE SIZE REQUIRH ALL HANGER STRONG-TIE O MATCHING SI DENOTES STF SD.1 THRU SD FOR ADDITIO SHEET SC-1. IT IS THE CON THE NOTES A SO THAT THE CONSTRUCTIO

SHEA	R WALL SC	HEDULE	2019 CBC			
TYPE 9	SHEATHING ⁷ APA RATED	NAILING 6	SILL PLATE ¹ AND A.B. ²	SOLE PLATE ³ CONNECT TO RIM	SEISMIC CAPACITY	WIND CAPACITY
\bigvee	3/8" SHEATHING ONE FACE	8d @ 6" O.C. EDGE AND 12" O.C. FIELD	2x P.T.D.F. SILL PLATE, 5/8"Ø x 12" @ 48" O.C.	16d @ 8" O.C. OR LTP4 @ 24" O.C.	260 # P.L.F.	365 # P.L.F.
B	3/8" SHEATHING ONE FACE 4A	8d @ 4" O.C. EDGE AND 12" O.C. FIELD	2x P.T.D.F. SILL PLATE, 5/8"Ø x 12" @ 32" O.C.	16d @ 6" O.C. OR LTP4 @ 16" O.C.	380 # P.L.F.	532 # P.L.F.
\bigvee	3/8" SHEATHING ONE FACE 4	8d @ 3" O.C. EDGE AND 12" O.C. FIELD	2x P.T.D.F. SILL PLATE, 5/8"Ø x 12 @ 32" O.C.	16d @ 4" O.C. OR LTP4 @ 14" O.C.	490 # P.L.F.	685 # P.L.F.
	3/8" SHEATHING ONE FACE 4B	8d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 5/8"Ø x 12" @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 10" O.C.	640 # P.L.F.	895 # P.L.F.
E	15/32" 4B SHEATHING ONE FACE	10d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 5/8"Ø x 12 @ 16" O.C.	16d @ 2 1/2" O.C. (2) ROWS STAG'D. OR LTP4 @ 8" O.C.	770 # P.L.F.	1,077 # P.L.F.
F	19/32" 4B SHEATHING ONE FACE	10d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 5/8"Ø x 12 @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 6" O.C.	870 # P.L.F.	1,217 # P.L.F.
G	3/8" SHEATHING BOTH FACES 4B, 5	8d @ 3" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 5/8"Ø x 12" @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 6" O.C.	980 # P.L.F.	1,370 # P.L.F.
H	3/8" SHEATHING BOTH FACES 4B, 5	8d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 5/8"Ø x 12" @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 6" O.C.	1,280 # P.L.F.	1,790 # P.L.F.
	15/32" 4B, 5 SHEATHING BOTH FACES	10d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 3/4"Ø x 12" @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 6" O.C.	1,540 # P.L.F.	2,154 # P.L.F.
V	19/32" 4B, 5 SHEATHING BOTH FACES	10d @ 2" O.C. EDGE AND 12" O.C. FIELD	3x P.T.D.F. SILL PLATE, 3/4"Ø x 12" @ 16" O.C.	16d @ 4" O.C. (2) ROWS STAG'D. OR LTP4 @ 6" O.C.	1,740 # P.L.F.	2,434 # P.L.F.

I) (2) ANCHORS MINIMUM PER SHEAR WALL. 3" x 3" x 1/4" STEEL WASHERS REQUIRED AT ALL ANCHOR BOLTS USED IN SHEAR WALLS. WASHER EDGE SHALL BE WITHIN 1/2" OF SHEATHING, SLOTTED WASHERS ARE PERMITTED.

2) SILL PLATE ANCHORED TO CONCRETE. 3) TYPICAL 2x SOLE PLATE ON TOP OF SUBFLOOR. APPLIES TO RAISED FLOOR FOUNDATION AND UPPER FLOORS ONLY.

4) 3x FRAMING MEMBERS AT ADJOINING PANEL EDGES OR DBL. STUDS w/ 16d @ 3" O.C. 4A) 3x FRAMING MEMBERS AT ADJOINING PANEL EDGES OR DBL. STUDS w/ 16d @ 4" O.C.

4B) 3x FRAMING MEMBERS AT ADJOINING PANEL EDGES. 5) WHERE PANELS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 INCHES O.C. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT

FRAMING MEMBERS, OR FRAMING SHALL BE 3-INCH NOMINAL OR THICKER AT ADJOINING PANEL EDGES AND NAILS ON EACH SIDE SHALL BE STAGGERED. GALVANIZED NAILS SHALL BE HOT DIPPED OR TUMBLED.

FRAMING MEMBERS OR BLOCKING REQUIRED AT ALL PANEL EDGES IN SHEAR WALL.

8) ALL SHEAR WALL VALUES ARE BASED ON 16" O.C. STUD SPACING.

9) ALL FRAMING MEMBERS USED IN THE CONSTRUCTION OF SHEAR WALL TO BE DOUGLAS FIR LARCH.

HOLD	OWN SCHE	DULE 2019	CBC			
TYPE	HOLDOWN	MIN. REQ'D. POST <i>9, 12</i>	REQUIRED BOLT	REQUIRED NAILS 10	REQUIRED LENGTH	CAPACITY
Â	11 HDU2-SDS2.5	(2) 2x PER WALL THICKNESS	$\frac{PAB5}{d_e} = \frac{1}{5} \frac{1}{1/2"}$ F = 8 1/2"	N/A	N/A	3,075 #
	11 HDU4-SDS2.5	(2) 2x PER WALL THICKNESS	$\frac{PAB5}{d_e} = \frac{1}{5} \frac{1}{1/2''}$ F = 81/2''	N/A	N/A	4,565 #
¢	4, 11 HDU5-SDS2.5	(2) 2x PER WALL THICKNESS	$\frac{PAB5}{d_e} = \frac{1, 2}{5 \frac{1}{2''}}$ F = 81/2''	N/A	N/A	5,645 #
	5, 11 HDU8-SDS2.5	4x6	$\frac{\frac{PAB7}{d_e} = 81/2"}{F = 13"}$	N/A	N/A	7,870#
E	11 HDU11-SDS2.5	4x6	$\frac{\frac{PAB8}{d_e} = \frac{6}{10"}}{F = 15"}$	N/A	N/A	9,535 #
F	11 HDU14-SDS2.5	HDU14-SDS2.5 4x8 OR 6x6		N/A	N/A	14,445 #
G	CS16 ⁷ STRAP	(1) 2x ⁸ PER WALL THICKNESS	N/A	(26) 8d OR (22) 10d	32" LONG PLUS CLEAR SPAN	1,705 #
H	MSTC40 ⁷ STRAP	(2) 2x ⁸ PER WALL THICKNESS	N/A	(36) 16d SINKERS	40" LONG	3,080 #
	MSTC52 ⁷ STRAP	8 4x4	N/A	(48) 16d SINKERS	52" LONG	4,620 #
<pre> </pre>	MSTC66 ⁷ STRAP	8 4x4	N/A	(68) 16d SINKERS	66" LONG	5,860 #
K	CMST14 7 STRAP	8 4x4	N/A	(66) 16d	60" LONG PLUS CLEAR SPAN	6,490 #
	CMST12 7 STRAP 7	4x6	N/A	(86) 16d	78" LONG PLUS CLEAR SPAN	9,215 #
NOTES						

 1) SINGLE POUR.
 DEEPEN / WIDEN FOOTING AROUND PAB ANCHOR

 2) TWO POUR.
 AS SPECIFIED ON HOLDOWN SCHEDULE (d & & F)

 3) N/A

4) PROVIDE (2) #4 TOP AND BOTTOM AT FOOTING UNDER SHEARWALL AND EXTEND 4'-6" PAST EACH END

PROVIDE (2) #4 TOP AND BOTTOM AT FOOTING UNDER SHEARWALL AND EXTEND 5'-6" PAST EACH END.

- 6) DBL. NUT AND STEEL PLATE PER DETAIL 52. PROVIDE (2) #4 TOP AND BOTTOM AT FOOTING UNDER SHEARWALL AND EXTEND 7'-0" PAST EACH END.
- 7) CENTERLINE OF STRAP TO BE CENTER OF RIM JOIST. MAXIMUM CLEAR SPAN TO BE 16". 8) MINIMUM POST REQUIRED TO BE INSTALLED IN UPPER AND LOWER WALL FRAMING.
- 9) CONNECT (2) 2x HOLDOWN STUDS TOGETHER WITH (24) 16d SINKER NAILS MIN. 10) ALL NAILS TO BE COMMON WIRE UNLESS NOTED OTHERWISE
- 11) ALL SCREWS TO BE SIMPSON SDS 1/4" x 2 1/2". HOLDOWN MAY BE RAISED OFF THE SILL WITH NO REDUCTION IN LOAD.
- (2) ALL HOLDOWN POST AND SILL PLATES TO BE DOUGLAS FIR LARCH.

CERTIFICATE OF COMPLIANCE Project Name: Cunningham Residence Calculation Description: Title 24 Analysis

Calculation Date/Time: 2021-08-14T18:28:47-07:00 Input File Name: AZ131A1.ribd19x

CF1R-PRF-01E (Page 1 of 11)

GENER	RAL INFORMATION									
01	Project Name	Cunningham Residence	nningham Residence							
02	Run Title	Title 24 Analysis								
03	Project Location	302 Grandview								
04	City	Novato	05	Standards Version	2019					
06	Zip code	94945	07	Software Version	CBECC-Res 2019.1.3 SP1					
08	Climate Zone	2	09	Front Orientation (deg/ Cardinal)	90					
10	Building Type	Single family	11	Number of Dwelling Units	1					
12	Project Scope	NewConstruction	13	Number of Bedrooms	2					
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	1					
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.33					
18	Total Cond. Floor Area (ft ²)	901	19	Glazing Percentage (%)	20.31%					
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a					
22	Is Natural Gas Available?	No								
СОМР										
01 Building Complies with Computer Performance										
	02 This building incorporates feature	s that require field testing and/or verificatio	n hy a co	rtified HEPS rater under the supervision of a	CEC-approved HEDS provider					
			n by a ce	Tuneu neks rater under the supervision of a						
	03 This building incorporates one or	This building incorporates one or more Special Features shown below								

Registration Number NOTICE: This document I responsible for, and cann	stem Serv ontained ir	Registration Date/Time: 08/16/2021 20:26 HERS Provider: CHEERS ervices, Inc. (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not et in this document.														
CA Building Energy		Report Version: 2019.1.300								Report Generated: 2021-08-14 18:29:48						
CERTIFICATE OF COMP	CERTIFICATE OF COMPLIANCE								v 202003	501						CF1R-PRF-01E
Project Name: Cunning	gham Residence					Ca	alcula	ation D	ate/Tin	ne: 2021	-08-14T	18:28:47	-07:00			(Page 4 of 11)
Calculation Descriptio	n: Title 24 Analy	sis				In	put F	ile Na	ne: AZ1	L31A1.ri	bd19x					
ZONE INFORMATION																
01	02		03			04				05			06			07
Zone Name	Zone	уре	HVAC System Nam	e	Zone l	Floor A	rea (fi	t ²)	Avg.	Ceiling H	eight	Water Heating System 1			Nater He	ating System 2
Home	Condit	oned	Split System Heat Pur	mp1		901				8.9			DHW Sys 1			N/A
OPAQUE SURFACES																
01	02		03		04			05			06		07			08
Name	Zone		Construction	,	Azimut	h	0	rientati	ion	Gros	s Area (ft	²)	Window and Area (ft2)	Door	г	ïlt (deg)
Front Wall	Home		R-21 Wall		90	M	$\overline{\ }$	Front			272		65.01			90
Left Wall	Home		R-21 Wall		180	Ż		Left			296		56		90	
Back Wall	Home		R-21 Wall		270		Back			272		47.33		90		
Right Wall	Home		R-21 Wall		0-		Right			240			28		90	
Interior Surface	Home>>Attic H	ome	R-21 Wall1		n/a n/a			56			0		n/a			
Roof	Home		R-38 Ceiling + R-19 Roof		n/a	n/a			901			n/a		n/a		
Raised Floor	Home		R-30 Floor Crawlspace	1.1.1	n/a	n/a		C	901			n/a		n/a		
			L		-	1		ĸ	3							
01	02		03	1	04			05			06		07			08
Name	Constructio	n	Type	Roof	Rise (x	in 12)	Roo	f Reflec	ctance Roof Emittance			:e	Radiant Barrier		Cool Boof	
Attic Home	Attic RoofHo	ne	Ventilated		6	,		0.1					No			
FENESTRATION / GLAZIN	IG					-				-						
01	02		03	04	L .	05	5	06	07	08	09	10	11	12	13	14
Name	Туре		Surface	Orienta	ation	Azim	uth	Width (ft)	Height (ft)	^t Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Sourc e	Exterior Shading
Window	Window		Front Wall	Fro	nt	90)	6	3.5	1	21	0.35	NFRC	0.28	NFRC	Bug Screen
Front Door	Window		Front Wall		nt	90)	3	6.67	1	20.01	0.21	NFRC	0.09	NFRC	Bug Screen
Window 2	Window		Front Wall		Front 90)	6	4	1	24	0.35	NFRC	0.28	NFRC	Bug Screen
Registration Number: 421-P010120614A-000-000-0000000-0000 Registration Date/Time: 08/16/2021 20:26 HERS Provider: CHEERS NOTICE: This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc. (CHERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not																
CA Building Energy Effic	iency Standards -	2019 Resid	lential Compliance		Rep Scho	ort Ver ema Ve	sion: 2 rsion:	2019.1. rev 202	300 200901			f	Report Genera	ted: 20	21-08-14	18:29:48
CERTIFICATE OF COMP	PLIANCE															CF1R-PRF-01E
Project Name: Cunningham Residence							alcula	ation D	ate/Tin	ne: 2021	-08-14T	18:28:47	07:00			(Page 7 of 11)

Calculation Description: Title 24 Analysis

Quality Insulation Installation (QII)

BUILDING ENVELOPE - HERS VERIFICATION 01

Input File Name: AZ131A1.ribd19x

03

Building Envelope Air Leakage

Not Required

04

CFM50

n/a

Not Required

NATER HEATING SYSTEMS									
01	02	03	04	05	06	07			
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification			
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a			

02

High R-value Spray Foam Insulation

Not Required

							_								
WATER HEATERS								\geq							
01	02	0	3	04	05	06	0	7	08	09	10	11	12		
Name	Heating Element Type	Tank	Туре	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input or P	Rating Vilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Ratin or Flow Rate	g NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition		
DHW Heater 1	Heat Pump	n,	/a	1	50	NEEA	n,	/a	n/a	n/a	80 gal	Rheem\PROPH50 T2 RH37515 (50 gal)	Outside		
[
WATER HEATING - HEI	RS VERIFICATIO	N													
01	02	2		03		04			05	00	5	07	08		
Name	Pipe Ins	ulation	Parall	el Pipin	g	Compact Distri	tribution Compact Distributio		Compact Distribution Type		Compact Distribution Type		on Control	Central DHW Distribution	Shower Drain Water Heat Recovery

DHW Sys 1 - 1/1 Not Required Not Required Not Required None Not Required Not Required Not Required Not Required

 Registration Number:
 421-P010120614A-000-000-0000000-0000
 Registration Date/Time:
 08/16/2021 20:26
 HERS Provider:
 CHEERS

 NOTICE:
 This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc. (CHERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.
 Report Version: 2019.1.300
 Report Generated:
 2021-08-14
 18:29:48

 Schema Version: rev 20200901

	CERTIFICATE OF COMPLIANCE Project Name: Cunningham Residence Calculation Description: Title 24 Analysis	Calculation I Input File Na	Date/Time: 2021-08-14T18:28:47-07:00 ame: AZ131A1.ribd19x	CF1R-PRF-01E (Page 2 of 11)	CERTIFICATE OF COMPLIANCE CF1R-PRF-01E Project Name: Cunningham Residence Calculation Date/Time: 2021-08-14T18:28:47-07:00 (Page 3 of 11) Calculation Description: Title 24 Analysis Input File Name: AZ131A1.ribd19x
	NERGY DESIGN RATING	Enouge Design Design		Margins	REQUIRED SPECIAL FEATURES The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
		Efficiency ¹ (EDR)	al ² (EDR) Efficiencv ¹ (FDR)	Total ² (EDR)	 Floor has high level of insulation Insulation below roof deck
	Standard Design	52.3	29.1		 Window overhangs and/or fins Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed
	Proposed Design	52.1	28.9 0.2	0.2	HERS FEATURE SUMMARY
		RESULT: ^{3:} COMPLIES			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
	Efficiency EDR includes improvements to the building	genvelope and more efficient equipment			Building-level Verifications:
	Building complies when efficiency and total complian	ace margins are greater than or equal to zero			 Indoor air quality ventilation Kitchen range hood
	Standard Design PV Capacity: 1.94 kWdc PV System resized to 1.94 kWdc (a factor of 1.936	6) to achieve 'Standard Design PV' PV scaling			 Cooling System Verifications: Minimum Airflow Verified EEP
		ENERGY USE SUMMARY			Verified SEER Verified Refrigerant Charge
	Energy Use (kTDV/ft ² -yr)	Standard Design Propo	osed Design Compliance Margin	Percent Improvement	Fan Efficacy Watts/CFM Heating System Verifications:
	Space Heating		23.57 0.89	3.6	 Verified HSPF Verified heat pump rated heating capacity
	Space Cooling IAQ Ventilation	16.27 3.28	17.73 -1.46 3.28 0	-9 0	 HVAC Distribution System Verifications: Duct leakage testing
	Water Heating	28.24	26.77 1.47	5.2	Domestic Hot Water System Verifications: None
	Self Utilization/Flexibility Credit Compliance Energy Total	n/a 72.25	0 0 71.35 0.9	n/a 1.2	BUILDING - FEATURES INFORMATION
					01 02 03 04 05 06 07
	01 02 03	04 05 06	06 07 08 09 10	11 12	Project Name Conditioned Floor Area (ft ²) Number of Dwelling Units Number of Bedrooms Number of Zones Number of Ventilation Number of Water Cooling Systems Heating Systems
	C System Size		FI Azimuth Tilt Array Angle Tilt: (x ir	Inverter Eff. Annual	Cunningham Residence90112101
	(kWdc)		(deg) Input (deg) 12)	(%) (%)	
<text></text>	1.94 NA Standa	ard Fixed none tru	ue 150-270 n/a n/a <=7:12	96 100	
	TE: This document has been generated by ConSol Home Energy sonsible for, and cannot guarantee, the accuracy or completeness A Building Energy Efficiency Standards - 2019 Residen TIFICATE OF COMPLIANCE ect Name: Cunningham Residence Ilation Description: Title 24 Analysis	y Efficiency Rating System Services, Inc. (CHERS) using information ss of the information contained in this document. Itial Compliance Report Version: 2019.1 Schema Version: rev 20 Calculation Dat	1.300 Report Generate 1.200901 Report Generate 1.200901 Ate/Time: 2021-08-14T18:28:47-07:00 ne: AZ131A1.ribd19x	RS. Therefore, CHEERS is not d: 2021-08-14 18:29:48 CF1R-PRF-01E (Page 5 of 11)	NOTICE: This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc. (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document. CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Report Generated: 2021-08-14 18:29:48 Schema Version: rev 20200901 CERTIFICATE OF COMPLIANCE Project Name: Cunningham Residence CF1R-PRF-01E Calculation Description: Title 24 Analysis Interest of CHEERS
AndA	01 02	03 04 05 06	07 08 09 10 11 1	2 13 14	OVERHAUGS AND FINS 01 02 03 04 05 06 07 08 09 10 11 12 13 14
	Name Type S	Surface Orientation Azimuth (ft)	Height (ft) Mult. Area (ft) Mult. U-factor Source SH	GC Sourc Shading	Overhang Left Fin Right Fin
	Window 3 Window 16	eft Wall Left 180	(III) (III) Source	e Bug Screen	Depth Dist Up Left Extent Right Extent Flap Ht. Depth Top Up Dist L Bot Up Depth Top Up Dist R Bot Up
	Window 4 Window Let	eft Wall Left 180	1 40 0.34 NFRC 0.	29 NFRC Bug Screen	Window 7 2 0.4 5.5 20 <
	Window 5 Window Back Window 6 Window Back	ack Wall Back 270 4	3.5 1 14 0.35 NFRC 0.1 1 1 4 0.35 NFRC 0.1	28 NFRC Bug Screen	OPAQUE SURFACE CONSTRUCTIONS
makema	Window 8 Window Ba Window 7 Window Ba	ack Wall Back 270 4	1 1 4 0.35 NFRC 0.1 4 1 16 0.35 NFRC 0.1	28 NFRC Bug Screen	01 02 03 04 05 06 07 08
	Window 8 Window Ri	ght Wall Right O	1 14 0.35 NFRC 0.1	28 NFRC Bug Screen	Construction Name Surface Type Construction Type Framing Total Cavity R-value Interior / Exterior Continuous U-factor Assembly Layers
			1 14 0.35 NFRC 0	28 NFRC Bug Screen	R-value
Note: Note: <t< td=""><td>JE DOORS 01</td><td>02</td><td>03</td><td>04</td><td>R-21 Wall Exterior Walls Wood Framed Wall 2x6 @ 16 in. O. C. R-21 None / None 0.068 Cavity / Frame: R-21 / 2x6 Exterior Finish: All Other Siding</td></t<>	JE DOORS 01	02	03	04	R-21 Wall Exterior Walls Wood Framed Wall 2x6 @ 16 in. O. C. R-21 None / None 0.068 Cavity / Frame: R-21 / 2x6 Exterior Finish: All Other Siding
by two the property is a strain in the pro	Name	Side of Building	Area (ft ²)	J-factor	Inside Finish: Gypsum Board
Note Important	Door	Back Wall	13.33	0.5	R-21 Wall1 Interior Walls Wood Framed Wall 2x6 @ 16 in. O. C. R-21 None / None 0.064 Cavity / Frame: R-21 / 2x6 Other Side Finish: Gypsum Board
Image <td>HANGS AND FINS</td> <td></td> <td></td> <td></td> <td>Roofing: Light Roof (Asphalt Shingle)</td>	HANGS AND FINS				Roofing: Light Roof (Asphalt Shingle)
memme	01 02 03	04 05 06 07 08 Overhang	8 09 10 11 12	13 14	Attic RoofHome Attic Roofs Wood Framed Ceiling 2x4 @ 24 in. O. C. R-19 None / None / None 0.059 Siding/sheathing/decking
	Window Depth Dist Up I	Left Extent Right Flap Ht. Depth Top L	Up Dist L Bot Up Depth Top Ur	Dist R Bot Up	Around Roof Joists: R-6.0 insul.
Note for the form N	Window 8 0.4	20 5.6 0 0 0			Floor Surface: Carpeted Floor Surface: Carpeted Floor Deck: Wood
	Front Door 8 0.4	15.8 18.3 0 6 0			Crawlspace
	Window 2 2 0.4	20 5.5 0 0 0	0 0 0 0	0 0	Ceilings (below Wood Framed Date 24 Ceiling Joists: R-28.9 insul.
	Window 5 2 0.4	20 5.5 0 0 0	0 0 0 0	0 0	attic) Ceiling 2x4 @ 24 In. U. C. K-38 None / None 0.025 Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
	Window 6 2 0.4	16.5 16.5 0 0 0		0 0	
	This document has been generated by ConSol Home Energy E ble for, and cannot guarantee, the accuracy or completeness o liding Energy Efficiency Consol - 2010 D	UU-UUUU Registration Date/Time: 0 Efficiency Rating System Services, Inc. (CHEERS) using information up of the information contained in this document.	U0/16/2021 20:26 HERS Provider: CF uploaded by third parties not affiliated with or related to CHEERS	IEERS Therefore, CHEERS is not	Registration Number: 421-P010120614A-000-000-0000000-0000 Registration Date/Time: 08/16/2021 20:26 HERS Provider: CHEERS NOTICE: This document has been generated by Consol Home Energy Efficiency Rating System Services, Inc. (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.
Index Control Calcing Con		Schema Version: rev 2020	00901		Schema Version: rev 20200901
tand materian tand materian<	IFICALE OF COMPLIANCE ect Name: Cunningham Residence	Calculation Da	ate/Time: 2021-08-14T18:28:47-07:00	CF1R-PRF-01E (Page 8 of 11)	CERTIFICATE OF COMPLIANCECF1R-PRF-01EProject Name: Cunningham ResidenceCalculation Date/Time: 2021-08-14T18:28:47-07:00(Page 9 of 11)
CONTRIMUE VETAFINE Column of the strength of th	ulation Description: Title 24 Analysis	Input File Nam	ne: AZ131A1.ribd19x	- •	Calculation Description: Title 24 Analysis Input File Name: AZ131A1.ribd19x
· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		HVAC - DISTRIBUTION SYSTEMS
Anne Besting Unit Cooling Unit Required Monto Required Monto Required Monto Condition Required Monto Required Monto Support Support <t< td=""><td>01 02</td><td>03 04 05</td><td>06 07 08 09</td><td>10 11</td><td>01 02 03 04 05 06 07 08 09 10 11 12 Duct Ins. R-value Duct Ins. R-value Duct Ins. R-value Surface Area Duct Ins. R-value Duct Ins. R-value Surface Area Duct Ins. R-value Duct Ins. R-</td></t<>	01 02	03 04 05	06 07 08 09	10 11	01 02 03 04 05 06 07 08 09 10 11 12 Duct Ins. R-value Duct Ins. R-value Duct Ins. R-value Surface Area Duct Ins. R-value Duct Ins. R-value Surface Area Duct Ins. R-value Duct Ins. R-
i i	Name System Type	Heating Unit Cooling Unit Fan Name Dis	stribution Required Verified Name Thermostat Status Existing	Heating Cooling Equipment Equipment	Name Type Design Type Supply Return Supply Return Supply Return Bypass Duct Leakage HERS
No. Verfled Heat pump heating cooling Heat Pump heating Heat Pump heating cooling <td></td> <td></td> <td>Air Type Condition</td> <td>Count Count</td> <td>Duct Duct Duct Verification</td>			Air Type Condition	Count Count	Duct Duct Duct Verification
01 02 03 04 05 06 07 08 09 1 -HAT PUMDE	it System Heat Pump1 Heat pump heating cooli	ing Heat Pump Heat Pump HVAC Fan 1 Dis System 1 System 1 System 1	Setback New NA System 1	1 1	Air Distribution System 1 Unconditioned attic Non-Verified R-6 R-6 Attic Attic n/a Na No Sealed and Bypass Duct Sealed and System 1
-HAIR PUMPS -HEAT PUMPS	01 02 03	04 05 06 0	07 08 09 10	11	HVAC DISTRIBUTION - HERS VERIFICATION
Name System Type Number of Unity System Type Number of Unity System Type System Type MERS Verification Number of Unity Numer of Unity Numer of Unity	C - HEAT PUMPS	Heating	Cooling Zonally Compared	sor	01 02 03 04 05 06 07 08 09
Image: bit in the system is a start of	Name System Type Number of U at Pump System 1 Central split HP 1	Jnits HSPF/COP Cap 47 Cap 17 SE 9.5 12000 8600 1	EER EER/CEER Zonally Controlled Compress Type 16 12.5 Not Zonal Single Speed	HERS Verification Heat Pump System 1-hers-htpump	NameDuct Leakage VerificationDuct Leakage Target (%)Verified Duct LocationVerified Duct DesignBuried DuctsDeeply Buried DuctsLow-leakage Air HandlerLow Leakage Ducts Entirely in Conditioned Space
Name Nerfied Airflow Target Nerfied EER Nerfied AER Nerfied ASP					Air Distribution Yes 5.0 Not Required Not Required Not Required Not Required Not Required Not
Name Airflow Target Verified EER Verified SEER Verified HSPF Verified HSPF Verified Heating Cap 47 Verified Heating Cap 47 Oump System Required 350 Required Required Yes Yes Yes Yes	01 02 03	04 05	<u> </u>	09	System 1-hers-dist
Pump System Required 350 Required Required Yes Yes Yes Ves Yes Yes Yes Yes Yes	Name Verified Airflow Airflow Ta	rget Verified EER Verified SEER Verif	ified Refrigerant Verified HSPF Verified Hea Charge Cap 47	iting Verified Heating Cap 17	HVAC - FAN SYSTEMS
	t Pump System Required 350	Required Reauired	Yes Yes Yes	Yes	UI 02 03 04 Name Type Fan Power (Watts/CFM) Name

HVAC HEAT PUMPS -	HERS VERIFICATION		СН	FFF	2 3			
01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge	Verified HSPF	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	Yes	Yes	Yes	Yes

 Registration Number: 421-P010120614A-000-000-0000000-0000
 Registration Date/Time: 08/16/2021 20:26
 HERS Provider: CHEERS

 NOTICE: This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc. (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.
 Report Version: 2019.1.300
 Report Generated: 2021-08-14
 18:29:48

 Schema Version: rev 20200901

HVAC Fan 1

CERTIFICATE OF COMPLIANCE

HVAC FAN SYSTEMS - HERS VERIFICATION 01 02 03 Required Fan Efficacy (Watts/CFM) Name Verified Fan Watt Draw HVAC Fan 1-hers-fan 0.58 Required

HVAC Fan

0.58 HVAC Fan 1-hers-fan

 Registration Number:
 421-P010120614A-000-000-000000-0000
 Registration Date/Time:
 08/16/2021
 20:26
 HERS Provider:
 CHEERS

 NOTICE:
 This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc. (CHERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.
 Report Version: 2019.1.300
 Report Generated:
 2021-08-14
 18:29:48

	ingham Residence Title 24 Enerc	iew Ifornia 94945 : AZ131A1
	Cunningham I	302 Grandview Novato, California 94945 Job Number: AZ131A1
I	T2	24-1

Schema Version: rev 20200901

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3B:

150.0(i)1

manufacturer's instructions.

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply. (01/2020)

Building Envelop	e Measures:
§ 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. They must 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 Emittance. 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):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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). 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
§ 150.0(g)2:	insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a
§ 150.0(q):	maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decor	ative Gas Appliances, and Gas Log Measures:
§ 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 Conditioni	ng, Water Heating, and Plumbing System Measures:
§ 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-K.*
§ 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-on 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)4:	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 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.
§ 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.

100.00/1.	a minimum of R-12 external insulat
150.0(j)2A:	Water Piping, Solar Water-heatin be insulated as specified in Sectior insulation wall thickness of one inc water piping with a nominal diamet than 3/4 inch that is: associated wit buried below grade, and from the h
150.0(j)3:	Insulation Protection. Piping insu wind as required by Section 120.3(Insulation covering chilled water pi Class I or Class II vapor retarder. F
150.0(n)1:	Gas or Propane Water Heating S the following: A dedicated 125 volt, copper branch circuit, within three word "spare" and be electrically iso for the branch circuit and labeled w outside termination and the space of the water heater, and allows nat
150.0(n)2:	Recirculating Loops. Recirculatin
150.0(n)3:	Solar Water-heating Systems. So Corporation (SRCC), the Internatio agency that is approved by the Exe
ucts and Fans Me	easures:
110.8(d)3:	Ducts. Insulation installed on an excontractor installs the insulation, th
150.0(m)1:	CMC Compliance. All air-distributi and ANSI/SMACNA-006-2006 HVA plenums must be insulated to a min space as confirmed through field ve surrounded by directly conditioned mechanically fastened. Openings r 181, UL 181A, or UL 181B or aeros inch, the combination of mastic and designed or constructed with mate Building cavities and support platfor reductions in the cross-sectional ar
150.0(m)2:	Factory-Fabricated Duct System connections, and closures; joints a tapes unless such tape is used in c
150.0(m)3:	Field-Fabricated Duct Systems. I mastics, sealants, and other requir
150.0(m)7:	Backdraft Damper. Fan systems t
150.0(m)8:	Gravity Ventilation Dampers. Gra manually operated dampers in all of
150.0(m)9:	to weather must be suitable for out foam insulation must be protected
150.0(m)10:	Porous Inner Core Flex Duct. Po
150.0(m)11:	Duct System Sealing and Leakage occupiable space, the ducts must be accordance with § 150.0(m)11 and
150.0(m)12:	Air Filtration. Space conditioning a equivalent filters. Filters for space of drops and labeling must meet the r
150.0(m)13:	Space Conditioning System Airfl for the placement of a static pressu per ton of nominal cooling capacity CFM for all others. Small duct high unit fan efficacy ≤ 0.62 watts per C

CERTIFICATE OF COMPLIANCE

Project Name: Cunningham Residence

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2021-08-14T18:28:47-07:00 Input File Name: AZ131A1.ribd19x

CF1R-PRF-01E (Page 10 of 11)

Project Na
Calculatio
DOCUMEN
1. I certify t
Documentati
David Mor
Company:
Red Tape E
Address:
6015 Bear
City/State/Zi
Elk Grove,
RESPONSIB
I certify the f
1. I
2.
3. T
Responsible I
Shellie Cur
Company:
Homeown
Address:
302 Grand
City/State/Zi
Novato, CA

IAQ (INDOOR AIR QUALITY) FANS					
01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
SFam IAQVentRpt	49	0.25	Default	0	n/a

Registration Date/Time: 08/16/2021 20:26 HERS Provider: CHEERS , Inc. (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not s document. Registration Number: 421-P010120614A-000-000-000000-0000 NOTICE: This document has been generated by ConSol Home Energy Efficiency Rating System Servic responsible for, and cannot guarantee, the accuracy or completeness of the information contained in CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Report Generated: 2021-08-14 18:29:48 Schema Version: rev 20200901

(m)

2019 Low-Rise Residential Mandatory Measures Summary

Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the

Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have ation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank. ng System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must n 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum ch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot ter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less ith a domestic hot water recirculation system, from the heating source to storage tank or between tanks,

heating source to kitchen fixtures.* ulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and (b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). iping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve. systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of , 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG

feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the olated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the where the water heater is installed; a condensate drain that is no more than two inches higher than the base tural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour. ig loops serving multiple dwelling units must meet the requirements of § 110.3(c)5. colar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification

onal Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing ecutive Director.

xisting space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a he contractor must certify to the customer, in writing, that the insulation meets this requirement. tion system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 AC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and inimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL osol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 nd either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums erials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. orms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause

ns. Factory-fabricated duct systems must comply with applicable requirements for duct construction, and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct combination with mastic and draw bands. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes,

rements specified for duct construction. that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers. ravity ventilating systems serving conditioned space must have either automatic or readily accessible, openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.

on must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to retuin the service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular d as above or painted with a coating that is water retardant and provides shielding from solar radiation. prous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.

age Test. When space conditioning systems use forced air duct systems to supply conditioned air to an t be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in d Reference Residential Appendix RA3.

systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure requirements in §150.0(m)12. Filters must be accessible for regular service.*

flow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole sure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM y, and an air-handling unit fan efficacy \leq 0.45 watts per CFM for gas furnace air handlers and \leq 0.58 watts per h velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

	2019 Low-Rise Residential Mandatory Measures Summary
Requirements for	or 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)1C:	Single Family Detached Dwelling Units. 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 provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be \leq 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Sy	/stems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; 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 Measu	es:
§ 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.
§ 150.0(k)1B:	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 must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 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).*
§ 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)1l:	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)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
\$ 150 0(k)2E	Interior Switches and Controls, Lighting controls must comply with the applicable requirements of § 110.9.

	Anthony B. Colbert
CERTIFICATE OF COMPLIANCE	CF1R-PRF-01E
Project Name: Cunningham Residence	Calculation Date/Time: 2021-08-14T18:28:47-07:00 (Page 11 of 11)
Calculation Description: Title 24 Analysis	Input File Name: AZ131A1.ribd19x
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
David Morgan	David Morgan
Company:	Signature Date:
Red Tape Express	08/14/2021
Address:	CEA/ HERS Certification Identification (If applicable):
6015 Bear Creek Court	
City/State/Zip:	Phone:
Elk Grove, CA 95758	(916) 684-6687
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
 I am eligible under Division 3 of the Business and Professions Code to accept responsibility I contifications identified on this Contifications identified on this Contifications 	/ for the building design identified on this Certificate of Compliance.
 The building design features or system design features identified on this Certificate of Con calculations, plans and specifications submitted to the enforcement agency for approval w 	npliance are consistent with the information provided on other applicable compliance documents, worksheets, vith this building permit application.
Responsible Designer Name:	Responsible Designer Signature:
Shellie Cunningham	Shellie Cunningham
Company:	Date Signed:
Homeowner - Shellie Cunningham	08/16/2021
Address:	License:
302 Grandview Avenue	
City/State/Zip:	Phone:
Novato, CA 94945	(415) 493-6144

Digitally signed by ConSol Home Energy Efficiency Rating System Services, Inc. (CHEERS). 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.

CA Building Energy Efficiency Standards - 2019 Residential Compliance

 Registration Number:
 421-P010120614A-000-000-0000000-0000
 Registration Date/Time:
 08/16/2021 20:26
 HERS Provider:
 CHEERS

 NOTICE:
 This document has been generated by ConSol Home Energy Efficiency Rating System Services, Inc.
 (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

 Report Version: 2019.1.300 Report Generated: 2021-08-14 18:29:48 Schema Version: rev 20200901

2019 Low-Rise Residential Mandatory Measures Summary

breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

	ENERGY COMMISSION	
, Ventilation	§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
or floors with	§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complex with all other applicable requirements in § 150.0(k)2.
at rates	§ 150.0(k)2l:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
a balanced CFM at 50 Pa	§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
endix RA3.8.	§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
ed to provide rflows must be or compliance.	§ 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 meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS.
ential it is	§ 150.0(k)3B:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
	§ 150.0(k)3C:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
mal efficiency e heater	§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
ectric	§ 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 Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
eater, or	§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
ne switch that mp sizing, flow	§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
	Solar Ready Buil	dings:
requirements	§ 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) through § 110.10(e).
luminaire or sor control, or	§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
n contact (IC) st have an A or be	§ 110.10(b)1:	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 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. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building of or on the roof or overhang of another structure located within 250 feet of the building. or on covered parking installed with the
ust hoods)		building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
	§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
JA8 elevated	§ 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.*
quired to power, emit no	§ 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 distance, measured in the horizontal plane, 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.*
oset is closed.	§ 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) through § 110.10(c) must be provided to the occupant.
is installed to	§ 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.
	3 (-,	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit

§ 110.10(e)2:

Title 24 Energy	Compliance Documentation

side Φ R unningham

U

Ð

 \mathbf{O}

I. Water Conservation Requirements (California Civil Code 1101.1-1101.8)

A. Alterations and Improvements to Single Family Residences

Where the permitted scope of work involves real property built and available for use on or before January 1, 1994. Existing toilets, urinals, interior faucets and showerheads that exceed flow rates listed below shall be replaced as part of the permitted work to meet the flow rates listed below.

Fixture Type	Maximum Flow Rate
Toilet (Water Closet)	1.6 gallons/flush
Urinal	1.0 gallons/flush
Showerheads	2.5 gallons/minute
Interior Faucets	2.2 gallons/minute

II. CalGreen 2019 Mandatory Requirements

A. <u>New Construction, Additions and Alterations</u>

All the following Mandatory Requirements apply to new construction. In "Additions" and "Alterations", where the conditioned building area, volume or size is increased Then compliance is limited to the scope of work outlined in the approved permit (i.e. if the permitted scope of work does not include site work then compliance with "Site Drainage" is not necessary, etc.).

B. Storm Water Quality Control (§ 4.106)

Storm water drainage protection shall be coordinated and managed by the contractor during construction. One or more of the f ollowing measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site:

- 1) Retention basins of sufficient size shall be utilized to retain storm water on the site and/or;
- 2) Where storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method. Water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

Examples include:

- a) Silt fencing: b) Hay Bales/Mulch;
- c) Cutback Curbs;
- d) Erosion Control Matting;
- e) Inlet Protectors;
- Stabilized Entrances: g) Sand/Gravel Bags;
- h) Fiber Rolls/Wattles;

C. Site Drainage (§ 4.106.3)

The site shall be planned and developed to keep surface water from entering the home and surrounding structures on the property. Construction plans shall indicate how the site grading or drainage system will manage surface water flows (Section 4.106.3). Examples of methods to manage surface water include, but are not limited to, the following:

- 1) Swales.
- 2) Water collection and disposal systems.
- 3) French drains. 4) Water retention gardens.
- 5) Other water measures, acceptable to the local jurisdiction, that keep surface water away from structures and aid in groundwater recharge.

Examples of Acceptable Methods of Implementation include:

- 1) Redirecting ground water flow both above and below the
- surface to ensure water flow away from structures. 2) Channel rain gutter discharge away from the building during large or intense rain events. The contractor should consider implementing site designs that mimic water flows similar to the natural environment.
- Additional design strategies that can be considered are: a) Roof overhangs. b) Sloped ground.
 - c) Properly placed drains.

D. Electric Vehicle Charging (§ 4.106.4.1) The following only applies to new construction where the home has an attached garage

- 1) Install a code approved raceway, no less than 1" inside diameter from the main electrical service or sub-panel. The raceway shall be continuous and uninterrupted where concealed or inaccessible. The raceway shall terminate in a UL approved cabinet, junction box or enclosure approximately 15-20 ft in front of the garage door. If conductors, circuit breakers are not installed under this
- permit then the following items shall be completed: a) The termination point shall have a permanent label "EV Capable"
 - b) The main electrical panel and any associated subpanels shall be sized a accommodate the electrical charging station.
 - c) An empty circuit breaker location shall be provided in the appropriate electrical panel for connection of the electrical vehicle charging station. The circuit breaker shall have the capacity to install a 208/240 single phase 40 amp breaker.
 - d) The circuit directory for the future 40 amp breaker shall be labeled "EV Capable"

E. Indoor Plumbing Requirements (§ 4.303)

- 1) All piping, fittings and plumbing fixtures shall be "lead free" and contain no more than 0.25% lead. 2) Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of
- the California Plumbing Code.
- 3) Plumbing Fixtures shall comply with the following requirements:

Fixture Type	Maximum Flow Rate
	Single flush water closets shall not exceed 1.28 gallons/flush when tested in accordance with ASME A112.19.233.2 Dual flush water closets shall not exceed and effective flush volume of 1.28
Toilet (Water Closet)	gallons/flush. The effective flush volume is defined as the composite, average flush volume of two reduced volume flushes plus one full flush.
	accordance with ASME A112.19.1 and ASME 112.19.14.
	Tank type water closets shall be certified to meet the performance requirements of the US EPA WaterSense Specifications for tank type toilets.
Urinal	Wall mounted urinals shall not exceed 0.125 gallons/flush. All other urinals shall not exceed 0.5 gallons/flush.
	1.8 gallons/minute at 80 psi.
Single Showerheads	Showerheads shall be certified to meet the performance requirements of the US EPA WaterSense Specifications for showerheads.
Multiple Showerheads serving one shower	The combined flow rate of all showerheads and/or shower outlets shall not exceed 1.8 gallons/minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: A handheld shower shall be considered a showerhead.
Interior Faucets	1.2 gallons/minute @ 60 psi maximum and 0.8 gallons/minute @ 20 psi minimum
Metering Faucets	0.20 gallons/cycle
	1.8 gallons/minute @ 60 psi.
Kitchen Faucets	Kitchen faucets may temporarily increase the flow rate listed above to a maximum of 2.2 gallons/minute @ 60 psi, but must default to a maximum flow rate of of 1.8 gallons/minute @ 60 psi
	Note: When complying faucets are unavailable the building official MAY accept an aerator or other means to achieve the maximum flow rate of 1.8 gallons/minute @ 60 psi.

F. Landscape Irrigation System (if inc. in the permit) (§ 4.304) Outdoor POTABLE water use in landscape areas shall conform to

the following: 1) Local water efficient landscape ordinance, or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

The MWELO and supporting documents and a water budget calculator are available at: https://water.ca.gov/LegacyFiles/wateruseefficiency/docs/MWEL <u>O09-10-09.pdf</u>

2) The requirements listed above only apply to the landscape and irrigation systems if it is installed as part of the work covered by the building permit.

G. Rodent Proofing (§ 4.406.1)

Annular spaces around pipes, electric cables, conduits or other **O. Adhesives, Sealants and Caulking** (§4.504.2.1) openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

H. Construction Waste Management (§ 4.408.1)

Contractor shall divert at least 65% of the non-hazardous construction waste through recycling, salvage or reuse. Diversion shall be based on weight or volume. Diversion shall not include excavated soil or land clearing debris. Contractor may develop an alternative waste reduction plan if recycling facilities capable of full compliance do not exist or are not located "reasonably close" to the job site. The local jurisdiction shall make the determination of "reasonably close".

Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval of the enforcing agency.

Contractor shall retain copies of all trip tickets form hauling and disposal firms and maintain updated calculations to document the project has successfully diverted at least 65% of the total nonhazardous construction waste.

Projects that generate a total combined weight of construction and demolition waste disposal of 3.4 pounds/sf of building area, or less, shall meet the minimum 65% construction waste reduction.

. <u>Construction Waste Management Plan(§ 4.408.2)</u>

Contractor shall submit a Waste Management Plan to the Building Department at time of permit submittal. The Waste Management Plan shall be updated as necessary and available to the during construction by the enforcing agency. The Waste Management Plan shall address the following:

- 1) Identify the construction and demolition waste materials to be diverted from disposal to recycling, reuse or salvage for
- future sale. 2) Identify the materials that will be sorted on site of sent for off-site sorting and diversion.
- 3) Identify the diversion facilities where the waste materials will be taken
- 4) Identify the methods used to reduce generation of
- construction waste.
- 5) Specify the amount and type of waste materials that will be diverted by either weight or volume.

J. Construction Waste Management Company (§ 4.408.3) The project shall utilize a waste management company approved by the enforcing agency.

K. <u>Construction Waste Management Documentation (§ 4.408.5)</u> Documentation shall be submitted to the enforcing agency demonstrating compliance with § 4.408.1 - 4.408.3.

L. <u>Homeowners Manual (§4.410)</u>

At the time of final inspection the contractor shall prepare a homeowners manual, compact disc, web-based reference or other media acceptable to the local jurisdiction. The homeowners manual shall include the following information as a minimum:

- a. Directions to the owner that the manual shall remain with the
- building throughout the life cycle of the structure. b. Operation and maintenance instructions for the following:
 - i. Equipment and appliances, including water saving devices and systems, HVAC systems, water heating systems, electric vehicle charges, photovoltaic systems and other major appliances and equipment
 - ii. Roof and yard drainage, including gutters and downspouts
 - iii. Space conditioning systems including condenser and air filters. iv. Landscape irrigation systems. (If installed under the
- permit).
- v. Water reuse systems. c. Information from local utility, water and waste recovery
- providers on methods to further reduce resource
- consumption including recycle programs and locations. d. Public transportation and/or carpool options available in the
- e. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
- f. Information about water conserving landscape and irrigation design and controllers which conserve water. (If installed under the permit).
- g. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from foundation
- h. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
- i. Information about state solar energy and incentive programs available.
- j. A copy of all special inspection verifications required by the enforcing agency or this code.

M. Fireplaces and Wood Stoves (§ 4.503.1)

All gas fireplaces shall be direct vent sealed-combustion. All wood or pellet stoves shall comply with US EPA New Source Performance Standards (NSPS) or any local ordinance that is more stringent. All fireplaces shall comply with all local ordinances.

N. <u>Heating and Air Conditioning System Protection (§ 4.504.1)</u> CalGreen requires all duct openings and HVAC equipment be protected from dust and debris throughout construction until the system, is ready for final start-up. Contractor shall complete daily inspections to verify all ductwork openings and all heating and cooling systems delivered to the construction site are sealed at the end of each day. The inspection includes ductwork and equipment delivered to the site but not vet installed. Contractor is advised to maintain project photos on a regular basis to document compliance with this requirement. Photo documentation shall be taken no less than twice a week and provided to owner at the end of construction. If the heating and cooling system is operated before all construction work is completed the system shall have a MERV 6 or MERV 8 filter in place and it shall be replaced whenever construction debris is visible on the filter, but no less than once every 30 calendar days, and immediately prior to owner occupancy.

Adhesives, sealants and caulking shall meet the following requirements unless more stringent local or regio nal air pollution or air quality management district rules apply:

- a. Adhesives, bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with the SCAQMD Rule 1168 VOC limits listed below in tables 4.504.1 and 4.504.2. None of the approved materials shall contain the following compounds:
 - i. Chloroform
 - ii. Ethylene dichloride
 - iii. Methylene chloride
 - iv. Perchlorothylene
 - v. Trichloroethylene
- b. Aerosol adhesives, and small unit sizes of adhesives, sealants and caulking compounds, in individual containers weighing less than one pound and containing less than 16 fluid ounces, shall comply with statewide VOC limits and other requirements, including prohibitions on the use of certain toxic compounds listed in the California Code of Regulations, Title 17, commencing with Section 94507.

Contractor shall maintain verification of compliance with all requirements listed below throughout the construction. Documentation shall include but not be limited to manufacturer's product specifications, associated MSDS sheets and at least one container of each material used on the project. Verification materials shall be maintained and available for inspection by the enforcing jurisdiction during site visits.

ADHESIVE VOC LIMIT ^{1, 2} Less Water and Less Exempt Compounds in Grams per Liter			
ARCHITECTURAL APPLICATIONS	VOC LIMIT		
Indoor carpet adhesives	50		
Carpet pad adhesives	50		
Outdoor carpet adhesives	150		
Wood flooring adhesive	100		
Rubber floor adhesives	60		
Subfloor adhesives	50		
Ceramic tile adhesives	65		
VCT and asphalt tile adhesives	50		
Drywall and panel adhesives	50		
Cove base adhesives	50		
Multipurpose construction adhesives	70		
Structural glazing adhesives	100		
Single-ply roof membrane adhesives	250		
Other adhesives not specifically listed	50		

TABLE 4.504.1

TABLE 4.504.1 (con't) ADHESIVE VOC LIMIT¹

Less Water and Less Exempt Compounds in Grams per Liter

SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.

2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule

> **TABLE 4.504.2** SEALANT VOC LIMIT

Less Water and Less Exempt Compour	nds in Grams per Liter
SEALANTS	VOC LIMIT
Architectural	250
Marine Deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural Nonporous	250
Architectural Porous	775
Modified bituminous	500
Marine deck	760
Other	750

P. Paints (§4.504.2.2)

Paints and architectural coatings shall comply with the VOC limits listed in the table below unless more stringent local limits apply. Materials not specifically listed under "Special Coatings" in the table below shall be classified as "Flat", "Nonflat" or "Nonflat-High Gloss" and meet the VOC limits set forth in the table below.

- a. Flat Coating: A coating that registers gloss less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Designation D 523-89 (1999).
- b. Nonflat Coating: A coating that registers a gloss of 15 or greater on an 85-degree meter and 5 or greater on a 60degree meter according to ASTM Designation D 523-89 (1999).
- c. Nonflat High Gloss Coating: A nonflat coating that registers a gloss of 70 or greater on a 60-degree meter according to ASTM Designation D 523- 89 (1999).

Contractor shall maintain verification of compliance with all requirements listed below throughout the construction. Documentation shall include but not be limited to manufacturer's product specifications, associated MSDS sheets and at least one container of each material used on the project. Verification materials shall be maintained and available for inspection by the enforcing jurisdiction during site visits.

Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on the use of certaintoxic compounds and ozone depleting substances, in Section 94522(e)(1) and (f)(1) of California Code of Regulations, Title 17 commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

TABLE 4.504.3 VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS 2,3 Grams of VOC per Liter of Coating,

Less water and Less Exempt Compounds			
COATING CATEGORY	VOC LIMIT		
Flat coatings	50		
Nonflat coatings	100		
Nonflat-high gloss coatings	150		
SPECIALT Y COATIN GS			
Aluminum roof coatings	400		
Basement specialty coatings	400		
Bituminous roof coatings	50		
Bituminous roof primers	350		
Bond breakers	350		
Concrete curing compounds	350		
Concrete/masonry sealers	100		
Driveway sealers	50		
Dry fog coatings	150		
Faux finishing coatings	350		
Fire resistive coatings	350		
Floor coatings	100		
Form-release compounds	250		
Graphic arts coatings (sign paints)	500		
High temperature coatings	420		
Industrial maintenance coatings	250		
Low solids coatings ¹	120		
Magnesite cement coatings	450		
Mastic texture coatings	100		
Metallic pigmented coatings	500		
Multicolor coatings	250		
Pretreatment wash primers	420		
Primers, sealers, and undercoaters	100		
Reactive penetrating sealers	350		
Recycled coatings	250		
Roof coatings	50		
Rust preventative coatings	250		
Shellacs			
Clear	730		
Opaque	550		
Specialty primers, sealers and undercoaters	100		
Stains	250		
Stone consolidants	450		
Swimming pool coatings	340		
Traffic marking coatings	100		
Tub and tile refinish coatings	420		
Waterproofing membranes	250		
Wood coatings	275		
Wood preservatives	350		
Zinc-rich primers	340		

1. Grams of VOC per liter of coating, including water and including exempt compounds

in the table.

- 2. The specified limits remain in effect unless revised limits are listed in subsequent columns
- 3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is

available from the Air Resources Board.

Q. Floor Finishes (§4.504.3)

	testi	ng and labelir
	a. b.	Carpet and California D
	c. d.	for the testir NSF/ANSI 1 Scientific Ce
2.	All ca mee Labe	arpet cushior t the requiren el program.

R. <u>Composite Wood (§ 4.504.5)</u>

Composite wood products including, but not limited to hardwood plywood, particleboard and medium density fiberboard composite wood products, used on the interior or exterior of the residence, shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measur e for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in the table listed below:

	Table 4.504.5 FORMALDEHYDE LIN	/ITS ¹
	Maximum Formaldehyde Emissions	in Parts per Million
	Product	Current Limit
	Hardwood plywood veneer core	0.05
	Hardwood plywood composite core	0.05
	Particleboard	0.09
	Medium density fiberboard	0.11
	Thin medium density fiberboard ²	0.13
	 Values in this table are derived from those specified by California Air Resources Board, Air Tox ics Control Mea Composite Wood as tested in accordance with ASTM additional information, see <i>California Code of Regulati</i> Sections 93120 through 93120.12. Thin medium density fiberboard has a maximum thickr inch(8mm). 	r the asure for E 1333. For ons, Title 17, ness of <i>5/16</i>
); e m	ontractor/Owner shall maintain verification quirements listed above. Documentation s hited to at least one of the following:	of compliance with all hall include but not be
	 a. Product certifications and specificati b. Chain of custody certifications; or 	ons; or

- 93120, et seq.).
- standards.

Verification materials shall be maintained and available for inspection by the enforcing jurisdiction during site visits.

Concrete Slab Requirements (§ 4.505)

Concrete slabs required to have a vapor retarder in compliance with CBC Title 24 – Part 2 – Chapter 19 shall meet the following criteria: a. The concrete design, vapor barrier and capillary break shall

b. An assembly approved by the local jurisdiction, or The concrete slab shall be placed in direct contact with a vapor barrier over a capillary break. The concrete mix design shall address bleeding, shrinkage, cracking an d curing when concrete is placed directly on a vapor barrier. The vapor barrier shall be minimum 6 mil thickness, seams shall be lapped per manufactures recommendations no less than 6 inches at all seams. Seams shall be taped with a water resistant tape approved by the vapor barrier manufacturer. The capillary break shall be at least 4 inches deep and composed of clean aggregate with a minimum diameter of $\frac{1}{2}$ ". For additional information see American Concrete Institute, ACI 302.2R-06. Sand is not allowed in this assembly.

T. <u>Moisture Protection (§ 4.50</u>5.3)

- damage.
- any wall or floor assemblies.
- enclosed.
- jurisdiction.

1. Carpet installed on the interior of the residence shall meet the ing requirements for one of the following: I Rug Institute's Green Label Plus Program; or

Department of Public Health Standard Practice ng of VOCs (Specification 01350); or 40 at the Gold level; or ertification Systems Indoor Advantage

ons installed on the interior of the residence shall ments of the Carpet and Rug Institute Green

3. Carpet adhesives used on the interior or exterior of the residence shall conform to the requirements listed under "Adhesives, Sealants and Caulking's" above,

4. If resilient flooring is installed, at least 80% of all resilient flooring installed shall either be listed in the CHPS High Performance Product Database (https://zerodocs.com/CHPS) or be certified under the Resilient Floor Covering Institute (RFCI) FloorScore program (https://rfci.com/floorscore/)

c. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section

d. Exterior grade products marked as meeting PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325

be designed by a licensed design professional, or

1. Contractor shall not install materials with visible signs of water

2. Contractor shall store building materials and equipment in a location and manner that protects them from rain and moisture. All building materials and equipment shall be appropriately covered to protect them from rain and moisture.

3. Insulation materials that are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure of

4. Wet applied insulation products shall follow the manufacturer's drying recommendations before any framing assemblies are

5. Wall and floor framing shall not be enclosed if framing members exceed 19% moisture content. This includes pressure treated lumber. Contractor shall use a probe-type or contact moisture meter to determine the moisture content. Moisture readings shall be taken at three RANDOM locations on the floor and wall framing (i.e. six total readings). Moisture readings shall be taken 2 ft to 4 ft from the grade stamped end of the framing member and documented in a method acceptable to the local

U. Exhaust Fans (§ 4.506.1)

Mechanical exhaust fans that exhaust directly from bathrooms (i.e. rooms that contain a bathtub, shower or tub/shower combination) shall comply with the following:

Anthony B. Colbert

S

es

xpr

Ш

Tape

σ

Ð

ocumentation

reen

ŪŪ

Cal

omplia

 \mathbf{O}

a. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.

b. Unless the exhaust fan is functioning as a component of a whole house ventilation system, the fan must be controlled by a humidistat which shall be readily accessible to occupants. Humidistat controls shall be capable of adjustment between a relative humidity of 50 to 80 percent.

V. <u>Heating and Air Conditioning System Design (§ 4.507.2)</u> Contractor shall complete and document the following steps to the

- satisfaction of the local jurisdiction and owner. a. Complete room-by-room ANSI/ACCA 2 Manual J – 2016, or equivalent, heating and cooling load calculations for the entire project; and
- b. Complete ANSI/ACCA 1 Manual D 2016, or equivalent, duct design for the entire project reflecting the impacts of all
- HVAC system components, and air delivery system; and c. Complete ANSI/ACCA 3 Manual S - 2014, or equivalent,
- equipment selection documentation.

Copies of Manual J, D & S calculations, documentation and mechanical system duct layout shall be provided to the owner and the local building department prior to ordering or installing any equipment and included in the homeowners manual.

W. HVAC Installer Qualifications (§ 702.1)

- HVAC system installer shall be trained and certified under programs acceptable to the local enforcement jurisdiction. Examples of acceptable training and certification programs include, but not limited to the follow:
- a. State certified apprentice programs
- b. Public utility training programs. c. Training programs sponsored by trade, labor or statewide
- energy consulting or verification organizations.
- d. Programs sponsored by manufacturing organizations. e. Other programs acceptable to the local enforcement
- agency.

X. Special Inspector Qualifications (§ 702.2)

When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed.

Y. Verification and Documentation (§ 703.1)

Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to

verify compliance, that method of compliance shall comply with the requirements of the CalGreen Regulations and acceptable to the enforcing agency.

Ð C esidence

R unningham

U

949 1A1

24-3

2019 CALGREEN RESIDENTIAL OC SECT Effective HCD SHL	CUPANCII ION A4.60 January 1, 615C (New 0	ES AP 2 , 2020 1/20)	PLICA	TION CHE	CKLIST		2019 CALGREEN RE
	L APPLICAI ELECTIV	EVELS NT TO SE E MEASU	LECT IRES	VE ENFOR SPECIFY VE	RIFICATIONS CING AGENCY ERIFICATION M	' TO METHOD	
FEATURE OR MEASURE		Prerect and Ele	luisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party	FEATURE OR MEAS
	Mandatory	Tier 1	Tier 2				
PLANNING AND DESIGN							A4.106.1 Reserved.
Site Selection							A4.106.2.1 Soil analysis is performed by
A4.103.1 A site which complies with at least one of the following characteristics is selected:1. An infill site is selected.	N/A						professional and the findings are utilized design of the building. A4.106.2.2 Soil disturbance and erosion
 A greyfield site is selected. An EPA-recognized Brownfield site is selected 							least one of the following:
 At 103.2 Facilitate community connectivity by one of the following methods: 1. Locate project within a 1/4-mile true walking distance of at least 4 basic services; 2. Locate project within 1/2-mile true walking distance of at least 7 basic services; or 3. Other methods increasing access to additional resources. 	N/A						 Natural drainage patterns are even controls are implemented to min construction and after occupanc Site access is accomplished by amount of cut and fill needed to and driveways. Underground construction activitito utilize the same trench, minim time the disturbed soil is expose
Site Preservation							replaced using accepted compa
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.	N/A						A4.106.2.3 Topsoil shall be protected or specified in this section. Tier 1. Displaced topsoil shall be stock designated area and covered or protect Tier 2. The construction area shall be it
Deconstruction and Reuse of Existing Materials							delineated by fencing or flagging to lim
 A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: Light fixtures Plumbing fixtures Doors and trim Masonry Electrical devices Appliances Foundations or portions of foundations 	N/A						 activity to the construction area. A4.106.3 Postconstruction landscape do one or more of the following: 1. Areas disrupted during construct be consistent with native vegeta patterns. 2. Utilize at least 75% native Califor tolerant plant and tree species a climate zone region.
Site Development	Shoot T24.2						
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	Section B						
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	Sheet T24-3						
4.106.4 Provide capability for electric vehicle charging for one- and two-family dwellings; townhouses with attached private garages; multifamily dwellings; and hotels/motels in accordance with Section 4.106.4.1, 4.106.4.2, or 4.106.4.3, as applicable.	Sheet T24-3						

¹ Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020

HCD SHL 6	615C (New 0	1/20)				
	L APPLICAI ELECTIV	EVELS NT TO SE E MEASU	LECT JRES	VE ENFOR SPECIFY VE	RIFICATIONS CING AGENCY RIFICATION N	TO IETHO
FEATURE OR MEASURE		Prerect and Ele	quisites ectives¹	Enforcing Agency	Installer or Designer	Thire Part
	Mandatory	Tier 1	Tier 2			
Performance Approach for Newly Constructed Buildings						
A4.203.1.1.1 Tier 1 and Tier 2. Total Energy Design Rating (Total EDR) and Energy Efficiency Design Rating (Efficiency EDR) for the Proposed Design Building is included in the Certificate of Compliance documentation.	N/A					
A4.203.1.1.2 Tier 1 and Tier 2. Quality Insulation Installation procedures specified in the Building Energy Efficiency Standards Reference Appendices RA3.5 are completed.	N/A					
 A4.203.1.2 Tier 1 and Tier 2 prerequisite options. One of the following options is required: Roof deck insulation or ducts in conditioned space. High performance walls. HERS-verified compact hot water distribution system. HERS-verified drain water heat recovery. 	N/A					
A4.203.1.3.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have additional integrated efficiency and onsite renewable energy generation to achieve a Total EDR for Tier 1 as specified in Table A4.203.1.1.1 or lower as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission. This Total EDR is in addition to meeting the Efficiency EDR.	N/A					
A4.203.1.3.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have additional integrated efficiency and onsite renewable energy generation to achieve a Total EDR for Tier 2 as specified in Table A4.203.1.1.1 or lower as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission. This Total EDR is in addition to meeting the Efficiency EDR.	N/A					
A4.203.1.4 Local jurisdictions adopting Tier 1 or Tier 2, or considering community shared solar or storage options as specified, shall consult with the local electric service for acceptance.	N/A					
WATER EFFICIENCY AND CONSERVATION						
Indoor Water Use						<u> </u>
4.303.1 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of Sections 4.303.1.1 through 4.303.1.4.4.	Sheet T24-3					

5

- Areas disrupted during construction be consistent with native vegetation
- patterns. Utilize at least 75% native California tolerant plant and tree species appro climate zone region.

² Required prerequisite for this Tier.

2019 CA	LGREEN RESIDE
FEAT	URE OR MEASURE
4.303.2 Plumbing fixtur 4.303.1 shall be install <i>Plumbing Code</i> , and sl standards.	res and fittings required i ed in accordance with the hall meet the applicable i
A4.303.1 The maximum not exceed 1.5 gallons may temporarily increas but not to exceed 2.2 g default to a maximum to 60 psi.	m flow rate of kitchen fau per minute at 60 psi. Kit use the flow above the ma gallons per minute at 60 p flow rate of 1.5 gallons pe
Note: Where complyin or other means may b	ng faucets are unavailable be used to achieve reduc
4.303.1.4.3 Metering fa not deliver more than (aucets in residential build).2 gallons per cycle.
A4.303.2 Alternate war applications. Alternate for indoor potable wate water sources shall be <i>California Plumbing Co</i>	ter source for nonpotable nonpotable water source er reduction. Alternate no installed in accordance ode.
A4.303.3 Install at leas dishwasher or clothes	st one qualified ENERGY washer.
A4.303.4 Nonwater uri	nals or waterless toilets
A4.303.5 One- and two with a demand hot wat	p-family dwellings shall b er recirculation system.
Outdoor Water Use	
4.304.1 Residential de water efficient landsca Department of Water F Landscape Ordinance stringent.	velopments shall comply pe ordinance or the curre Resources' Model Water (MWELO), whichever is
A4.304.1 A rainwater of designed and installed	capture, storage and re-u
A4.304.2 A landscape utilize potable water.	design is installed, which
A4.304.3 For new wate	er service connections, la

irrigated areas less than 5,000 square feet sh with separate submeters or metering devices potable water use.

Water Reuse Systems

A4.305.1 Piping is installed to permit future u graywater irrigation system served by the clouother fixtures.

A4.305.2 Recycled water piping is installed.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020 HCD SHL 615C (New 01/20)

		EVELS NT TO SE E MEASU	LECT RES	VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD				
FEATURE OR MEASURE		Prereq and Ele	uisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party		
FEATURE OR MEASURE I Reserved. 1 Soil analysis is performed by a licensed design onal and the findings are utilized in the structural f the building. 2.2 Soil disturbance and erosion are minimized by at a of the following: latural drainage patterns are evaluated and erosion ontrols are implemented to minimize erosion during onstruction and after occupancy. It e access is accomplished by minimizing the mount of cut and fill needed to install access roads in driveways. Inderground construction activities are coordinated o utilize the same trench, minimize the amount of me the disturbed soil is exposed and the soil is eplaced using accepted compaction methods. 2.3 Topsoil shall be protected or saved for reuse as a in this section. Displaced topsoil shall be stockpiled for reuse in a ted area and covered or protected from erosion. The construction area shall be identified and ted by fencing or flagging to limit construction to the construction area. B Postconstruction landscape designs accomplish for ore of the following: Weas disrupted during construction are restored to the consistent with native vegetation species and the saterns. Utilize at least 75% native California or drought olerant plant and tree species appropriate for the limate zone region.	Mandatory	Tier 1	Tier 2					
6.1 Reserved.								
6.2.1 Soil analysis is performed by a licensed design sional and the findings are utilized in the structural of the building.	N/A							
5.2.2 Soil disturbance and erosion are minimized by at ne of the following: Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during								
construction and after occupancy. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads	N/A							
and driveways. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.								
6.2.3 Topsoil shall be protected or saved for reuse as ed in this section.								
 Displaced topsoil shall be stockpiled for reuse in a nated area and covered or protected from erosion. 	N/A							
2. The construction area shall be identified and eated by fencing or flagging to limit construction y to the construction area.								
5.3 Postconstruction landscape designs accomplish more of the following:								
Areas disrupted during construction are restored to be consistent with native vegetation species and	N/A							
Utilize at least 75% native California or drought tolerant plant and tree species appropriate for the climate zone region.								

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020 HCD SHL 615C (New 01/20)

	L APPLICAI ELECTIV	EVELS NT TO SE 'E MEASU	LECT IRES	VEI ENFOR(SPECIFY VE	RIFICATIONS CING AGENCY RIFICATION M	to Iethod
FEATURE OR MEASURE		Prereq and Ele	luisites ectives¹	Enforcing Agency	Installer or Designer	Third- Party
	Mandatory	Tier 1	Tier 2			
A4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following:						
Tier 1. Not less than 20% of the total parking, walking or patio surfaces shall be permeable.	N/A					
Tier 2. Not less than 30% of the total parking, walking or patio surfaces shall be permeable.						
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in the applicable tables.						
Low-Rise Residential						
Tier 1. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(1).	N/A					
Tier 2. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(2).						
High-Rise Residential, Hotels and Motels						
Tier 1. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(3).						
Tier 2. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).						
A4.106.6 Install a vegetated roof for at least 50% of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the <i>California Building Code</i> , Chapters 15 and 16.	N/A					
A4.106.7 Reduce nonroof heat islands for 50% of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.	N/A					
A4.106.8.1 Tier 1 and Tier 2. For one- and two-family dwellings and townhouses with attached private garages. Install a dedicated 208/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit.	N/A					
 A4.106.8.2 Provide capability for future electric vehicle charging in new multifamily dwellings, as specified. Tier 1. In 15% of total parking spaces. Tier 2. In 20% of total parking spaces. 	N/A					

ENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020

HCD SHL 6	615C (New 01/20)

6

	LE APPLICAN ELECTIV	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			RIFICATIONS CING AGENCY RIFICATION M	TO ETHC
E	Prerequisites Enfo and Electives ¹ Age		EVELS NT TO SELECT Prerequisites and Electives ¹ Tier 1 Tier 2 I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Enforcing Agency	Installer or Designer	Thir Par
	Mandatory	Tier 1	Tier 2			
red in Section h the <i>California</i> ble referenced	Sheet T24-3 X Section E					С
n faucets shall . Kitchen faucets e maximum rate, 60 psi, and must ns per minute at	N/A					Ē
duction.						
ouildings shall	Sheet 124-3 Section E					
able urces are used e nonpotable nce with the	N/A					E
RGY STAR	N/A					
ets are installed.	N/A					
all be equipped m.	N/A					С
nply with a local current California ater Efficient er is more	Sheet T24-3					С
re-use system is	N/A					
hich does not	N/A					
is, landscaped shall be provided es for outdoor	N/A					E
use of a lothes washer or	N/A					
	N/A					

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020

HCD SHL 615C (New 01/20)

	LI APPLICAI ELECTIV	EVELS NT TO SE E MEASU	LECT RES	VEI ENFORG SPECIFY VE	RIFICATIONS CING AGENCY RIFICATION M	TO ETHOD
FEATURE OR MEASURE A4.305.3 Recycled water is used for landscape irrigation. Innovative Concepts and Local Environmental Conditions A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions. Item 1 Item 2 Item 3 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY Foundation Systems A4.403.1 A Frost-Protected Shallow Foundation (FPSF) is designed and constructed. A4.403.2 Cement use in foundation mix design is reduced. Teir 1. Not less than a 20% reduction in cement use. Teir 2. Not less than a 25% reduction in cement use. Efficient Framing Techniques A4.404.1 Beams, headers and trimmers are the minimum size to adequately support the load. A4.404.2 Building dimensions and layouts are designed to minimize waste. A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cused. A4.405.1 One or more of the following building materials that do not require additional resources for finishing are used: A4.405.2 Floors that do not require gaint or stain. 0. Exterior trim not requiring paint or stain. 3. Siding or exterior wall coverings whic		Prerequisites and Electives ¹		Enforcing Agency	Installer or Designer	Third- Party
	Mandatory	Tier 1	Tier 2			□ All
A4.305.3 Recycled water is used for landscape irrigation.	N/A					
Innovative Concepts and Local Environmental Conditions						
A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.	N/A					
Item 1						
Item 2						
Item 3						
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY						
Foundation Systems						
A4.403.1 A Frost-Protected Shallow Foundation (FPSF) is designed and constructed.	N/A					
A4.403.2 Cement use in foundation mix design is reduced.						
Tier 1. Not less than a 20% reduction in cement use.	N/A					
Tier 2. Not less than a 25% reduction in cement use.						
Efficient Framing Techniques						
A4.404.1 Beams, headers and trimmers are the minimum size to adequately support the load.	N/A					
A4.404.2 Building dimensions and layouts are designed to minimize waste.	N/A					
A4.404.3 Use premanufactured building systems to eliminate solid sawn lumber whenever possible.	N/A					
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.	N/A					
Material Sources						
 A4.405.1 One or more of the following building materials that do not require additional resources for finishing are used: 1. Exterior trim not requiring paint or stain. 2. Windows not requiring paint or stain. 3. Siding or exterior wall coverings which do not require paint or stain. 	N/A					
A4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural or stamped concrete floors.	N/A					
A4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project.						
Tier 1. Not less than a 10% RCV.	N/A					
Tier 2. Not less than a 15% RCV.						
A4.405.4 Renewable source building products are used.	N/A					

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020 HCD SHL 615C (New 01/20)							
	L APPLICA ELECTIV	EVELS NT TO SE 'E MEASU	LECT RES	VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METH(
FEATURE OR MEASURE		Prereq and Ele	uisites ectives ¹	Enforcing Agency	Installer or Designer	Thir Part	
	Mandatory	Tier 1	Tier 2				
A4.106.8.3 Provide electric vehicle charging spaces for new hotels and motels.							
Tier 1. Install EV spaces per Table A4.106.8.3.1.	N/A						
Tier 2. Install EV spaces per Table A4.106.8.3.2.							
 A4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development. 1. Provide short-term bicycle parking, per Section A4.106.9.1. 2. Provide long-term bicycle parking for multifamily buildings, per Section A4.106.9.2. 3. Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3. 	N/A						
 A4.106.10 [HR] Outdoor lighting systems shall be designed and installed to comply with: The minimum requirements in the <i>California Energy Code</i> for Lighting Zones 1-4; and Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and Allowable BUG ratings not exceeding those shown in Table A4.106.10; or Comply with a lawfully enacted local ordinance, whichever is more stringent. 	N/A						
Innovative Concepts and Local Environmental Conditions							
A4.108.1 Items in this section are necessary to address innovative concepts or local environmental conditions.	N/A						
Item 1							
Item 2							
Item 3							
ENERGY EFFICIENCY (LOW-RISE RESIDENTIAL)							
General							
4.201.1 Building meets or exceeds the requirements of the California Building Energy Efficiency Standards ³ .							

³ These measures are currently required elsewhere in statute or in regulation.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective January 1, 2020 HCD SHL 615C (New 01/20)

	LI APPLICAN ELECTIV	EVELS NT TO SE E MEASU	LECT RES	VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METH			
FEATURE OR MEASURE		Prereq and Ele	uisites ectives ¹	Verifications Specify verifications Specify verifications Enforcing Agency Installer or Designer All All All All	T F		
FEATURE OR MEASURE anced Durability and Reduced Maintenance 6.1 Annular spaces around pipes, electric cables, duits or other openings in plates at exterior walls shall be ected against the passage of rodents by closing such nings with cement mortar, concrete masonry or a similar nod acceptable to the enforcing agency. er Resistance and Moisture Management 107.1 Install foundation and landscape drains. 107.2 Install gutter and downspout systems to route er at least 5 feet away from the foundation or connect to scape drains which discharge to a dry well, sump, wale, rainwater capture system or other approved on-location. 107.3 Provide flashing details on the building plans and ply with accepted industry standards or manufacturer's uctions. 107.4 Protect building materials delivered to the struction site from rain and other sources of moisture. 107.6 Exterior doors to the dwelling are protected to rent water intrusion. 107.7 A permanent overhang or awning at least 2 feet in th is provided at all exterior walls. Istruction Waste Reduction, Disposal and Recycling 16.1 Recycle and/or salvage for reuse a minimum of of the nonhazardous construction and demolition waste coordance with one of the following: Comply with a more stringent local construction and demolition waste management ordinance; or A construction awaste management plan, per Section 4.408.2; or <	Mandatory	Tier 1	Tier 2				
Enhanced Durability and Reduced Maintenance							
4.406.1 Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.	Sheet T24-3 X Section G						
Water Resistance and Moisture Management							
A4.407.1 Install foundation and landscape drains.	N/A						
A4.407.2 Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved onsite location.	N/A						
A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.	N/A						
A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.	N/A						
A4.407.5 In Climate Zone 16, an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.	N/A						
A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.	N/A						
A4.407.7 A permanent overhang or awning at least 2 feet in depth is provided at all exterior walls.	N/A						
Construction Waste Reduction, Disposal and Recycling							
 4.408.1 Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with one of the following: Comply with a more stringent local construction and demolition waste management ordinance; or A construction waste management plan, per Section 4.408.2; or A waste management company, per Section 4.408.3; or The waste stream reduction alternative, per Section 4.408.4. 	Sheet T24-3 Section H Section I Section J Section K						

Expres Tape £ X 2 **Red** 6015 Bear (Elk Grove, (1916) 684-6 CalGreen ance Documentation omplia C

S

Cunningham | 302 Grandview Novato, California 94945 Job Number: AZ131A1 949[∠] 1A1

T24-4

Residence

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST
SECTION A4.602
Effective January 1, 2020

HCD SHL	615C (New 0	1/20)					
	LI APPLICAI ELECTIV	EVELS NT TO SE E MEASU	LECT IRES	VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOI			
FEATURE OR MEASURE		Prerequisites and Electives ¹		Enforcing Agency	Installer or Designer	Third Party	
	Mandatory	Tier 1	Tier 2				
A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following:							
Tier 1. At least a 65% reduction with a third-party verification.	N/A						
Tier 2. At least a 75% reduction with a third-party verification.							
Exception: Equivalent waste reduction methods are developed by working with local agencies.							
Building Maintenance and Operation							
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.	Sheet T24-3						
4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.	N/A ⊠						
Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82(a)(2)(A) et seq. will also be exempt from the organic waste portion of this section.							
Innovative Concepts and Local Environmental							
Conditions							
innovative concepts or local environmental conditions.	N/A						
Item 1							
Item 2							
Item 3							
ENVIRONMENTAL QUALITY							
Fireplaces							
4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. 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. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.	Sheet T24-3						
Pollutant Control							
4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.	Sheet T24-3						

9

FEATURE OR MEASURE

4.504.2.1 Adhesives, sealants and caulks shall b with VOC and other toxic compound limits.

4.504.2.2 Paints, stains and other coatings shall b compliant with VOC limits.

4.504.2.3 Aerosol paints and coatings shall be conwith product-weighted MIR Limits for ROC and other compounds.

4.504.2.4 Documentation shall be provided to verific compliant VOC limit finish materials have been use

4.504.3 Carpet and carpet systems shall be comp VOC limits.

4.504.4 80% of floor area receiving resilient flooring comply with specified VOC criteria.

4.504.5 Particleboard, medium density fiberboard and hardwood plywood used in interior finish systecomply with low formaldehyde emission standards

A4.504.1 Use composite wood products made with California Air Resources Board approved no-adde formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.

A4.504.2 Install VOC compliant resilient flooring s Tier 1. At least 90% of the resilient flooring insta comply. Tier 2. At least 100% of the resilient flooring inst comply.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020 HCD SHL 615C (New 01/20)

	LI APPLICAN ELECTIV	EVELS NT TO SE E MEASU	LECT RES	VEI ENFORC SPECIFY VE	TO ETHOD	
		Prereq and Ele	uisites ectives¹	Enforcing Agency	Installer or Designer	Third- Party
	Mandatory	Tier 1	Tier 2			
be compliant	Sheet T24-3					
lbe	Sheet T24-3					
compliant other toxic	Sheet T24-3					
erify that used.	Sheet T24-3					
npliant with	Sheet T24-3					
ring shall	Sheet T24-3					
rd (MDF) stems shall rds.	Sheet T24-3 X Section R					
vith either ded	N/A					
ı systems. alled shall stalled shall	N/A					

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST
SECTION A4.602
Effective January 1, 2020
HCD SHL 615C (New 01/20)

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
FEATURE OR MEASURE		Prereq and Ele	uisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2				
 A4.504.3 Thermal insulation installed in the building shall meet the following requirements: Tier 1. Install thermal insulation in compliance with VOC limits. Tier 2. Install insulation which contains no-added formaldehyde (NAF) and is in compliance with Tier 1. 	N/A						
Interior Moisture Control							
4.505.2 Vapor retarder and capillary break is installed at slab-on-grade foundations.	Sheet T24-3						
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	Sheet T24-3						
Indoor Air Quality and Exhaust							
 4.506.1 Each bathroom shall be provided with the following: 1. ENERGY STAR fans ducted to terminate outside the building. 2. Fans must be controlled by a humidity control (separate or built-in); OR functioning as a component of a whole house ventilation system. 3. Humidity controls with manual or automatic means of adjustment, capable of adjustment between a relative humidity range of ≤ 50% to a maximum of 80%. 	Sheet T24-3						
A4.506.1 Reserved.							
A4.506.2 [HR] Provide filters on return air openings rated MERV 8 or higher during construction when it is necessary to use HVAC equipment.	N/A						
A4.506.3 Direct-vent appliances shall be used when equipment is located in conditioned space or the equipment must be installed in an isolated mechanical room.	N/A						
Environmental Comfort							
 4.507.2 Duct systems are sized, designed, and equipment is selected using the following methods: Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J - 2016 or equivalent. Size duct systems according to ANSI/ACCA 1 Manual D - 2016 or equivalent. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 or equivalent. 	Sheet T24-3 ⊠ Section V						

10

11

				And	hony B	. Col	
2019 CALGREEN RESIDENTIAL OC SECT Effective J HCD SHL	CUPANCIE ION A4.60 January 1, 615C (New 0	ES API 2 2020 1/20)	PLICA	TION CHE	CKLIST		
FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
	Prerequisites and Electives ¹		Enforcing Agency	Installer or Designer	r Third- Party		
	Mandatory	Tier 1	Tier 2				
Outdoor Air Quality Reserved							
Innovative Concepts and Local Environmental Conditions							
A4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions.	N/A						
Item 1							
Item 2							
Item 3							
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS							
Qualifications							
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	Sheet T24-3						
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.	Sheet T24-3						
Verifications							
703.1 Verification of compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.	Sheet T24-3						

12

Cunningham Residence 302 Grandview Novato, California 94945 Job Number: AZ131A1

T24-5

Express

Tape Creek Court CA 95758 6687 (Phone)

Red 6015 Bear (Elk Grove, (916) 684-6

CalGreen ompliance Documentation

Ú