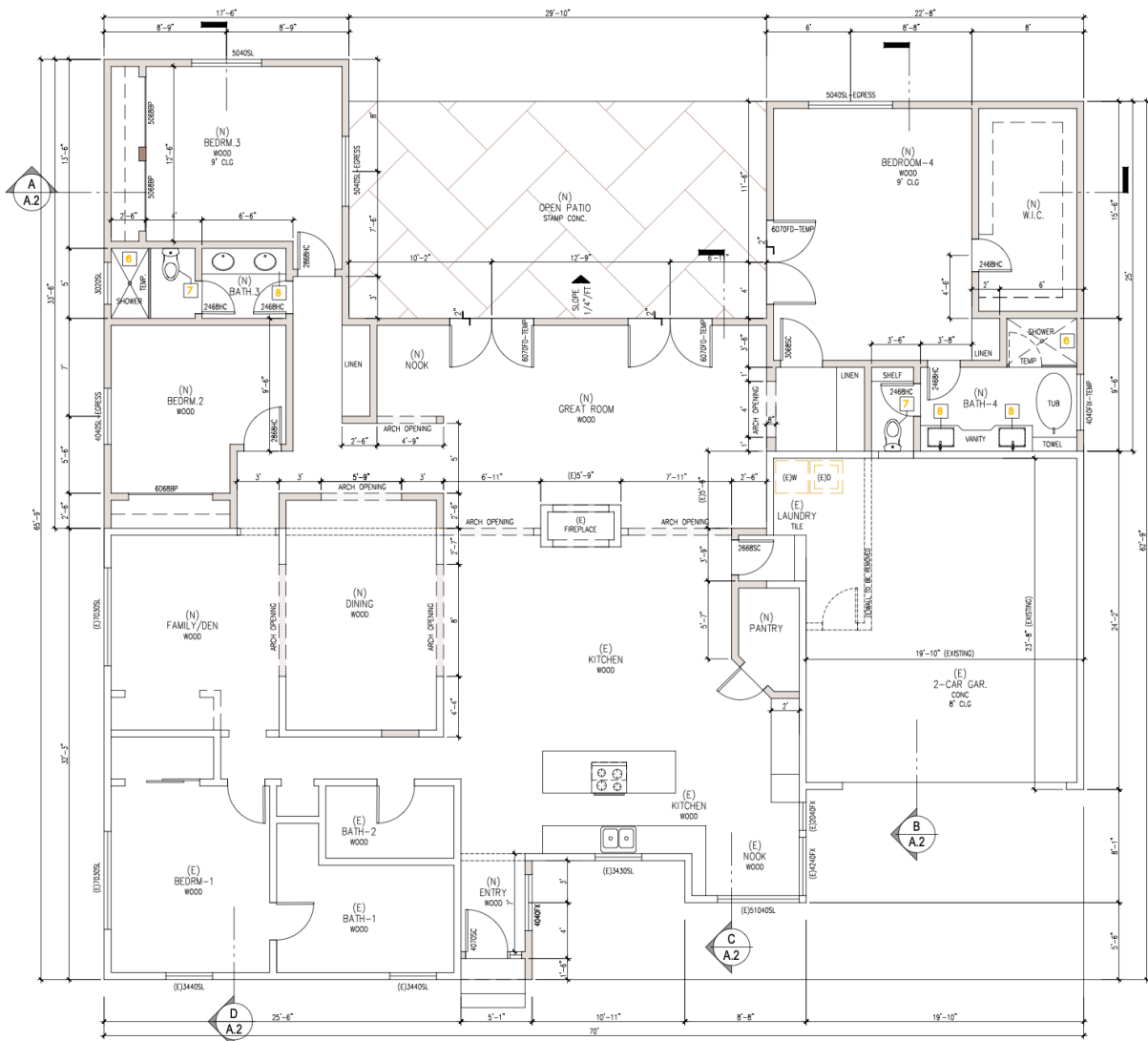


Attachment 5





1  
A2.0  
PROPOSED FLOOR PLAN

## PLAN NOTES

- 1 DOUBLE SINK WITH CARRIAGE DISPOSAL
- 2 BUILT-IN DISHWASHER WITH AIR GAP
- 3 SELF VENTING TO O.S.A DROP-IN COOKTOP RANGE
- 4 REFRIGERATOR SPACE, PROVIDE PLUMBING RECESSED FOR ICE MAKER
- 5 MICROWAVE OVEN OVER CONVENTIONAL OVEN
- 6 32"X60" FIBERGLASS TUB WITH SHOWER TO 72" A.F.F. WITH SHOWER HEAD AT 48" A.F.F.
- 7 WATER CLOSET, 1.6 GALLON MAX. PER FLUSH
- 8 VANITY WITH MEDICINE CABINET
- 9 WASHER AND DRYER UNIT, VENT TO O.S.A. AND PROVIDE RECESS NICHE FOR PLUMBING AND WASTE LINE
- 10 SHELF AND POLE
- 11 WATER HEATER PER CMC AND ELECTRICAL SUB PANEL
- 12 FAUL
- 13 A/C CONDENSER
- 14 NEW 1" WATER LINE
- 15 NEW 4" DIA. SEWER CONNECT TO EXISTING SEWER LINE



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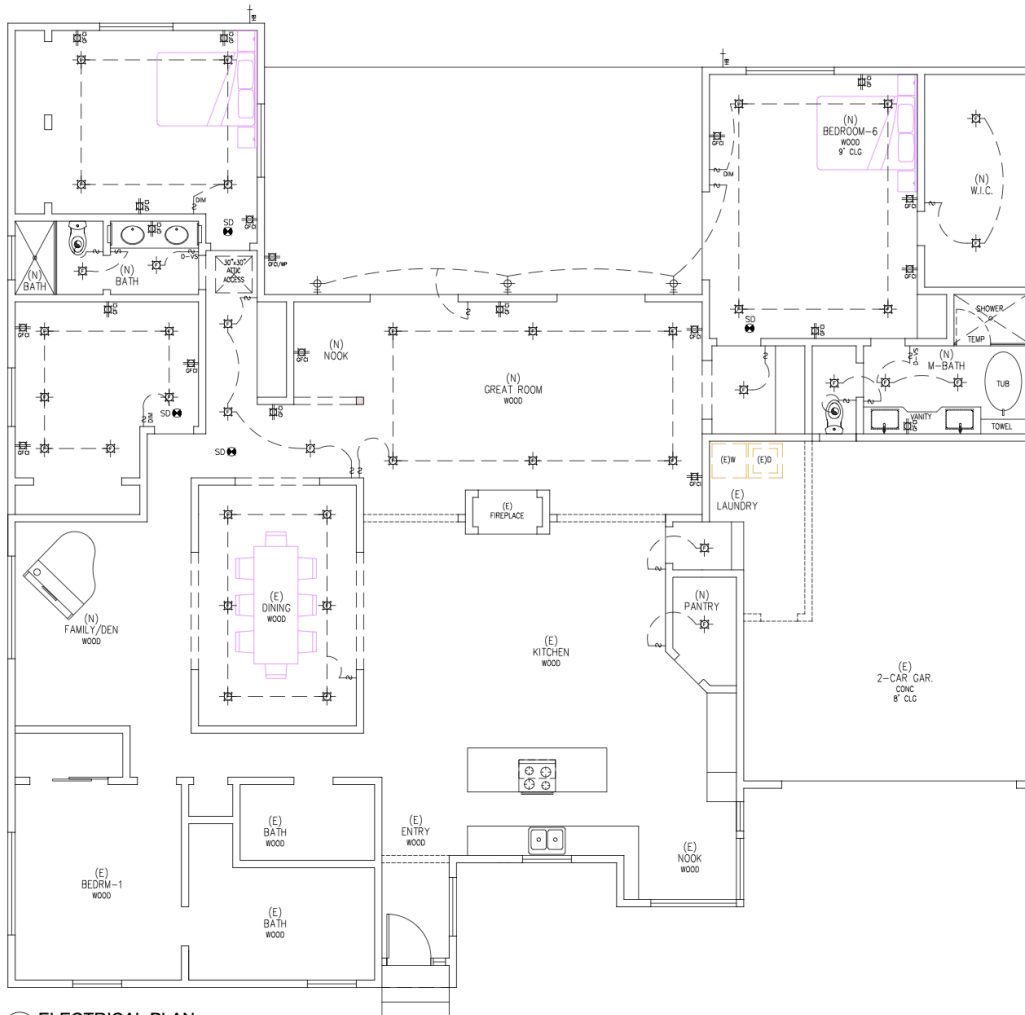
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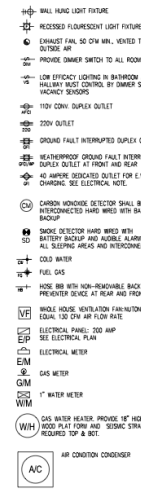
SUB-1 9/14/23  
VARIANCE 1/29/24

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A.2



1 ELECTRICAL PLAN  
A2.0 1/1/17



NOTES:  
1. ALL LIGHT TO BE LED & ENERGY EFFICIENT.  
2. ALL RECESSED LIGHTING SHALL BE AIR-TIGHT AND IC-INSULATED CEILING.  
3. ALL FLUORESCENT LIGHTING TO BE "DERIVED TO THE ENERGY CONSERVATION".

PROVIDE VENT DRAIN ON THE FOUNDATION PLAN SITES IN ACCORDANCE WITH 250-94 (NEC 250-94-1).  
PROVIDE & LOCATE OF BONDING WIRE TO METAL SUPPLY SYSTEM OR GROUND ROD (NEC 250-80A & 83).  
CONNECTION TO THE GROUNDING ELECTRODES BE LOCATED AT A READILY ACCESSIBLE LOCATION.  
PROVIDE BONDING FOR ANY REMOVABLE EQUIPMENT.  
PROVIDE HARD-WIRE BATTERY BACKUP SMOKE ALARM IN EACH SLEEPING ROOM, OUTSIDE EACH SEPARATE SLEEPING AREA IN EACH STORY WITHIN A DWELLING UNIT. THEY SHALL BE INTERCONNECTED.  
PROVIDE A WHOLE-HOUSE FAN PER DEC 3001.1A. NOTICE: SMOKE, NO CW.  
ELECTRICAL RECEPTACLE, SWITCH AND CONTROL HEIGHTS SHALL BE LOCATED NO MORE THAN 18 INCHES MEASURED FROM THE TOP OF THE RECEPTACLE OUTLET BOX NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX TO THE LEVEL OF THE FINISHED FLOOR. (CIRC 1108A.1, 1108A.2.)  
T-24 ENERGY REQUIREMENTS  
1. A MINIMUM OF SIZE OF THE LUMINAIRES IN A KITCHEN MUST BE FLUORESCENT OR HIGH EFFICACY.  
2. BATHROOM, GARAGE, LAUNDRY OR UTILITY ROOMS MUST HAVE FLUORESCENT OR HIGH EFFICACY LIGHTING. AND AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES MUST BE CONTROLLED BY A VACANCY SENSORS.  
3. BEDROOMS, LIVING ROOMS, FAMILY ROOMS, AND OTHER ROOMS USED FOR LIVING AND SLEEPING MUST HAVE FLUORESCENT OR HIGH EFFICACY LIGHTING OF AN OCCUPANT SENSOR, OR DIMMERS MAY BE INSTALLED.  
4. EXTERIOR LIGHTING MUST BE FLUORESCENT OR HIGH EFFICACY, OR AN OCCUPANT SENSOR WITH AN INTEGRAL PHOTO CONTROL MAY BE INSTALLED.  
ACCESSIBLE NOTES  
ELECTRICAL RECEPTACLE, SWITCH AND CONTROL HEIGHTS SHALL BE LOCATED NO MORE THAN 18" MEASURED FROM THE TOP OF THE RECEPTACLE OUTLET BOX NOR LESS THAN 15" MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX TO THE LEVEL OF THE FINISHED FLOOR.  
CAL GREEN NOTES  
FOR EACH DWELLING UNIT, INSTALL A LISTED RACEWAY TO ACCOMMODATE A DEDICATED 20-AMP, 120-Volt BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN 3/4" DIA. 1" NOMINAL 1" (HIGHER DIAMETER) THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUB-PANEL AND SHALL TERMINATE AND A LISTED CIRCUIT BOX OR OTHER ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF AN E.V. CHARGER. RACEWAYS ARE REQUIRED TO BE CONTINUOUS AT UNBROKEN, UNACCESSIBLE OR CONCEALED AREAS AND SPACES. THE SERVICE PANEL AND/OR SUB-PANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACES RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVER CURRENT PROTECTIVE DEVICE.  
HVAC NOTES  
EFFICIENCIES OF HVAC EQUIPMENT: CENTRAL FURNACE: EFF. 90% 14.0 SEER  
DUCT INSULATION: R-6.0  
ROOMS AIR QUALITY AND MECHANICAL VENTILATION: WHOLE HOUSE EXHAUST FAN: 130 CFM  
GAS WATER HEATER NOTES  
NEW GAS WATER HEATERS SHALL HAVE ALL THE FOLLOWING AS PER 2022 ENERGY STANDARDS SECTION:  
1. A DEDICATED 20-AMP ELECTRICAL RECEPTACLE THAT IS CONNECTED TO THE ELECTRICAL PANEL WITH A 120-240 VOLT 1 CONDUCTOR, TO HAVE BRANCH CIRCUIT WITHIN 5 FEET OF THE WATER HEATER.  
2. A CATEGORY II OR IV VENT, OR A TYPE B VENT WITH STRAIGHT PIPE BETWEEN OUTSIDE AND WATER HEATER.  
3. A CONDENSATE DRAIN THAT IS NO MORE THAN 2 INCHES HIGHER THAN THE BASE ON WATER HEATER OR NATURAL DRAINING.  
4. A GAS SUPPLY LINE WITH CAPACITY OF AT LEAST 30,000 BTU/HOUR.  
5. INDIVIDUAL WATER HEATERS WITH AN INPUT RATING GREATER THAN 6.5 KBTU/HOUR (200K) SHALL MEET THE REQUIREMENTS OF SECTION 110.3(C)(1).

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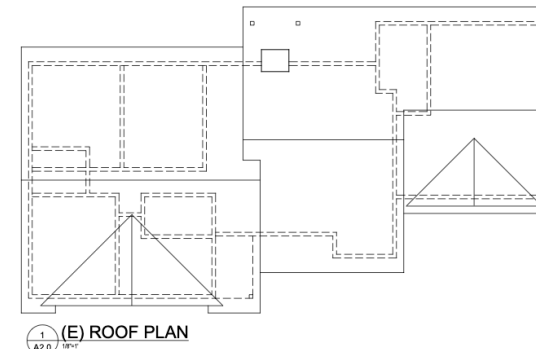
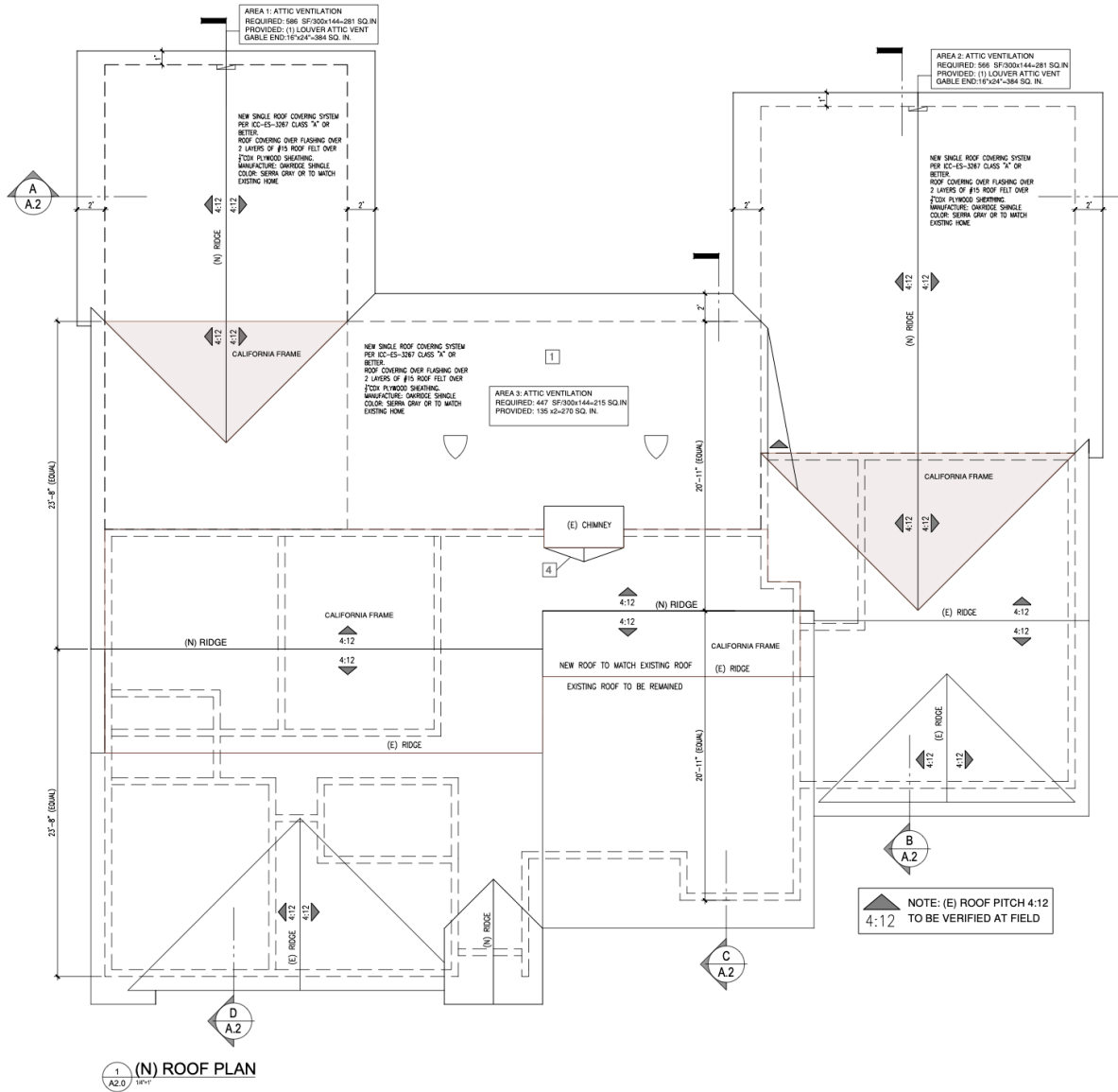
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A.3



## ROOF NOTES

1. INSTALL ROOFING PER MANUFACTURER SPEC'S. VERIFY REQUIREMENTS FOR WIND TABS WITH MANUF. SPEC'S AND LOCAL BUILDING DEPT.
2. PROVIDE A VAPOR BARRIER NOT EXCEEDING 1 PDSM INSTALLED ON THE WARM SIDE OF THE ATTIC INSULATION, WHEN "ATTIC AREA/300" CALC. FORMULA IS USED.
3. PROVIDE 1/4" CORROSION RESISTANT METAL MESH AT ATTIC VENTS, PER CRC SECTION 1305.3.
4. PROVIDE OPENING TO "CALIFORNIA ROOFED" AREA AS REQUIRED BY THE CRC FOR ACCESS AND/OR VENTILATION. SEE STRUCT. ENGINEERS PLANS/DETAIL FOR BLOCKED OPENINGS, AS REQUIRED.
5. IF IT IS EXCLUSIVELY THE DEVELOPER'S RESPONSIBILITY TO VERIFY, APPROVE, AND SUPERVISE INSTALLATION OF ALL ROOFING, FLASHING, AND WEATHERPROOFING PER MANUF. SPEC'S AND THE CRC AND LOCAL CODES.
6. TRUSS MANUF. TO PROVIDE BLOCK OUTS AT GABLE ENDS FOR VENTS AND RECESSED DETAILS AS OCCURS.
7. CALIFORNIA FRAME
8. DOWNSPOUTS
9. GUTTERS

1. BUILT-UP COMPOSITION
2. ROOF: CLASS "A" FIRE RATED
3. MANUF.: CERTANTEED
4. BRAND: FLINTASTIC
5. MODEL: GTS-FR COOL STAR
6. COLOR: WALNUT BROWN
7. SFR: 80
8. ICC-ES ESR-1388
9. CRC#0688-081
10. IFR: 0.10
11. ASD: 0.59
12. ITE: 0.90

## VENT MFR'S

DORMER AND GABLE END VENTS  
PLYCO FOUNDATION VENTS, INC.  
12000 HODMAN STREET  
WATERFORD, CA 95386

CLOWARD VENTS (WWW.CLOWARDVENT.COM)  
O'HARA, INC.  
2881 S. GRAVENSTEIN HWY., SUITE 107  
SEBASTOPOL, CA 95472



## ATTIC VENT CALCULATION

PROVIDE 1 SQ. IN. OF VENTILATION PER 300 SQ. IN. OF ATTIC SPACE. PROVIDE THAT SIZE OF THE REQ. VENTILATION AREA IS PROVIDED BY VENTILATORS IN THE UPPER PORTION OF THE ATTIC, (HIGH VENTING) AT 3 FT ABOVE EAVE VENT WITH THE BALANCE BEING PROVIDED BY EAVE VENTS, (LOW VENTING) PER C.B.C. 1305.3. EXCEPTION 1.

	BUILDING
ATTIC AREA (S.F.)	1960
VENT RATIO	1/300
REQUIRED VENTILATION (SQ. IN.)	(1960x144)/300=940.8
O'HARA "S" VENT	97.50 SQ. IN.
TOTAL ROOF VENTS NEEDED	940.8/97.50 = 9.6 (10)



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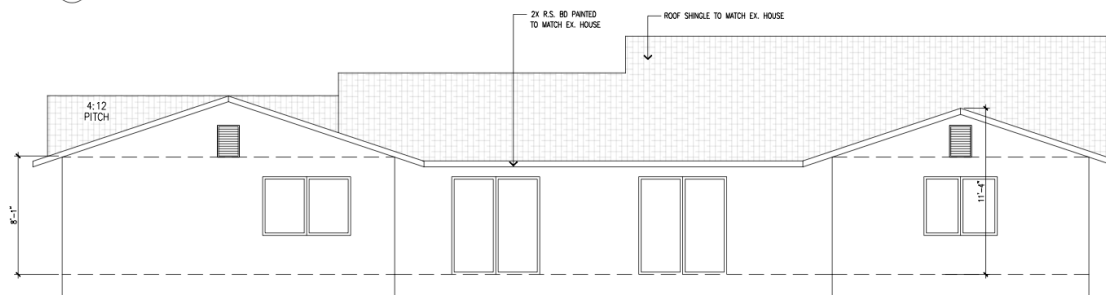
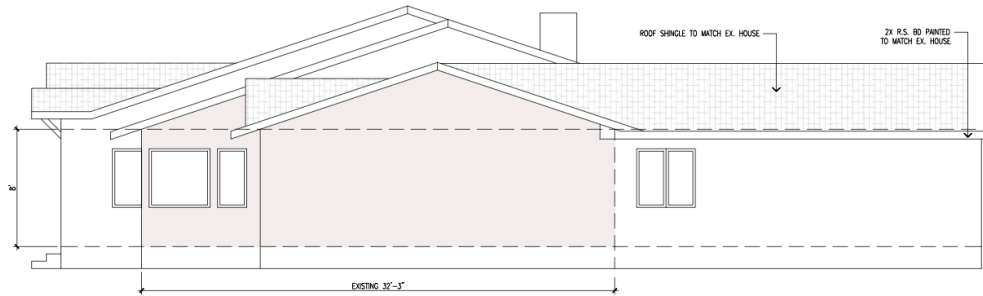
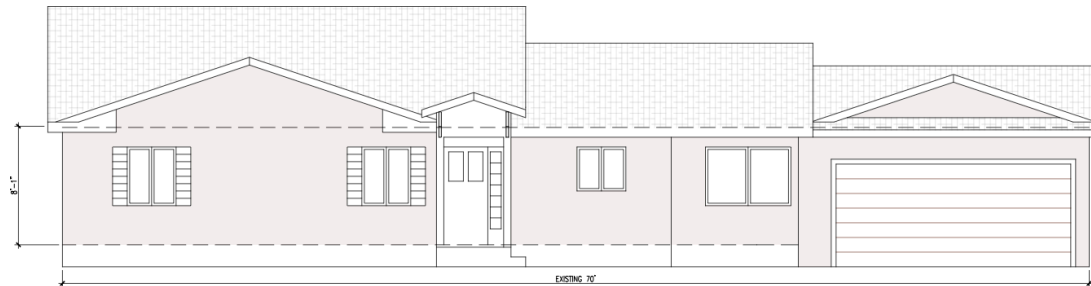
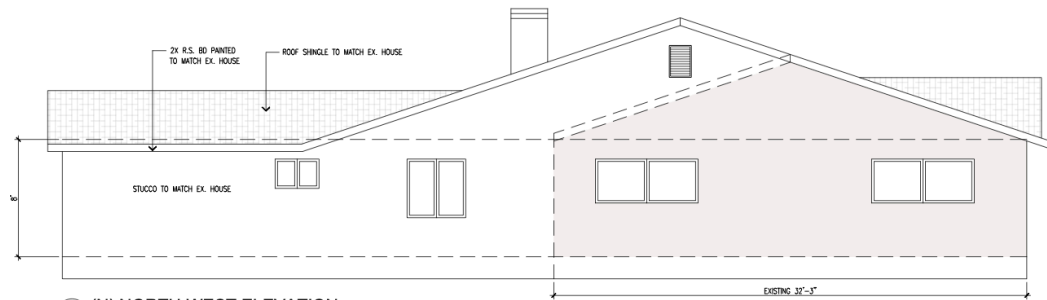
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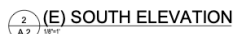
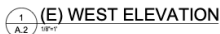
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*[Signature]*

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**A.4**





# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

## RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

### CHAPTER 3 GREEN BUILDING SECTION 301 GENERAL

**301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in the application checklist contained in this code. Voluntary green building measures are also included in the application checklist and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 105.7.2.

**301.1.1 Additions and alterations. [HCD]** The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building footprint, conditioned area, volume or size. The requirements that apply only to and/or within the specific area of the addition or alteration.

The mandatory provision of Section 4.106.4.2 apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

**Note:** Repairs including, but not limited to, resurfacing, restriping and repaving or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

**Note:** On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall reduce noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1 et seq. for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

**301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD]** The provisions of the residential code of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

### SECTION 302 MIXED OCCUPANCY BUILDINGS

### SECTION 302.1 MIXED OCCUPANCY BUILDINGS.

In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

**Exception:** 1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.

2. [HCD] For purposes of CALGreen, live/work units, complying with Section 4.10 of the California Building Code, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

### DIVISION 4.1 PLANNING AND DESIGN

#### ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
CHPD	Office of Statewide Health, Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

### CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

#### SECTION 4.102 DEFINITIONS

The following terms are defined in Chapter 2 (and are included here for reference)

**FRENCH DRAIN.** A trench, hole or other depressed area incised, filled with rock, gravel, fragments of brick or similar porous material used to collect or channel drainage water.

**WATILES.** Watiles are used to reduce sediment in runoff. Watiles are often constructed of natural plant matter such as hay, straw or similar material stacked in the form of bales and placed on a downflow slope. Watiles are also used for perimeter and inlet controls.

#### 4.106 SITE DEVELOPMENT

4.106.1 **USE OF AVAILABLE NATURAL RESOURCES.** Projects that disturb less than one acre of land shall be designed to preserve and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

**4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION.** Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water runoff in order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

- Retention basins of sufficient size shall be utilized to retain storm water on the site.
- Where storm water is conveyed to a public drainage system, collection, pump-out or similar disposal method, water shall be filtered by use of a silt trap system, wattle or other method approved by the enforcing agency.
- Compliance with a watily installed storm water management ordinance.

**Note:** Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil. (Website: [https://waterboards.ca.gov/water\\_issues/programs/stormwaterconstruction.html](https://waterboards.ca.gov/water_issues/programs/stormwaterconstruction.html))

#### 4.106.3 GRADING AND PAVING.

Construction plans shall indicate how the site grading or drainage system will manage surface water flows to keep water from entering buildings. Examples of methods to manage surface water runoff, but are not limited to, the following:

- Swales
- Water collection and disposal systems
- French drains
- Water retention gardens
- Other water measures which keep surface water away from buildings and aid in groundwater recharge

**Exception:** Additions and alterations not affecting the drainage path.

#### 4.106.4 Electric vehicle (EV) charging for new construction.

New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

- Exceptions:**
- On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible within the project, the local enforcing agency may, at its discretion, allow a waiver from the local utility power supply or the local utility or unable to supply adequate capacity for the project.
  - Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure development is required, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
  - Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

**4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages.** For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall be at least trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or submain and shall terminate at a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, raceable or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved for permit installation of a branch circuit overcurrent protective device.

**Exception:** A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code.

#### 4.106.4.1.1 Identification.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future use as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

#### 4.106.4.2 Multifamily development projects with less than 20 dwelling units, and hotels and motels with less than 20 sleeping units or guest rooms.

When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Section 4.106.4.2.1 and 4.106.4.2.2. Calculators for use in determining the required number of EV charging spaces shall be based on the number of EV charging spaces required for the entire project, not on a per-unit basis. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 2512.2 for further details.

#### 4.106.4.2.1 Multifamily development projects with less than 20 dwelling units, and hotels and motels with less than 20 sleeping units or guest rooms.

The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

**1.EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformers, have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 ampere.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

**Exceptions:**

- When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.
- When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

**Notes:**

- When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

**Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.**

**b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.**

**2.EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with power Level 2 EV charging receptacles. For multifamily parking spaces, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

**Exception:** Areas of parking facilities served by parking lifts.

#### 4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.

The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

**1.EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformers, have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 ampere.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

**Exception:** When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of the parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

**Notes:**

- Construction documents shall show locations of future EV spaces.

**b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.**

**2.EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with power Level 2 EV charging receptacles. For multifamily parking spaces, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

**Exception:** Areas of parking facilities served by parking lifts.

**3.EV Chargers.** Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where covered use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to support the maximum required EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 ampere, and installed EVSE shall have a 40-ampere minimum dedicated branch circuit. ALMS shall not be used to reduce the minimum required receptacle to the required EV capable spaces.

#### 4.106.4.2.3 Electric vehicle charging stations (EVCS).

Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.

**Exception:** Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

#### 4.106.4.2.1 Location.

EVCS shall comply with at least one of the following options:

- The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.
- The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

**Exception:** Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.1.2, Item 3.

#### 4.106.4.2.2 Electric vehicle charging stations (EVCS) dimensions.

The charging spaces shall be designed to comply with the following:

- The minimum length of each EV space shall be 16 feet (5486 mm).
- The minimum width of each EV space shall be 9 feet (2743 mm).
- One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

**Exception:** A surface slope for the EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

#### 4.106.4.2.3 Accessible EV spaces.

In addition to the requirements in Section 4.106.4.2.2.1 and 4.106.4.2.2.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B, ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

#### 4.106.4.3 EV space requirements.

1. Single EV space requirements. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall be at least trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or equipment location, as applicable. The service panel and/or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved for permit installation of a branch circuit overcurrent protective device.

**Exception:** A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2. Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on anticipated or installed or future receptacles or EVSE, recovery methods, wiring schematics and electrical load calculations. Plans design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

**Exception:** A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

#### 4.106.4.3 Identification.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

#### 4.106.4.3 Electric vehicle ready space signage.

Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with California Traffic Operations Policy Directive 13-01 (Green Environment Vehicle Signs and Pavement Markings) or its successor(s).

#### 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing buildings.

When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered such that electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

**Notes:**

- Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
- There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

#### DIVISION 4.2 ENERGY EFFICIENCY

#### 4.201 GENERAL

**4.201.1 SCOPE.** For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

#### DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

#### 4.303 INDOOR WATER USE

#### 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS.

Plumbing fixtures (water closets and urinals), showers, faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

**Note:** All noncompliant plumbing fixtures in any residential new property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1 et seq. for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

#### 4.303.1.1 Water Closets.

The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

**Note:** The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

#### 4.303.1.2 Showers.

The effective flush volume of all water mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

#### 4.303.1.3 Single Showerheads.

Showersheds shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

#### 4.303.1.3 Multiple Showerheads serving one shower.

When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by one shower outlet shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

**Note:** A hand-held shower shall be considered a showerhead.

#### 4.303.1.4 Faucets.

4.303.1.4.1 **Residential Lavatory Faucets.** The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.5 gallons per minute at 20 psi.

#### 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas.

The maximum flow rate of residential lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

#### 4.303.1.4.3 Metering Faucets.

Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.

#### 4.303.1.4.4 Kitchen Faucets.

The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must follow a maximum flow rate of 1.8 gallons per minute at 60 psi.

**Note:** Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

#### 4.303.1.4.5 Pre-rinse spray valves.

When installed, shall meet the requirements in the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (P44) Table H-2, Section 1605.1 (P44)(A), and Section 1607 (S97) and shall be equipped with an integral automatic shut-off.

**FOR REFERENCE ONLY:** The following table and code section have been reported from the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (P44) and Section 1605.3 (P44)(A).

PRODUCT CLASS	MAXIMUM FLOW RATE (gpm)
Product Class 1 (5 x 5.0 cft)	1.00
Product Class 2 (5.0 cft and 5.0 cft)	1.20
Product Class 3 (8 x 8.0 cft)	1.28

**Table 20 Section 1605.3 (P44)(A): Commercial pre-rinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray rate of not less than 4.0 ounces force (ozf) [113 grams force (gf)]**

#### 4.303.2 Standards for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.

Summers shall be installed to measure water usage of individual retail dwelling units in accordance with the California Plumbing Code.

**Exception:** A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

#### 4.303.3 Standards for plumbing fixtures and fittings.

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.

**NOTE:** THIS TABLE COMPLETES THE DATA IN SECTION 4.303.1 AND IS INCLUDED AS A CONFORMANCE FOR THE CODE.

#### TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GPM @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.6 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GPM @ 60 PSI
WATER CLOSET	1.28 GPM @ 60 PSI
URINALS	0.125 GPM @ 60 PSI

#### 4.304 OUTDOOR WATER USE

#### 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS.

Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

**NOTES:**

- The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code of Regulations, Title 23, Chapter 2.7, Division 2. MWELO and located in the following water budget calculator, are available at: <https://www.water.ca.gov/>

#### 4.400 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

#### 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

#### 4.406.1 FLOORED PROTECTIVE.

Interior surfaces, including walls, floors, electric cables, conduits or other openings in soffit/platen 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.

#### 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

#### 4.408.1 CONSTRUCTION WASTE MANAGEMENT.

Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with other recycling programs, or 4.408.2, 4.408.3, or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

**Exceptions:**

- Excavated soil and land-clearing debris.
- Alternate waste management methods developed by working with local agencies if diversion or recycle facilities capable of compliance with the law do not exist or are located reasonably close to the jobsite.
- The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the local boundaries of the diversion facility.

**4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN.** Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse, salvage, or other program.

2. Specify of construction and demolition waste materials will be sorted on-site (separately or separately combined single stream).

3. Identify diversion facilities where the construction and demolition waste material collected will be taken.

4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.

5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

**4.408.3 WASTE MANAGEMENT COMPANY.** Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

**Note:** The owner or contractor may make the determination if the construction and demolition waste material shall be diverted by a waste management company.

#### 4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LA].

Projects that generate a total combined weight of construction and demolition waste diverted in landfills, which do not exceed 3.4 tons (3,400 lbs.) of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

**4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE.** Projects that generate a total combined weight of construction and demolition waste diverted in landfills, which do not exceed 3.4 tons (3,400 lbs.) of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

#### 4.408.5 DOCUMENTATION.

Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4.

**NOTES:**

- Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at <http://www.ca.gov/calgreen.html> may be used to assist in documenting compliance with the code.
- Mixed construction and demolition debris (C & D) processes can be located at the California Department of Resources and Recycling (CDRRC) website (<http://www.cdrrecycle.org/>).

#### 4.410 BUILDING MAINTENANCE AND OPERATION

#### 4.410.1 OPERATION AND MAINTENANCE MANUAL.

At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.

2. Operation and maintenance instructions for the following:

- Equipment and appliances, including water-saving devices and systems, HVAC systems, electronic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
- Roof and yard drainage, including gutters and downspouts.
- Space conditioning systems, including condensers and air filters.
- Landscape irrigation systems.
- Water reuse systems.

3. Information from local utility and water recovery providers on methods to further reduce resource consumption, including recycle programs and locations.

4. Public transportation and/or carpool options available in the area.

5. 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.

6. Information about water-conserving landscape and irrigation design and contractors which conserve water.

7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.

8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.

9. Information about state water savings and incentive programs available.

10. A copy of all special inspections verifications performed by the enforcing agency or its title.

11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.

12. Information and/or drawings illustrating the location of major fire reinforcements.

**4.410.2 RECYCLING BY OCCUPANTS.** When 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (but not limited to) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a locally enacted local recycling ordinance, if more restrictive.**Exception:** Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42948.62 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.**DIVISION 4.5 ENVIRONMENTAL QUALITY**  
**SECTION 4.501 GENERAL**  
**4.501.1 REPAIRS.**  
The provisions of this chapter that outline means of reducing the quality of air contaminants that are odorous, dusty, smoky, and/or otherwise harmful to human health, shall be applied to all buildings, occupants and neighbors.**SECTION 4.502 DEFINITIONS**  
**5.102.1 DEFIN**

# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

## RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

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