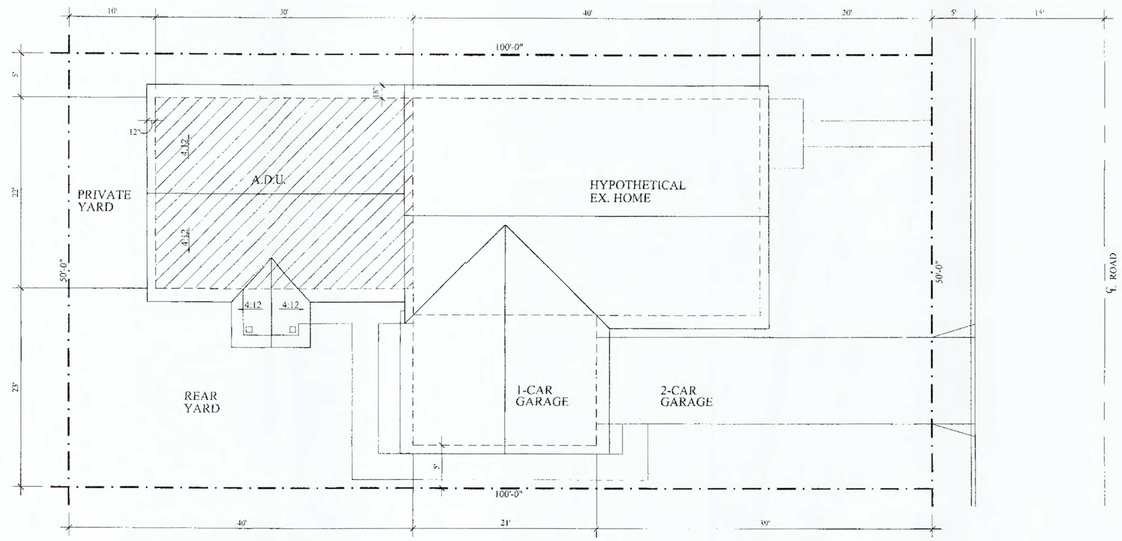


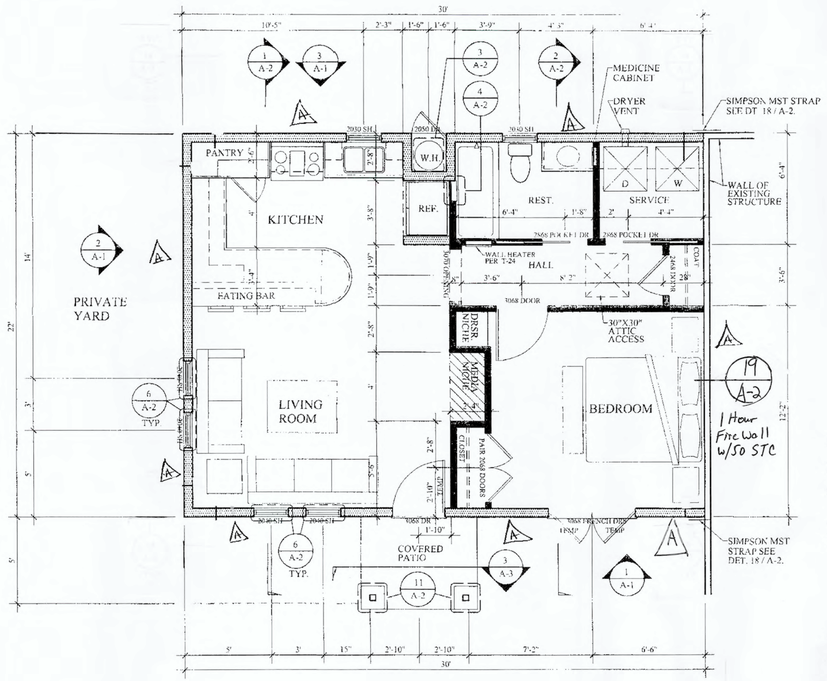
SITE PLAN
SCALE: N.T.S.

NOTES
-- THE SHADED AREA INDICATES THE LOCATION AND SIZE OF THE NEW A.D.U.
-- ALL GRAPHICAL DEPICTIONS OF THE EXISTING STRUCTURES ARE ASSUMED, AND ARE TO BE REVISED OR ADDED TO AS NEEDED FOR FUTURE ADAPTATIONS OF THIS DESIGN.

All engineering has been placed on plans

REGISTERED PROFESSIONAL ENGINEER DENNIS L. SCHNEIDER CIVIL EXP. 6/30/09

Wall heater installed per manufactures installation instructions, including all vents, flues, fire stops and minimum clearance to combustibles per Manufactures installation instructions.



FLOOR PLAN
SCALE: N.T.S.

A USE: 15/32" PLYWOOD or OSB PANEL W/10d COMMON NAILS 4@" O.C. EDGES, 12" O.C. INT.

B USE: 7/8 WIDTH MIN. 15/32" PLYWOOD PANEL W/10d COMMON NAILS 4@" O.C. EDGES, 12" O.C. INT. SUPPLY HOLDOWNS AT EACH END OF PANEL

ALL HOLDDOWNS SHALL BE SIMPSON PHD2-SDS3 OR GREATER.

IF T-111 IS USED AS A SHEAR WALL PANEL, THE PANEL MUST BE RATED AT 15/32" (MIN.) AS STAMPED BY THE MANUFACTURER.

FLOOR T1l0 SHEAR WALL PANELS MUST BE SUPPORTED BY DOUBLE JOISTS OR BLOCKING TO TRANSFER LOAD TO WALL SYSTEM

PROVIDE 5/8" X 10" ANCHOR BOLTS, 7" INTO CONCRETE W/ 3"x3"x.229" THICK WASHERS @ 6' O.C. AROUND PERIMETER OF SLAB AND ALL INTERIOR BEARING WALLS WITH BOLTS 12" MAX. FROM CORNERS AND NOT LESS THAN T10 BOLTS PER SILL, U.O.N.

ALL SHEARWALL PANELS MUST BE CONTINUOUS, FROM BOTTOM OF BOTTOM PLATE, TO TOP OF TOP PLATE, OR BLOCKED BETWEEN.

SHEARWALL SCHEDULE

WALL LEGEND

2X6 WOOD STUD WALL W/ R-19 INSULATION @ EXTERIOR LOCATIONS

2X4 WOOD STUD WALL W/ 5/8" TYPE 'X' GYP. BD. ON INTERIOR SIDE

PLAN NOTES:

1. SLAB ON GRADE SHALL BE PLACED ON PROPERLY COMPACTED SOIL AS RECOMMENDED IN THE FOLLOWING:
   A. TO BE ESTABLISHED ON A 12" THICK BLANKET OF NON-EXPANSIVE GRANULAR SOILS HAVING AN EXPANSION INDEX OF LESS THAN 20.
   B. TO BE POURED OVER A 6-MIL POLYETHYLENE FILM COVERED WITH 2" OF CLEAN SAND
2. SEE TYPICAL SECTIONS AND DETAILS WHERE NO DETAILS SHOWN OR NOTED ON THE DRAWINGS.
3. PROVIDE TWO LAYERS OF #15 FELT INSTALLED UNDER THE MANUF'D. HORIZ. SIDING OVER A MIN. 3/8" PLYWOOD SHEATHING - TYPICAL.
4. WOOD BEAMS OR HEADERS 4X10, 4X12 OR 6X14 SHALL HAVE 4X4 SUPPORTING POSTS AT BOTH ENDS
5. ALL ANCHOR BOLTS ARE TO BE TIGHTENED AND SECURE PRIOR TO FOUNDATION INSPECTION.
6. EACH SUBMITTAL WILL BE REVIEWED FOR THE USE ON THE OTHER SIDE OF THE COMMON WALL. SPECIFY USE AT TIME OF APPLICATION.
7. ENERGY FENESTRATION U & SHGC VALUES OF EACH WINDOW MUST BE VERIFIED PRIOR TO FINAL INSPECTION.

VICINITY MAP

PROJECT DATA

BUILDING DEPARTMENT: COUNTY OF HUMBOLDT

BUILDING CODES: 2019 CBC, CPC, CMC, CRC CEC & CA. ENERGY EFFICIENCY STANDARDS

OCCUPANCY CLASSIFICATION: GROUP R, DIV. 3

CONSTRUCTION TYPE: TYPE V-B

PROJECT DESCRIPTION: 660 SQ. FT. ADDITION

STORIES: ONE (1)

SCOPE OF PROJECT

ADDITION OF AN ACCESSORY DWELLING UNIT TO AN EXISTING SINGLE FAMILY HOME. THE A.D.U. CONTAINS ONE BEDROOM, A BATHROOM, A SERVICE ROOM, A LIVINGROOM, AND A KITCHEN.

PROJECT DATA

LOT AREA	
EXISTING AREA (HOUSE):	
EXISTING AREA (GARAGE):	
EXISTING FOOTPRINT:	
EXISTING LOT COVERAGE:	
AREA OF A.D.U. ADDITION:	660 S.F.
TOTAL PROPOSED AREA:	
PROPOSED FOOTPRINT:	

SHEET INDEX

LEGAL DESCRIPTION

TRACT NUMBER:

LOT NUMBER:

ASSESORS PARCEL NUMBER:

CONSULTANTS

OWNER:

DESIGNER:
DOUG BROWN
BROWN DESIGNS
327 MAIN STREET
P.O. BOX 152
FERNDALE, CA 95536

BROWN DESIGNS
327 MAIN STREET
FERNDALE, CA 95536
PHONE 707.215.5390
FAX 707.215.3131

THE TYPICAL
ACCESSORY
DWELLING UNIT

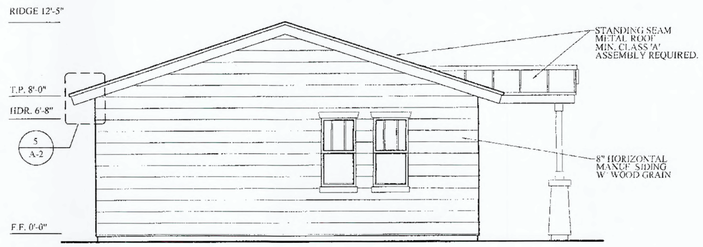
Job Address:

DRAWN:	D.A.B.
SCALE:	AS NOTED
JOB NO.:	07001
DATE:	04/20/07
RELEASE DATE:	
CAD NAME:	
SHEET NO.:	

T-1

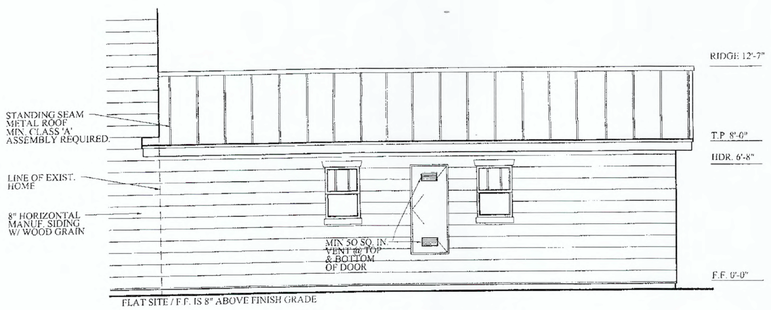
SUBMISSION PLAN CHECK CORRECTED SET

1 SOUTH ELEVATION
SCALE: N.T.S.



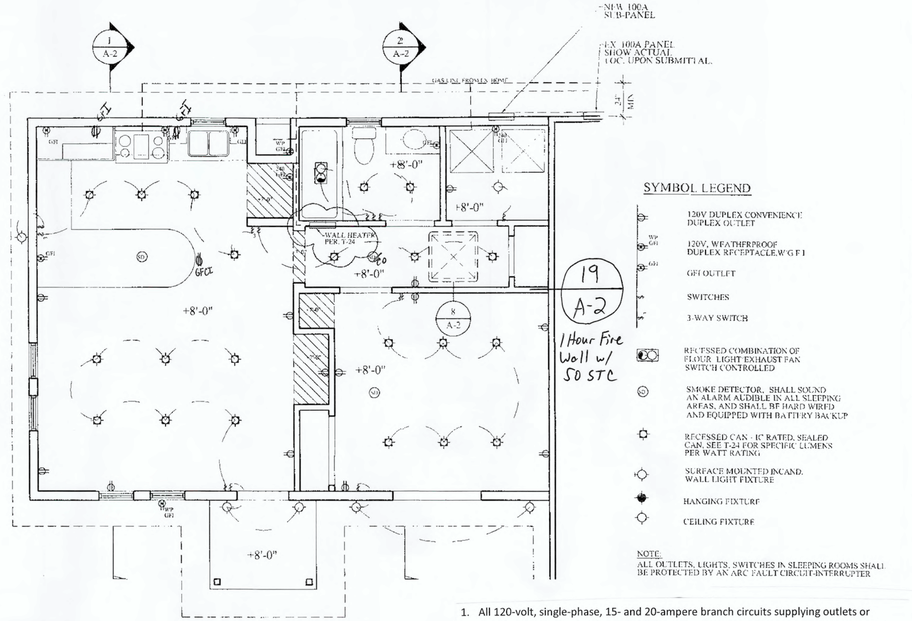
1 EAST ELEVATION
SCALE: N.T.S.

NOTE
THE WEST ELEVATION DOES NOT EXIST DUE TO THE LOCATION OF THE A.D.U. AND THE EXISTING STRUCTURE.



3 NORTH ELEVATION
SCALE: N.T.S.

Wall heater installed per manufactures installation instructions, including all vents, flues, fire stops and minimum clearance to combustibles per Manufactures installation instructions.



4 R.C.P. / LIGHTING PLAN
SCALE: N.T.S.

1. All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall be protected by a listed combination-type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit. CEC 210.12
2. GFCI protection shall be required at bathroom outlets, kitchen outlets where serving countertop surfaces, in garages, and exterior. CEC 210.8

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THE TYPICAL
ACCESSORY
DWELLING UNIT

Job Address:

DRAWN:	D.A.B.
SCALE:	AS NOTED
JOB NO.:	07001
DATE:	04/20/07
RELEASE DATE:	
CAD NAME:	
SHEET NO.:	

A-1

ATTIC VENT CALCULATIONS

ATTIC AREA = 660 S.F.
660 S.F. / 150 = 4.4 S.F. OF VENTED AREA REQUIRED

USE RIDGE VENT SYSTEM BY MBCI
W/IICH PROVIDES 12 SQ. IN. PER LINEAR FOOT OF RIDGE. = 2.5 SQ. FT. OF VENTED AREA AT RIDGE.

ALSO USE OFFSET VENT BLOCKS PER DET. 15 / A-2. EACH VENTED BAY HAS 21 SQ. IN. OF VENTED AREA. PROVIDE A VENT EVERY 3 BAYS (BETWEEN R.J.'S). = 14 VENTS
14 VENTS X 21 SQ. IN. = 2 S.F. OF VENTED AREA AT EAVE.

2.5 S.F. + 2 S.F. = 4.5 S.F. OF TOTAL VENTED AREA

4.5 S.F. > 4.4 S.F. THEREFORE VENT REQUIREMENT FULFILLED

WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

GA FILE NO. WP 3244	GENERIC	1 HOUR FIRE	50 to 54 STC SOUND

GYPSUM WALLBOARD, RESILIENT CHANNELS, MINERAL OR GLASS FIBER INSULATION, WOOD STUDS

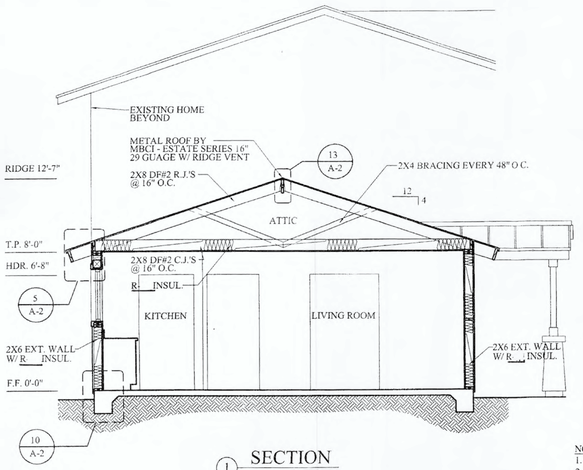
Fire Design:
Resilient channels 16" o.c. attached at right angles to ONE SIDE of 2 x 4 wood studs 16" o.c. with 1-1/4" Type S screws. **Base** layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1" Type S screws 8" o.c. with vertical joints located midway between studs. **Face** layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1-5/8" Type S screws 8" o.c.
Face layer joints offset 16" from **base** layer joints. 3" mineral or glass fiber insulation in stud space.
OPPOSITE SIDE: **One** layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 6d cement coated nails, 1-7/8" long, 0.0915" shank, 15/64" heads, 7" o.c.
Vertical joints staggered 16" on OPPOSITE SIDES. **(LOAD-BEARING)**

Thickness: 6" (Fire and Sound)
Approx. Weight: 9 psf (Fire and Sound)
Fire Test: Based on UL R14196, DSNK05371, 2-15-05, UL Design U305
Sound Test: NRCC TL-93-118

Sound Design:
Sound tested as constructed for fire.

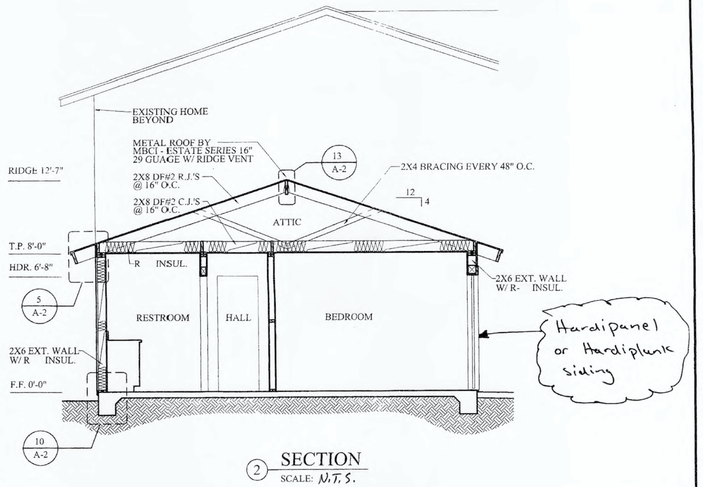
1. Through penetrations of fire-resistance rated walls and ceilings shall be protected in accordance with CRC R302.4.

1 Hour Fire Wall w/50 STC | 19



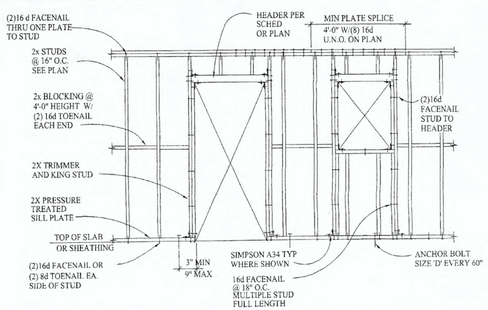
1 SECTION
SCALE: N.T.S.

NOTE:
1. NO FLOORING ALLOWED IN ATTIC.
2. MIN. 3/8 PLYWOOD SHTG REQUIRED AT ALL EXTERIOR WALLS.



2 SECTION
SCALE: N.T.S.

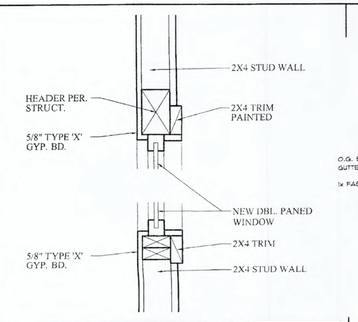
BROWN DESIGNS
327 MAIN STREET
FERNDALE, CA 95536
PHONE 707.215.5390
FAX 707.215.3131



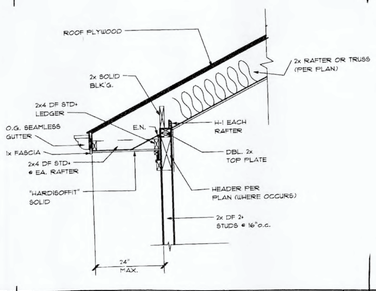
HEADER SCHEDULE (SEE NOTE 1)	
OPNG WIDTH	HEADER
UP TO 4'-0"	4x4
6'-0" TO 8'-0"	4X8
8'-0" TO 10'-0"	4x12

NOTE:
1. USE 4X12 DF #2 FOR HEADERS CARRYING ROOF LOADS

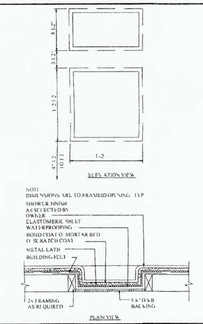
TYPICAL WALL FRAMING DETAIL | 7



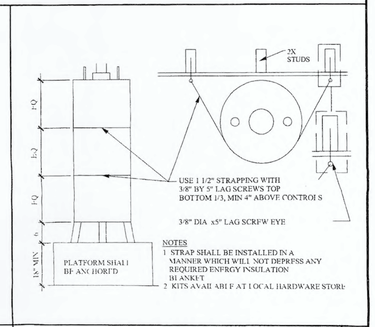
WINDOW TRIM DETAIL | 6



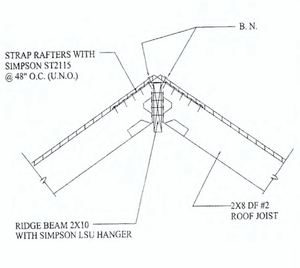
EAVE DETAIL | 5



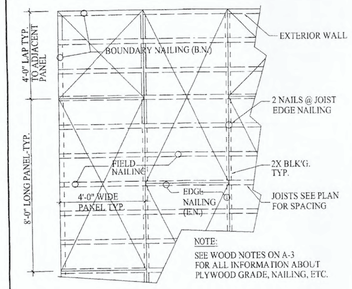
SHAMPOO NICHE | 4



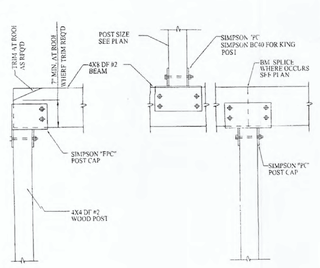
WATER HEATER ANCHOR | 3



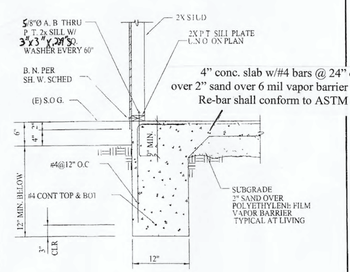
RIDGE DETAIL | 13



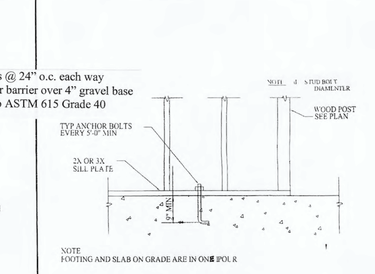
TYPICAL PLYWOOD DETAIL | 12



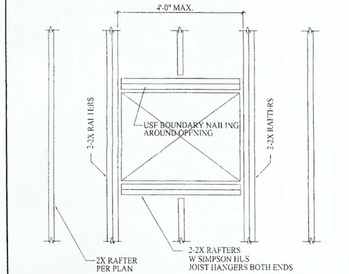
POST TO BEAM DETAIL | 11



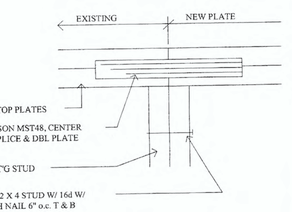
FOOTING DETAIL | 10



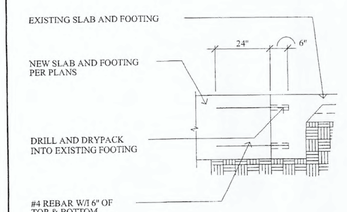
ANCHOR BOLT DETAIL | 9



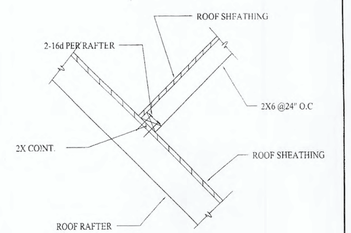
ATTIC ACCESS DETAIL | 8



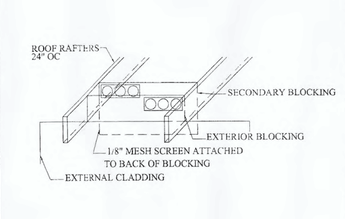
FRAMING CONN. DETAIL | 18



FOOTING CONN. DETAIL | 17



CALIF. FRAME DETAIL | 16



OFFSET BLOCK VENT DETAIL | 15

ALTERNATIVE SHEAR DETAIL | 14

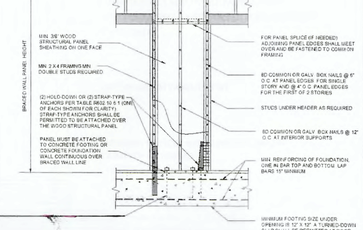


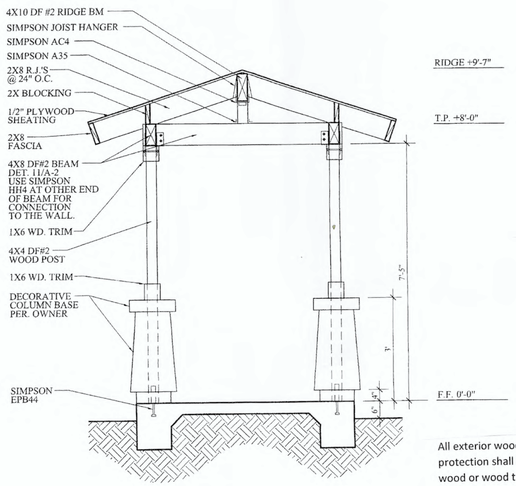
FIGURE R602.10.6.1
METHOD ABW—ALTERNATE BRACED WALL PANEL

ALTERNATIVE SHEAR DETAIL | 14

THE TYPICAL
ACCESSORY
DWELLING UNIT

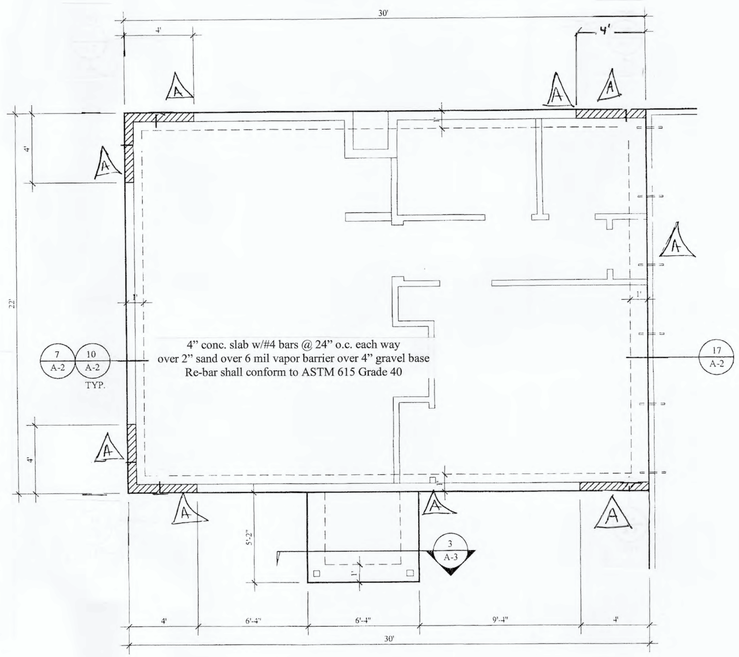
Job Address:

DRAWN:	D.A.B.
SCALE:	AS NOTED
JOB NO.:	07001
DATE:	04/20/07
RELEASE DATE:	
CAD NAME:	
SHEET NO.:	A-2



3 ROOF OVER PORCH SECTION
SCALE: N.T.S.

All exterior wood and wood-based products exposed to the weather without adequate protection shall be provided with protection from decay by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1. 2019 CRC 317



1 FOUNDATION PLAN
SCALE: N.T.S.

GENERAL NOTES

1 THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE, AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS INCLUDING THOSE CONDITIONS OF ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUB-CONTRACTORS. STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2 ALL MATERIALS AND WORKMANSHIP SHALL BE PERFORMED IN ACCORDANCE WITH 2001 CALIFORNIA BUILDING CODE.

3 WHERE NO DETAILS SHOWN OR NOTED ON THE DRAWINGS, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

4 OPENINGS, POCKETS, SLEEVES, ETC., SHALL NOT BE PLACED IN SLABS, BEAMS, WALLS, COLUMNS AND FOOTINGS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS

5 CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOADS SHALL NOT EXCEED DESIGN LIVE LOADS FOR EACH PARTICULAR LEVEL. PROVIDE ADEQUATE SHORING AND BRACING IF LOAD EXCEED DESIGN LIVE LOAD OR WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.

6. THIS SET OF DRAWINGS REPRESENT THE FINISHED STRUCTURE. METHOD OF CONSTRUCTION NOT NECESSARY INDICATED, THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, SCAFFOLDING, ETC.

7 DESIGN LIVE LOADS:
ROOF LIVE LOADS: 20 PSF
FLOOR LIVE LOADS: 40 PSF.
SEISMIC FORCE: E
A-2KM - NA-1.5
SEISMIC SOURCE:
SOIL PROFILE TYPE SD
DISTANCE TO KNOWN FAULT 0 KM
WIND FORCE: 110 MPH WIND ZONE

FOUNDATION NOTES

1 THE "FOUNDATION DESIGN IS BASED ON CBC-01 TABLE 18-I-A. ALLOWABLE SOIL BEARING VALUE IS 1000 PSF.

2 FOUNDATION DESIGN SHALL BE 18" MINIMUM BELOW LOWEST ADJACENT FINAL GRADE, AND 12" MINIMUM WIDTH, BEAR ON FIRM NATIVE OR PROPERLY COMPACTED SOILS.

3 SUBGADE SHALL BE 2" SAND OVER POLYETHYLENE FILM VAPOR BARRIER.

4 SIDE OF FOUNDATION MAY BE POURED AGAINST STABLE EARTH UNLESS SHOWN OR NOTED OTHERWISE.

5. CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT DEWATERING FOR EITHER SURFACE WATER, GROUND WATER OR SEEPAGE WATER

6. CONTRACTOR SHALL PROTECT ALL UTILITY LINES, ETC ENCOUNTERED DURING EXCAVATIONS AND BACKFILLING.

7 CONTRACTOR SHALL PROVIDE AND INSTALL ALL CRIBBING SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANK.

8. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL SHALL BE PROPERLY COMPACTED.

9 CONTRACTOR SHALL BRACE OR PROTECT FROM LATERAL LOADS FOR THE PIT AND RETAINING WALLS UNTILL ATTACHING SLABS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL STRENGTH.

CONCRETE NOTES

1. ALL CONCRETE SHALL BE NORMAL WEIGHT "ONFORMING TO THE FOLLOWING:

LOCATION	28-DAY MIN. COMPRESSIVE STRENGTH	MAXIMUM AGGREGATE SIZE (IN.)	MIX DESIGN SLUMP (INCHES)
A. SLAB ON GRADE	2500 psi	1	4 (5" MAX)
B. FOOTINGS & GR BMS	2500 psi	1 5	4 (5" MAX)

2 AGGREGATE SHALL CONFORM TO ASTM C-33.

3. WATER SHALL BE CLEAN, FREE FROM DELETERIOUS AMOUNTS OF ACIDS, ALKALIS OR ORGANIC MATERIALS, OILS, SALTS AS PER 2001 CBC

4 CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94

5. CONDUIT PLACED IN A CONCRETE SLAB SHALL NOT EXCEED 1/3 OF THE THICKNESS OF THE SLAB AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING STEEL. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6".

6. CONSTRUCTION JOINTS:
THE SURFACES OF ALL CONSTRUCTION JOINTS SHALL BE CLEAN, FREE FROM LOOSE DEBRIS IMMEDIATELY BFORE NEW CONCRETE IS PLACED. ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED

7. ALL SAW CUTS IN SLAB ON GRADE SHALL BEMADE NOT LATER THAN 24 HOURS AFTER PLACING CONCRETE.

NOTES FOR ANCHOR BOLTS

1. ALL STUD WALLS NOT SCHEDULED (INCLUDING WALLS BELOW WINDOWS, ETC.) SHALL HAVE 2X SILL PLATES WITH A MINIMUM OF 5/8" Ø X ANCHOR BOLTS AT 5'-0"

2. ANCHOR BOLTS SHALL BE AT LEAST A307 QUALITY STEEL AND SHALL HAVE TREADED LENGTH OF 2" MINMUM AT TOP, 3" MINIMUM TOTAL PROJECTION ABOVE TOP OF SLAB, 9" MINIMUM EMBEDMENT INTO CONCRETE AND A STANDARD BOLT HEAD OR AN EQUAL DEFORMITY IN THE EMBEDED PORTION. (90° HOOK AT BOTTOM WITH 2.5" BEND DIAMETER AND 3" RETURN IS ACCEPTABLE)

3 ANCHOR BOLTS SHALL BE LOCATED AT CENTEI OF SILL PLATES. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE OF SILL PLATE WITH ONE BOLT LOCATED WITHIN 12" OF EACH END OF EACH PIECE. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE.

NOTES FOR PLYWOOD SHEAR WALL CONSTRUCTION:

2. ALL PLYWOOD SHALL BE APPLIED DIRECTLY TO FRAMING

3 ALL PLYWOOD PANEL EDGES SHALL BE BACKED WITH 2"X OR WIDER FRAMING

4. PROVIDE 8d NAILS AT 12" O.C. ALONG INTERMEDIATE FRAMING MEMBERS (FIELD) AT ALL PLYWOOD

5 TYPICAL EXTERIOR STUDS SHALL BE 2X4 DOUGLAS FIR STRUCTURAL NO. 2 GRADE AT 16" O.C. UNLESS NOTED OTHERWISE.

6 TYPICAL INTERIOR STUDS SHALL BE 2X DOUGLAS FIR STRUCTURAL NO. 2 GRADE AT 16" O.C. UNLESS NOTED OTHERWISE

7 STAGGER EDGE NAILS AT ALL ADJOINING PANEL EDGES

8 IN SHEAR WALL LOCATIONS, FOUNDATION SIL PLATE AND ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 2INCH NOMINAL MEMBER AND STAGGER NAILING FOR ALL MEMBERS RECEIVING EDGE NAILING. SEE DET 14/A-2.

9. SHEAR WALL SHALL RUN CONTINUOUSLY FROM FOUNDATION TO ROOF/FLOOR FRAMING

WOOD

1 ALL LUMBER SHALL BE GRADE MARKED DOUGLAS FIR AND SHALL HAVE THE FOLLOWING GRADES, UNLESS NOTED OTHERWISE:

JOISTS & RAFTERS	GRADE NO. 2 OR BETTER
BEAMS & STRINGERS	GRADE NO. 1 AND BETTER
DOUBLE TOP PLATES	GRADE NO. 1 AND BETTER
2X4 STUDS	CONSTRUCTION GRADE OR BETTER
3X4 & 2X6 STUDS	GRADE NO. 2 OR BETTER
POSTS AND TIMBERS	GRADE NO. 1 AND BETTER

2. PLYWOOD SHEATHING SHALL BE FULL SIZE SHEET WHERE POSSIBLE WITH 48" X 32" MINIMUM SHEET SIZE AND LAID CONTINUOUSLY OVER TWO OR MORE SPANS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.

A. FLOOR SHEATHING SHALL BE GRADE MARKED "D.F.P.A. EXTERIOR SHEATHING C-D GRADE" 19/32" THICK WITH EXTERIOR GLUE. PANEL I.D. RATING 32/16 OR BETTER. EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS. NAILED WITH 10d DEFORMED SHANK NAILS AT 6" O.C. AT EDGES AND BOUNDARIES, AT 10" O.C. IN FIELD. U.N.O.

B ROOF SHEATHING SHALL BE GRADE MARKED "D.F.P.A. EXTERIOR SHEATHING C-D GRADE" 15/32" THICK WITH EXTERIOR GLUE. PANEL SPAN RATING 24/0 OR BETTER. NAILED WITH 8d COMMON NAILS AT 6" O.C. AT EDGES AND BOUNDARIES, AT 12" O.C. IN FIELD UNLESS NOTED OTHERWISE.

3 ALL NAILS SHALL BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE. SEE FRAMING PLANS OR DETAILS FOR NAIL SIZES AND SPACINGS. NAILS THAT NOT DETAILED OR NOTED SHALL BE IN ACCORDANCE WITH TABLE R602.3(1) NAILING SCHEDULE.

4. ALL JOIST HANGERS AND FRAMING CONNECTORS SHALL BE "SIMPSON" OR APPROVED EQUAL

5. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, ETC UNLESS SPECIFICALLY NOTED.

6 BOLT HOLES SHALL BE SAME DIAMETER AS THAT OF THE BOLTS PROVIDE WASHERS BETWEEN BOLT HEADS OR NUTS AND WOOD MEMBERS

7 TIGHTEN NUTS ON ALL BOLTS BEFORE CLOSING IN COMPLETION OF JOB.

8 ALL SILL PLATES RESTING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR.

9. ANCHOR BOLT DISTANCE FROM THE SILL END OR BREAK IS 6 TIMES THE BOLT DIAMETER, UP TO 12" MAX.

10 PROVIDE IDOUBLE JOISTS UNDER ALL PARTITIONS THAT ARE PARALLEL TO JOISTS. USE 2-16d NAILS AT 16" O.C. TO NAIL THE DOUBLE JOISTS TOGETHER.

11 TOP PLATES FOR ALL STUD WALLS SHALL BE 2-2X LAP FOR TOP PLATES SHALL BE 48" LONG MINIMUM NAILED WITH 16d AT 4" AT EACH LAP UNLESS NOTED OTHERWISE. SPLICES IN UPPER AND LOWER PLATES SHALL BE STAGGERED 10'-0" MINIMUM

12. PRE-DRILL FOR NAILING AS REQUIRED WHEN NAIL SPACING RESULTS IN WOOD SPLITTING. PRE-DRILL HOLES SHALL BE SMALLER THAN THE DIAMETER OF THE NAILS

13 NO STUD IIS ALLOWED TO BE OVER 10'-0" HIGH BETWEEN CROSS TIES WHERE IT IS BRACED OR BEARING WALL.

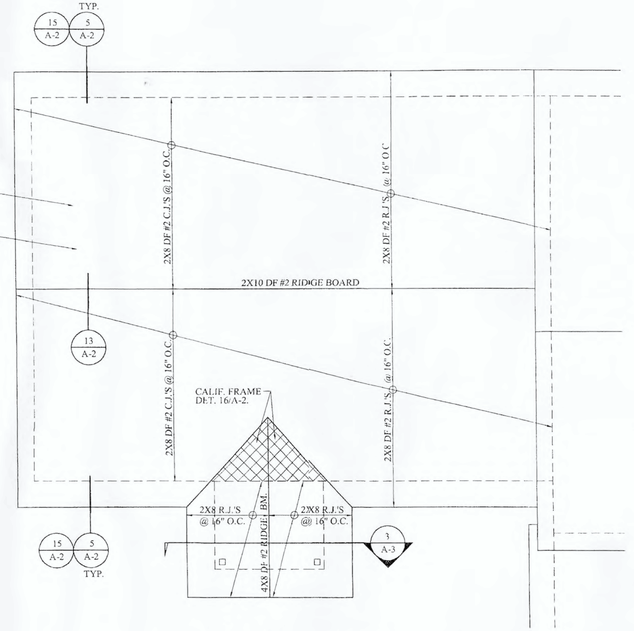
14. THE HOLD-DOWN CONNECTORS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.

15. APPROVED PLATE WASHERS, IN-LIEU OF CUT WASHERS, SHALL BE PROVIDED FOR ALL PLYWOOD SHEARWALL SILL PLATE ANCHOR BOLTS.

16 THE SILL PLATE ANCHOR BOLTS AND HOLD-DOWN CONNECTOR BOLTS AT ALL PLYWOOD SHEARWALL SHALL HAVE THE PLATE WASHERS.

17 CUTTING OR NOTCHING OF WOOD STUDS OR PLATES SHALL NOT EXCEED 25% OF THE STUD-PLATE WIDTH WITH THE EXTERIOR AND BEARING WALL AND NOT TO EXCEED 40% OF THE STUD/PLATE WIDTH IN NONBEARING PARTITIONS BORED HOLES DIAMETER IS LIMITED TO 40% OF THE STUD PLATE WIDTH IN ANY STUD AND MAY BE 60% IN NONBEARING PARTITIONS OR WHEN THE BORED STUD IS DOUBLED.

18. FULL LENGTH STUDS (BALLOON FRAME) SHALL BE USED ON EXTERIOR WALLS WITH VAULTED CEILING.



2 ROOF FRAMING PLAN
SCALE: N.T.S.

BROWN DESIGNS
327 MAIN STREET
FERNDALE, CA 95536
PHONE 707.215.5390
FAX 707.215.3131

THE TYPICAL
ACCESSORY
DWELLING UNIT

Job Address:

DRAWN:	D.A.B.
SCALE:	AS NOTED
JOB NO.:	07001
DATE:	04/20/07
RELEASE DATE:	
CAD NAME:	
SHEET NO.:	

A-3

SUB# 25573 PLAN CHECK CORRECTED SET

General Notes

Please include the following construction notes as part of the approved set of construction plans. Once signed these notes shall be considered a part of the approved set of construction plans.

Footings

1. Footings are required to be a minimum of 12'' below undisturbed ground surface, 12'' wide, 6'' footing thickness and a 6'' stem wall thickness for one story. Footing and Foundations shall comply with CRC R403 Footings, CRC R404 Foundation and Retaining Walls, and all applicable referenced subsections and tables.
2. Concrete slabs shall be a minimum 3.5'' thick. CRC R501.6
3. Concrete slabs shall be separated from earth by a minimum 6-mil vapor retarder, with edges lapped a minimum of 6''. Exceptions: Garages, utility building, driveways, walks, patios. Unheated: accessory structures, storage rooms less than 70 square feet. CRC R506.2.3
4. Fill material shall be free of vegetation and foreign material. The fill shall be compacted to ensure uniform support of the slab, and except where approved, the fill depths shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth. CRC 506.2.1
5. Horizontal reinforcing at footing and stem wall–one #4 rebar within the top 12'' of stem wall and one #4 rebar 3'' from bottom of footing. CRC R403.1.3, per Figure R403.1.3 and R403.1.3.5, Reinforcement. D83per R403.1.3.5.1 through R403.1.3.5.4.
6. Where a construction joint is created between a concrete footing and a concrete stem wall, not fewer than one No. 4 vertical bar shall be installed at more than 4 feet on

center. The vertical bar shall have a standard hook and extend to the bottom of the footing and shall have support and cover as specified in CRC R403.1.3.1 Concrete stem walls with concrete footings, and Section R403.1.3.5.3 and extend not less than 14 inches into the stem wall. Standard hooks shall comply with section R608.5.4.5. Not fewer than one No. 4 horizontal bar shall be located 3 to 4 inches from the bottom of the footing.

7. Anchor bolts for sill plates shall be minimum 5/8''x 10'' min. 7'' embedded, max 6' on center, or approved anchor straps. The bolts shall be in the middle third of the width of the plate. Not fewer than two bolt bolts per plate section with one bolt not less more than 12 inches and or less than 7 bolt diameters from each end of the plate section (4 3/8" for 5/8" dia. bolt). Provide 3''x 3''x 0.229'' square plate washers on each bolt. CRC R403.1.6, CRC R602.11.1
8. Underfloor ventilation. Minimum net area of ventilation openings shall be not less than 1 square foot for each 150 square feet of under-floor area. One opening shall be within 3 feet of each corner of the building. Openings shall be covered for their height and width that the least dimension of the covering shall not exceed 1/4 inch (6.4 mm): CRC R408 Under floor space. Including all applicable referenced section, subsections, and tables.
9. Underfloor access. Openings through a perimeter wall shall be not less then16 inches by 24 inches. No under-floor plumbing cleanout shall be located exceeding 5 feet from an access door, trap door, or crawl hole. An under-floor space in which an appliance is installed shall be accessible through an opening and passageway not less than the largest component of the appliance and not less than 22 inches by 30 inches. CRC R408.4, CPC 707.9, CMC 304.4.

Floor Framing

1. Floor joist size, spacing and grade shall conform to CRC R502.3 Allowable joist spans, Table R502.3.1(1) and R502.3.1(2), R502.3.1 Sleeping areas and attic joists OR shall be designed by a licensed professional.
2. Girder and Header spans. Allowable girder and header spans shall not exceed the values set forth in Tables R602.7(1)(2)(3) and CRC R502.5.
3. Girders for single-story construction or supporting one floor shall be 4''x 6'' for spans 6' or less, with girders spaced at 8' o.c. For other sizes and spans see CRC R502.5.
4. Allowable girder and header spans. The allowable spans of girders and headers fabricated of dimension lumber shall not exceed the values set forth in Tables R602.7(1), R602.7(2) and R602.7(3). Tables R502.5(1)(2) shall be used for cantilever spans.
5. All wood structural panel sheathing shall be identified for grade, bond classification, and performance category by a grade mark or certificate of inspection, issued by an approved agency. CRC R503.2.1 Identification and Grade.
6. Nail spacing for plywood sheathing -- 6'' at edges, 12'' in field (unless closer nailing is specified). CRC Table R602.3(1) Item 30,31,32.
7. Joists shall be supported laterally at the ends as described in CRC R502.7

8. A load path for lateral forces shall be provided between floor framing and braced wall panels. CRC R502.2.1 and CRC R602.10.8.
9. Provide lateral ties for deck DTT2Z. Provide detail of deck attachment to structure. Where the lateral load connection is provided in accordance with Figure 507.9.2(1). Hold-down tension devices shall be installed in not less than two locations per deck, within 24 inches of each end of the deck. Where the lateral load connection is provided in accordance with Figure 507.9.2(2) the hold-down tension devices shall be installed in less than 4 locations per deck. CRC 507.9.2 Lateral connection.
10. At floor openings where the header joist span exceeds 4 feet, the trimmer joist and the header joist shall be doubled and of sufficient cross section to support the floor joist framing into the header. Approved hangers shall be used for the header joist to trimmer joist connections when the header joist span exceeds 6' CRC R502.10 Framing of openings. Figure R502.2
11. Joists framing from opposite sides over a bearing support shall lap a minimum of 3 inches and shall be nailed together with a minimum of three 10d face nails. CRC R502.6.1, Figure 502.2.
12. Notches and holes in solid lumber joists and beams shall comply with CRC R502.8. Cutting, drilling, and notching. Structural floor members shall not be cut, bored, or notched more than the limitations specified in this section. See Figure R502.8.
13. Naturally durable wood or preservative treated wood, per AWPA U1, shall be required in the following locations per 2019 CRC R317 Protection of wood and wood-based products against decay. R317.1 Location required. 1-7.
    - Wood joists closer than 18'' and girders closer than 12'' from the exposed ground.
    - Wood framing members that rest on concrete or masonry and are less than 8'' from the exposed ground.
    - Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated by and impervious moisture barrier.
    - Wood siding, sheathing and wall framing on the exterior of the building having a clearance of less than 8'' from ground or less than 2'' from a horizontal concrete surface.
    - All wood in contact with the ground.
    - All wood embedded in concrete that is in direct contact with the ground or exposed to weather and that supports structures intended for human occupancy.
14. Wood I-Joists conform to ASTM D 5055. CRC R502.1.2.
15. Structural glue laminated timbers. Glued laminated timbers shall be manufactured and identified as required in ANSI A190.1, ANSI 117 and ASTM D3737. CRC R502.1.3.
16. Floor cantilevers supporting an exterior balcony are permitted to be constructed in accordance with CRC R502.3.3, Floor cantilevers. Exterior balconies are permitted to be constructed in accordance with Table R502.3.3(2).
17. The ends of wood girders entering masonry or concrete walls shall be provided with a ½ inch airspace on top, sides, and end, unless natural durable or preservative treated wood is used. CBC 2304.12.2.1, CRC R317 Protection of wood and wood-based products against decay. R317.1 Location required. 1-7.

Wall Framing

1. Bearing studs. Where joists, trusses or rafters are spaced more than 16 inches on center and the bearing studs below are spaced 24 inches on center, such members shall bear within 5 inches of the studs beneath. CRC R602.3.3.
2. The minimum number of full height studs (king studs) at each end of a header shall be in accordance with CRC R602.7.5, Table R602.7(1) or R602.7(2).
3. Header support jack (trimmer) studs need to be in accordance with (Header and girder spans for exterior bearing walls. CRC R602.7.5, per Table R602.7(1) or R602.7(2) CBC 2308.4.1.1(1).
4. Header support jack (trimmer) studs need to be in accordance with (Header and girder spans for interior bearing walls. CRC R602.7.5, per Table R602.7(1) or R602.7(2).
5. Double top plates shall have a minimum lap of 48''. Nail with eight 16d nails on each side of the joint unless additional nailing is specified. Plates at intersections with bearing walls and corners shall also be overlapped. CRC R602.3.2, CBC 2308.5.3.2.
6. Table 602.3. Sole plate to joist or blocking shall be 16d at 16'' o.c. and 3-16d at 16'' at braced wall panels. CRC Table R602.7(3).
7. Fire blocking is required in concealed spaces between stair stringers at the top and bottom of the run. CBC 718.2, CRC R302.11, No.3.
8. Foundation cripple walls shall be framed of studs not less in size than the studs of the wall above. Cripple walls exceeding 4' in height shall be framed of studs as required for an additional story. Cripple walls shall be sheathed. Cripple walls less than 14'' in height shall be continuously sheathed on one side with wood structural panels fastened to both the top and bottom plates in accordance with Table R602.3(1) or constructed of solid blocking. CRC R602.9 Cripple wall framing, Table R602.3(1), R602.10.10 and Tables. Cripple wall bracing, (6 table references in this section).
9. Drilling and notching of studs and top plates shall be in accordance with Section CRC R602.6.
10. Load-bearing dimension lumber for studs, plates and headers shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with CRC R602.1.1, R301.1.1.1.
11. Buildings shall be provided with exterior and interior braced wall lines per CBC 2308.6 Spacing shall not exceed 25 feet on center for seismic category D and E in both the longitudinal and transverse directions in each story. Each braced panel shall start within 8' of each corner and interior intersecting braced wall line. CRC R602.10
12. Minimum wood structural panel sheathing nailing: 8D at 6'' o.c. at edges and 12'' o.c. in field. Nailing shall be inspected prior to covering. CRC R602.3.
13. Provide one layer no. 15 asphalt felt or other approved material under exterior siding. Material shall have upper layer lapped 2'' min over lower layer with 6'' min laps at joints. CRC R703.2 and CRC R703.2.
14. Fire blocking shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, vertically at floor and

ceiling levels, soffit levels and horizontally at intervals not to exceed 10' CRC R302.11. CBC 718.2 Fire Blocking.

15. Alternate braced wall panels shall comply as follows.
    - Structural sheathing CBC 2308.9.8.1.
    - Anchors at outside quarter points 1 story 2308.9.3.1 #1.
    - Continuous footing and rebar top and bottom CBC 2308.9.3.1 #2.
    - 3 anchors on 1st story of 2 story CBC 2308.9.3.1 #2.
    - Portal frame braced panel 16'' 1 story and 24'' two story: 10' max to top of header and wood structural sheath 1 side only to top of header, straps between header and studs or posts with tie downs between studs / posts and foundation all required CBC 2308.9.3.2.

Wall Covering

1. Enclosed usable space under stairs requires ½'' gypsum board protection CRC R302.7.
2. All areas between residence and garage require to have ½'' gypsum board on walls and 5/8'' Type X gypsum board on lid if living space above. CRC R302.6, Table R302.6.
3. R-3 and U occupancy exterior wall requirements: (TBL-602 ft.nt.f/TBL-704.8)
    - One hour less than 5' to property line.
    - Openings more than 3' and less than 5' shall be protected and are limited to 15% of the wall area. Unprotected openings not allowed.
    - Wall less than 5' from property line must be one hour rated from both sides of the wall. CBC 601.
4. When a structure is in a State Responsibility Area (SRA) all new construction shall comply with CRC R337
5. All fasteners used for attachment of siding shall be corrosion resistant. CRC R703.3.3.

Roof and Ceiling Framing

1. Rafters shall be framed directly opposite each other at the ridge. CBC 2308.7.3 Ceiling joist and rafter framing. Rafters shall be framed directly opposite each other at the ridge. CRC R802.4.2 Rafters shall be framed not more than 1 1/2 inches (38 mm) offset from each other to a ridge board or directly opposite from each other with a collar tie, gusset plate or ridge strap in accordance with CRC Table R602.3(1). Rafters shall be nailed to the top wall plates in accordance with CRC Table R602.3(1) unless the roof assembly is required to comply with the uplift requirements of Section CRC R802.11.
2. Purlins to support roof loads may be installed to reduce the span of rafters within allowable limits and shall be supported by struts to bearing walls. CRC R802.4.5, Figure R802.4.5.
3. Spans for ceiling joist and rafters shall be in accordance with CRC span Tables R802.1(1) through (8) for rafter spans and Tables R802.5.1(1) and (2). For ceiling joist spans.
4. Rafter tie and cross tie connections to rafter shall comply with: CBC 2308.7.3.1, Tables 2308.7.3.1 and 2304.10.1, CBC 2308.8. Table 2308.7.3.1.
5. Ceiling joist and rafter connections shall comply with CRC R802.5.2, Table R802.5.2, Figure R802.4.5 and Table R802.5.2, Table R602.3(1), Table R802.5.2.

6. Nail rafters to adjacent parallel ceiling joists. Where not parallel, use rafter ties at 4' o.c. max. Rafter ties shall use adjustment factor in footnote h. for the height above supporting wall and the location of the connection must be in lower third of attic space. CRC R802.5.2.2 Rafter ties. Wood rafter ties shall be not less than 2 inches by 4 inches installed in accordance with Table R802.5.2 at each rafter. Other approved rafter tie methods shall be permitted.
7. Provide collar ties or ridge strap in compliance with CBC 2308.7.3.1, CRC R802.4.6, Table R602.3(1). Table R602.3(1) CRC R802.4.2. Table R602.3(1). Table R602.3(1) CRC R802.11.
8. Rafter or ceiling joists shall have at least 1-½'' bearing on wood or metal or 3'' on masonry or concrete. CRC R802.6 Bearing.
9. Ends of ceiling joists shall be lapped a minimum of 3'' or butted over bearing partitions or beams and toe nailed to the bearing member. CRC R802.3.2. Table R802.5.2. CRC R802.5.2.1, Table R802.5.2, Table R602.3(1). Table R503.2.1.1(1).
10. Structural members that support rafters and ceiling joists with a roof slope of less than three units vertical in 12 units horizontal (25% slope) shall be designed as beams. Structural members include ridge beams, hips, and valleys. CRC R802.4.4, CRC R802.6.
11. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition where not designed to carry and distribute the specific load at that point. CRC R802.4.3.
12. Wood structural panel sheathing when designed to be permanently exposed in outdoor applications, shall be of an exterior exposure durability identified as Exposure 1. Wood structural panel roof sheathing exposed to the underside may be identified as Exposure 1. Minimum nailing is 6'' at edges and 12'' in the field, 8d common or box nails. Nail panels to blocking between rafters. CRC R803.2.1.1, Table R503.2.1.1(1), CRC R603.9.3, Figure R603.9 and Table CRC R603.3.2(1).
13. Solid block all rafter and trusses at exterior walls. Nail blocking to top plate with 3 - 8d toenails per block or provide clips. CBC 2308.6.7.2 Top plate connection. CRC R602.10.8.2 Connections to roof framing.
14. Cutting, boring, and notching of structural roof members shall comply with CRC R802.7.
15. Framing for roof and ceiling openings shall comply with CRC R802.9.
16. Attic ventilation: 1/150 of attic area. CRC R806.2 Minimum vent area. The minimum net free ventilating area shall be 1/150 of the area of the vented space. CBC 1202.2.2 Openings into attic.
17. Wood structural roof panel sheathing shall comply with CRC R803.2.

Stairs and Decks

1. Deck framing and support posts to be of preservative treated or naturally durable lumber. Hardware and fasteners shall be hot-dipped galvanized, stainless steel, silicon bronze, or copper. CRC R317 Protection of Wood and Wood-Based Products Against Decay, CRC R507.2.3 Fasteners and connectors. CBC 2304.10.5 Fasteners and connectors in contact with preservative-treated and fire-retardant-treated wood. CBC 2304.12 Protection against decay and termites. Wood shall be protected from decay

and termites in accordance with the applicable provisions of Sections 2304.12.1 through 2304.12.7.

2. All wood exposed to weather to be pressure treated, redwood or a type of wood that will resist decay. CBC 2304.12, CRC R317
3. Wood/plastic composite deck boards shall be installed in accordance with the manufacture installation instructions. CRC R507.2.2, CRC R507.2.2.5
4. The deck attachment for lateral loads shows DTT1Z this device needs to be minimum 750 LB capacity at minimum 4 locations, evenly distributed along deck and one within 24'' of each end of the ledger. CRC R507.9.2 Lateral connection. Figure R507.9.2(1)
5. Exterior decks and stairways are required to meet Fire Safe Regulations.
6. Decks shall be either self-supporting or positively anchored to the primary structure. Toenails or nails subject to withdrawal shall not be used for such attachment. CRC R311.5
7. Deck guard rail minimum 42'' from finished decking to top of guardrail. R312 CRC R312.1.2 Height.
8. Handrail grip-size per CRC R311.7.8.3, CBC 1012.3.
9. Stairway rise 4'' min, 7-¾'' max and run 10'' min, handrail to be 34'' to 38'' above nose of tread. Maximum opening at balusters of stairway is less than 4-3/8'' and the triangular openings formed by the rise, tread and bottom element of rail less than 6'' opening. Guardrails minimum 42'' from finished floor to top of guardrail. Maximum opening at balusters at guardrails is less than 4''. CRC R311.7.1. R311.7.5, R311.7.5.1, R311.7.5.2, R311.7.8, R311.7.8.3
10. The radius of curvature at the tread nosing shall be not greater than 9/16 inch. A projection not less than ¾ inch and not more than 1-1/4 inches max. Exception: A nosing projection is not required where the tread depth is not less than 11 inches. CRC R311.7.5.3 CBC 1011.5.5.1, CBC 11B-504.5.
11. Guards shall be located along open sided walking surfaces, including stairs, ramps, landings, and decks, that are more than 30'' above the floor or grade, measured at any point within 36'' horizontally. Required guards shall be not less than 42'' above the adjacent walking surface. Except that handrail may be considered as guards at stairways. Openings in guards shall not exceed 4''. CRC R312
12. The minimum headroom in all parts of the stairway shall not be less than 6'-8'' measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway. R311.7.2.
13. Open risers are permitted provided that the openings located more than 30 inches, as measured vertically, to the floor or grade below do not permit the passage of a 4-inch diameter sphere. CRC 311.7.5.1. Open risers not permitted CBC 11B-504.3.
14. Handrails required on not less than one side of each continuous run of treads or flight with four or more risers. CRC 311.7.8.

Window Glazing, Escape and Rescue Openings

1. All emergency escape and rescue openings shall have a minimum clear opening of 5.7 square feet with a minimum net clear opening width of 20 inches and height of 24

inches. And a maximum sill height of 44'' from finished floor to net clear opening of window. Grade floor window may be total clear opening of 5.0 square feet, and a maximum sill height of 44'' from finished grade / floor to net clear opening of window. CRC 310.2.1, CRC 310.2.2, and CBC 1029.

2. Emergency escape and rescue openings shall be clear of any obstruction and operational from the inside of the room without the use of keys, tools, or special knowledge. CRC310.1.1, CRC310.4.
3. Windowsills -- In dwelling units, where opening of an operable window is located more than 72 inches above the finished grade or surface below on the exterior of the building shall have the lowest part of the clear opening of the window a minimum of 24 inches above the finished floor of the room in which the window is located. CRC312.1, CRC312.2.
4. Identification of safety glazing shall be in accordance with CRC308.1.
5. Glazing in the following locations shall be safety glazing conforming to the human impact loads of CRC308.3 and CRC308.4.
   - Fixed and operable panels of swinging, sliding and bi-fold door assemblies.
   - Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24'' arc of the door in a closed position and whose bottom edge is less than 60'' above the floor or walking surface.
   - Glazing in an individual fixed or operable panel that meets all the following conditions: 1-- Exposed area of an individual pane greater than 9 square feet. 2-- Bottom edge less than 18 inches above the floor. 3-- Top edge greater than 36 inches above the floor. 4-- One or more walking surfaces within 36'' horizontally of the glazing.
   - Glazing in railings.
   - Glazing in enclosures for or wall facing hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers where the bottom edge of the glazing is less than 60'' measured vertically above any standing or walking surface.
   - Glazing in walls and fences adjacent to indoor and outdoor swimming pools, hot tubs, and spas where the bottom edge of the glazing is less than 60'' above a walking surface and within 60 inches, measured horizontally and in a straight line, of the water's edge.
   - Glazing adjacent to stairways, landings, and ramps within 36'' horizontally of a walking surface when the surface of the glazing is less than 60'' above the plane of the adjacent walking surface.
6. Skylights and sloped glazing shall comply with CRC308.6. Full tempered safety glass, approved rigid plastics, and tested and labeled to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440, and WDMA I.S.11. CRC308.6, CRC308.6.2, CRC308.6.5, CRC308.6.9, CRC308.6.9.1

Means of Egress, Stairs, and Landings

1. Provide at least one side-hinged egress door from each dwelling unit not less than 3' wide and 6'-8'' high with minimum 32 inches width clear. Egress door shall be readily openable from inside without the use of a key or special knowledge or effort CRC311.2.
2. For habitable levels or basements located more than one story above or more than one story below an egress door, the maximum travel distance from any occupied point to a stairway or ramp that provides egress from such habitable level or basement, shall not exceed 50 feet. CRC311.4.
3. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the required egress door without requiring travel through a garage. CRC311.1.
4. Landings or finished floors at the required egress door shall be not more than 1 1/2 inches lower than the top of the threshold. CRC311.3.1.
5. Landings shall be at least as wide as the door or stairway served and shall be 36'' minimum in the direction of travel. CRC311.3.
6. A continuous handrail shall be provided on at least one side of each continuous run of treads or flight with four or more risers. CRC311.7.8
7. Handrail height, measured vertically from the sloped plane adjoining the tread nosing or finish surface of ramp slope, shall be not less than 34'' and not more than 38''. Handrails adjacent to a wall shall have a space of at least 1-½'' between the wall and the handrail. CRC311.7.8.1, CRC311.7.8.3.
8. Winder treads shall comply with CRC311.7.5.2.1.
9. Spiral stairs shall comply with CRC311.7.10.1.
10. Ramps with a slope more than 1 unit vertical in 12 units horizontal shall be provided with handrails on at least one side. CRC311.8.1.3.
11. Doors other than the required egress door shall be provided with landings or floors not more than 7-3/4 inches below the top of the threshold. Exception: A top landing is not required where a stairway of not more than two risers is located on the exterior side of the door, provided that the door does not swing over the stairway. CRC311.3.2.

Light, Ventilation, and Room Areas

1. All habitable rooms shall have aggregate glazing of not less than 8 percent of the floor area to provide natural light, or they shall be provided with artificial light per CRC303.1.
2. All habitable rooms shall be provided with natural ventilation through openings to the outdoor air, or they shall be provided with mechanical ventilation in accordance with CRC303.1.
3. Provide bathroom exhaust fan for each bathroom containing a bathtub, shower, or combination for purpose of humidity control. CRC303.3.1.
4. All interior and exterior stairways shall be illuminated. Exterior stairway illumination shall be controlled from inside of the dwelling. CRC303.7, CRC303.8.
5. Each bathroom containing a bathing facility shall be mechanically ventilated for the purposes of humidity control. CRC303.3.1.

6. Bathrooms, water closet compartments and similar rooms shall have window at least 3 square feet in area, half of which must be openable, or mechanical ventilation must be provided. CRC303.3.

Smoke and CO

1. Smoke alarms shall be installed in each sleeping room. Outside of each separate sleeping area in the immediate vicinity of the bedrooms. On each additional story of the dwelling, including basements and habitable attics, but not including crawl spaces and uninhabitable attics. Smoke alarms shall be hardwired with battery backup and alarm interconnected. CRC314.3, CRC314.5, CBC 907.2
2. Automatic residential fire sprinkler systems shall be designed and installed in accordance with NFPA 13D. CRC313.2.1.

Garage and Carport

1. Common wall between garage and dwelling shall have ½'' gypsum board applied on the garage side. Garage ceiling with habitable space above shall have 5/8'' type X gypsum board applied to the ceiling. Carports with no enclosed uses above do not need protection. CRC302.6, Table CRC302.6.
2. No openings may be provided between a garage and a sleeping room. Other openings shall be equipped with solid wood or steel doors 1-3/8'' thickness and shall be self-closing and self-latching. R302.5.1, CBC 406.3.4.2.
3. Permitted openings between the garage and dwelling shall be equipped with 1-3/8'' in thickness, solid wood doors, solid or honeycomb core steel doors, or 20-minute fire-rated doors and self-closing and self-latching. CRC302.5.1, CBC 406.3.2.1.
4. The garage shall be separated from the dwelling and its attic area in accordance with Table CRC302.6.
5. Ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum no. 26 gage (0.48mm) sheet steel or other approved material. CRC302.5.2, CBC406.3.2.2.
6. Garage floor surfaces shall be of an approved noncombustible material, and the area used to park vehicles shall be sloped to a drain or toward the main vehicle entry. CRC309.1.
7. Appliances and receptacles installed in garages and carports generating a glow, spark, or flame shall be located 18'' minimum above the floor. Provide protective bollard or other impact barrier. CMC 305.1, CPC507.13, CMC305.1.1, CPC507.13.1.

Exterior Wildlife Exposure

1. Defensible space must be signed off prior to final inspection. CRC337.1.5.
2. Exterior siding. Hardy-panel siding. Or see approved products. Exterior walls shall be ignition resistant construction in compliance with CBC 707A.3 and SFM Standard 12-7A-5 (2) Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use that complies with the requirements of section 2302.2 CBC—Fire-retardant-treated wood. Fire-retardant-treated wood is any wood product which, when impregnated with

chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E 84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 101/2 feet beyond the centerline of the burners at any time during the test.

3. Exterior wall vents 1/8'' screen. CBC 706A.
4. Exterior doors to be non- combustible construction, or 1-3/8'' solid core, or 20-minute fire rated. CBC 708A.3.
5. Windows minimum one pane tempered CBC 708A.2.1.
6. Decking surfaces approved product. CBC 709A.
7. Vegetation management compliance. CBC 701A.5, CFC 4906, CRC337.1.5.
8. Eave and soffit vents must be fire rated to preclude ember and flame entrance CBC 706A.
9. Underside of eaves shall be ignition resistant or non-combustible. CBC 706A.2.
10. Roof gutters shall be provided with a means to prevent the accumulation of leaves. CBC 705A.4.
11. Deck framing to be minimum 6x6 pt. posts, and minimum 6x8 pt. girders.

Electrical

1. Single and multiple-station smoke alarms shall be installed in each sleeping room. Outside of each separate sleeping area in the immediate vicinity of the bedrooms. On each additional story of the dwelling, including basements and habitable attics, but not including crawl spaces and uninhabitable attics. CRC 314.3.
2. Smoke alarms shall be hardwired with battery backup and alarms interconnected. CRC 314.4.
3. Electrical panel boards installed outdoors need to be weatherproof and listed for damp/wet locations. CEC 408.37, CEC 312.2.
4. GFCI outlets are required for all kitchen receptacle outlets, in bathroom, in under floor spaces at or below grade level, in exterior, and in garage. CEC 210.8.
5. Hydro massage tubs, Jacuzzi tubs, verify GFCI protection, accessibility, bonding of electrical equipment and grounded metal parts. CEC 680.71, CEC 680.73, CEC 680.74, CEC 210.23 (A) (2).
6. Need at least two receptacle GFCI outlets, with exterior covers, accessible at grade level, one each at the front and back of the dwelling. CEC 210.52(E), CEC 406.9 (A), (B)
7. No parts of cord connected luminaires, chain-, cable-, or cord-suspended luminaries, lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within a zone measured 3 feet horizontally and 8 feet vertically from the top of the bathtub rim or shower stall threshold. This zone is all encompassing and includes the space directly over the tub or shower stall. CEC 410.10 (D).
8. Bond all metal gas and water lines. CEC 250.104(A), 250.104(B), 250.68(B).
9. Kitchen and dining must have a minimum of two 20-amp small appliance branch circuits. Kitchen counter GFI outlets must be installed in every counter space 12'' or wider, not

greater than 4’-0’’ on center and within 24’’ of the end of any counter space. CEC 210.52, 210.11(c)(1).

10. Please provide GFI outlets for kitchen island countertop. CEC 210.52 (c) (2).
11. Kitchens require mechanical ventilation to the outside, with a minimum of at least 100 cfm. CMC 403.7.
12. Bathroom GFI receptacle outlets installed on wall or partition adjacent to and within 36’’ of each basin. CEC 210.52(d), 210.52(d), ex.
13. Bathroom receptacle GFCI outlets are supplied by a dedicated 20-amp branch circuit. Provide minimum one 20-amp circuit for bathroom outlets, with no other outlets on circuit. Where a 20-amp circuit supplies a single bathroom, other outlets, lighting within the same bathroom shall be permitted to be supplied by this circuit. CEC 210.11(c)(3) and ex. 210.23(a)(2).
14. Provide bathroom exhaust fan vented to the exterior for each bathroom containing a bathtub, shower, or combination for purpose of humidity control with a minimum of 50 cfm. If bath fan includes a light, they must be switched separately. Bath fans must be controlled by a humidity control. CRC 303.3.1, CBC 1202.5.2.1, CMC 403.7
15. Bath fans must be controlled by a humidity control and vented to the exterior. CRC 303.3.1.
16. No receptacles installed within or directly over a bathtub space or shower stall. CEC 406.9(C).
17. No switches in tub or shower spaces. CEC 404.4 (c)
18. Need a dedicated 20-amp circuit to supply the laundry outlets and no other outlets. CEC 210.11(C)(2).
19. Need laundry receptacle outlet within 6’ of the intended appliance location. CEC 210.50(C).
20. Garage needs a wall switch controlled lighting outlet is provided. CEC 210.70(a)(2) line 1.
21. Receptacles must be installed at 24" o.c. maximum along walls and on walls longer than 1 feet. CEC 210.52.
22. Hallways with a continuous length of 10’ or more have at least one receptacle outlet. CEC 210.52(H).
23. All luminaries in rooms other than kitchen, bathrooms, garage, laundry rooms or utility rooms must be high efficacy or controlled by a manually-on/occupant sensor-off type switch or dimmer. Closets less than 70 sf. are exempt.
24. Need proper accessibility, working clearances around electrical equipment. 30’’ min. or width of equipment and 36’’ min. depth. CEC 110.26, 230.70 (A)(1),230.91, 240.24
25. Bond all metal gas and water lines. CEC 250.104(A) (1) 250.104 (B), 250.68 CEC.
26. Verify that the grounded conductor of a feeder circuit is insulated and isolated from equipment grounding conductors and grounded enclosures. CEC 250.24(a)(5), 250.142(b), 310.2.
27. No electrical panels in closet. CEC 110.26(B)(3)(E)(1)(A) through(E).
28. Recessed can lights must be IC Rated for direct contact to insulation and be air-tight to preclude infiltration from attic into the conditioned space.
29. Receptacles on 120 volt 15 and 20 amp circuits shall be tamper resistant. CEC 406.12.

30. Central heating equipment shall be supplied by an individual branch circuit. CEC 422.12.
31. All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall be protected by a listed combination-type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit. CEC 210.12.
32. Installation of luminaires, lighting outlets, and ceiling-suspended (paddle) fans, Shall be in compliance with CEC 680.43.
33. Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed, shall be marked by their manufacturer as suitable for this purpose, and shall not support ceiling-suspended (paddle) fans that weigh more than 70 pounds. CEC 314.27(C).
34. The front edge of the listed electrical box, plaster ring, extension ring, or listed extender will not be set back of the finished wall or ceiling surface more than ¼ inch maximum. CEC 314.20.
35. All electrical wiring and equipment subject to physical damage shall be protected. CEC 547.5 (E).
36. All electrical to be securely fastened and supported by an approved means in accordance with 2019 CEC.
37. Service equipment is identified as suitable for use as service equipment. CEC 230.66.
38. For dwellings units, attached garages and detached garages with electric power, at least one wall switch-controlled lighting outlet shall be installed to provide illumination on the exterior side of outdoor entrances or exist with grade level access. CEC 210.70(2)(2).

Plumbing

1. A sediment trap shall be installed downstream of the appliance shutoff valve as close to the appliance as possible. CPC 1212.9.
2. Water heater installed in accordance with the manufacture installation instructions and CPC 501.1.
3. Provide water heater temperature/pressure relief valve with drain to exterior of building with 90-degree fitting minimum 6 inches and maximum 24 inch above finished grade. Provide approved seismic strapping. CPC 608.5 Discharge piping, 504.6 Temperature Pressure, and vacuum Relief Devices,504.4 Pressure-Limiting Devices 507.2 Seismic Provisions.
4. Where water heater is in a space where damage may result from a leaking water heater, a watertight pan of corrosion resistant materials shall be installed beneath the water heater with a minimum three-quarter inch diameter drain to the exterior. CPC 507.5
5. Water heater shall be secured to resist earthquakes with approved seismic strapping. One at upper 1/3 and one at lower 1/3 of vertical dimension with the lower strap being a minimum of 4'' above controls. CPC 507.2.

6. Gas utilization equipment in garages shall be installed so that all burners and burner ignition devices are located no less than 18'' above the floor unless listed otherwise. CPC 507.13
7. Minimum 30'' x 30'' work platform in front of the service area. CPC 508.4.3
8. Minimum 24'' wide solid wood passageway and minimum 30'' x 30'' work platform in front of service area. A permanent 120-volt receptacle outlet and a lighting fixture shall be installed near the appliance. The switch controlling the lighting fixture shall be located at the entrance to the passageway. CPC 509.4.4, CPC 509.4.5
9. Water closets shall not be set closer than 15'' from its center to any side wall or obstruction and 30'' from center to center of any similar fixture. Provide 24'' minimum clear space in front of water closet. CPC 402.5
10. Shower compartments shall have a finished interior of 1,024 square inches and shall be capable of encompassing a 30-inch circle. The clearance shall be maintained up to 70'' of height above shower drain. The shower doors shall open to maintain not less than a min 22'' clear unobstructed opening for egress. CPC 408.6, 408.5
11. Provide valves for bathtub fillers and whirlpool tub fillers that will limit hot water temperature to 120 degrees F. CPC 409.4.
12. Water pipe and building sewer in a same trench should meet the conditions in CPC 609.2.
13. Approved non-removable backflow prevention devices shall be provided on hose bibs. CPC 602.3, CPC 603.3.3.
14. Fuel burning water heater is not allowed in bedroom or bathroom unless direct vent type or complying with CPC 504.1 and Closet is equipped with a listed, gasketed door assembly and a listed self-closing device. CPC 504.1 (1), 504.1.1, 504.1.2.
15. Each cleanout in piping 2" or less in size shall be so installed that there is a clearance of not less than 18" by 18" in front of the clean out. Clean outs in piping exceeding 2" shall have a clearance of not less than 24". No underfloor clean out shall be located exceeding 5 feet from an access door or crawl hole. CPC 707.9.
16. Combination waste and vent system is only allowed where structural conditions preclude the installation of a conventional system. CPC 910.1.
17. Fixtures having concealed slip joint connections shall be provided with an access panel or utility space at least 12'' in its least dimension to make such connections accessible for inspection and repair. CPC 402.10
18. The aggregate cross-sectional area of the vent shall not be less than that of the largest required building sewer. CPC 904.1.
19. All wet vented fixtures shall be within the same story. CPC 908.1.
20. The minimum area of any vent installed in a combination waste and vent system shall be at least ½ the inside cross-sectional area of the drainpipe served. CPC 910.3
21. Each drainpipe and each trap, in a combination waste and vent system, shall be 2 pipe sizes larger than the sizes required by chapter 7 and CPC 910.4
22. No vertical waste pipe shall be used in such a system, except the tailpiece or connection between the outlet of a plumbing fixture and the trap. Such tailpieces or connections shall be as short as possible, and in no case exceed 2 feet. CPC 910.5.

23. All water closets shall not exceed 1.28 gallons, shower heads shall have a maximum flow rate of not more than 1.8 GPM at 80 psi. CPC 401.3, CPC 411.2, CPC 408.2, CPC 407.2.1, CPC 407.2.2.
24. The type of all materials to be used for the fuel gas piping system shall meet the requirements of CPC 1209.5.
25. Gas pressure regulators shall be accessible for servicing. Line pressure regulators shall be marked by a metal tag or other means designating the part of building supplied. CPC 1208.8.1, CPC 1208.8.2.
26. CPC 403.3 Exposed pipe and surfaces water supply and drainpipes under accessible lavatories and sink shall be insulated or otherwise be configured to protect against contact. CPC 609.11 insulation of domestic hot water piping shall be in accordance with section CPC 609.11.1 and section 609.11.2.
27. Where gas piping is installed underground beneath buildings, the piping shall be one of the following.
    - Encased in an approved conduit designed to withstand the imposed loads and installed in accordance with 1210.1.6.1.
    - Conduit with one end terminating outdoors. The conduit shall extend into an accessible portion of the building and, at the point where the conduit terminates in the building, the space between the conduit and the gas piping shall be sealed to prevent the possible entrance of a gas leakage. Where the end sealing is of a type that will retain the full pressure of the pipe, the conduit shall be designed for the same pressure as the pipe. The conduit shall extend not less than 4 inches outside the building, be vented outdoors above finished ground level, and be installed to prevent the entrance of water and insects. [NFPA 54:7.1.6.1], CPC 1210.1.6, 1210.1.6.1.
28. An electrically continuous corrosion-resistant tracer shall be buried with the plastic pipe to facilitate locating. The tracer shall be one of the following
    - A product specifically designed for that purpose.
    - Insulated copper conductor not less than 14 AWG. Where tracer wire is used, access shall be provided from aboveground, or one end of the tracer wire or tape shall be brought aboveground at a building wall or riser. CPC 1210.1.7.2 Tracer.
29. A pressure test shall be performed on all new gas line at inspection. Please have gas line under pressure before inspector is on site. This inspection shall include an air, CO2, or nitrogen pressure test, at which time the gas piping shall stand a pressure of not less than 10 psi (69 kPa) gauge pressure. Test pressures shall be held for a length of time satisfactory to the Authority Having Jurisdiction but in no case less than 15 minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures more than 14 inches water column pressure (3.5 kPa), the test pressure shall be not less than 60 psi (414 kPa) and shall be continued for a length of time satisfactory to the Authority Having Jurisdiction, but in no case for less than 30 minutes. For CSST carrying gas at pressures more than 14 inches water column (3.5 kPa) pressure, the test pressure shall be not less than 30 psi (207 kPa) for 30 minutes. These tests shall be made using air, CO2, or nitrogen pressure and shall be made in the presence of the

Authority Having Jurisdiction. Necessary apparatus for conducting tests shall be furnished by the permit holder. Test gauges used in conducting tests shall be in accordance with Section 318.0.

Mechanical

1. A sediment trap shall be installed downstream of the appliance shutoff valve as close to the appliance as possible. CMC 1312.9.
2. Furnace installed in attic or furred space shall be accessible for inspection, service, repair, and replacement without removing permanent construction. CMC 904.10
3. Furnace / equipment in attic shall have an access space large enough to allow the largest piece of equipment to be removed, with a minimum of 22'' x 30''. CMC 904.10, CMC 304.4.
4. Clearances from combustible construction per the manufacture installation instructions. CMC 904.2, 904.2.1.
5. Where the height of the passageway is less than 6', the distance from the passageway access to the appliance shall not exceed 20' measured along the center line of the passageway. CMC 304.4.1.
6. The passageway shall be unobstructed and shall have solid flooring minimum 24'' wide from the entrance opening to the appliance. Minimum 30''x 30'' work platform in front of the service area. A permanent 120-volt receptacle outlet and a lighting fixture shall be installed near the FAU. CMC 304.4.2, CMC 304.4.3, CMC 304.4.4.
7. The switch controlling the lighting fixture shall be located at the entrance to the passageway. CMC 304.4.4 [NFPA 54:9.5.3]
8. Provide manufacture installation instructions for all appliances installed. CMC 303.1
9. Central heating furnaces and low-pressure boilers shall be provided with clearances in accordance with section 904.2.1 through 904.2.9. CMC 904.2.
10. Provide access for all appliances for inspection, service, repair, and replacement without removing permanent construction. CMC 304
11. All mechanical equipment shall be listed and labeled by an approved agency. If equipment is not listed, complete equipment information, including manufacture data sheets, test reports, shall be provided to allow for evaluation. Testing by an approved agency will be required before approval is granted. CMC 303.1
12. Equipment designed to be fixed in position shall be securely fastened in place. CMC 303.4.
13. Forced air unit and water heater shall be CA approved, listed and labeled and installed in accordance with the terms of its listing and the manufacture installation instructions.
14. Provide a level working space of not less than 30'' wide and 30'' deep and in front of the service side of the furnace. CMC 304.4.3
15. Provide a permanent 120-volt receptacle outlet and a lighting fixture near appliance. Switch for lighting fixture shall be provided at passageway entrance. CMC 304.4.4 [NFPA 54:9.5.3]
16. Provide makeup air for the ventilation system. All rooms and occupied spaces listed in table 4-1 shall be designed to have ventilation outside air. CMC 402, table 4-1

17. All gas appliances shall be vented in accordance with CMC chapter 7.
18. Outdoor combustion air: Two permanent openings method: An upper combustion air opening or duct should be provided and located within the upper 12'' of the enclosure. In addition, a lower combustion air opening or duct should be provided and located within the lower 12'' of the enclosure. Upper and lower combustion air ducts should not be joined but should be completely separated. (1) Where directly communicating with the outdoors or where communicating to the outdoors through vertical ducts, each opening shall have a free area of not less than 1 square inch per 4000 Btu/h of total input rating of appliances in the enclosure. (2) Where communicating with the outdoors through horizontal ducts, each opening shall have a free area of not less than 1 square inch per 2000 Btu/h of total input rating of appliances in the enclosure. CMC 701.6, 701.6.1 (1)(2)
19. Outdoor combustion air: One permanent opening method: One combustion air opening sized at 1 square inch per 3,000 Btu/h input rating of the appliances in the enclosure, but not smaller than the vent flow area, shall be allowed within the upper 12'' of the enclosure. When this is done, all of the combustion air shall be taken from the outdoors and the appliance shall have a minimum clearance of 1 inch on the sides and back, and 6 inches from the front. CMC 701.1, 701.6, 701.6.2.
20. Portions of venting systems that extend through occupied and storage spaces shall be enclosed. A combustion products vent, vent connector, chimney or chimney connector shall not extend into or through an air duct or plenum. Clearance of appliances or connectors from combustible materials shall comply with CMC table 8-2.
21. A chimney for a residential -type or low heat appliance shall extend not less than 3' above the highest point where it passes through a roof of a building and not less than 2' higher than a portion of a building within a horizontal distance of 10'. CMC 802.5.4.
22. The vent for the wall furnace should be a type BW gas vent. The first ceiling plate above the furnace in a stud cavity enclosing the vent should be ventilated. Each subsequent ceiling plate should be fire stopped by the fire stop spacers furnished with the vent. CMC 907.1.2.
23. CMC 504.4.2.1 Domestic dryers' moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 14 feet, including two 90-degree elbows. CMC 502.2 Termination of Exhaust Ducts.
24. Wood stove CA. approved, listed, and labeled and installed in accordance with the manufacture installation instructions.
25. Wood stove chimney shall be listed and labeled and installed in accordance with the manufacture installation instructions.
26. Joints between cross-linked polyethylene (PEX) pipe or fittings shall be installed with fittings for PEX tubing that comply with the applicable standards referenced in Table 1210.1. PEX tubing labeled in accordance with ASTM F876 shall be marked with the applicable standard designation for the fittings specified for use with the tubing. Mechanical joints shall be installed in accordance with the manufacturer's installation instructions.

Grading and Site Improvement

1. All Grading, Excavation, Erosion, and Sedimentation Control in conformance with county code section 331-14 and 2019 CBC.
2. Cut slopes shall be no steeper than 2 horizontals to 1 vertical.
3. Fill slopes shall be no steeper than 2 horizontals to 1 vertical and shall have not less than 90% compaction out to the finished surface.
4. Compaction of all fills shall be compacted to a minimum of 90 percent of maximum dry density with sufficient testing for documentation of compliance with this standard.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE

SECTION	REQUIREMENTS
Chapter 1 – ADMINISTRATION	
101.3.1	**Scope** Applies to ALL newly constructed residential buildings: low-rise, high-rise, and hotels/motels.
102.3	Requires a completed Residential Occupancies Application Checklist or alternate method acceptable to the enforcing agency to be used for documentation of conformance.
Chapter 3 – GREEN BUILDING	
301.1.1	**Additions and alterations** • Applies to additions or alterations of residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. • Requirements only apply within the specific area of the addition or alteration.
301.2	**Low-rise and high-rise residential buildings** Banners identify provisions applying to low-rise only [LR] or high-rise only [HR].
302.1	**Mixed occupancy buildings** Requires each portion of mixed occupancy buildings to comply with CALGreen measures applicable for the specific occupancy. **Exceptions:** • Accessory structures and accessory occupancies serving residential buildings to comply with Chapter 4 and Appendix A4, as applicable. • Live/work units complying with the California Building Code Section 419 shall not be considered a mixed occupancy. Live/work units are required to comply with Chapter 4 and Appendix A4, as applicable.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20)

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2019 CALGREEN CODE

SECTION	REQUIREMENTS
Chapter 4 – RESIDENTIAL MANDATORY MEASURES	
Division 4.1 – PLANNING AND DESIGN	
4.106.2	**Storm water drainage and retention during construction**
	Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.
4.106.3	**Grading and paving**
	Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. **Exception:** Additions and alterations which do not alter the existing drainage path.
4.106.4	**Electric vehicle (EV) charging for new construction**
	• Comply with Section 4.106.4.1, 4.106.4.2 or 4.106.4.3 for 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:** 1. On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon 1 of the following: 1.1. Where there is no commercial power supply. 1.2. Verification that meeting requirements will alter the local utility infrastructure design requirements on the utility side of the meter increasing costs to the homeowner/developer by more than $400.00 per dwelling unit. 2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities. **Note:** For definitions of Accessory Dwelling Units and Junior Accessory Units, see CALGreen Chapter 2.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE

SECTION	REQUIREMENTS
4.106.4.1	**EV charging: 1- & 2-family dwellings/townhouses with attached private garages** • Install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit. • Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). • Raceway shall originate at the main service or subpanel and terminate into 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, inaccessible, or concealed areas and spaces. • Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.
4.106.4.1.1	**Identification** Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”
4.106.4.2	**EV charging for multifamily dwellings** • Applies to all multifamily dwelling units with parking facilities on the site. • 10% of the total number of parking spaces provided for all types of parking facilities, but in no case less than 1, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the number of EV spaces shall be rounded up to the nearest whole number. **Note:** 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.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE

SECTION	REQUIREMENTS
4.106.4.2.1	**EV charging space (EV space) locations** Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least 1 EV space shall be located in the common use parking areas and shall be available for use by all residents.
4.106.4.2.1.1	**EV charging stations (EVCS)** When EV chargers are installed, EV spaces (required by Section 4.106.4.2.2, Item 3,) shall comply with at least 1 of the following options: 1. The EV 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. 2. The EV space shall be located on an accessible route to the building, as defined in the California Building Code, Chapter 2. **Exception:** EVCS 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 4.106.4.2.2, Item 3.
4.106.4.2.2	**EV charging space (EV space) dimensions** EV spaces shall be designed to comply with the following: 1. The minimum length of each EV space shall be 18 feet. 2. The minimum width of each EV space shall be 9 feet. 3. 1 in every 25 EV spaces, but not less than 1, shall also have an 8-foot wide minimum aisle. A 5-foot wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet. a. Surface slope for this EV space and aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.

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4.106.4.2.3	**Single EV space required** • Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. • Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). • Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space. • Construction documents shall identify the raceway termination point. • Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.
4.106.4.2.4	**Multiple EV spaces required** • Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics, and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. • Plan design shall be based upon a 40-ampere minimum branch circuit. • Required raceways and related components planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.
4.106.4.2.5	**Identification** 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.

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SECTION	REQUIREMENTS
4.106.4.3	**EV charging for hotels and motels** • Applies to all newly constructed hotels and motels. • Construction documents shall identify the location of EV spaces. **Note:** 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.
4.106.4.3.1	**Number of required EV spaces** **Table 4.106.4.3.1** shows the number of required EV spaces based on the total number of parking spaces provided for all types of parking facilities.
4.106.4.3.2	**EV charging space (EV space) dimensions** EV spaces shall be designed to comply with the following: • Minimum length of each EV space shall be 18 feet. • Minimum width of each EV space shall be 9 feet.
4.106.4.3.3	**Single EV space required (similar to 4.106.4.2.3)** • Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. • Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). • Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space. • Construction documents shall identify the raceway termination point. • Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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SECTION	REQUIREMENTS
4.106.4.3.4	**Multiple EV spaces required (similar to 4.106.4.2.4)** • Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. • Plan design shall be based upon a 40-ampere minimum branch circuit. • Required raceways and related components planned to be installed underground, enclosed, inaccessible or, in concealed areas and spaces shall be installed at the time of original construction.
4.106.4.3.5	**Identification (similar to 4.106.4.2.5)** 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.
4.106.4.3.6	**Accessible EV spaces** In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for EV charging stations in the California Building Code, Chapter 11B.
Division 4.2 – ENERGY EFFICIENCY	
4.201.1 & 5.201.1	**Scope** • Energy efficiency requirements for low-rise residential (Section 4.201.1) and high-rise residential/hotels/motels (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen. • Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2019 California Energy Code.

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SECTION	REQUIREMENTS
Division 4.3 – WATER EFFICIENCY AND CONSERVATION	
4.303.1	**Water conserving plumbing fixtures and fittings**
	Plumbing fixtures and fittings shall comply with the following: **4.303.1.1** – Water closets: ≤ 1.28 gal/flush. **4.303.1.2** – Wall mounted urinals: ≤ 0.125 gal/flush; all other urinals ≤ 0.5 gal/flush. **4.303.1.3.1** – Single showerheads: ≤ 1.8 gpm @ 80 psi. **4.303.1.3.2** – Multiple showerheads: combined flow rate of all showerheads controlled by a single valve shall not exceed 1.8 gpm @ 80 psi, or only 1 shower outlet is to be in operation at a time. **4.303.1.4.1** – Residential lavatory faucets: maximum flow rate ≤ 1.2 gpm @ 60 psi; minimum flow rate ≥ 0.8 gpm @ 20 psi. **4.303.1.4.2** – Lavatory faucets in common and public use areas of residential buildings: ≤ 0.5 gpm @ 60 psi. **4.303.1.4.3** – Metering faucets: ≤ 0.2 gallons per cycle. **4.303.1.4.4** – Kitchen faucets: ≤ 1.8 gpm @ 60 psi; temporary increase to 2.2 gpm allowed but shall default to 1.8 gpm.
4.303.2	**Standards for plumbing fixtures and fittings**
	Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet applicable standards referenced in Table 1701.1 of the California Plumbing Code.
4.304.1	**Outdoor potable water use in landscape areas**
	New 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.
Division 4.4 – MATERIAL CONSERVATION & RESOURCE EFFICIENCY	
4.406.1	**Rodent proofing**
	Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency to prevent passage of rodents.

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SECTION	REQUIREMENTS
4.408.1	**Construction waste management** • Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance. • Provide documentation to the enforcing agency per Section 4.408.5. **Exceptions:** 1. Excavated soil and land-clearing debris. 2. Alternative waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite. 3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.
4.408.2	**Construction waste management plan** Submit a construction waste management plan meeting Items 1 through 5 in Section 4.408.2. Plans shall be updated as necessary and shall be available for examination during construction.
4.408.3	**Waste management company** Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.

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SECTION	REQUIREMENTS
4.408.4 & 4.408.4.1	**Waste stream reduction alternative [LR]** • Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1. • Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.
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 covers 10 specific subject areas shall be placed in the building.
4.410.2	**Recycling by occupants** Where 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 is identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive. **Exception:** Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.
Division 4.5 – ENVIRONMENTAL QUALITY	
4.503.1	**Fireplaces - General** 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 all applicable local ordinances.

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SECTION	REQUIREMENTS
4.504.1	**Protection of mechanical equipment during construction** At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air intake and distribution component openings shall be covered. Tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.
4.504.2.1	**Adhesives, sealants and caulks** Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products shall also comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2. 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations (CCR), Title 17, commencing with Section 94507.
4.504.2.2	**Paints and coatings** Architectural paints and coatings shall comply with VOC limits in Table 1 of the Air Resources Board Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-high Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-high Gloss VOC limit in Table 4.504.3 shall apply.

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SECTION	REQUIREMENTS
4.504.2.3 & 4.504.2.4	**Aerosol paints and coatings** • Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 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 shall additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49. • Documentation is required per Section 4.504.2.4.
4.504.3	**Carpet systems** Carpet installed in the building interior shall meet the testing and product requirements of 1 of the following: 1. Carpet and Rug Institute's Green Label Plus Program. 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level. 4. Scientific Certifications Systems Indoor Advantage™ Gold.
4.504.3.1	**Carpet cushion** Carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.
4.504.3.2	**Carpet adhesive** Carpet adhesives shall meet the requirements of Table 4.504.1.

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SECTION	REQUIREMENTS
4.504.4	**Resilient flooring systems** Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with 1 or more of the following: 1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database. 2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). 3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program. 4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).
4.504.5 & 4.504.5.1	**Composite wood products** • Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in the Air Resources Board's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), as shown in Table 4.504.5. • Documentation is required per Section 4.504.5.1. • Definition of Composite Wood Products: Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" do not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-joined lumber, all as specified in CCR, Title 17, Section 93120.1(a).

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SECTION	REQUIREMENTS
4.505.2	**Concrete slab foundations** Concrete slab foundations or concrete slab-on-ground floors required to have a vapor retarder by the California Building Code, Chapter 19, or the California Residential Code, Chapter 5, respectively, shall also comply with this section.
4.505.2.1	**Capillary break** A capillary break shall be installed in compliance with at least 1 of the following: 1. A 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06. 2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.
4.505.3	**Moisture content of building materials** Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified in compliance with the following: 1. Moisture content shall be determined with either a probe-type or a contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements in Section 101.8. 2. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified. 3. At least 3 random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing. Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Manufacturers' drying recommendations shall be followed for wet-applied insulation products prior to enclosure.

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SECTION	REQUIREMENTS
4.506.1	**Bathroom exhaust fans** Each bathroom shall be mechanically ventilated and shall comply with the following: 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control. a. Humidity controls shall be capable of manual or automatic adjustment between a relative humidity range of ≤ 50% to a maximum of 80%. b. A humidity control may be a separate component to the exhaust fan and is not required to be integral or built-in. **Note:** For CALGreen, a bathroom is a room which contains a bathtub, shower, or tub/shower combination. Fans or mechanical ventilation is required in each bathroom.
4.507.2	**Heating and air-conditioning system design** Heating and air-conditioning systems shall be sized, designed and equipment selected using the following methods: 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J – 2016 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D – 2016 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods. 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S – 2014 (Residential Equipment Selection) or other equivalent design software or methods. **Exception:** Use of alternate design temperatures necessary to ensure the systems function are acceptable.

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SECTION	REQUIREMENTS
CHAPTER 7 – INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS	
702.1	**Installer training**
	HVAC system installers shall be trained and certified in the proper installation of HVAC systems and equipment by a recognized training or certification program. Examples of acceptable HVAC training and certification programs include, but are not limited to, the following: 1. State certified apprenticeship programs. 2. Public utility training programs. 3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations. 4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency.
702.2	**Special inspection**
	When required by the enforcing agency, special inspectors must be qualified and able to demonstrate competence to the enforcing agency in the discipline in which they are inspecting.
703.1	**Documentation**
	Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.