

ADDITIONAL NOTES



PROJECT DATA

\* REFER TO ATTACHED OWNER CERTIFICATION FORM CDD-0438 FOR ADDRESS, PARCEL NUMBER, PROPERTY OWNER OR ANY ADDITIONAL SITE SPECIFIC PROJECT DATA.

JURISDICTION: CITY OF SACRAMENTO  
 OCCUPANCY: R-3  
 TYPE OF CONSTRUCTION: V-B  
 FIRE SPRINKLERS:  
 PV REQUIRED: NO (PER SECTION 150.1(c)140, EXCEPTION 2 < 1.8kWdc)

CODE COMPLIANCE

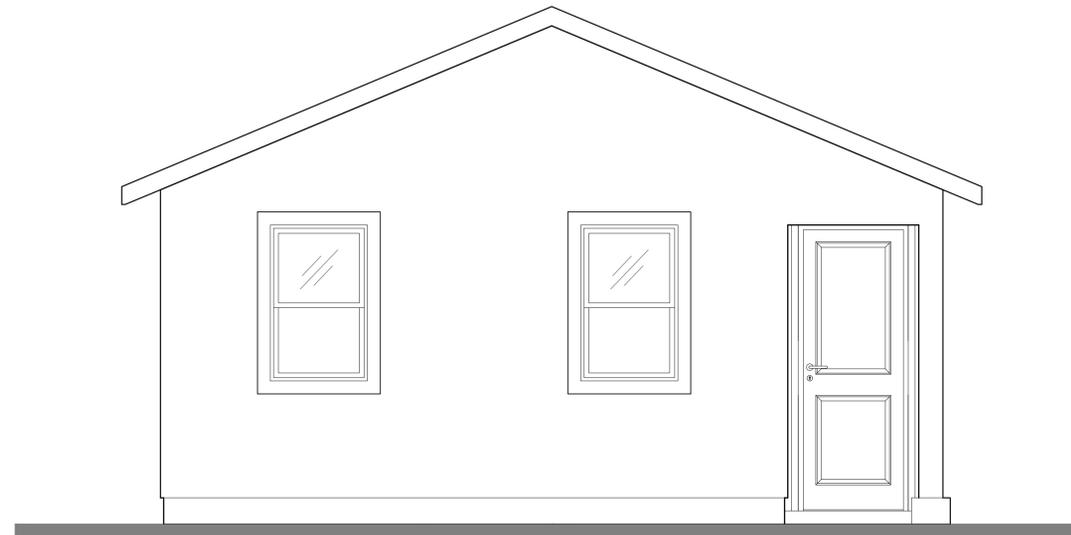
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

- 2022 CALIFORNIA BUILDING CODE (CBC)
- 2022 CALIFORNIA RESIDENTIAL BUILDING CODE
- 2022 CALIFORNIA ELECTRICAL CODE (CEC)
- 2022 CALIFORNIA MECHANICAL CODE (CMC)
- 2022 CALIFORNIA PLUMBING CODE (CPC)
- 2022 CALIFORNIA ENERGY CODE (CENC)
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen CODE)
- 2022 CALIFORNIA REFERENCE STANDARDS CODE
- CURRENT CITY OF SACRAMENTO CODES AND ORDINANCES

PROJECT DESCRIPTION

NEW 20'x20' SINGLE STORY ACCESSORY DWELLING UNIT:

HABITABLE LIVING AREA: 367 SQ FT  
 COVERED PORCH: 24 SQ FT  
 UTILITY CLOSET: 9 SQ FT



NOTES TO OWNER/BUILDER

1. ALL WORK SHALL CONFORM TO APPLICABLE CODES, REGULATIONS, LAWS AND ORDINANCES AS REQUIRED BY CODES AND REGULATIONS LISTED HEREIN AND AS REQUIRED BY THE STATE OF CALIFORNIA AND ALL RELEVANT REGULATORY BODIES.
2. FLOOR PLAN DIMENSIONS SHOWN ARE FACE OF FRAME UNLESS OTHERWISE NOTED AT NEW CONSTRUCTION. DIMENSIONS NOTED AS "CLEAR" ARE TO PRECISELY MAINTAINED.
3. DO NOT DRILL OR CUT JOISTS, BEAMS, COLUMNS OR OTHER STRUCTURAL ELEMENTS UNLESS SPECIFICALLY INDICATED. MAKE OPENINGS OF PROPER SIZE FOR CONDUITS, DUCTS, PIPES, AND OTHER ITEMS PASSING THROUGH OPENINGS.
4. "ALIGN" SHALL MEAN TO ACCURATELY LOCATE FINISH FACES IN THE SAME PLANE. "TYPICAL" OR "TYP" SHALL MEAN THAT THE CONDITION IS REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT, UNLESS OTHERWISE NOTED. DETAILS ARE USUALLY KEYED AND NOTED "TYP" ONLY ONCE, WHEN THEY FIRST OCCUR. "SIMILAR" MEANS COMPARABLE CHARACTERISTICS FOR THE CONDITIONS NOTED. VERIFY DIMENSIONS AND ORIENTATION ON PLANS AND ELEVATIONS.
5. ANY ERRORS, OMISSIONS OR CONFLICTS FOUND IN THE VARIOUS PARTS OF THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE CITY FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
6. PROTECT AREA OF WORK AND ADJACENT AREAS FROM DAMAGE.
7. BLOCKING TO BE PROVIDED BEHIND ALL WALL-MOUNTED ACCESSORIES.

NOTES TO OWNER/BUILDER

1. BUILDER TO VERIFY THAT THE SANITARY SEWER SERVING THE ADU WILL HAVE A MINIMUM SLOPE OF 2% FROM THE LOWEST PART OF THE SYSTEM IN THE ADU TO THE POINT IT CONNECTS TO THE SEWER SYSTEM OF THE MAIN HOUSE. IF EXISTING SLOPE IS LESS THAN 2%, A PUMP MAY BE USED.
2. AN ENGINEERING PERMIT WILL BE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY, INCLUDING BUT NOT LIMITED TO CONSTRUCTION STAGING, CONSTRUCTION PARKING, SIDEWALK, DRAINAGE, OR SEWER WORK. APPROVAL OF THIS BUILDING PERMIT DOES NOT AUTHORIZE WORK IN THE PUBLIC RIGHT-OF-WAY. THE GROUND IMMEDIATELY ADJACENT TO THE ADU FOUNDATION SHALL BE SLOPED AWAY FROM BUILDING AT A SLOPE OF NOT LESS THAN 6" (5% SLOPE) IN THE FIRST 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IMPERVIOUS SURFACES WITHIN 10 FEET OF BUILDING SHALL BE SLOPE A MINIMUM OF 2% AWAY FROM BUILDING.
3. ADDRESS ASSIGNMENT IS REQUIRED PRIOR TO FINAL INSPECTION OF THE BUILDING PERMIT.

NOTE TO PERSONS WITH DISABILITIES

PLANS HAVE BEEN DESIGNED TO ACCOMMODATE CBC, CHAPTER 11B ACCESSIBLE FEATURES, AND PLANS ARE INCLUSIVE OF COMMONLY UTILIZED DETAIL DRAWINGS. THESE MAY BE INCORPORATED INTO THE CONSTRUCTION AT THE OWNER'S DISCRETION, AND ARE CONSIDERED COMPLETELY VOLUNTARY ON PART OF THE PERMIT HOLDER.

RESTRICTIONS AND REQUIREMENTS FOR USE OF THESE PLANS

1. THIS STRUCTURE MUST BE LOCATED A MINIMUM HORIZONTAL DISTANCE OF 5' FROM ALL LOT LINES, WITH THE EXCEPTION OF WALL LINE "1" (SEE SHEET FSD.1 FOR WALL LINE "1" OPTIONS).
2. THIS STRUCTURE MUST BE LOCATED A MINIMUM HORIZONTAL DISTANCE OF 4' FROM ANY RESIDENTIAL STRUCTURE (OR STRUCTURES ACCESSORY TO ON THE SAME LOT, WITHOUT EXCEPTION).
3. THESE PLANS MAY ONLY BE USED FOR CONSTRUCTION ON LOTS WITHIN THE CITY OF SACRAMENTO AND ONLY IF ALL PROPERTY OWNERS EXECUTE A HOLD HARMLESS AGREEMENT TO THE SATISFACTION OF THE CITY OF SACRAMENTO.
4. APPLICANT IS REQUIRED TO PROVIDE A SITE PLAN AND INCORPORATE IT INTO THIS PLAN SET PRIOR TO SUBMITTING PLANS

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Revisions:

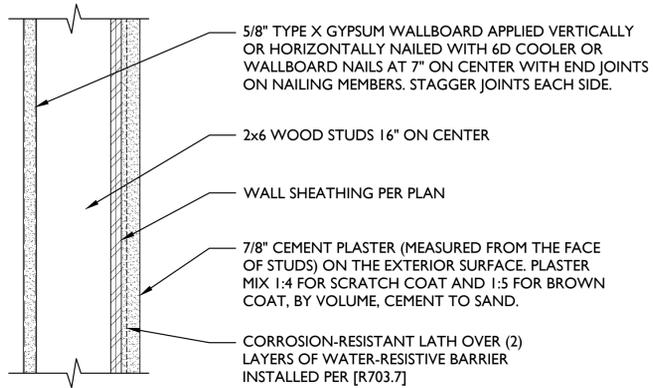
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File:

Drawn By:	JCE
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Scale:	AS NOTED
Date:	01/04/2023

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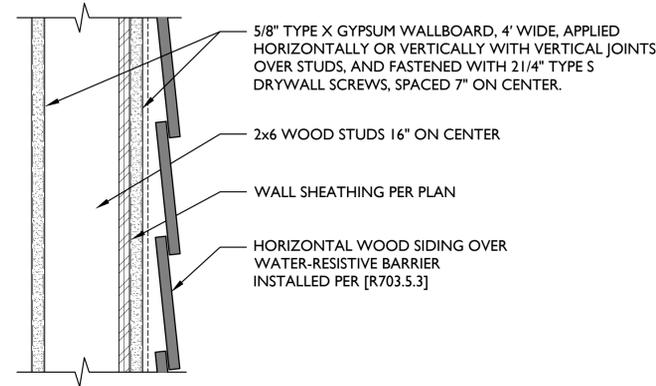
TI.1



**EXTERIOR SIDE:**  
 CBC TABLE 721.1(2), ITEM 15-1.3  
 2" x 4" WOOD STUDS 16" ON CENTER WITH 7/8" CEMENT PLASTER (MEASURED FROM THE FACE OF STUDS) ON THE EXTERIOR SURFACE. PLASTER MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT, BY VOLUME, CEMENT TO SAND.

**INTERIOR SIDE:**  
 CBC TABLE 721.1(2), ITEM 14-1.3  
 2" x 4" WOOD STUDS 24" ON CENTER WITH 5/8" TYPE X GYPSUM WALLBOARD APPLIED VERTICALLY OR HORIZONTALLY NAILED WITH 6D COOLER OR WALLBOARD NAILS AT 7" ON CENTER WITH END JOINTS ON NAILING MEMBERS. STAGGER JOINTS EACH SIDE.

NOTE: WOOD STRUCTURAL PANELS SHALL BE PERMITTED TO BE INSTALLED BETWEEN THE FIRE PROTECTION AND THE WOOD STUDS ON EITHER THE INTERIOR OR EXTERIOR SIDE OF THE WOOD FRAME ASSEMBLIES IN THIS TABLE, PROVIDED THAT THE LENGTH OF THE FASTENERS USED TO ATTACH THE FIRE PROTECTION IS INCREASED BY AN AMOUNT NOT LESS THAN THE THICKNESS OF THE WOOD STRUCTURAL PANEL.

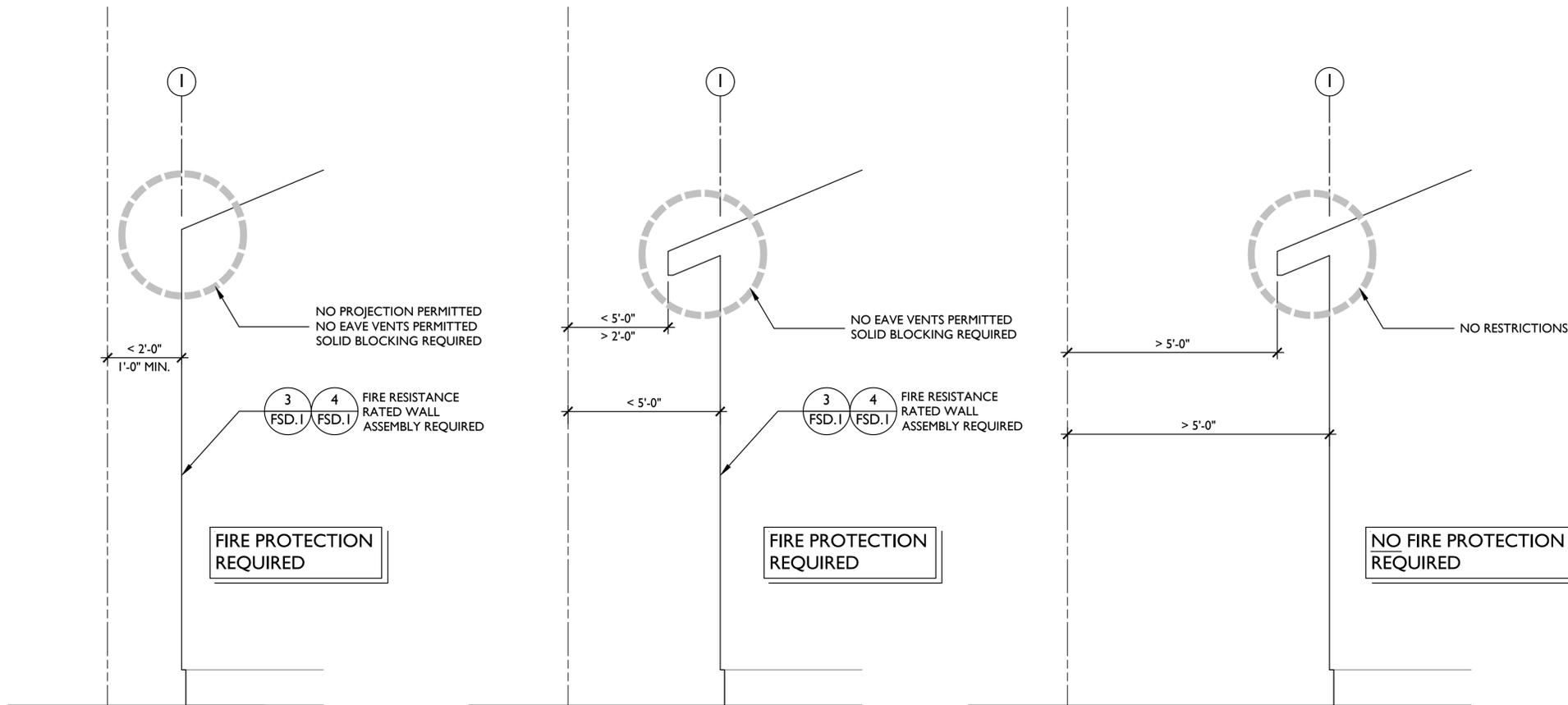


**EXTERIOR AND INTERIORS SIDES:**  
 CBC TABLE 721.1(2), ITEM 15-1.14  
 2" x 6" WOOD STUDS AT 16" WITH DOUBLE TOP PLATES, SINGLE BOTTOM PLATE; INTERIOR AND EXTERIOR SIDES COVERED WITH 5/8" TYPE X GYPSUM WALLBOARD, 4" WIDE, APPLIED HORIZONTALLY OR VERTICALLY WITH VERTICAL JOINTS OVER STUDS, AND FASTENED WITH 2 1/4" TYPE S DRYWALL SCREWS, SPACED 7" ON CENTER.

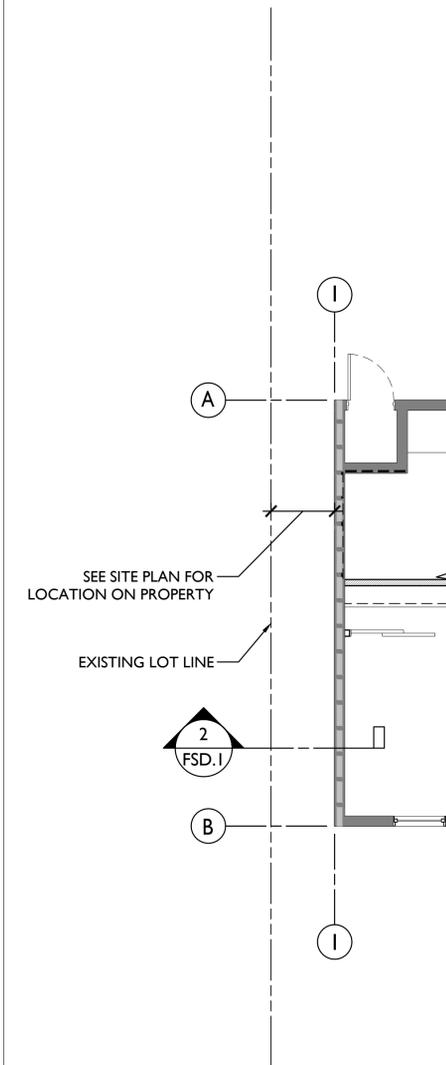
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4 STUCCO FIRE RESISTANCE RATED WALL ASSEMBLY  
 FSD.1 SCALE: 1" = 1'-0"

3 WOOD SIDING FIRE RESISTANCE RATED WALL ASSEMBLY  
 FSD.1 SCALE: 1" = 1'-0"



2 FIRE SEPARATION DISTANCE SECTIONS  
 FSD.1 SCALE: 3/4" = 1'-0"



1 FIRE SEPARATION PARTIAL FLOOR PLAN  
 FSD.1 SCALE: 1/4" = 1'-0"

**Residential Code Requirements**

2022 Adopted Codes effective January 1<sup>st</sup>, 2023

The code requirements in this document are excerpts only, not a comprehensive list of all requirements that may apply to your project. These sheets, when attached to a set of plans, become part of those plans, and must remain attached thereto. The approval of these plans and specifications shall not be held to permit or approve the violation of any City ordinance or State or Federal law.

**Building Code Requirements**

- B-1 **In dwelling units, smoke alarms shall be installed** on the wall or ceiling of the area immediately outside each separate sleeping area, in each room used for sleeping purposes, and on each story within the dwelling unit. In dwellings with basements, an alarm shall be installed on each story and in the basement. In dwellings within where a story or basement is split into two or more levels and does not have an intervening door between the adjacent levels, a smoke alarm need only be installed on the upper level, except that when the lower level is less than one full story below the upper level, an alarm shall be installed on each level. Where the ceiling height of a room that opens onto a hallway serving a bedroom exceeds the height of the hallway by 24 inches, smoke alarms shall be installed in the hallway and in the adjacent room. In new construction, the required smoke alarms shall receive their primary power from a commercial source and have a battery backup. When more than one smoke alarm is being provided the alarms shall be interconnected. 2022 CRC, Section R314.
- B-2 When interior **alterations, repairs, or additions having a value in excess of \$1,000** are made, provide approved **smoke alarms** as required for new buildings. The alarm may be battery operated. 2022 CRC, Section R314.6.2.
- B-3 For new construction, and alteration, repairs and additions, an approved **carbon monoxide alarm** shall be installed in dwelling units and in sleeping units within which fuel-burning appliances including fireplaces are installed and in dwelling units that have attached garages. 2022 CRC, Section R315.1.
- B-4 **Sprinklers shall be installed** to protect all areas of a new dwelling unit. Fire sprinklers shall be designed and installed per 2022 CRC, Section R313.2.1.
- B-5 **Basements, habitable attics, and every sleeping room in dwelling units** shall have not less than one operable emergency escape and rescue opening approved for **emergency escape or rescue** that shall open directly into a public way, yard, or court that opens to a public way. Escape or rescue windows shall have a minimum net clear opening area of not less than 5.7 square feet, except that when escape and rescue windows are on the grade-floor they can have a minimum net clear opening area of 5 square feet. All emergency escape and rescue windows shall have the bottom of the clear opening not greater than 44 inches measured from the floor. The minimum net clear opening height shall be 24 inches. The minimum net clear opening width shall be 20 inches. Storm shelters and basements that are less than 200 square feet and are only used to house mechanical equipment are exempt from this requirement. 2022 CRC, Section R310.1. See Exception 2 Where the dwelling or townhouse is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following: 2.1 One means of egress complying with Section R311 and one emergency escape and rescue opening. 2.2 Two means of egress complying with Section R311.
- B-6 **Private garages shall be separated from a dwelling unit and its attic space** by minimum ½ inch gypsum board applied on the garage side. Private garages located beneath habitable spaces shall be separated from the habitable space by means of minimum 5/8 inch gypsum board. A garage shall not open directly into a room used for sleeping purposes. Door openings between a private garage and a dwelling unit are required to be self-closing and self-latching. When not protected by fire sprinklers, the door shall be constructed of solid wood, solid material, or honeycomb core steel and must be 1-3/8 inch thick or have a 20 minute fire rating. 2022 CRC, Sections R302.5 & R302.6.
- B-7 **Ducts may pass through the walls or a ceiling separating a private garage from a dwelling unit** provided the ducts within the garage are constructed of steel having a thickness of not less than 26 gauge galvanized sheet steel and the duct has no openings into the garage. 2022 CRC, Section R302.5.2.
- B-8 Provide **readily accessible natural ventilation directly to the outdoors** for all habitable rooms within a dwelling unit equal to 4 percent of the floor area ventilated. 2022 CRC, Section R303.1.

- B-9 Provide **natural or artificial light** to all habitable rooms within a dwelling unit. Natural light shall be equal to 8 percent of the floor area served. Artificial light shall have an average illumination of 6 foot-candles at a height of 30 inches above the floor level. 2022 CRC, Section R303.1.
- B-10 **Rooms containing bathtubs, showers, spas, and similar bathing fixtures** shall be provided with an aggregate glazing area of not less than 3 square feet of which at least one half must be operable or be mechanically ventilated with the exhaust air going directly to the outside. 2022 CRC, Section R303.3.
- B-11 **Age-in-place design and fall prevention in newly constructed dwellings** shall be designed and constructed in accordance with 2022 CRC, Sections R327.1.1 through R327.1.4. **Reinforcement for grab bars** shall be provided in **at least one bathroom** on entry level. Where there is no bathroom on the entry level, at least one bathroom on the second or third floor of the dwelling shall comply with this section. **Electrical receptacle outlets, switches, and controls** (including controls for heating, ventilation, and air conditioning) intended to be used by occupants shall be located no more than 48 inches measured from the top of the outlet box and not less than 15 inches measured from the bottom of the outlet box above the finish floor. Effective July 1, 2024, **at least one bathroom and one bedroom** on the entry level shall provide a doorway with a net clear opening of not less than 32 inches, measured with the door positioned at an angle of 90 degrees from the closed position. **Doorbell buttons or controls**, when installed, shall not exceed 48 inches above exterior floor or landing, measured from the top of the doorbell button assembly.
- B-12 Provide **safely glazing** for all glazing in locations specified as hazardous in the 2022 CRC, Section R308.4.
- B-13 **Shower compartments and walls above bathtubs with installed shower heads** shall be finished with a smooth, nonabsorbent surface to a height of not less than 6 feet above the floor. 2022 CRC, Section R307.2.
- B-14 Provide an approved **attic access** in a readily accessible location sized 22 inches by 30 inches with minimum 30 inch vertical headroom. 2022 CRC, Section R807.1. **If mechanical equipment** is installed in the attic space the access must be sized so that the largest piece of equipment can be removed, but in no case smaller than 22 inch by 30 inch with 30 inch vertical headroom clearance per 2022 CMC, section 304.4.
- B-15 **Enclosed usable space under interior stairways** in dwelling units shall have the walls and soffits protected on the enclosed side with ½ inch gypsum board. 2022 CRC, Section R302.7.
- B-16 **Private stairways** shall be constructed with a 7-3/4 inch maximum rise, a 10 inch minimum run, and a 36 inch minimum width. A nosing not less than ¾ inch but not more than 1-1/4 inch shall be provided on stairways with solid risers where the tread depth is less than 11 inches. The largest tread run and the greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. Maintain a continuous 5 foot 6 inch headroom clearance above the stairway. 2022 CRC, Section R311.7.
- B-17 A minimum of **one handrail** is required on **all stairway runs with four or more risers** that serve dwelling units. The top of handrails shall be placed not less than 34 inches nor more than 38 inches above the nosing of the treads except for at the lowest riser, landing transitions, and the start of the flight where they may be allowed to be higher. A clear space of 1-1/2 inches is required between the handrail and the wall. The maximum projection of the handrail into the required stairway width shall be 4-1/2 inches. Openings in open **guards on stairways** shall be sized such that a 4-3/8 inch sphere will not pass through. The triangular openings formed by the riser, tread, and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of 6 inches in diameter cannot pass through the opening. 2022 CRC, Section R311.7.8 and R312.1.3.
- B-18 **Circular handrails** shall have a minimum diameter of 1-1/4 inches and a maximum diameter of 2 inches. **Non-circular handrails** shall have a minimum perimeter dimension of 4 inches, a maximum perimeter dimension of 6-1/4 inches, and a maximum cross-section of 2-1/4 inches. **Handrails with a perimeter greater than 6-1/4 inches** shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch within 7/8 inch below the widest part of the profile. The required depth shall continue for at least 1-3/4 inches below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1-1/4 inches to a maximum of 2-3/4 inches. 2022 CRC, Section R311.7.8.5.
- B-19 **Guards** are required where open-sided walking surfaces including stairs, ramps, and landings are located more than 30 inches above the floor below. These guards shall be a minimum of 42 inches in height. Openings in open guards for these areas shall be sized such that a 4 inch diameter sphere cannot pass through any opening. 2022 CRC, Section R312.1.
- B-20 **On stairways, guards whose top rail also serves as a handrail** shall have a height not less than 34 inches and not more than 38 inches measured vertically from a line connecting the leading edge of the treads. 2022 CRC, Section 312.1.2 exception #2.
- B-21 **Interior spaces intended for human occupancy shall be provided with heating facilities** capable of maintaining a room temperature of 68 degrees Fahrenheit at a point 3 feet above the floor and 2 feet from exterior walls in all habitable rooms. 2022 CRC, Section R303.10.

- B-22 **Ceiling heights** for habitable space, hallways and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet. Bathrooms, toilet rooms and laundry rooms shall have a ceiling height not less than 6 feet 8 inches. 2022 CRC, Section R305.1.
- B-23 **Factory built chimneys and factory built fireplaces** shall be listed and installed in accordance with the terms of their listing and the manufacturer's instructions. 2022 CRC, Sections R1004.1 & R1005.1.
- B-24 **Braced wall lines** shall consist of braced wall panels that meet the requirements for location, size, spacing and type of bracing as shown in 2022 CRC, Sections R602.10.1.1, Tables R602.10.1.2(2) & R602.10.1.2(3), R602.10.1.4.1, and R602.10.3. Brace wall lines shall be in line or offset from each other by not more than 4 feet. All braced wall panels shall be clearly indicated on the plans.
- B-25 Any braced wall panel may be replaced by an **alternate braced wall panel** constructed in accordance with 2022 CRC, Section R602.10.6.1 and Table R602.10.6.1.
- B-26 **Cripple walls having a stud height exceeding 14 inches** shall be framed of studs not less in size than the studs above. Cripple walls exceeding 4 feet in height shall be framed with studs sized as required for an additional story. Cripple walls with studs less than 14 inches high shall be framed of solid blocking or shall be sheathed on at least one side with a wood structural panel that is fastened to both the top and bottom plate. All cripple walls shall be supported on a continuous foundation. 2022 CRC, Section R602.9.
- B-27 **Stud size, height, and spacing** shall conform to 2022 CRC, Table R602.3(5).
- B-28 **Provide access to all under-floor spaces**. Access provided through the floor shall be a minimum size of 18 inches by 24 inches. Access provided through the wall shall be a minimum of 16 inches by 24 inches and shall not be located under a door to the residence. 2022 CRC, Section 408.4.
- B-29 **Provide adequate ventilation at all under-floor spaces**. 2022 CRC, Section 408.1.
- B-30 **Wood framing members** and wood-based products must be foundation grade redwood or treated and marked by an approved agency when required by 2022 CRC, section R317.
- B-31 **Foundation plates or sills shall be bolted or anchored to the foundation** with not less than ½ inch diameter steel bolts or approved anchors spaced a minimum of 6 feet on center for one and two story dwellings and a minimum of 4 feet on center for three or more story dwellings. There shall be at least two bolts per plate that start within 12 inches or 7 bolt diameters of the end of the plate. All foundation bolts shall be embedded a minimum of 7 inches into the concrete or masonry. Each bolt shall have a properly sized nut and washer. 2022 CRC, Sections R403.1.6 & R403.1.6.1. **The washers** must be a minimum 3 x 3 inches square and .229 inches thick. A diagonal slot is allowed of a width 3/16 inch larger than the bolt diameter and a maximum 1-3/4 in length, provided a standard cut washer is used between the nut and plate washer. 2022 CRC, Section R602.11.1.
- B-32 **Cutting and notching** of exterior walls and bearing partitions shall not be greater than 25 percent of the stud width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition. 2022 CRC, Section 602.6 #1.
- B-33 **A drilled or bored hole** not greater in diameter than 60 percent of the stud width is permitted in a non-bearing partition or in a wall where the bored stud is doubled provided not more than two such successive studs are bored. A minimum 5/8 inch of wood is required between the bored hole and the edge of the wood. Where the diameter of a bored hole in a stud located in exterior walls or bearing partitions is over 40 percent, such stud shall be doubled and not more than two successive doubled studs shall be so bored. Bored holes cannot be located in the same vicinity as a cut or a notch. 2022 CRC, Section 602.6 #2.
- B-34 **Footings** shall be designed so that the allowable bearing capacity of the soil is not exceeded per Table R401.4.1. Where a specific design is not provided, the size of concrete footings supporting walls of light-frame construction shall conform to the requirements of 2022 CRC, Table R403.1. The minimum depth of footings shall be 12 inches below undisturbed ground. 2022 CRC, Section R403.1.4.
- B-35 Where **post and beam or girder construction** is used, a **positive connection** shall be provided to ensure against uplift and lateral displacement. 2022 CRC, Section R502.9.
- B-36 Where rafters are not parallel with the ceiling joist, rafters shall be tied to an equivalent **rafter tie** that is connected per Table 802.5.2. The rafter ties shall be a minimum of 2 inch by 4 inch. 2022 CRC, Section R802.5.2. Where ceiling joists or rafter ties are not provided, the ridge formed by these rafters shall be supported by a wall or girder designed in accordance with accepted engineering practice.
- B-37 Provide adequate **ventilation to all attic spaces**. 2022 CRC, Section R806.1
- B-38 Provide **fire blocking and draft stopping** in concealed locations of combustible construction in accordance with the 2022 CRC, Sections R302.11 & R302.12.
- B-39 **All gypsum board, stucco, plaster, and lath** shall be installed as per 2022 CRC, Chapter 7.

**Plumbing Code Requirements**

- P-1 Provide an **approved dishwasher air gap fitting** as per 2022 CPC, Section 807.3.
- P-2 Potable water outlets with hose attachments, other than water heater drains, boiler drains, and clothes washer connectors, shall be protected by a listed non-removable hose bib type backflow preventor or a listed atmospheric vacuum breaker as per 2022 CPC, Section 603.5.7.
- P-3 **Joints**. Where a fixture comes in contact with the wall or floor, the joint between the fixture and the wall or floor shall be made watertight. 2022 CPC, Section 402.2.
- P-4 **No underfloor cleanout** shall be located more than 5 feet from an access door, trap door, or crawl hole. 2022 CPC, Section 707.9.
- P-5 **Gas Water heaters located in residential garages or adjacent spaces** open to the garage that are not part of the living space shall be installed so that the pilots, burners, and burner-igniter devices are at least 18 inches above the floor unless listed as flammable vapor ignition resistant. 2022 CPC, Section 507.13.
- P-6 **Fuel burning water heaters** shall be installed per 2022 CPC, Section 506.0, for combustion air.
- P-7 **Water heaters that depend on the combustion of fuel for heat** shall not be installed in bedrooms or bathrooms unless installed in an approved closet or direct vent type per 2022 CPC, Section 504.1.
- P-8 **Listed water heaters shall be installed** in accordance with their listing and the manufacturers' instructions. **Unlisted water heaters** shall be installed with a clearance of 12" on all sides and rear. 2022 CPC, Section 504.3.1 & 504.3.2.
- P-9 Any water system containing **storage water heating equipment** shall be provided with an approved, listed, and adequately sized combination pressure and temperature relief valve. 2022 CPC, Section 608.3.
- P-10 **Relief valves located inside a building** shall be provided with a drain of galvanized steel, hard drawn copper piping and fittings, CPVC, or listed valve drain. The drain shall extend from the valve to the outside of the building with the end of the pipe not more than 2 feet nor less than 6 inches above the ground and pointing downward. 2022 CPC, Section 608.5. **Note:** No part of such drainpipe shall be trapped, and the terminal end of the drainpipe shall not be threaded.
- P-11 **Water heaters shall be anchored or strapped** to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a minimum distance of 4 inches shall be maintained above the controls with the strapping. 2022 CPC, Section 507.2.
- P-12 **Gas utilization equipment** connected to a piping system shall have an accessible approved **manual shut off valve** with a non-displaceable valve member, or a listed gas convenience outlet installed within 6' of the equipment it serves. Shut off valves serving decorative gas appliances shall be permitted to be installed in fireplaces if listed for such use. 2022 CPC, Section 1212.6.
- P-13 **Showers and tub-shower combinations** in all buildings shall be provided with individual control valves of the pressure balance or the thermostatic mixing valve type. 2022 CPC, Section 408.3.

- Note:** When lath is applied over wood base sheathing, include two layers of grade D paper. 2022 CRC, Section R703.6.3.
- B-40 Provide **weather protection** on all exterior walls located above grade that are not constructed of concrete or masonry. 2022 CRC, Section R703.1.
- B-41 On graded sites, the **top of any exterior foundation** shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved drainage device a minimum of 12 inches plus 2 percent per foot (1/4 inch per linear foot measured from the gutter to the edge of the footing). Where a gutter is not present, the measurement shall be taken from the crown of road. 2022 CRC, Section R403.1.7.3.

**Mechanical Code Requirements**

- M-1 **Domestic clothes dryer moisture exhaust ducts** shall terminate on the outside of the building and shall be equipped with a back-draft damper. Sheet metal screws or other fasteners that will obstruct the flow shall not be used. Unless otherwise permitted or required by the dryer manufacturer's installation instructions and by the building official, domestic dryer moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 14 feet including two 90° elbows. Two feet shall be deducted for each 90° elbow in excess of two. 2022 CMC, Section 504.4.
- M-2 **Make up air**. When a closet is designed for the installation of a clothes dryer, a minimum opening of 100 square inches for makeup air shall be provided in the door or by other approved means. 2022 CMC, Section 504.4.1.
- M-3 **Installation of a Listed Cooking Appliance or Microwave Oven above a Listed Cooking Appliance**. The installation of a listed cooking appliance or microwave oven over a listed cooking appliance shall conform to the conditions of the upper appliance's listing and the manufacturers' installation instructions. 2022 CMC, Section 921.4.
- M-4 **Domestic range vents**. Ducts for domestic kitchen downdraft grill-range ventilation shall be installed as per 2022 CMC, Section 504.2.
- M-5 **Fuel burning equipment** shall be assured a sufficient supply of combustion air as per Chapter 7, 2022 CMC.
- M-6 **Warm air furnaces shall not be installed** in a room used or designed to be used as a bedroom or bathroom unless direct vent type or installed in an approved closet enclosure per 2022 CMC, Section 904.1.
- M-7 **Attic furnace**. The distance from the passageway access to the furnace shall not exceed 20 feet measured along the center line of the passageway. The passageway shall be unobstructed and shall have continuous solid flooring not less than 24 inches wide from the entrance opening to the furnace. A level working platform not less than 30 inches in depth and width shall be provided in front of the entire fire box side of the warm air furnace. If the furnace temperature limit control, air filter, fuel control valve, vent collar, or air handling unit is not serviceable from the fire box side of the furnace, a continuous floor not less than 24 inches in width shall be provided from the platform in front of the fire box side of the furnace to and in front of this equipment. A permanent electric outlet and lighting fixture controlled by a switch located at the required passageway opening shall be provided at or near the furnace. 2022 CMC, Section 304.4.
- M-8 **Vent termination**. Gas vents with listed vent caps 12 inches in size or smaller shall be permitted to be terminated in accordance with Table 802.6.2, provided they are located at least 8 feet from the vertical wall or similar obstruction. All other gas vents shall terminate not less than 2 feet above the highest point where they pass through the roof and at least 2 feet higher than any portion of a building within 10 feet. 2022 CMC, Section 802.6.2. **Note:** Single wall metal pipe shall not originate in an unoccupied attic or concealed space and shall not pass through any attic, inside wall, concealed space, or floor. 2019 CMC, Section 802.7.3.2.
- M-9 **Approval of Equipment**. Listed and unlisted equipment shall comply with the 2022 CMC, Section 301.2.
- M-10 **Ignition source**. Heating and cooling equipment located in a garage that generates a glow, spark, or flame capable of igniting flammable vapors shall be installed with sources of ignition at least 18 inches above the floor level. 2022 CMC, Section 305.

20x20 STUDIO PLAN  
367 SQ FT.

REVISION TITLE

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Drawn By:	JCE
Checked By:	MB
Scale:	AS NOTED
Date:	01/04/2023

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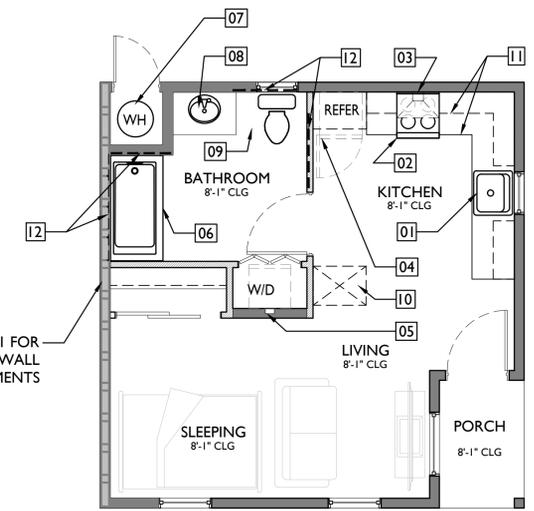
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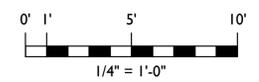
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FLOOR PLAN KEYNOTES

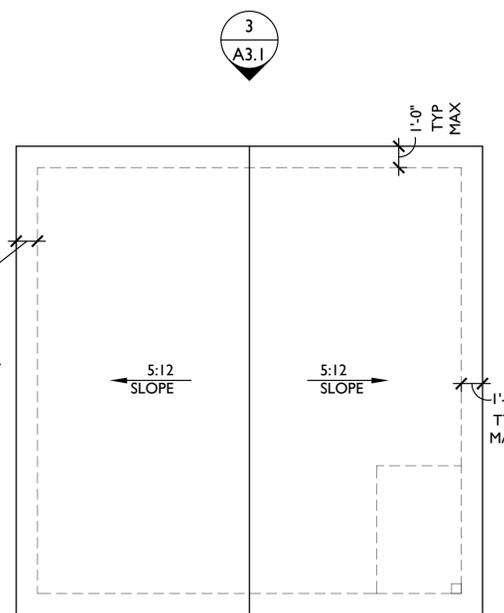
- [01] KITCHEN SINK [CPC TABLE 422.1]
- [02] ELECTRIC COOK TOP OR RANGE OVEN
- [03] LOCAL EXHAUST VENTILATION HOOD, MIN. 100 CFM
- [04] REFRIGERATOR
- [05] AUTOMATIC CLOTHES WASHER CONNECTION [CPC TABLE 422.1]
- [06] SHOWER OR TUB/SHOWER COMBINATION: FLOORS AND WALLS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR. [CRC R307.2]
- [07] ELECTRIC WATER HEATER, SPECIFICATIONS PER ENERGY DOCUMENTATION
- [08] LAVATORY SINK [CPC TABLE 422.1]
- [09] TOILET [CPC TABLE 422.1]
- [10] ATTIC ACCESS: PROVIDE 22"X30" OPENING OR LARGE ENOUGH TO REMOVE THE LARGEST PIECE OF EQUIPMENT. LOCATION APPROXIMATE. VERIFY/COORDINATE WITH CEILING FRAMING. [R807.1]
- [11] KITCHEN CABINET LAYOUT BY OWNER/CONTRACTOR
- [12] SOLID BLOCKING REINFORCEMENT FOR GRAB BARS PER [CRC R327.1.1]



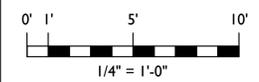
SEE SHEET FSD.1 FOR FIRE RESISTANCE RATED WALL ASSEMBLY REQUIREMENTS



1 FLOOR PLAN  
A2.1 SCALE: 1/4" = 1'-0"



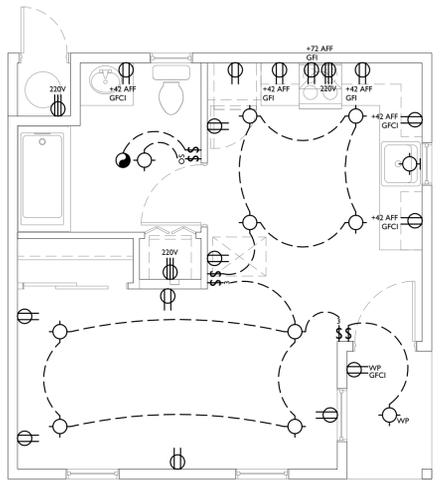
ATTIC VENTILATION:  
NOTE: CONTRACTOR SHALL VERIFY THAT INSTALLED VENTING PROVIDES THE MINIMUM REQUIRED NET FREE AREA AS SPECIFIED BELOW:  
ATTIC AREA: 400 SQ FT  
VENT RATIO: 1/300  
MINIMUM UPPER VENTING REQUIRED: 96 SQ. INCHES  
MINIMUM LOWER VENTING REQUIRED: 96 SQ. INCHES  
MINIMUM TOTAL VENTING REQUIRED: 192 SQ. INCHES



3 ROOF PLAN  
A2.1 SCALE: 1/4" = 1'-0"

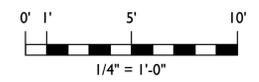
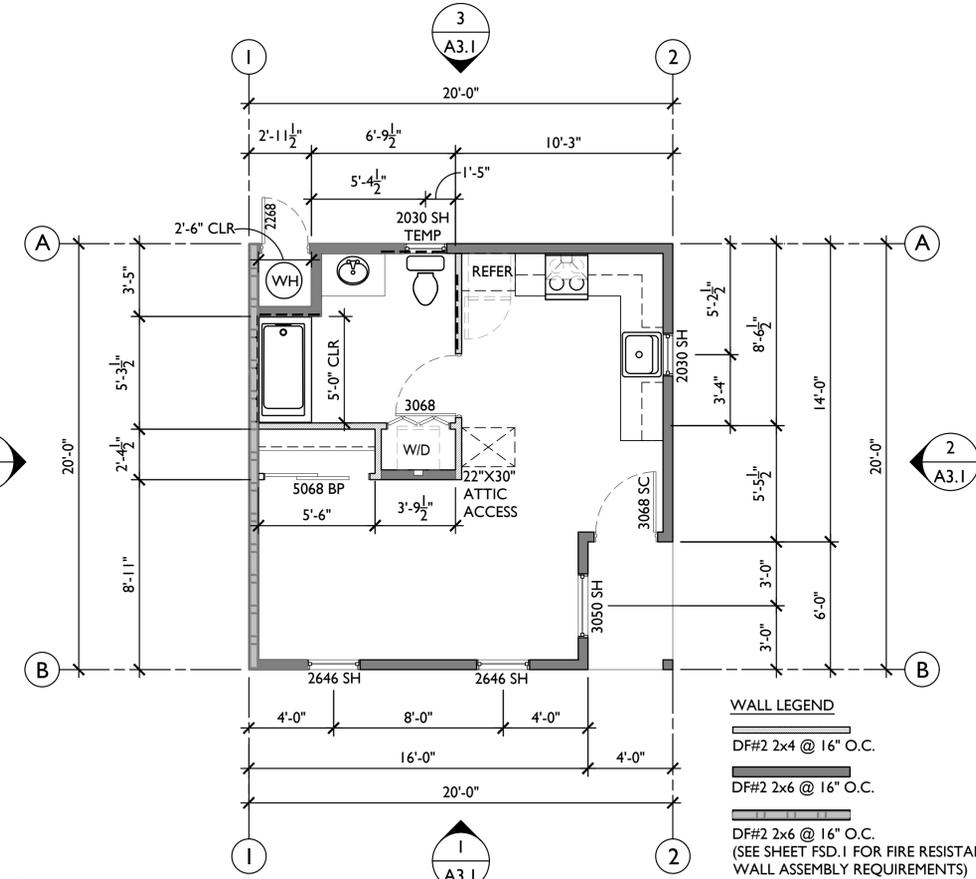
ENERGY COMPLIANCE REQUIREMENTS

- BUILDING ENVELOPE INSULATION R-VALUES**
- EXTERIOR WALLS R-21
  - ATTIC ROOF R-4
  - CEILING (BELOW ATTIC) R-30
- ATTIC ROOF**
- ROOF REFLECTANCE 0.2
  - ROOF EMITTANCE 0.75
  - RADIANT BARRIER NO
  - COOL ROOF YES
- WINDOW/ GLAZING VALUES**
- U-FACTOR 0.3
  - SHGC 0.23
- SPACE CONDITIONING SYSTEMS**
- SYSTEM TYPE CENTRAL SPLIT HEAT PUMP
  - SEER/EER 14/11.7
  - HSPF 8
  - DUCT INSUL. R-VALUE R-8
- INDOOR AIR QUALITY (IAQ) FAN**
- AIRFLOW 26 CFM
- WATER HEATER EFFICIENCY TYPE** NEEA HEAT PUMP
- PV SYSTEM REQUIREMENTS**
- NO PV REQUIRED PER EXCEPTION 2 (SECTION 150.1(c)14)
- REQUIRED HERS VERIFICATIONS**
- QUALITY INSULATION INSTALLATION (QII)
  - INDOOR AIR QUALITY VENTILATION
  - KITCHEN RANGE HOOD
  - MINIMUM AIRFLOW
  - VERIFIED REFRIGERANT CHARGE
  - FAN EFFICACY WATTS/CFM
  - VERIFIED HSPF2
  - VERIFIED HEAT PUMP RATED HEATING CAPACITY
  - DUCT LEAKAGE TESTING



- ELECTRICAL SYMBOLS**
- EXHAUST VENT, VENT TO EXTERIOR
  - ⊕ 220V RECEPTACLE
  - ⊕ CEILING MOUNTED FIXTURE (HIGH EFFICACY)
  - ⊕ WALL MOUNTED FIXTURE (HIGH EFFICACY)
  - ⊕ DUPLEX WALL RECEPTACLE (ARC FAULT PROTECTED)
  - ⊕ GFCI DUPLEX WALL RECEPTACLE (GROUND FAULT INTERRUPTER)
  - ⊕ WWP GFCI DUPLEX WALL RECEPTACLE EXTERIOR WEATHER PROOF (GROUND FAULT INTERRUPTER)
  - ⊕ WALL SWITCH
  - ⊕ WS WALL SWITCH (OCCUPANCY SENSOR)
  - ⊕ WS WALL SWITCH (3-WAY)

4 ELECTRICAL PLAN  
A2.1 SCALE: 1/4" = 1'-0"



2 DIMENSIONED FLOOR PLAN  
A2.1 SCALE: 1/4" = 1'-0"

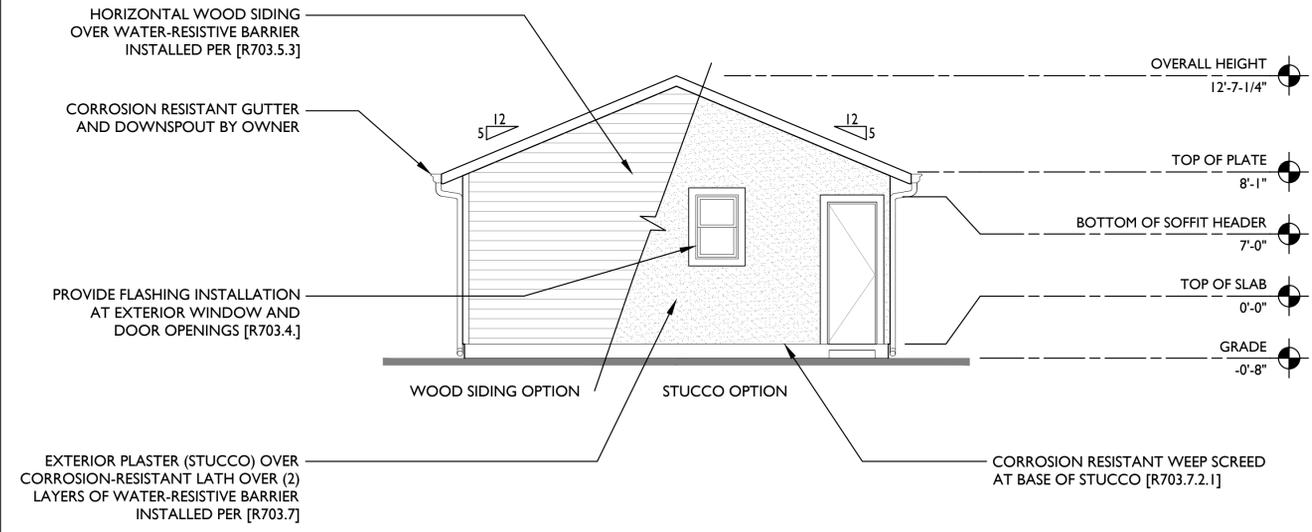
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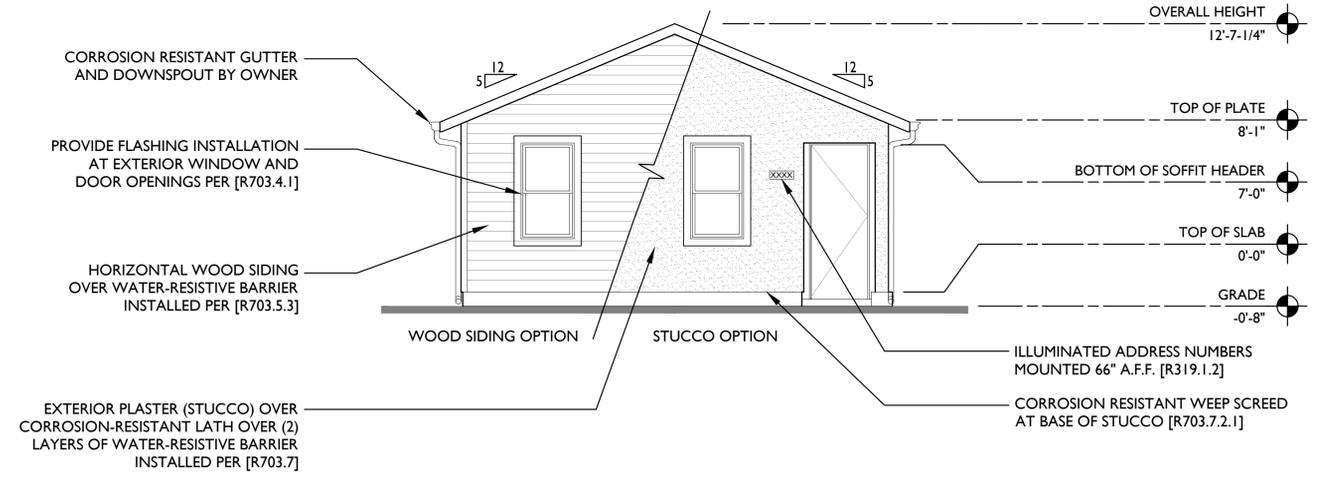
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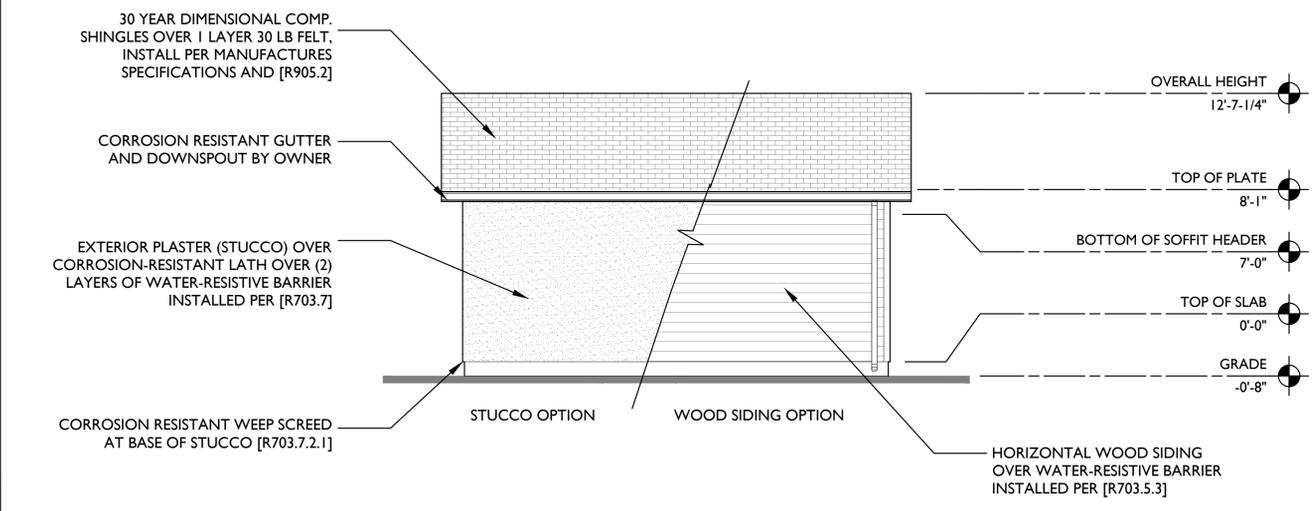
A3.1



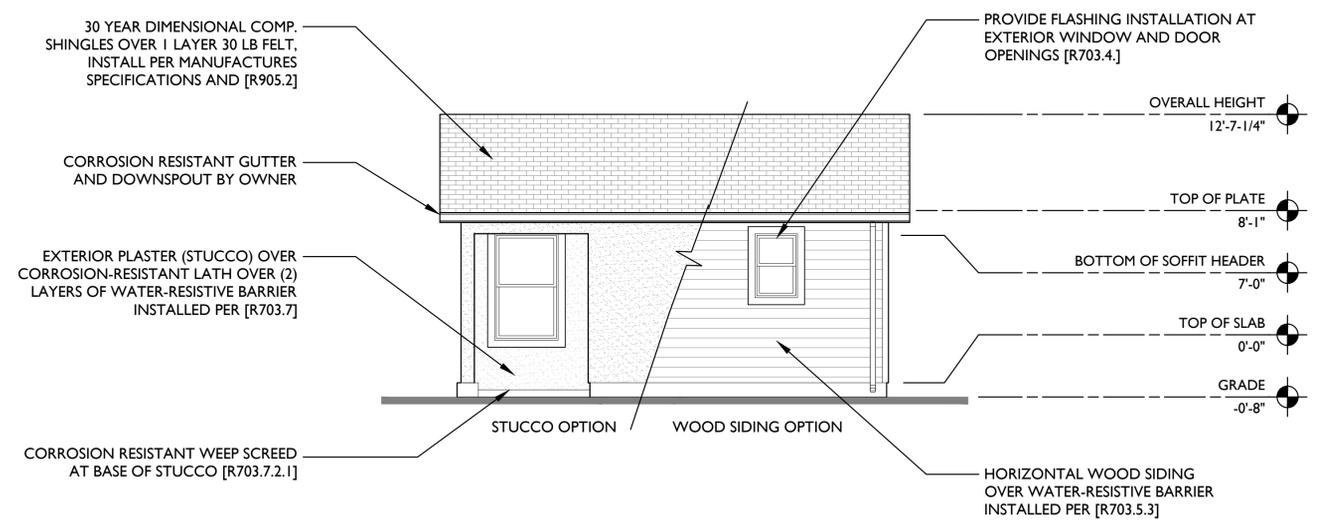
3 REAR ELEVATION  
A3.1 SCALE: 1/4" = 1'-0"



1 FRONT ELEVATION  
A3.1 SCALE: 1/4" = 1'-0"



4 LEFT ELEVATION  
A3.1 SCALE: 1/4" = 1'-0"



2 RIGHT ELEVATION  
A3.1 SCALE: 1/4" = 1'-0"

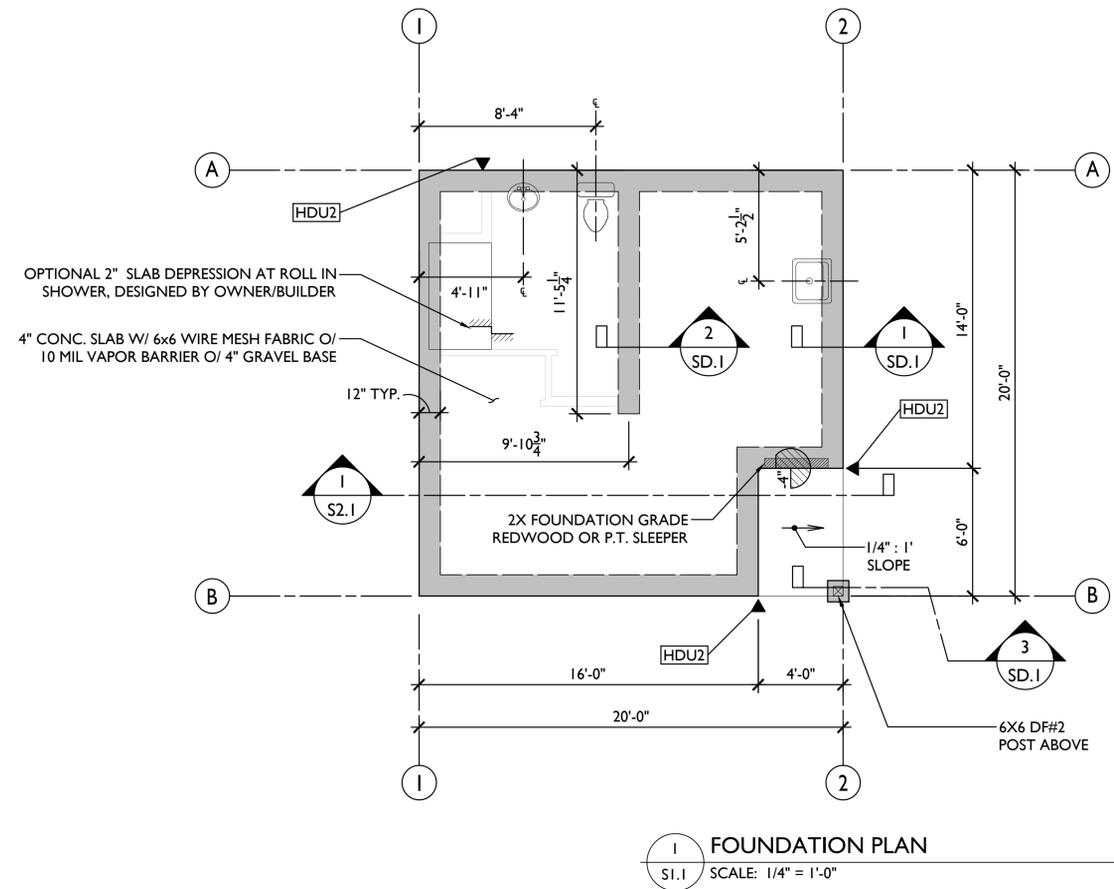
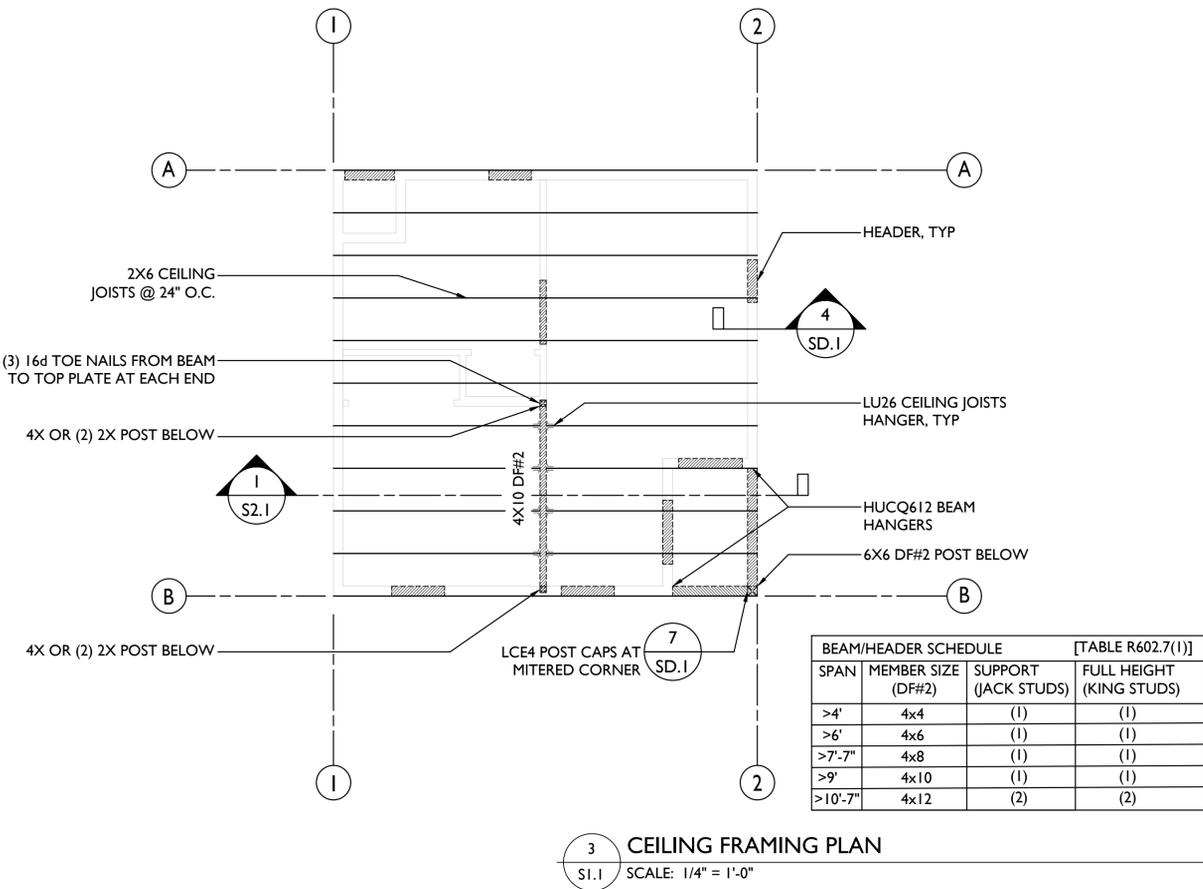
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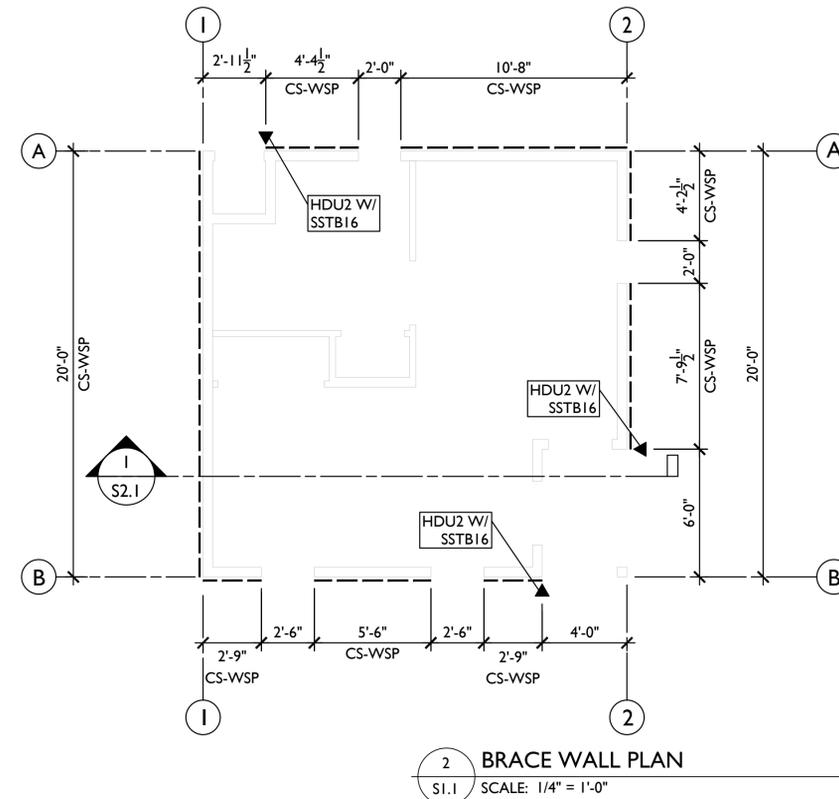
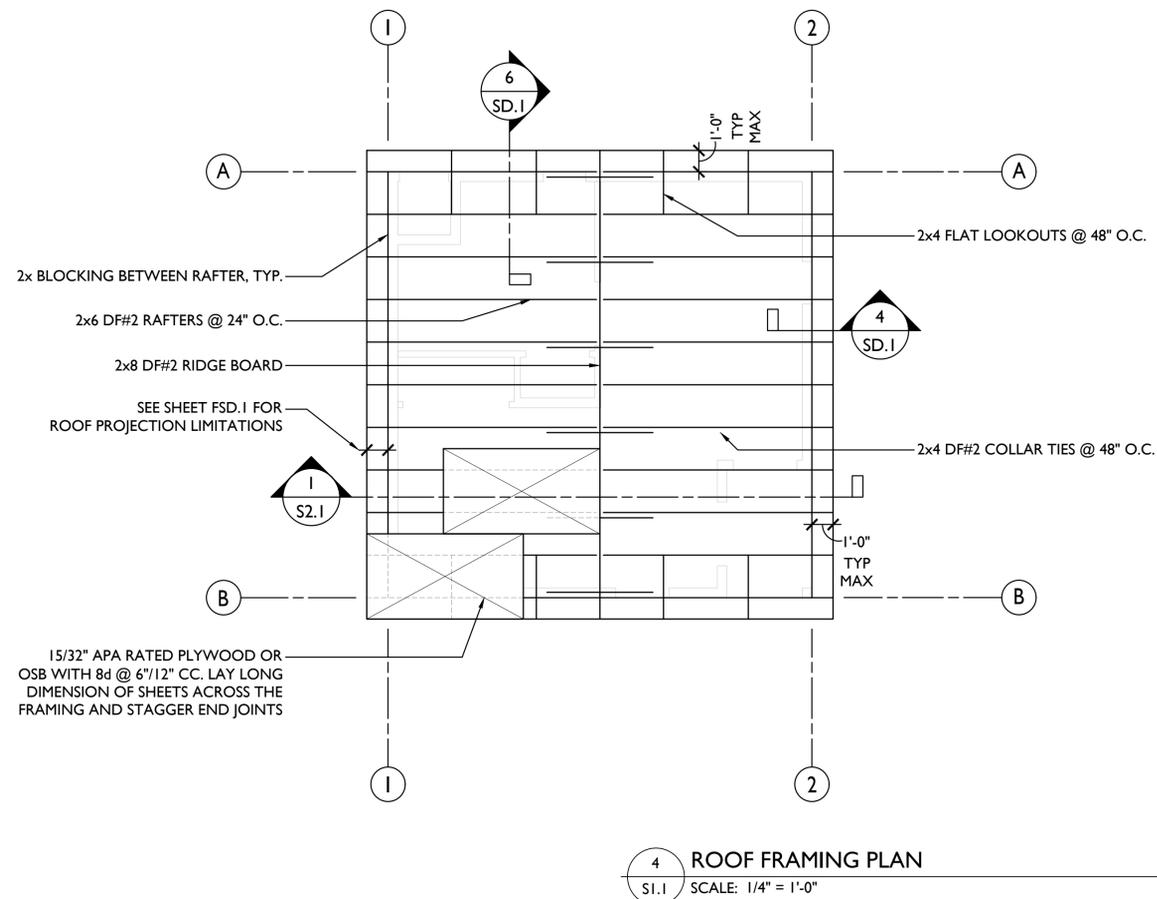
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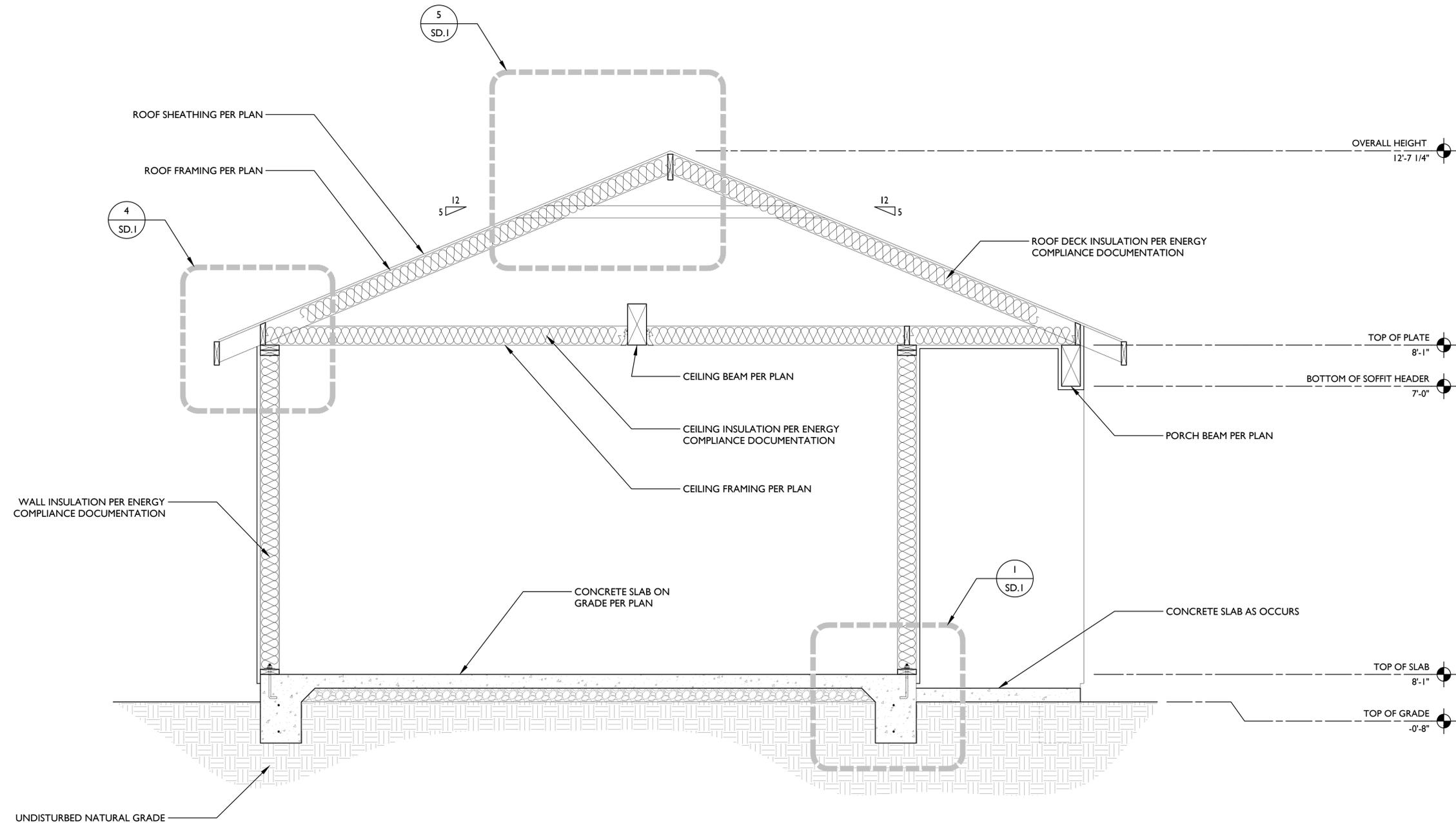


HOLDOWN SCHEDULE					
SYMBOL	HOLDOWN ID	CAPACITY (LBS)	MINIMUM FRAMING MEMBER	ANCHOR BOLT	EMBEDMENT
▼	HDU2*	1,810	DBL 2x	SSTB16	12-5/8"

\* OTHER LISTED DEVICE WITH MIN. CAPACITY OF 1,800 LB MAY BE UTILIZED

BRACE WALL SCHEDULE			
METHOD	MINIMUM PANEL THICKNESS	NAILING	
		EDGE	FIELD
CS-WSP (CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL)	3/8" OSB	8d @ 6" O.C.	8d @ 12" O.C.





20x20 STUDIO PLAN  
367 SQ. FT.

STRUCTURAL SECTION

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**S2.1**

**1** STRUCTURAL SECTION  
S2.1 SCALE: 3/4" = 1'-0"

TABLE R602.3(1) FASTENING SCHEDULE

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>	
		Roof	SPACING AND LOCATION
1	Blocking between ceiling joists, rafters or trusses to top plate or other framing below	4-8d box (2 1/2" x 0.113"); or	Toe nail
		3-8d common (2 1/2" x 0.131"); or	
		3-10d box (3" x 0.128"); or	
		3-3" x 0.131" nails	
2	Blocking between rafters or truss not at the wall top plates, to rafter or truss	2-8d common (2 1/2" x 0.131"); or	Each end toe nail
		2-3" x 0.131" nails	
		2-16d common (3 1/2" x 0.162"); or	
3	Flat blocking to truss and web filler	3-3" x 0.131" nails	End nail
		16d common (3 1/2" x 0.162"); or	
		3" x 0.131" nails	
4	Ceiling joists to top plate	1" x 0.131" nails	6" o.c. face nail
		4-8d box (2 1/2" x 0.113"); or	
		3-8d common (2 1/2" x 0.131"); or	
5	Ceiling joist not attached to parallel rafter, laps over partitions [see Section R802.5.2 and Table R802.5.2(1)]	3-3" x 0.131" nails	Face nail
		4-10d box (3" x 0.128"); or	
		3-16d common (3 1/2" x 0.162"); or	
6	Ceiling joist attached to parallel rafter (heel joint) [see Section R802.5.2 and Table R802.5.2(1)]	4-3" x 0.131" nails	Face nail
		4-10d box (3" x 0.128"); or	
		4-16d common (3 1/2" x 0.162"); or	
7	Collar tie to rafter, face nail	3-10d common (3" x 0.148"); or	Face nail each rafter
		4-3" x 0.131" nails	
		3-16d box (3 1/2" x 0.162"); or	
8	Rafter or roof truss to plate	3-10d common (3" x 0.148"); or	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss <sup>d</sup>
		4-10d box (3" x 0.128"); or	
		4-3" x 0.131" nails	

7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d box (3 1/2" x 0.135"); or	Toe nail
		3-10d common (3" x 0.148"); or	
		4-10d box (3" x 0.128"); or	
8	Stud to stud (not at braced wall panels)	3-16d box (3 1/2" x 0.135"); or	End nail
		2-16d common (3 1/2" x 0.162"); or	
		3-10d box (3" x 0.128"); or	
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" x 0.162")	24" o.c. face nail
		10d box (3" x 0.128"); or	
		3" x 0.131" nails	
10	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" x 0.162")	16" o.c. face nail
		16d common (3 1/2" x 0.162")	
		16d box (3 1/2" x 0.135"); or	
11	Built-up header (2" to 2" header with 1/2" spacer)	5-8d box (2 1/2" x 0.113"); or	12" o.c. each edge face nail
		3" x 0.131" nails	
		16d common (3 1/2" x 0.162")	
12	Continuous header to stud	4-8d common (2 1/2" x 0.131"); or	Toe nail
		4-10d box (3" x 0.128"); or	
		4-16d common (3 1/2" x 0.162"); or	
13	Adjacent full-height stud to end of header	3-16d common (3 1/2" x 0.162"); or	End nail
		4-10d box (3" x 0.128"); or	
		4-3" x 0.131" nails	
14	Top plate to top plate	16d common (3 1/2" x 0.162")	16" o.c. face nail
		10d box (3" x 0.128"); or	
		3" x 0.131" nails	
15	Double top plate splice	12-16d box (3 1/2" x 0.135"); or	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
		12-10d box (3" x 0.128"); or	
		12-3" x 0.131" nails	
16	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2" x 0.162")	16" o.c. face nail
		16d box (3 1/2" x 0.135"); or	
		3" x 0.131" nails	

16	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panels)	3-16d box (3 1/2" x 0.135"); or	16" o.c. face nail
		2-16d common (3 1/2" x 0.162"); or	
		4-3" x 0.131" nails	
17	Top or bottom plate to stud	4-8d box (2 1/2" x 0.113"); or	Toe nail
		3-16d box (3 1/2" x 0.135"); or	
		4-8d common (2 1/2" x 0.131"); or	
18	Top or bottom plate to stud	4-10d box (3" x 0.128"); or	End nail
		4-3" x 0.131" nails	
		3-16d box (3 1/2" x 0.135"); or	
19	Top plates, laps at corners and intersections	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-3" x 0.131" nails	
		3-10d box (3" x 0.128"); or	
20	1" brace to each stud and plate	2-8d common (2 1/2" x 0.131"); or	Face nail
		2-10d box (3" x 0.128"); or	
		2-8d common (2 1/2" x 0.131"); or	
21	1" x 6" sheathing to each bearing	2-8d common (2 1/2" x 0.131"); or	Face nail
		2-10d box (3" x 0.128"); or	
		2-8d common (2 1/2" x 0.131"); or	
22	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
23	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
24	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
25	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
26	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
27	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	
28	1" x 6" sheathing to each bearing	2-10d box (3" x 0.128"); or	Face nail
		2-8d common (2 1/2" x 0.131"); or	
		2-16d common (3 1/2" x 0.162"); or	

29	Ledge strip supporting joists or rafters	Wider than 1" x 8"	Toe nail
		4-8d box (2 1/2" x 0.113"); or	
		3-8d common (2 1/2" x 0.131"); or	
30	Bridging or blocking to joist, rafter or truss	3-10d box (3" x 0.128"); or	Toe nail
		4-8d box (2 1/2" x 0.113"); or	
		3-8d common (2 1/2" x 0.131"); or	
31	Blocking between rafters or truss not at the wall top plates, to rafter or truss	4-8d box (2 1/2" x 0.113"); or	Toe nail
		3-8d common (2 1/2" x 0.131"); or	
		3-10d box (3" x 0.128"); or	
32	Blocking between rafters or truss not at the wall top plates, to rafter or truss	4-8d box (2 1/2" x 0.113"); or	Toe nail
		3-8d common (2 1/2" x 0.131"); or	
		3-10d box (3" x 0.128"); or	
33	Flat blocking to truss and web filler	4-8d box (2 1/2" x 0.113"); or	End nail
		3-8d common (2 1/2" x 0.131"); or	
		3" x 0.131" nails	
34	Ceiling joists to top plate	1" x 0.131" nails	6" o.c. toe nail
		4-8d box (2 1/2" x 0.113"); or	
		3-8d common (2 1/2" x 0.131"); or	
35	Ceiling joist not attached to parallel rafter, laps over partitions [see Section R802.5.2 and Table R802.5.2(1)]	3" x 0.131" nails	4" o.c. toe nail
		8d box (2 1/2" x 0.113")	
		8d common (2 1/2" x 0.131"); or	
36	Ceiling joist attached to parallel rafter (heel joint) [see Section R802.5.2 and Table R802.5.2(1)]	10d box (3" x 0.128"); or	6" o.c. toe nail
		3" x 0.131" nails	
		3-8d box (2 1/2" x 0.113"); or	
37	Collar tie to rafter, face nail	3" x 0.131" nails	Face nail
		3-8d common (2 1/2" x 0.131"); or	
		3-10d box (3" x 0.128"); or	
38	Rafter or roof truss to plate	2-8d common (2 1/2" x 0.131"); or	Face nail
		2-10d box (3" x 0.128"); or	
		2-8d common (2 1/2" x 0.131"); or	
39	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
40	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
41	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
42	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
43	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
44	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
45	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
46	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
47	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
48	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
49	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
50	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
51	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
52	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
53	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
54	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
55	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
56	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
57	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
58	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
59	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
60	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
61	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
62	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
63	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
64	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
65	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
66	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
67	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
68	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
69	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
70	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
71	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
72	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
73	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
74	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
75	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
76	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
77	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
78	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
79	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
80	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-16d box (3 1/2" x 0.135"); or	
		2-16d common (3 1/2" x 0.162"); or	
81	Collar tie to rafter, face nail	2-16d common (3 1/2" x 0.162"); or	Face nail
		3-1	

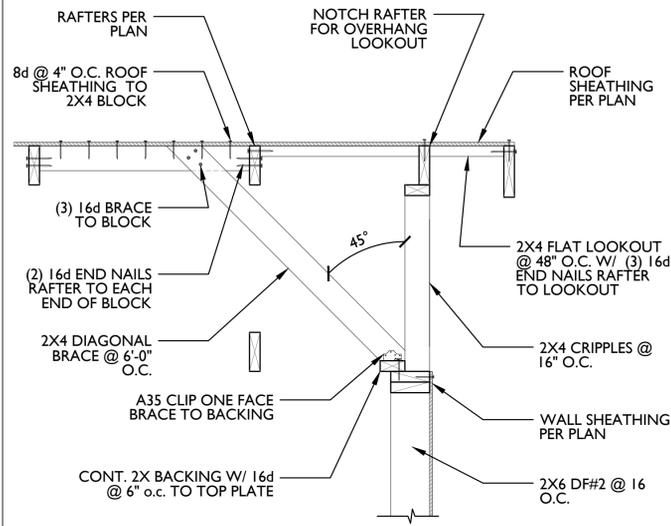
Revisions:

△	--
△	--
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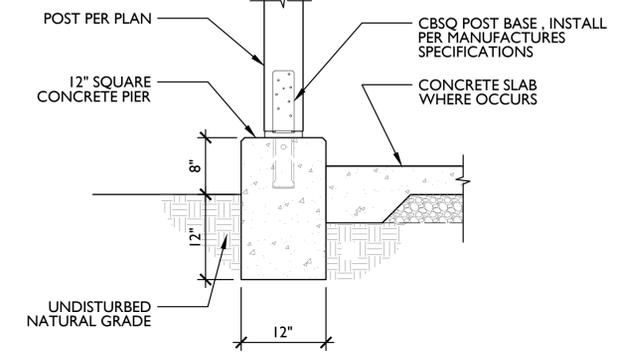
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Checked By: MB  
Scale: AS NOTED  
Date: 01/04/2023

Job No.

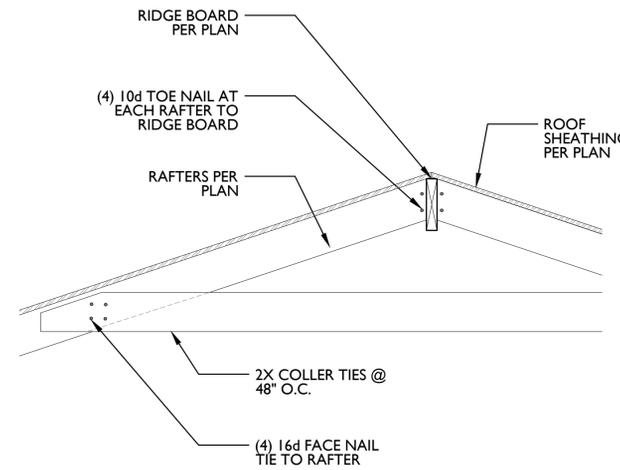
**SD.1**



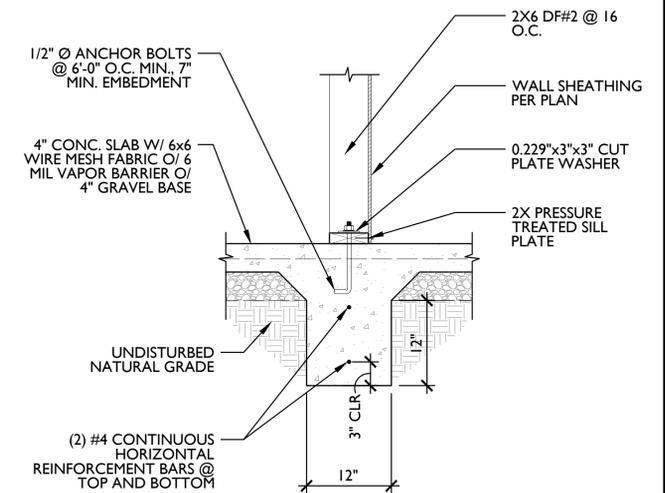
**6 TYPICAL GABLE END**  
SD.1 SCALE: 1" = 1'-0"



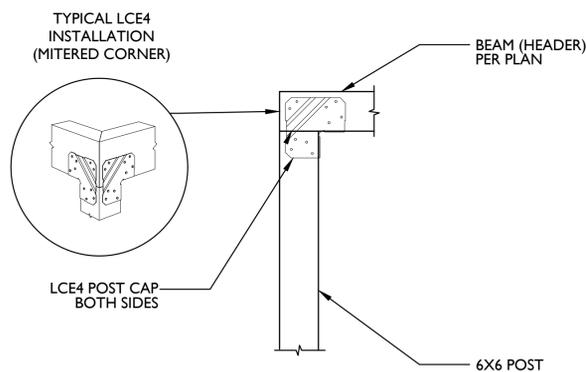
**3 PORCH POST FOOTING**  
SD.1 SCALE: SD.1



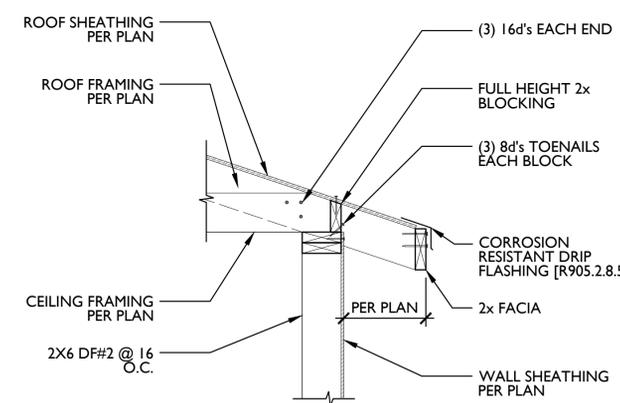
**5 TYPICAL RIDGE**  
SD.1 SCALE: 1" = 1'-0"



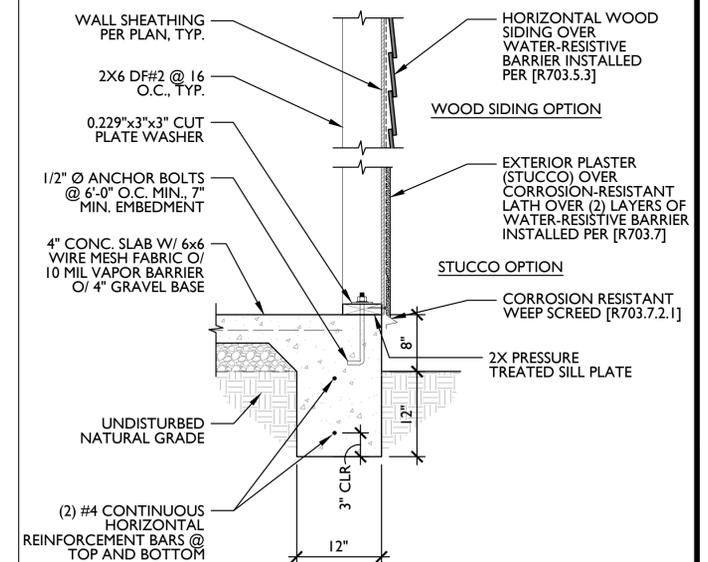
**2 INTERIOR FOOTING DETAIL**  
SD.1 SCALE: 1" = 1'-0"



**7 PORCH POST BEAM CONNECTION**  
SD.1 SCALE: 1" = 1'-0"



**4 TYPICAL EAVE DETAIL**  
SD.1 SCALE: 1" = 1'-0"



**1 PERIMETER FOOTING DETAIL**  
SD.1 SCALE: 1" = 1'-0"



2022 Single-Family Residential Mandatory Requirements Summary

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

Table with 2 columns: Code reference and Description. Includes sections for Building Envelope (Air Leakage, Labeling, Field Fabricated exterior doors and fenestration products, etc.), Insulation Requirements for Heated Slab Floors, Radiant Barrier, Roof Deck, Ceiling and Rafter Roof Insulation, etc.

Table with 2 columns: Code reference and Description. Includes sections for Fireplaces, Decorative Gas Appliances, and Gas Log; Space Conditioning, Water Heating, and Plumbing System; and Lighting.

Table with 2 columns: Code reference and Description. Includes sections for Energy Storage System (ESS) Ready, Heat Pump Space Heater Ready, Electric Cooktop Ready, Electric Clothes Dryer Ready, and Solar Readiness.

5/6/22



2022 Single-Family Residential Mandatory Requirements Summary

Table with 2 columns: Code reference and Description. Includes sections for Pilot Lights, Building Cooling and Heating Loads, Clearances, Liquid Line Drier, Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation, etc.

Table with 2 columns: Code reference and Description. Includes sections for Ducts and Fans; Lighting Controls and Components; Luminaire Efficacy; Recessed Downlight Luminaires in Ceilings; Light Sources in Enclosed or Recessed Luminaires; and Blank Electrical Boxes.

5/6/22



2022 Single-Family Residential Mandatory Requirements Summary

Table with 2 columns: Code reference and Description. Includes section for Space Conditioning System Airflow Rate and Fan Efficacy.

Table with 2 columns: Code reference and Description. Includes sections for Ventilation and Indoor Air Quality; Pool and Spa Systems and Equipment; and Lighting.

5/6/22



2022 Single-Family Residential Mandatory Requirements Summary

Table with 2 columns: Code reference and Description. Includes sections for Energy Storage System (ESS) Ready, Heat Pump Space Heater Ready, Electric Cooktop Ready, Electric Clothes Dryer Ready, and Solar Readiness.

\*Exceptions may apply.

5/6/22



2022 Single-Family Residential Mandatory Requirements Summary

Table with 2 columns: Code reference and Description. Includes sections for Screw based luminaires, Light Sources in Enclosed or Recessed Luminaires, Light Sources in Drawers, Cabinets, and Linen Closets, Interior Switches and Controls, Accessible Controls, Multiple Controls, Mandatory Requirements, Energy Management Control Systems, Automatic Shutoff Controls, Dimmers, Residential Outdoor Lighting, Internally illuminated address signs, Residential Garages for Eight or More Vehicles, and Solar Readiness.

5/6/22

City of SACRAMENTO Community Development

20x20 STUDIO PLAN 367 SQ. FT. ENERGY COMPLIANCE DOCUMENTATION

Table with 2 columns: Revisions and Description. Includes revision symbols and dates.

Table with 2 columns: File information and Description. Includes fields for Drawn By, Checked By, Scale, and Date.

Job No.

EN.1

**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 1 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

GENERAL INFORMATION			
01	Project Name	ADU (Studio)	
02	Run Title	Title 24 Analysis	
03	Project Location	-	
04	City	Sacramento	05 Standards Version
06	Zip code	95811	07 Software Version
08	Climate Zone	12	09 Front Orientation (deg/ Cardinal)
10	Building Type	Single family	11 Number of Dwelling Units
12	Project Scope	Newly Constructed	13 Number of Bedrooms
14	Addition Cond. Floor Area (ft <sup>2</sup> )	0	15 Number of Stories
16	Existing Cond. Floor Area (ft <sup>2</sup> )	n/a	17 Fenestration Average U-factor
18	Total Cond. Floor Area (ft <sup>2</sup> )	367	19 Glazing Percentage (%)
20	ADU Bedroom Count	n/a	

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

Registration Number: 423-P010000544A-000-000-0000000-0000 Registration Date/Time: 01/03/2023 09:51 HERS Provider: CHEERS  
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 CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Report Generated: 2023-01-03 10:00:42  
 Schema Version: rev 20220901

**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 2 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)
Standard Design	37.2	30.6	32			
Proposed Design						
North Facing	35.8	29.7	31.4	1.4	0.9	0.6
East Facing	35.8	29.1	31.1	1.4	1.5	0.9
South Facing	35.5	28.5	30.7	1.7	2.1	1.3
West Facing	35.7	29.7	31.5	1.5	0.9	0.5
RESULT: PASS						
<sup>1</sup> Efficiency EDR includes improvements like a better building envelope and more efficient equipment <sup>2</sup> Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries <sup>3</sup> Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> <li>Standard Design PV Capacity: 1.70 kWdc</li> <li>Proposed PV Capacity Scaling: North (1.70 kWdc) East (1.70 kWdc) South (1.70 kWdc) West (1.70 kWdc)</li> </ul> PV System not required to be provided per 2022 California Energy Code, Section 150.1(c)I40, EXCEPTION 2 < 1.8kWdc. Photo-Voltaic (PV) demand has been generated for the benefit of building owners who chose to voluntarily install PV equipment. A separate building permit would be required for this.						

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**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 3 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (KTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (KTDV/ft <sup>2</sup> -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	3.11	21.18	3.09	23.64	0.02	-2.46
Space Cooling	2.07	48.87	2.31	57.61	-0.24	-8.74
IAQ Ventilation	0.54	5.82	0.54	5.82	0	0
Water Heating	5.98	62.64	4.48	46.99	1.5	15.65
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	11.7	138.51	10.42	134.06	1.28	4.45
Space Heating	3.11	21.18	3.16	23.99	-0.05	-2.81
Space Cooling	2.07	48.87	2.21	54.74	-0.14	-5.87
IAQ Ventilation	0.54	5.82	0.54	5.82	0	0
Water Heating	5.98	62.64	4.48	46.99	1.5	15.65
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	11.7	138.51	10.39	131.54	1.31	6.97

Registration Number: 423-P010000544A-000-000-0000000-0000 Registration Date/Time: 01/03/2023 09:51 HERS Provider: CHEERS  
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 Schema Version: rev 20220901

**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 4 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (KTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (KTDV/ft <sup>2</sup> -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	3.11	21.18	2.95	22.05	0.16	-0.87
Space Cooling	2.07	48.87	2.2	53.87	-0.13	-5
IAQ Ventilation	0.54	5.82	0.54	5.82	0	0
Water Heating	5.98	62.64	4.48	46.99	1.5	15.65
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	11.7	138.51	10.17	128.73	1.53	9.78
Space Heating	3.11	21.18	2.91	21.93	0.2	-0.75
Space Cooling	2.07	48.87	2.41	59.64	-0.34	-10.77
IAQ Ventilation	0.54	5.82	0.54	5.82	0	0
Water Heating	5.98	62.64	4.48	46.99	1.5	15.65
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	11.7	138.51	10.34	134.38	1.36	4.13

Registration Number: 423-P010000544A-000-000-0000000-0000 Registration Date/Time: 01/03/2023 09:51 HERS Provider: CHEERS  
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**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 5 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft <sup>2</sup> -yr)	Proposed Design (kBtu/ft <sup>2</sup> -yr)	Compliance Margin (kBtu/ft <sup>2</sup> -yr)	Margin Percentage
North Facing				
Gross EUI <sup>1</sup>	45.3	43.55	1.75	3.86
Net EUI <sup>2</sup>	20.54	18.79	1.75	8.52
East Facing				
Gross EUI <sup>1</sup>	45.3	43.57	1.73	3.82
Net EUI <sup>2</sup>	20.54	18.81	1.73	8.42
South Facing				
Gross EUI <sup>1</sup>	45.3	43.4	1.9	4.19
Net EUI <sup>2</sup>	20.54	18.64	1.9	9.25
West Facing				
Gross EUI <sup>1</sup>	45.3	43.68	1.62	3.58
Net EUI <sup>2</sup>	20.54	18.92	1.62	7.89
Notes				
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.				
2. Net EUI is Energy Use Total (including PV) / Total Building Area.				

Registration Number: 423-P010000544A-000-000-0000000-0000 Registration Date/Time: 01/03/2023 09:51 HERS Provider: CHEERS  
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**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 6 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
1.7	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
<ul style="list-style-type: none"> <li>PV System: 1.7 kWdc (See note on page 3 of this report)</li> <li>Cool roof</li> <li>Insulation below roof deck</li> <li>Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed</li> </ul>

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
<ul style="list-style-type: none"> <li>Quality insulation installation (QII)</li> <li>Indoor air quality ventilation</li> <li>Kitchen range hood</li> <li>Minimum Airflow</li> <li>Verified Refrigerant Charge</li> <li>Fan Efficacy Watts/CFM</li> <li>Verified HSPF2</li> <li>Verified heat pump rated heating capacity</li> <li>Duct leakage testing</li> </ul>

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft <sup>2</sup> )	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
ADU (Studio)	367	1	1	1	0	1

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File:  
 Drawn By: JCE  
 Checked By: MB  
 Scale: AS NOTED  
 Date: 01/04/2023

Job No.

**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

Project Name: ADU (Studio) Calculation Date/Time: 2023-01-03T09:59:55-08:00 (Page 7 of 12)  
 Calculation Description: Title 24 Analysis Input File Name: 26650-sacramento-ADU (studio).ribd22x

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft <sup>2</sup> )	Avg. Ceiling Height	Water Heating System 1	Status
Zone 1	Conditioned	Heat Pump1	367	8.1	DHW Sys 1	New

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft <sup>2</sup> )	Window and Door Area (ft <sup>2</sup> )	Tilt (deg)
Front Walls	Zone 1	R-21 Wall	0	Front	161.6	42.5	90
Left Walls	Zone 1	R-21 Wall	90	Left	161.6	0	90
Rear Walls	Zone 1	R-21 Wall	180	Back	161.6	6	90
Right Walls	Zone 1	R-21 Wall	270	Right	161.6	21	90
Ceiling/Roof - HPVA	Zone 1	R-30 Ceiling + R-4 Roof	n/a	n/a	367	n/a	n/a

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.2	0.75	No	Yes

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft <sup>2</sup> )	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Front Glazing	Window	Front Walls	Front	0			1	22.5	0.3	NFRC	0.23	NFRC	Bug Screen
Rear Glazing	Window	Rear Walls	Back	180			1	6	0.3	NFRC	0.23	NFRC	Bug Screen
Right Glazing	Window	Right Walls	Right	270			1	21	0.3	NFRC	0.23	NFRC	Bug Screen

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01	02	03	04
Name	Side of Building	Area (ft <sup>2</sup> )	U-factor
Door	Front Walls	20	0.2

01	02	03	04	05	06	07	08
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	367	80	none	0	80%	No

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.066	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: Wood Siding/Sheathing/Decking
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-4	None / None	0.184	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/Sheathing/Decking Cavity / Frame: R-4 / 2x4
R-30 Ceiling + R-4 Roof	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O. C.	R-30	None / None	0.032	Over Ceiling Joists: R-15.7 Insul. Cavity / Frame: R-14.3 / 2x6 Inside Finish: Gypsum Board

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

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

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	40	Rheem	RheemPROPH40T2R H37515	Outside	Outside	Outside

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

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01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Heat Pump1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating			Cooling			Zonally Controlled	Compressor Type	HERS Verification	
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2				EER / EER / CEER
Heat Pump System 1	Central split HP	1	HSPF2	8	12000	8000	EER2SEER2	14	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	Yes	Yes

01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

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

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	26	0.35	Exhaust	No	n/a	No	Yes	

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Michael Kunz	Documentation Author Signature: <i>Michael Kunz</i>
Company: Energy Performance Services	Signature Date: 01/03/2023
Address: P.O. Box 587	CEA/HERS Certification Identification (if applicable): 888-828-9488
City/State/Zip: Blue Lake, CA 95525	Phone: 888-828-9488
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

Digitally signed by Corbal Home Energy Efficiency Rating System Services, Inc. (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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20x20 STUDIO PLAN  
367 SQ. FT.  
ENERGY COMPLIANCE DOCUMENTATION

Revisions:
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File:  
 Drawn By: JCE  
 Checked By: MB  
 Scale: AS NOTED  
 Date: 01/04/2023

Job No.

EN.3

# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

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

Y	NA	RESPON PARTY
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>CHAPTER 3 GREEN BUILDING</b> <b>SECTION 301 GENERAL</b> <b>301.1 SCOPE.</b> Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. <b>301.1.1 Additions and alterations. [HCD]</b> The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration. The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application. <b>Note:</b> Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section. <b>Note:</b> On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD]</b> The provisions of individual sections of CALGreen may apply to either low-rise residential buildings or high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SECTION 302 MIXED OCCUPANCY BUILDINGS</b> <b>302.1 MIXED OCCUPANCY BUILDINGS.</b> In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy. Exceptions: 1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable. 2. [HCD] For purposes of CALGreen, live/work units, complying with Section 419 of the California Building Code, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DIVISION 4.1 PLANNING AND DESIGN</b> <b>ABBREVIATION DEFINITIONS:</b> HCD Department of Housing and Community Development BSC California Building Standards Commission DSA-SS Division of the State Architect, Structural Safety OSHPD Office of Statewide Health Planning and Development LR Low Rise HR High Rise AA Additions and Alterations N New		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>CHAPTER 4 RESIDENTIAL MANDATORY MEASURES</b> <b>SECTION 4.102 DEFINITIONS</b> <b>4.102.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference) <b>FRENCH DRAIN.</b> A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar porous material used to collect or channel drainage or runoff water. <b>WATTLES.</b> Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls. <b>4.106 SITE DEVELOPMENT</b> <b>4.106.1 GENERAL.</b> Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section. <b>4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION.</b> Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site. 1. Retention basins of sufficient size shall be utilized to retain storm water on the site. 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency. 3. Compliance with a lawfully enacted storm water management ordinance. <b>Note:</b> Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil. (Website: <a href="https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html">https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html</a> ) <b>4.106.3 GRADING AND PAVING.</b> Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following: 1. Swales 2. Water collection and disposal systems 3. French drains 4. Water retention gardens 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. <b>Exception:</b> Additions and alterations not altering the drainage path. <b>4.106.4 Electric vehicle (EV) charging for new construction.</b> New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. <b>Exceptions:</b> 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions: 1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power. 1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project. 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities. <b>4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages.</b> For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or 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. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit (B/C) reserved for permit installation of a branch circuit overcurrent protective device. <b>Exception:</b> A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code. <b>4.106.4.1.1 Identification.</b> The 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".		

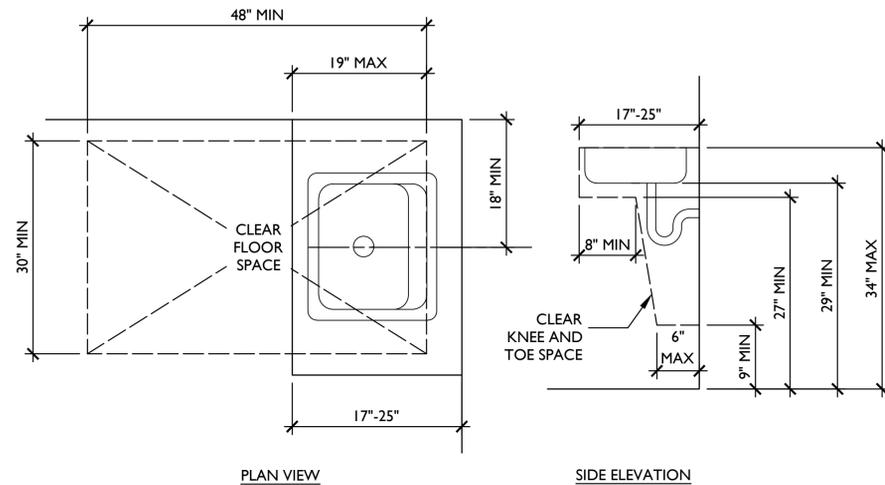
Y	NA	RESPON PARTY																		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		
<b>4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.</b> When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details. <b>4.106.4.2.1 Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.</b> The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section. <b>1.EV Capable.</b> Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. <b>Exceptions:</b> 1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces. 2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed. <b>Notes:</b> a. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use. <b>2.EV Ready.</b> Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit. <b>Exception:</b> Areas of parking facilities served by parking lifts. <b>4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.</b> The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section. <b>1.EV Capable.</b> Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. <b>Exception:</b> When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required. <b>Notes:</b> a. Construction documents shall show locations of future EV spaces. b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use. <b>2.EV Ready.</b> Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit. <b>Exception:</b> Areas of parking facilities served by parking lifts. <b>3.EV Chargers.</b> Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests. When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces. <b>4.106.4.2.2.1 Electric vehicle charging stations (EVCS).</b> Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1. <b>Exception:</b> Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements. <b>4.106.4.2.2.1.1 Location.</b> EVCS shall comply with at least one of the following options: 1. The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space. 2. The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building. <b>Exception:</b> Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3. <b>4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.</b> The charging spaces shall be designed to comply with the following: 1. The minimum length of each EV space shall be 18 feet (5486 mm). 2. The minimum width of each EV space shall be 9 feet (2743 mm). 3. One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm). a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. <b>4.106.4.2.2.1.3 Accessible EV spaces.</b> In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A. <b>4.106.4.2.3 EV space requirements.</b> 1. Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit (B/C) reserved for permit installation of a branch circuit overcurrent protective device. <b>Exception:</b> A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code. 2. Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.																				
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<b>4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.</b> When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. <b>Notes:</b> 1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.																				
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<b>DIVISION 4.2 ENERGY EFFICIENCY</b> <b>4.201 GENERAL</b> <b>4.201.1 SCOPE.</b> For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.																				
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<b>DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION</b> <b>4.303 INDOOR WATER USE</b> <b>4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS.</b> Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4. <b>Note:</b> All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates. <b>4.303.1.1 Water Closets.</b> The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets. <b>Note:</b> The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. <b>4.303.1.2 Urinals.</b> The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. <b>4.303.1.3 Showerheads.</b> <b>4.303.1.3.1 Single Showerhead.</b> Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads. <b>4.303.1.3.2 Multiple showerheads serving one shower.</b> When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time. <b>Note:</b> A hand-held shower shall be considered a showerhead. <b>4.303.1.4 Faucets.</b> <b>4.303.1.4.1 Residential Lavatory Faucets.</b> The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi. <b>4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas.</b> The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi. <b>4.303.1.4.3 Metering Faucets.</b> Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle. <b>4.303.1.4.4 Kitchen Faucets.</b> The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a minimum flow rate of 1.8 gallons per minute at 60 psi. <b>Note:</b> Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. <b>4.303.1.4.5 Pre-rinse spray valves.</b> When installed, shall meet the requirements in the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff. <b>FOR REFERENCE ONLY:</b> The following table and code section have been reprinted from the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).																				
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<b>4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.</b> Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the California Plumbing Code. <b>4.303.3 Standards for plumbing fixtures and fittings.</b> Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code.																				
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<b>4.304 OUTDOOR WATER USE</b> <b>4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS.</b> 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. <b>NOTES:</b> 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: <a href="https://www.water.ca.gov/">https://www.water.ca.gov/</a>		
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<b>DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b> <b>4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE</b> <b>4.406.1 RODENT PROOFING.</b> Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency. <b>4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</b> <b>4.408.1 CONSTRUCTION WASTE MANAGEMENT.</b> Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous 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. <b>Exceptions:</b> 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local 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. <b>4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN.</b> Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency. 1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale. 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream). 3. Identify diversion facilities where the construction and demolition waste material collected will be taken. 4. Identify construction methods employed to reduce the amount of construction and demolition waste generated. 5. Specify that the by weight or volume, but not by both. <b>4.408.3 WASTE MANAGEMENT COMPANY.</b> Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1. <b>Note:</b> The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company. <b>4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR].</b> Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1 <b>4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE.</b> Projects that generate a total combined weight of construction and demolition waste disposed of 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 <b>4.408.5 DOCUMENTATION.</b> Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4. <b>Notes:</b> 1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at <a href="http://www.hcd.ca.gov/CALGreen.html">www.hcd.ca.gov/CALGreen.html</a> may be used to assist in documenting compliance with this section. 2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).		
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<b>4.410 BUILDING MAINTENANCE AND OPERATION</b> <b>4.410.1 OPERATION AND MAINTENANCE MANUAL.</b> At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building: 1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure. 2. Operation and maintenance instructions for the following: a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment. b. Roof and yard drainage, including gutters and downspouts. c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems. e. Water reuse systems. 3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations. 4. Public transportation and/or carpool options available in the area. 5. Educational material on the positive impacts of an interior relative humidity between 30–60 percent and what methods an occupant may use to maintain the relative humidity level in that range. 6. Information about water-conserving landscape and irrigation design and controllers which conserve water. 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation. 8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc. 9. Information about state solar energy and incentive programs available. 10. A copy of all special inspections verifications required by the enforcing agency or this code. 11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures. 12. Information and/or drawings identifying the location of grab bar reinforcements.		
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<b>4.410.2 RECYCLING BY OCCUPANTS.</b> 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 are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.		
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<b>DIVISION 4.5 ENVIRONMENTAL QUALITY</b> <b>SECTION 4.501 GENERAL</b> <b>4.501.1 Scope.</b> The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors. <b>SECTION 4.502 DEFINITIONS</b> <b>5.102.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference) <b>AGRIFIBER PRODUCTS.</b> Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements. <b>COMPOSITE WOOD PRODUCTS.</b> Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, gluelaminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1. <b>DIRECT-VENT APPLIANCE.</b> A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.		

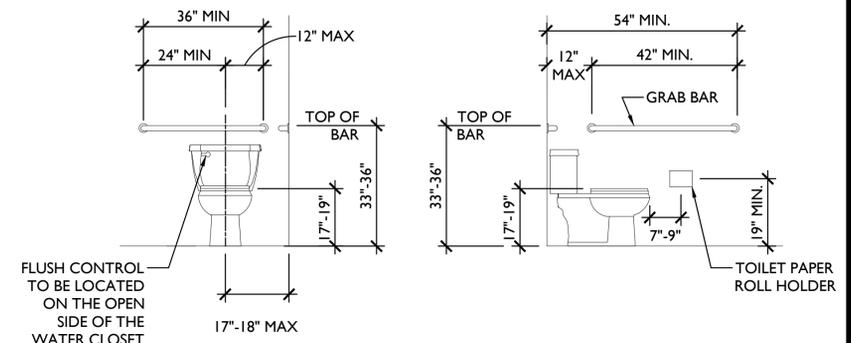


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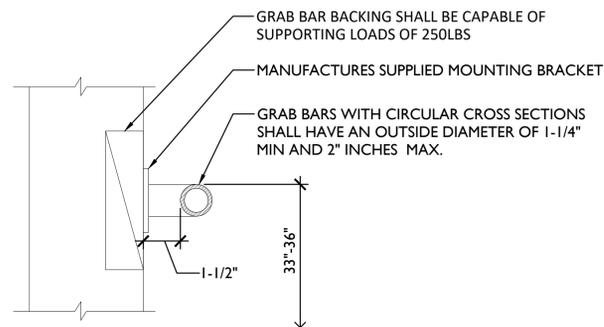
1. PROVIDE LEVER TYPE FAUCET CONTROLS FOR ACCESSIBLE LAVS.
2. PROVIDE INSULATION PADS ON ALL WATER SUPPLY & DRAIN PIPES FOR ACCESSIBLE LAVS.
3. FAUCET CONTROLS & OPERATING MECHANISMS FOR KITCHEN SINKS SHALL BE OPERABLE W/ ONE HAND & SHALL NOT REQUIRE GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE FAUCET CONTROLS & OPERATING MECHANISMS FOR KITCHEN SINKS SHALL BE NO GREATER THAN 5 LF. LEVER OPERATED, PUSH TYPE & ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.



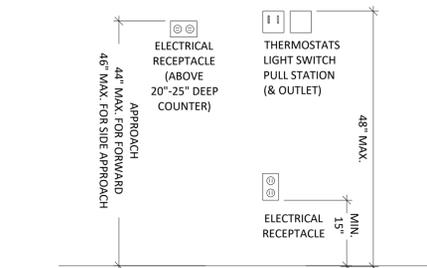
4 ACCESSIBLE CLEARANCES AT VANITY/ KITCHEN SINK  
AD.1 SCALE: NTS



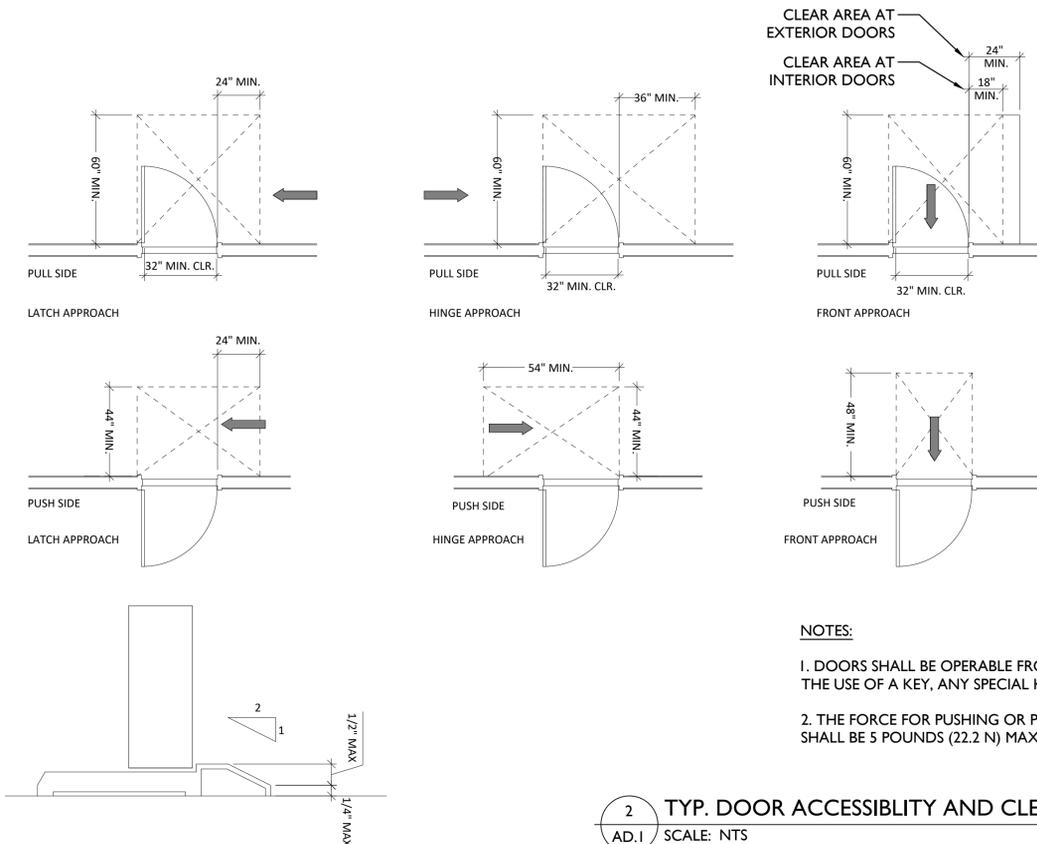
1 TYP. ACCESSIBLE TOILET CLEARANCES  
AD.1 SCALE: NTS



5 GRAB BAR MOUNTING /BLOCKING DETAIL  
AD.1 SCALE: NTS



6 ACCESSIBLE FIXTURE MOUNTING HEIGHT DETAILS  
AD.1 SCALE: NTS

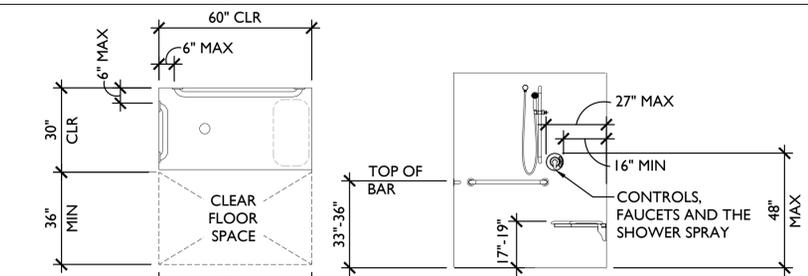


2 TYP. DOOR ACCESSIBILITY AND CLEARANCE DETAILS  
AD.1 SCALE: NTS

- NOTES:
1. DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, ANY SPECIAL KNOWLEDGE OR EFFORT.
  2. THE FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE 5 POUNDS (22.2 N) MAXIMUM.

NOTE: THESE COMMONLY UTILIZED DETAILS ARE PROVIDED ONLY FOR CONVENIENCE AND MAY BE USED OR OMITTED AT THE OWNER'S CHOICE. THE OWNER MAY ALTER DIMENSIONS PER THEIR OWN PREFERENCES, PROVIDED THEY DO NOT CONFLICT WITH OTHER NON-ACCESSIBILITY/RELATED PROVISIONS OF CALIFORNIA BUILDING STANDARD CODE.

7 ACCESSIBILITY NOTES  
AD.1 SCALE: NTS



3 ROLL IN SHOWER DETAIL  
AD.1 SCALE: NTS

Revisions:

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File:

Drawn By:	JCE
Checked By:	MB
Scale:	AS NOTED
Date:	01/04/2023

Job No.

AD.1