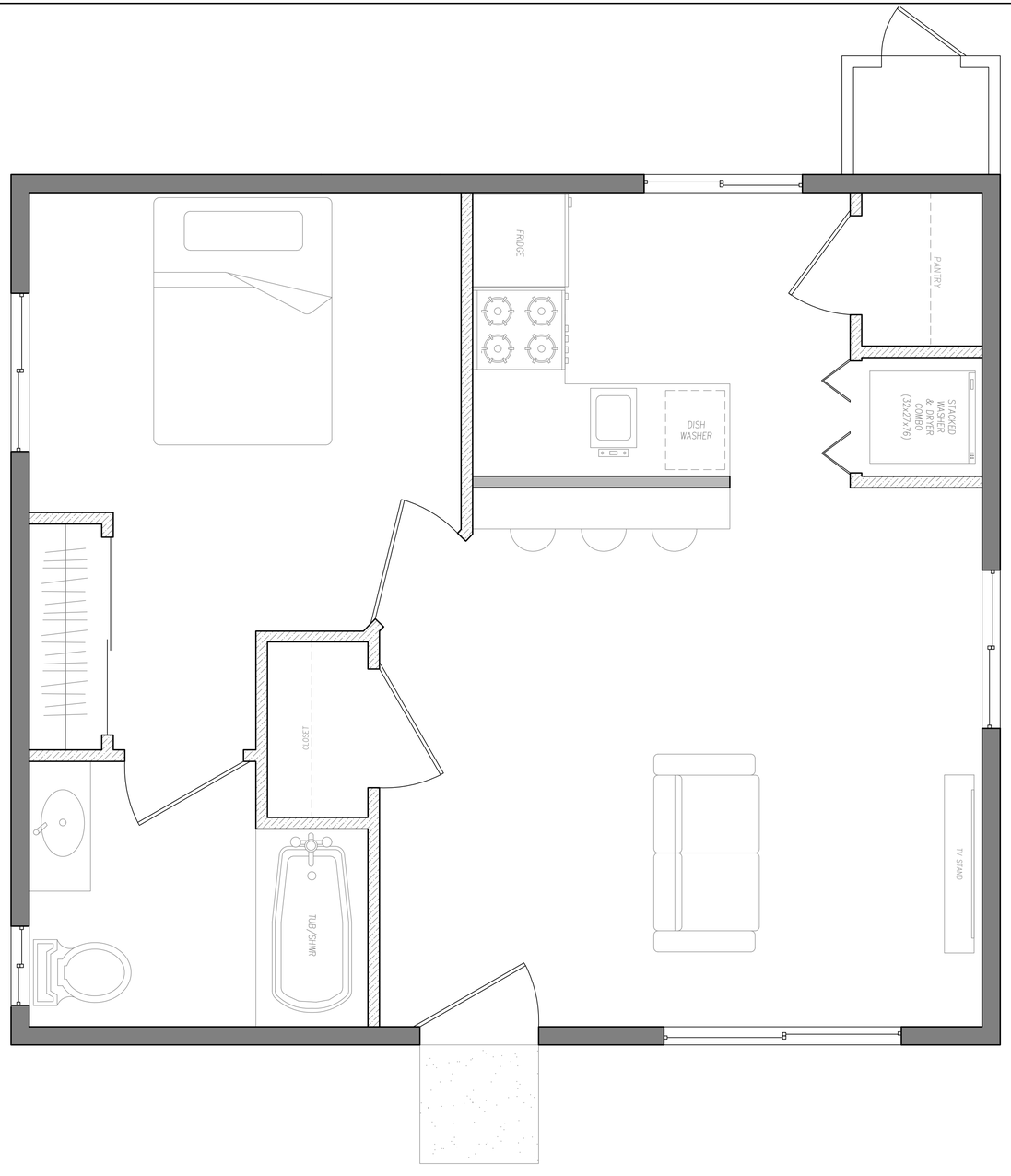
CITY OF VACAVILLE
PRE-REVIEWED
ACCESSORY DWELLING UNIT PROGRAM



550 SQ. FT.
1 BED 1 BATH
ACCESSORY DWELLING UNIT
DETACHED

SHEET INDEX	
COVER SHEETS	
C0	COVER
C1	COVER SHEET 1
C2	COVER SHEET 2
ARCHITECTURAL SHEETS	
A1	FLOOR PLAN
A2	SECTIONS
A3	ELEVATION A
A4	ELEVATION B
A5	ELEVATION C
STRUCTURAL SHEETS	
S1	FOUNDATION PLAN
S2	ROOF FRAMING PLAN
S3	DETAILS
S4	DETAILS
ELECTRICAL SHEETS	
E1	ELECTRICAL PLAN
PLUMBING SHEETS	
P1	PLUMBING PLAN
CALGREEN FORMS	
G1	CALGREEN FORM 1
G2	CALGREEN FORM 2

ELEVATION	*(CHOOSE ONE)*
A	
B	
C	

ADU INFO

OCCUPANCY TYPE	R-3
CONSTRUCTION TYPE	VB
CLIMATE ZONE	12
NUMBER OF STORIES	1
FIRE SPRINKLERS	YES/NO

ADDITIONAL REQUIREMENTS DUE AT TIME OF SUBMITTAL

TRUSS DRAWINGS AND CALCULATIONS

FIRE SPRINKLER PLAN (IF REQUIRED)

SOLAR PHOTOVOLTAIC (PV) PLAN

GEOTECHNICAL SOILS AND FOUNDATION INVESTIGATION (IF REQUIRED)

CA ENERGY CODE CERTIFICATE OF COMPLIANCE (TITLE 24)(MUST BE REGISTERED)

SPECIAL INSPECTION FORM (IF APPLICABLE)

SITE SPECIFIC PLAN (SHOWING LOCATION OF WATER, BUILDING DRAIN, BUILDING SEWER, GAS AND ELECTRICAL SERVICE LINES FROM MAIN POINT OF CONNECTION TO THE BUILDING ALONG WITH EASEMENTS, IF ANY. ALSO SHOW SHUTOFF VALVE LOCATIONS, ELECTRICAL METER, AND SUBPANEL(S)

BUILDING CODE:

2022 BUILDING STANDARDS CALIFORNIA ADMINISTRATIVE CODE, PART 1 WITH JULY 2024 SUPPLEMENT, TITLE 24 C.C.R.

2022 CALIFORNIA RESIDENTIAL CODE (CRC), PART 2.5 WITH JULY 2024 SUPPLEMENT TITLE 24 C.C.R.

2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, WITH JULY 2024 SUPPLEMENT, TITLE 24 C.C.R.

2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.

2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.

2022 CALIFORNIA ENERGY CODE AND ENERGY COMMISSION STANDARDS (CECS), PART 6, WITH JULY 2024 SUPPLEMENT, TITLE 24 C.C.R.

2022 CALIFORNIA FIRE CODE (CFC), PART 9, WITH JULY 2024 SUPPLEMENT, TITLE 24 C.C.R.

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11 WITH JULY 2024 SUPPLEMENT, TITLE 24 C.C.R.

2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12 TITLE 24 C.C.R.

VACAVILLE MUNICIPAL CODE (VMC)

VMC 15.20.273 CONSTRUCTION ADJACENT TO OPEN SPACE CONSTRUCTION REQUIREMENTS.
CONFIRM WITH THE VACAVILLE FIRE DEPARTMENT IF THIS ADU IS ADJACENT TO OPEN SPACE (YES/NO)

CONTRACTOR SHALL REFER TO THE ABOVE CITED CODES AND LOCAL REGULATIONS WHERE SPECIFIC DETAILS ARE REQUIRED BUT NOT DEPICTED IN THE APPROVED PLANS.

DISCLAIMER:
BY USING THESE STANDARD PLANS, THE USER AGREES TO RELEASE THE CITY OF VACAVILLE FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE, OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS. THE USE OF THESE PLANS DOES NOT ELIMINATE OR REDUCE THE USER'S RESPONSIBILITY TO VERIFY ANY AND ALL INFORMATION.

CITY OF VACAVILLE

REVISIONS

PROJECT TITLE: CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM
SHEET DESCRIPTION: COVER
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT: 550

DRAWING SCALE: ----

SHEET: C0

A. GENERAL

1. NOTES AND DETAILS OR THE DRAWINGS SHALL TAKE PRECEDENCE OVER THESE NOTES. THE DETAILS ON THE DRAWINGS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OTHERWISE. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, DETAILS OF A CHARACTER SIMILAR TO THOSE SHOWN SHALL BE USED, SUBJECT TO REVIEW.

B. ELECTRICAL, PLUMBING, AND MECHANICAL

1. EXTERIOR LIGHTING. AT LEAST ONE SWITCH CONTROLLED LIGHTING OUTLET SHALL BE INSTALLED TO PROVIDE ILLUMINATION ON THE EXTERIOR OF OUTDOOR ENTRANCES OR EXITS WITH GRADE LEVEL ACCESS (CEC 210.70A.2.2).
2. DETECTORS. ALL DETECTORS MUST BE HARD WIRED TO THE BUILDING'S ELECTRICAL SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE INTERCONNECTED, WITH BATTERY BACKUP (CRC R314.4)
   - 2.A. SMOKE DETECTORS. SMOKE DETECTORS ARE REQUIRED IN EACH SLEEPING ROOM, OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF SLEEPING ROOMS, AND ON EACH STORY OF A DWELLING INCLUDING BASEMENTS. (CRC R314.3)
   - 2.B. CARBON MONOXIDE DETECTORS. CARBON MONOXIDE DETECTORS ARE REQUIRED OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF SLEEPING ROOMS AND ON EACH STORY OF A DWELLING INCLUDING BASEMENTS. (CRC R314.3)
3. WATER HEATER SEISMIC STRAPPING. MINIMUM TWO 3/4–INCH–BY–24–GAUGE STRAPS REQUIRED AROUND WATER HEATERS, WITH 1/4–INCH–BY–3–INCH LAG BOLTS ATTACHED DIRECTLY TO FRAMING. STRAPS SHALL BE AT POINTS WITHIN UPPER THIRD AND LOWER THIRD OF WATER HEATER VERTICAL DIMENSION. LOWER CONNECTION SHALL OCCUR MINIMUM 4 INCHES ABOVE CONTROLS. (CPC 507.2)
4. WATER CLOSET CLEARANCE. MINIMUM 30–INCH–WIDE BY 24–INCH–DEEP CLEARANCE REQUIRED AT FRONT OF WATER CLOSETS. NO WATER CLOSET OR BIDET SHALL BE SET CLOSER THAN 15 INCHES FROM ITS CENTER TO A SIDE WALL OR OBSTRUCTION. (CPC 402.5)
5. SHOWER SIZE. SHOWER COMPARTMENTS SHALL HAVE MINIMUM AREA OF 1024 SQUARE INCHES AND BE ABLE TO ENCOMPASS A 30–INCH–DIAMETER CIRCLE. SHOWER DOORS SHALL HAVE A MINIMUM 22–INCH UNOBSTRUCTED WIDTH. (CPC 408.5 AND CPC 408.6)
6. PER THE CALIFORNIA ENERGY CODE 150.0(S), ALL SINGLE–FAMILY RESIDENCES THAT INCLUDE ONE OR TWO DWELLING UNITS SHALL MEET THE FOLLOWING. ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE:
   - 6.A. AT LEAST ONE OF THE FOLLOWING SHALL BE PROVIDED:
     - 6.A.1. ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED–UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS–SUPPLIED BRANCH CIRCUITS, OR
     - 6.A.2. DEDICATED RACEWAY FROM THE MAIN SERVICE TO A PANELBOARD (SUBPANEL) THAT SUPPLIES THE BRANCH CIRCUITS IN SECTION 150.0(S)(2). ALL BRANCH CIRCUITS ARE PERMITTED TO BE SUPPLIED BY THE MAIN SERVICE PANEL PRIOR TO THE INSTALLATION OF AN ESS. THE TRADE SIZE OF THE RACEWAY SHALL BE NOT LESS THAN 1 INCH. THE PANELBOARD THAT SUPPLIES THE BRANCH CIRCUITS (SUBPANEL) MUST BE LABELED "SUBPANEL SHALL INCLUDE ALL BACKED–UP LOAD CIRCUITS."
   - 6.B. A MINIMUM OF FOUR BRANCH CIRCUITS SHALL BE IDENTIFIED AND HAVE THEIR SOURCE OF SUPPLY COLLOCATED AT A SINGLE PANELBOARD SUITABLE TO BE SUPPLIED BY THE ESS. AT LEAST ONE CIRCUIT SHALL SUPPLY THE REFRIGERATOR, ONE LIGHTING CIRCUIT SHALL BE LOCATED NEAR THE PRIMARY EGRESS AND AT LEAST ONE CIRCUIT SHALL SUPPLY A SLEEPING ROOM RECEPTACLE OUTLET.
   - 6.C. THE MAIN PANELBOARD SHALL HAVE A MINIMUM BUSBAR RATING OF 225 AMPS.
   - 6.D. SUFFICIENT SPACE SHALL BE RESERVED TO ALLOW FUTURE INSTALLATION OF A SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH WITHIN 3 FEET OF THE MAIN PANELBOARD. RACEWAYS SHALL BE INSTALLED BETWEEN THE PANELBOARD AND THE SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH LOCATION TO ALLOW THE CONNECTION OF BACKUP POWER SOURCE.
7. PER THE CALIFORNIA ELECTRICAL CODE ARTICLE 230.61, ALL ELECTRICAL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROVIDED WITH A SURGE–PROTECTIVE DEVICE (SPD). IT SHALL BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR SHALL BE LOCATED IMMEDIATELY ADJACENT THERETO. THE SPD SHALL BE TYPE 1 TYPE 2, BOTH OF WHICH ARE TO BE HARD–WIRED, AND THE REQUIREMENT APPLIES TO BOTH NEW SERVICE INSTALLATIONS AND REPLACEMENTS.
8. FIRE SPRINKLERS– AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13D OR SECTION R313.3 SHALL BE INSTALLED IN ONE– AND TWO FAMILY DWELLINGS OR TOWNHOUSES INCLUDING ATTACHED GARAGES. (R313.1, R313.2)
   - 8.A. SENATE BILL 1069 ADDS THE FOLLOWING EXCEPTION FOR AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEMS IF ALL THE FOLLOWING CONDITIONS EXIST:
     - 8.A.1. THE UNIT MEETS THE DEFINITION OF AN ACCESSORY DWELLING UNIT IN THE GOVERNMENT CODE (SECTION 65852.2).
     - 8.A.2. THE EXISTING PRIMARY RESIDENCE IS NOT REQUIRED TO HAVE AN AUTOMATIC RESIDENTIAL SPRINKLER SYSTEM.

C. MECHANICAL VENTILATION AND INDOOR AIR QUALITY (ASHRAE 62.2-2010)

1. TRANSFER AIR. VENTILATION AIR SHALL BE PROVIDED DIRECTLY FROM THE OUTDOORS AND NOT AS TRANSFER AIR FROM ADJACENT DWELLING UNITS OR OTHER SPACES, SUCH AS GARAGES, UNCONDITIONED CRAWLSPACES, OR UNCONDITIONED ATTICS. (CBEES 150.0(O))
2. INSTRUCTIONS AND LABELING. VENTILATION SYSTEM CONTROLS SHALL BE LABELED AND THE HOME OWNER SHALL BE PROVIDED WITH INSTRUCTIONS ON HOW TO OPERATE THE SYSTEM. (CBEES 150.0(O))
3. COMBUSTION AND SOLID–FUEL BURNING APPLIANCES. COMBUSTION APPLIANCES SHALL BE PROPERLY VENTED AND AIR SYSTEMS SHALL BE DESIGNED TO PREVENT BACK DRAFTING. (CBEES 150.0(O))
4. MINIMUM FILTRATION. MECHANICAL SYSTEMS SUPPLYING AIR TO OCCUPIABLE SPACE THROUGH DUCTWORK SHALL BE PROVIDED WITH A FILTER HAVING A MINIMUM EFFICIENCY OF MERV 13 OR BETTER. (CBEES 150.0(O))
5. AIR INLETS. AIR INLETS (NOT EXHAUST) SHALL BE LOCATED AWAY FROM KNOWN CONTAMINANTS. (CBEES 150.0(O))
6. AIR MOVING EQUIPMENT. AIR MOVING EQUIPMENT USED TO MEET EITHER THE WHOLE–BUILDING VENTILATION REQUIREMENT OR THE LOCAL VENTILATION EXHAUST REQUIREMENT SHALL BE RATED IN TERMS OF AIRFLOW AND SOUND. (CBEES 150.0(O))
   - 6.A. ALL CONTINUOUSLY OPERATING FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE.
   - 6.A. INTERMITTENTLY OPERATED WHOLE–BUILDING VENTILATION FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE.
   - 6.C. INTERMITTENTLY OPERATED LOCAL EXHAUST FANS SHALL BE RATED AT MAXIMUM OF 3.0 SONE.
   - 6.D. REMOTELY LOCATED AIR–MOVING EQUIPMENT (MOUNTED OUTSIDE OF HABITABLE SPACES) NEED NOT MEET SOUND REQUIREMENTS IF AT LEAST 4 FEET OF DUCTWORK BETWEEN FAN AND INTAKE GRILL.
7. LOCAL EXHAUST FANS TO EXTERIOR TO PROVIDE MINIMUM 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS VENTILATION OR AS SPECIFIED IN ENERGY REPORT.
8. A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE–BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.
9. AN INTERMITTENTLY OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURCE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.
   - 9.A. BATHROOMS: INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL NOT BE LESS THAN 50 CFM. CONTINUOUS OPERATION SHALL NOT BE LESS THAN 20 CFM. (CMC 405.3.1)
   - 9.B. KITCHENS: INTERMITTENT CONTROLLED OPERATIONS, THE EXHAUST RATE SHALL NOT BE LESS THAN 100 CFM FOR RANGE HOODS OR 300 CFM FOR MECHANICAL EXHAUST FANS INCLUDING DOWNDRAFT APPLIANCES. CONTINUOUS OPERATED VENTILATION, THE EXHAUST RATE SHALL NOT BE LESS THAN 5CFM OR 4% OF THE OCCUPIED FLOOR AREA. (CMC 405.4.1)

D. FOUNDATION

1. PROJECTS DETERMINED TO BE IN SEISMIC DESIGN CATEGORY (SDC) "D" REQUIRE A GEOTECHNICAL SOILS AND FOUNDATION INVESTIGATION (CBC 1803.2 & 1803.5.12) UNLESS WAIVED BY THE BUILDING OFFICIAL. THE SOILS ENGINEER SHALL BE RESPONSIBLE FOR REVIEWING THE SITE PLAN AND THE FOUNDATION PLAN PREPARED BY OTHERS AND SHALL PROVIDE A LETTER STATING THAT THE DRAWINGS AND ALL PERTINENT DETAILS HAVE BEEN REVIEWED AND ARE IN CONFORMANCE WITH THE GEOTECHNICAL REPORT RECOMENDATIONS.
   - 1.A. A SOILS REPORT MUST BE PROVIDED BY A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. (CRC R401.4, CBC 1803)
   - 1.B. EACH CITY, COUNTY, OR CITY AND COUNTY SHALL ENACT AN ORDINANCE WHICH REQUIRES A PRELIMINARY SOIL REPORT, PREPARED BY A CIVIL ENGINEER WHO IS REGISTERED BY THE STATE. THE REPORT SHALL BE BASED UPON ADEQUATE TEST BORINGS OR EXCAVATIONS, OF EVERY SUBDIVISION, WHERE A TENTATIVE AND FINAL MAP IS REQUIRED PURSUANT TO SECTION 66426 OF THE GOVERNMENT CODE. THE PRELIMINARY SOIL REPORT MAY BE WAIVED IF THE BUILDING DEPARTMENT OF THE CITY, COUNTY OR CITY AND COUNTY, OR OTHER ENFORCEMENT AGENCY CHARGED WITH THE ADMINISTRATION AND ENFORCEMENT OF THE PROVISIONS OF SECTION R401.4.1.1, SHALL DETERMINE THAT, DUE TO THE KNOWLEDGE SUCH DEPARTMENT HAS AS TO THE SOIL QUALITIES OF THE SOIL OF THE SUBDIVISION OR LOT, NO PRELIMINARY ANALYSIS IS NECESSARY. (CRC401.4.1.1.1.)
2. FOUNDATION REINFORCEMENT. CONTINUOUS FOOTINGS AND STEM WALLS SHALL BE PROVIDED WITH A MINIMUM TWO LONGITUDINAL NO. 4 BARS, ONE AT THE TOP AND ONE AT THE BOTTOM OF THE FOOTING. (CRC R403.1.3.3)
3. INTERIOR BRACED WALL FOUNDATION SUPPORT. BRACED WALLS SHALL BE SUPPORTED BY CONTINUOUS FOUNDATIONS. (CRC 403.1.3.4)
4. HORIZONTAL REINFORCEMENT SHALL BE THE LONGEST LENGTHS PRACTICAL. WHERE SPLICES ARE NECESSARY IN REINFORCEMENT, THE LENGTH OF LAP SPLICE SHALL BE 40 BAR DIAMETERS. THE MAXIMUM GAP BETWEEN NONCONTACT PARALLEL BARS AT A LAP SPLICE SHALL NOT EXCEED THE SMALLER OF ONE–FIFTH THE REQUIRED LAP LENGTH AND 6 INCHES (SEE FIGURE R608.5.4(1))
5. ANCHOR BOLTS AND SILLS. FOUNDATION PLATES OR SILLS SHALL BE BOLTED OR ANCHORED TO THE FOUNDATION OR FOUNDATION WALL PER THE FOLLOWING (CRC R403.1.6 AND CRC R602.11.1):
   - 5.A. MINIMUM 1/2–INCH–DIAMETER STEEL BOLTS, ASTM F1554, GR36
   - 5.B. BOLTS EMBEDDED AT LEAST 7 INCHES INTO CONCRETE OR MASONRY
   - 5.C. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE.
   - 5.D. BOLTS SPACED MAXIMUM 6 FEET ON CENTER
   - 5.E. MINIMUM TWO BOLTS PER PLATE/SILL PIECE WITH ONE BOLT LOCATED MAXIMUM 12 INCHES AND MINIMUM 7 BOLT DIAMETERS FROM EACH END OF EACH SILL PLATE/PIECE
   - 5.F. MINIMUM 3–INCH BY 3–INCH BY 0.229–INCH STEEL PLATE WASHER BETWEEN SILL AND NUT ON EACH BOLT EXCEPT WHERE APPROVED ANCHOR STRAPS ARE USED. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO $\frac{3}{16}$ INCH LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1–3/4 INCHES, PROVIDED STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.
6. HOLD–DOWNS. ALL HOLD–DOWNS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
7. FASTENERS FOR PRESSURE–PRESERVATIVE TREATED AND FIRE RETARDANT TREATED WOOD SHALL BE HOT–DIPPED ZINC COATED GALVANIZED, STAINLESS STEEL OR COPPER (CRC R317.3)
8. *VAPOR RETARDER.*
   - *8.A. A VAPOR RETARDER INSPECTION WILL BE REQUIRED PRIOR TO PLACEMENT OF THE SAND TO CONFIRM PROPER INSTALLATION (VAPOR RETARDER IS TO BE ASTM E1745 CLASS A COMPLIANT AND MANUFACTURER'S INSTALLATION REQUIREMENTS MUST BE AVAILABLE FOR INSPECTION PURPOSES).*
   - *8.B. A MINIMUM 10–MIL VAPOR RETARDER CONFORMING TO ASTM E1745 CLASS A REQUIREMENTS WITH JOINTS LAPPED NOT LESS THAN 6" IS REQUIRED.*
   - *8.C. PROVIDE 4" NOMINAL THICK CONCRETE SLAB WITH #3 REBAR AT 24" O.C. EACH WAY, PLACED MID–HEIGHT OF SLAB OVER 2" SAND BLOTTER INSTALLED OVER 10 MIL VAPOR RETARDER CONFORMING TO ASTM E1745 OVER AN ADDITIONAL 2" SAND OVER COMPACTED FILL COMPLYING WITH SITE SOILS REPORT.*

E. WOOD FRAMING

1. FASTENER REQUIREMENTS. THE NUMBER, SIZE, AND SPACING OF FASTENERS CONNECTING WOOD MEMBERS/ELEMENTS SHALL NOT BE LESS THAN THAT SET FORTH IN CRC TABLE R602.3(1). (CRC R602.3)
2. SILL PLATE. STUDS SHALL HAVE FULL BEARING ON NOMINAL 2–INCH THICK OR LARGER SILL PLATE WITH WIDTH AT LEAST EQUAL TO STUD WIDTH. (CRC R602.3.4)
3. BEARING STUDS. WHERE JOISTS, TRUSSES, OR RAFTERS ARE SPACED MORE THAN 16 INCHES ON CENTER AND THE BEARING STUDS BELOW ARE SPACED 24 INCHES ON CENTER, SUCH MEMBERS SHALL BEAR WITHIN 5 INCHES OF THE STUDS BENEATH. (CRC R602.3.3) EXCEPTION: THE TOP PLATES ARE TWO 2–INCH BY 6–INCH OR TWO 3–INCH BY 4– INCH MEMBERS.
4. DRILLING AND NOTCHING OF STUDS. ANY STUD IN AN EXTERIOR WALL OR BEARING PARTITION MAY BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25% OF ITS WIDTH. STUDS IN NONBEARING PARTITIONS MAY BE NOTCHED TO A DEPTH NOT TO EXCEED 40% OF A SINGLE STUD WIDTH. ANY STUD MAY BE BORED OR DRILLED, PROVIDED THE DIAMETER OF THE RESULTING HOLE IS NO MORE THAN 60% OF THE STUD WIDTH, THE EDGE OF THE HOLE IS NO MORE THAN 5/8 INCH TO THE EDGE OF THE STUD, AND THE HOLE IS NOT LOCATED IN THE SAME SECTION AS A CUT OR NOTCH. STUDS LOCATED IN EXTERIOR WALL OR BEARING PARTITIONS DRILLED OVER 40% AND UP TO 60% SHALL ALSO BE DOUBLED WITH NO MORE THAN TWO SUCCESSIVE STUDS BORED. (CRC R602.6) EXCEPTION: USE OF APPROVED STUD SHOES IS PERMITTED WHERE THEY ARE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. TOP PLATE. WOOD STUD WALLS SHALL BE CAPPED WITH A DOUBLE TOP PLATE INSTALLED TO PROVIDE OVERLAPPING AT CORNERS AND AT INTERSECTIONS WITH OTHER PARTITIONS. END JOINTS IN DOUBLE TOP PLATES SHALL BE OFFSET AT LEAST 24 INCHES. JOINTS IN PLATES NEED NOT OCCUR OVER STUDS. PLATES SHALL BE MINIMUM NOMINAL 2 INCHES THICK AND HAVE WIDTH AT LEAST EQUAL TO WIDTH OF STUDS. (CRC R602.3.2)
6. TOP PLATE SPLICES. TOP PLATE LAP SPLICES SHALL BE FACE–NAILED WITH MINIMUM 8 16D NAILS ON EACH SIDE OF SPLICE. (CRC R602.10.8.1)
7. DRILLING AND NOTCHING OF TOP PLATE. WHEN PIPING OR DUCTWORK IS PLACED IN OR PARTLY IN AN EXTERIOR WALL OR INTERIOR LOAD–BEARING WALL, NECESSITATING CUTTING, DRILLING, OR NOTCHING OF THE TOP PLATE BY MORE THAN 50% OF ITS WIDTH, A GALVANIZED METAL TIE NOT LESS THAN 0.054–INCH THICK AND 1–1/2–INCHES WIDE SHALL BE FASTENED ACROSS AND TO THE PLATE AT EACH SIDE OF THE OPENING WITH NOT LESS THAN 8 10D NAILS HAVING A MINIMUM LENGTH OF 1–1/2 INCHES AT EACH SIDE OR EQUIVALENT. THE METAL TIE MUST EXTEND MINIMUM 6 INCHES PAST THE OPENING. (CRC R602.6.1)
8. SHEAR WALL AND DIAPHRAGM NAILING. ALL SHEAR WALLS, ROOF DIAPHRAGMS, AND FLOOR DIAPHRAGMS SHALL BE NAILED TO SUPPORTING CONSTRUCTION PER CRC TABLE R602.3(1). (CRC R604.3)
9. SHEAR WALL JOINTS. ALL VERTICAL JOINTS IN SHEAR WALL SHEATHING SHALL OCCUR OVER, AND BE FASTENED TO, COMMON STUDS. HORIZONTAL JOINTS IN SHEAR WALLS SHALL OCCUR OVER, AND BE FASTENED TO, MINIMUM 1–1/2–INCH–THICK BLOCKING. (CRC R602.10.10)
10. FRAMING OVER OPENINGS. HEADERS, DOUBLE JOISTS, OR TRUSSES OF ADEQUATE SIZE TO TRANSFER LOADS TO VERTICAL MEMBERS SHALL BE PROVIDED OVER WINDOW AND DOOR OPENINGS IN LOAD–BEARING WALLS AND PARTITIONS. (CBC 2304.3.2).
11. ROOF TRUSSES TRUSSES SHALL BE BRACED TO PREVENT ROTATION AND PROVIDE LATERAL STABILITY IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE INDIVIDUAL TRUSS DESIGN DRAWINGS. IN THE ABSENCE OF SPECIFIC BRACING REQUIREMENTS, TRUSSES SHALL BE BRACED IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICE SUCH AS THE SBCA BUILDING COMPONENT SAFETY INFORMATION (BCSI) GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.
12. ROOF DIAPHRAGM UNDER FILL FRAMING. ROOF PLYWOOD SHALL BE CONTINUOUS UNDER CALIFORNIA FILL FRAMING.
13. ROOF DIAPHRAGM AT RIDGES. MINIMUM 2–INCH NOMINAL BLOCKING REQUIRED FOR ROOF DIAPHRAGM NAILING AT RIDGES.
14. BLOCKING OF ROOF TRUSSES. MINIMUM 2–INCH NOMINAL BLOCKING REQUIRED BETWEEN TRUSSES AT RIDGE LINES AND AT POINTS OF BEARING AT EXTERIOR WALLS.
15. TRUSS CLEARANCE. MINIMUM 1/2–INCH CLEARANCE REQUIRED BETWEEN TOP PLATES OF INTERIOR NON–BEARING PARTITIONS AND BOTTOM CHORDS OF TRUSSES.
16. FIREBLOCKING. FIREBLOCKING SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS (CRC R302.11 AND CRC R1003.19):
    - 16.A. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS:
      - 16.A.1. VERTICALLY AT THE CEILING AND FLOOR LEVELS
      - 16.A.2. HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET
    - 16.B. AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS, AND COVE CEILINGS
    - 16.C. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN
    - 16.D. AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION
    - 16.E. AT CHIMNEYS AND FIREPLACES PER ITEM E.49
    - 16.F. CORNICES OF A TWO–FAMILY DWELLING AT THE LINE OF DWELLING–UNIT SEPARATION
17. FIREBLOCKING MATERIALS. EXCEPT AS OTHERWISE SPECIFIED IN ITEMS E.48 AND E.49, FIREBLOCKING SHALL CONSIST OF THE FOLLOWING MATERIALS WITH THE INTEGRITY MAINTAINED (CRC R302.11.1):
    - 17.A. TWO–INCH NOMINAL LUMBER
    - 17.B. TWO THICKNESSES OF ONE–INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS
    - 17.C. ONE THICKNESS OF 23/32–INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 23/32–INCH WOOD STRUCTURAL PANEL
    - 17.D. ONE THICKNESS OF 3/4–INCH PARTICLEBOARD WITH JOINTS BACKED BY 3/4–INCH PARTICLEBOARD
    - 17.E. 1/2–INCH GYPSUM BOARD
    - 17.F. 1/4–INCH CEMENT–BASED MILLBOARD
    - 17.G. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OF OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NON–RIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10–FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROWS OF STUDS OR STAGGERED STUDS. UNFACED FIBERGLASS BATT INSULATION USED AS FIREBLOCKING SHALL FILL THE ENTIRE CROSS–SECTION OF THE WALL CAVITY TO A MINIMUM HEIGHT OF 16 INCHES MEASURED VERTICALLY. WHEN PIPING, CONDUIT, OR SIMILAR OBSTRUCTIONS ARE ENCOUNTERED, THE INSULATION SHALL BE PACKED TIGHTLY AROUND THE OBSTRUCTION. LOOSE–FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES.
18. FIREBLOCKING AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES, AND WIRES AT CEILING AND FLOOR LEVEL. SUCH OPENINGS SHALL BE FIREBLOCKED WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. (CRC R302.11)
19. DRAFTSTOPPING. IN COMBUSTIBLE CONSTRUCTION WHERE THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR/CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1000 SQUARE FEET. DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS. WHERE THE ASSEMBLY IS ENCLOSED BY A FLOOR MEMBRANE ABOVE AND A CEILING MEMBRANE BELOW, DRAFTSTOPPING SHALL BE PROVIDED IN FLOOR/CEILING ASSEMBLIES UNDER THE FOLLOWING CIRCUMSTANCES (CRC R302.12):
    - 19.A. CEILING IS SUSPENDED UNDER THE FLOOR FRAMING
    - 19.B. FLOOR FRAMING IS CONSTRUCTED OF TRUSS–TYPE OPEN–WEB OR PERFORATED MEMBERS
20. DRAFTSTOPPING MATERIALS. DRAFTSTOPPING SHALL NOT BE LESS THAN 1/2–INCH GYPSUM BOARD, 3/8–INCH WOOD STRUCTURAL PANELS, OR OTHER APPROVED MATERIALS ADEQUATELY SUPPORTED. DRAFTSTOPPING SHALL BE INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS UNLESS OTHERWISE APPROVED BY THE BUILDING OFFICIAL. THE INTEGRITY OF DRAFTSTOPS SHALL BE MAINTAINED. (CRC R302.12.1)
21. COMBUSTIBLE INSULATION CLEARANCE. COMBUSTIBLE INSULATION SHALL BE SEPARATED MINIMUM 3 INCHES FROM RECESSED LUMINAIRES, FAN MOTORS, AND OTHER HEAT–PRODUCING DEVICES. (CRC R302.14)
22. PROTECTION OF WOOD AGAINST DECAY. NATURALLY DURABLE OR PRESERVATIVE–TREATED WOOD SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS (CRC R317.1):
    - 22.A. ALL WOOD IN CONTACT WITH GROUND, EMBEDDED IN CONCRETE IN DIRECT CONTACT WITH GROUND, OR EMBEDDED IN CONCRETE EXPOSED TO WEATHER
    - 22.B. WOOD FRAMING MEMBERS THAT REST ON CONCRETE OR MASONRY EXTERIOR FOUNDATION WALLS AND ARE LESS THAN 8 INCHES FROM EXPOSED EARTH SHALL BE OF NATURALLY DURABLE OR PRESERVATIVE–TREATED WOOD
    - 22.C. WOOD FRAMING, SHEATHING, AND SIDING ON THE EXTERIOR OF THE BUILDING AND HAVING CLEARANCE LESS THAN 6 INCHES FROM THE EXPOSED GROUND OR LESS THAN 2 INCHES VERTICALLY FROM CONCRETE STEPS, PORCH SLABS, PATIO SLABS, AND SIMILAR HORIZONTAL SURFACE EXPOSED TO WEATHER
    - 22.D. SILLS AND SLEEPERS ON CONCRETE OR MASONRY SLAB IN DIRECT CONTACT WITH GROUND UNLESS SEPARATED FROM SUCH SLAB BY IMPERVIOUS MOISTURE BARRIER

F. BASIS OF DESIGN

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CAT.	RISK CATEGORY
	Speed (mph)	Topo graphic effects		
0	110	NO	D	II

G. GENERAL MATERIAL SPECIFICATIONS

1. LUMBER. ALL JOISTS, RAFTERS, BEAMS, AND POSTS SHALL BE NO. 2 GRADE DOUGLAS FIR–LARCH OR BETTER. STUDS NOT MORE THAN 8 FEET LONG SHALL BE STUD–GRADE DOUGLAS FIR–LARCH OR BETTER WHEN SUPPORTING NOT MORE THAN ONE FLOOR, ROOF, AND CEILING. STUDS LONGER THAN 8 FEET SHALL BE NO. 2 GRADE DOUGLAS FIR–LARCH OR BETTER.
2. STUCTURAL PLYWOOD SHALL CONFORM TO COMMERIAL STANDARD DOC PS 1–09 AND HAVE A PANEL GRADE OF C–D. WOOD BASED STRUCTURAL –USE PANELS (I.E. ORIENTED STRAND BOARD) SHALL CONFORM TO THE APA PRP–108 PERFORMANCE STANDARD OF THE VOLUNTARY PRODUCT STANDARD DOC PS 2–10. "PERFORMANCE STANDARD FOR WOOD–BASED STRUCTURAL–USE PANELS". PUBLISHED BY THE DEPARTMENT OF COMMERCE AND THE AMERICAN PLYWOOD ASSOCIATION. ALL PLYWOOD AND STRUCTURAL–USE PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1. SHEATHING EXPOSED TO WEATHER SHALL BE GRADE C–C EXTERIOR WITH A RANGE INDEX AS TO MATCH BODY OF DIAGRAM SPECIFIED.
3. CONCRETE. THE QUALITY AND DESIGN OF CONCRETE SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE (CBC), EXCEPT ITEMS NOT SPECIFICALLY COVERED THERIN SHALL ALSO CONFORM TO ACI 318–14.
   CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS (CRC R402.2)
4. REINFORCING STEEL. REINFORCING STEEL USED IN CONSTRUCTION OF REINFORCED CONCRETE STRUCTURES SHALL BE DEFORMED AND COMPLY WITH ASTM A 615., GRADE 40 (CRC R403.1.3.5.1)
5. FASTENERS FOR PRESERVATIVE–TREATED WOOD. FASTENERS FOR PRESERVATIVE–TREATED AND FIRE–RETARDANT–TREATED WOOD – INCLUDING NUTS AND WASHERS –– SHALL BE OF HOT DIPPED ZINC–COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER. (CRC R317.3.1)
   EXCEPTION: 1/2–INCH DIAMETER OR GREATER STEEL BOLTS
   EXCEPTION: FASTENERS OTHER THAN NAILS AND TIMBER RIVETS MAY BE OF MECHANICALLY DEPOSITED ZINC–COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLASS 55 MINIMUM
   EXCEPTION: PLAIN CARBON STEEL FASTENERS ACCEPTABLE IN SBX/DOT AND ZINC BORATE PRESERVATIVE–TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT
6. FASTENERS FOR FIRE–RETARDANT–TREATED WOOD. FASTENERS FOR FIRE–RETARDANT–TREATED WOOD USED IN EXTERIOR APPLICATIONS OR WET OR DAMP LOCATIONS SHALL BE OF HOT DIPPED ZINC–COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER. (CRC R317.3.3)
7. WALL FLASHING. APPROVED CORROSION–RESISTANT FLASHING SHALL BE APPLIED SHINGLE FASHION AT THE FOLLOWING LOCATIONS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS (CRC R703.8):
   - 7.A. EXTERIOR DOOR AND WINDOW OPENINGS, EXTENDING TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER–RESISTIVE BARRIER FOR SUBSEQUENT DRAINAGE
   - 7.B. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS
   - 7.C. UNDER AND AT THE ENDS OF MASONRY, WOOD, OR METAL COPINGS AND SILLS
   - 7.D. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM
   - 7.E. WHERE EXTERIOR PORCHES, DECKS, OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD–FRAME CONSTRUCTION
   - 7.F. AT WALL AND ROOF INTERSECTIONS
   - 7.G. AT BUILT–IN GUTTERS

H. LIGHTING

RESIDENTIAL LIGHTING. CA ENERGY CODE 150.0(K)

1. *LUMINAIRE REQUIREMENTS.*
   - *1.A. LUMINAIRE EFFICACY. ALL INSTALLED LUMINAIRES SHALL MEET THE REQUIREMENTS IN TABLE 150.0–A.*
     EXCEPTION 1 TO SECTION 150.0(K)1A: INTEGRATED DEVICE LIGHTING. LIGHTING INTEGRAL TO EXHAUST FANS, KITCHEN RANGE HOODS, BATH VANITY MIRRORS AND GARAGE DOOR OPENERS.
     EXCEPTION 2 TO SECTION 150.0(K)1A: NAVIGATION LIGHTING SUCH AS NIGHT LIGHTS, STEP LIGHTS, AND PATH LIGHTS LESS THAN 5 WATTS.
     EXCEPTION 3 TO SECTION 150.0(K)1A: CABINET LIGHTING. LIGHTING INTERNAL TO DRAWERS, CABINETRY AND LINEN CLOSETS WITH AN EFFICACY OF 45 LUMENS PER WATT OR GREATER.
   - *1.B. SCREW–BASED LUMINAIRES. SCREW–BASED LUMINAIRES SHALL CONTAIN LAMPS THAT COMPLY WITH REFERENCE JOINT APPENDIX JA8.*
   - *1.C. RECESSED DOWNLIGHT LUMINAIRES IN CEILINGS. LUMINAIRES RECESSED INTO CEILINGS SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS:*
     - *1.C.1. SHALL NOT CONTAIN SCREW BASE LAMP SOCKETS; AND*
     - *1.C.2. HAVE A LABEL THAT CERTIFIES THE LUMINAIRE IS AIRTIGHT WITH AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS WHEN TESTED IN ACCORDANCE WITH ASTM E283. AN EXHAUST FAN HOUSING WITH INTEGRAL LIGHT SHALL NOT BE REQUIRED TO BE CERTIFIED AIRTIGHT; AND*
     - *1.C.3. BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINAIRE HOUSING AND CEILING, AND HAVE ALL AIR LEAK PATHS BETWEEN CONDITIONED AND UNCONDITIONED SPACES SEALED WITH A GASKET OR CAULK, OR BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS TO MAINTAIN AIRTIGHTNESS BETWEEN THE LUMINAIRE HOUSING AND CEILING; AND*
     - *1.C.4. MEET THE CLEARANCE AND INSTALLATION REQUIREMENTS OF CALIFORNIA ELECTRICAL CODE SECTION 410.116 FOR RECESSED LUMINAIRES.*
     EXCEPTION TO SECTIONS 150.0(K)1CII AND III: RECESSED LUMINAIRES MARKED FOR USE IN FIRE–RATED INSTALLATIONS EXTRUDED INTO CEILING SPACE AND RECESSED LUMINAIRES INSTALLED IN NONINSULATED CEILINGS.
   - *1.D. LIGHT SOURCES IN ENCLOSED OR RECESSED LUMINAIRES. LAMPS AND OTHER SEPARABLE LIGHT SOURCES THAT ARE NOT COMPLIANT WITH THE JA8 ELEVATED TEMPERATURE REQUIREMENTS, INCLUDING MARKING REQUIREMENTS, SHALL NOT BE INSTALLED IN ENCLOSED OR RECESSED LUMINAIRES.*
   - *1.E. BLANK ELECTRICAL BOXES. THE NUMBER OF ELECTRICAL BOXES THAT ARE MORE THAN 5 FEET ABOVE THE FINISHED FLOOR AND DO NOT CONTAIN A LUMINAIRE OR OTHER DEVICE SHALL BE NO GREATER THAN THE NUMBER OF BEDROOMS. THESE ELECTRICAL BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR CONTROL, LOW VOLTAGE WIRING OR FAN SPEED CONTROL.*
2. *INDOOR LIGHTING CONTROLS.*
   - *2.A. LIGHTING SHALL HAVE READILY ACCESSIBLE WALL–MOUNTED CONTROLS THAT ALLOW THE LIGHTING TO BE MANUALLY TURNED ON AND OFF.*
     EXCEPTION TO SECTION 150.0(K)2A: CEILING FANS MAY PROVIDE CONTROL OF INTEGRATED LIGHTING VIA A REMOTE CONTROL.
   - *2.B. NO CONTROLS SHALL BYPASS A DIMMER, OCCUPANT SENSOR OR VACANCY SENSOR FUNCTION WHERE THAT DIMMER OR SENSOR HAS BEEN INSTALLED TO COMPLY WITH SECTION 150.0(K).*
   - *2.C. LIGHTING CONTROLS SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF SECTION 110.9.*
   - *2.D. AN ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) OR A MULTISCENE PROGRAMMABLE CONTROL MAY BE USED TO COMPLY WITH DIMMING, OCCUPANCY AND LIGHTING CONTROL REQUIREMENTS IN SECTION 150.0(K)2 IF IT PROVIDES THE FUNCTIONALITY OF THE SPECIFIED CONTROLS IN ACCORDANCE WITH SECTION 110.9, AND THE PHYSICAL CONTROLS SPECIFIED IN SECTION 150.0(K)2A.*
   - 2.E. AUTOMATIC–OFF CONTROLS.
     - 2.E.1. IN BATHROOMS, GARAGES, LAUNDRY ROOMS, UTILITY ROOMS AND WALK–IN CLOSETS, AT LEAST ONE INSTALLED LUMINAIRE SHALL BE CONTROLLED BY AN OCCUPANCY OR VACANCY SENSOR PROVIDING AUTOMATIC–OFF FUNCTIONALITY.
     - 2.E.2. FOR LIGHTING INTERNAL TO DRAWERS AND CABINETRY WITH OPAQUE FRONTS OR DOORS, CONTROLS THAT TURN THE LIGHT OFF WHEN THE DRAWER OR DOOR IS CLOSED SHALL BE PROVIDED.

DISCLAIMER:
BY USING THESE STANDARD PLANS, THE USER AGREES TO RELEASE THE CITY OF VACAVILLE FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE, OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS. THE USE OF THESE PLANS DOES NOT ELIMINATE OR REDUCE THE USER'S RESPONSIBILITY TO VERIFY ANY AND ALL INFORMATION.

CITY OF VACAVILLE

REVISIONS
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PROJECT TITLE: CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM

SHEET DESCRIPTION: COVER

DATE: 12/23/2024

AGENCY: SJV REAP

ADU SQFT: 550

DRAWING SCALE: ----

SHEET: C1

2.F. DIMMING CONTROLS. LIGHTING IN HABITABLE SPACES, INCLUDING BUT NOT LIMITED TO LIVING ROOMS, DINING ROOMS, KITCHENS AND BEDROOMS, SHALL HAVE READILY ACCESSIBLE WALL–MOUNTED DIMMING CONTROLS THAT ALLOW THE LIGHTING TO BE MANUALLY ADJUSTED UP AND DOWN. FORWARD PHASE CUT DIMMERS CONTROLLING LED LIGHT SOURCES IN THESE SPACES SHALL COMPLY WITH NEMA SSL 7A.
EXCEPTION 1 TO SECTION 150.0(K)2F: CEILING FANS MAY PROVIDE CONTROL OF INTEGRATED LIGHTING VIA A REMOTE CONTROL.
EXCEPTION 2 TO SECTION 150.0(K)2F: LUMINAIRES CONNECTED TO A CIRCUIT WITH CONTROLLED LIGHTING POWER LESS THAN 20 WATTS OR CONTROLLED BY AN OCCUPANCY OR VACANCY SENSOR PROVIDING AUTOMATIC–OFF FUNCTIONALITY.
EXCEPTION 3 TO SECTION 150.0(K)2F: NAVIGATION LIGHTING SUCH AS NIGHT LIGHTS, STEP LIGHTS, AND PATH LIGHTS LESS THAN 5 WATTS, AND LIGHTING INTERNAL TO DRAWERS AND CABINETRY WITH OPAQUE FRONTS OR DOORS OR WITH AUTOMATIC–OFF CONTROLS.

2.G. INDEPENDENT CONTROLS. INTEGRATED LIGHTING OF EXHAUST FANS SHALL BE CONTROLLED INDEPENDENTLY FROM THE FANS. THE FOLLOWING SHALL BE CONTROLLED SEPARATELY FROM CEILING–INSTALLED LIGHTING SUCH THAT ONE CAN BE TURNED ON WITHOUT TURNING ON THE OTHER:
2.G.1. UNDERCABINET LIGHTING.
2.G.2. UNDERSHELF LIGHTING.
2.G.3. INTERIOR LIGHTING OF DISPLAY CABINETS.
2.G.4. SWITCHED OUTLETS.

3. RESIDENTIAL OUTDOOR LIGHTING. IN ADDITION TO MEETING THE REQUIREMENTS OF SECTION 150.0(K)1A, LUMINAIRES PROVIDING RESIDENTIAL OUTDOOR LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS, AS APPLICABLE:
3.A. FOR SINGLE–FAMILY RESIDENTIAL BUILDINGS, OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A RESIDENTIAL BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT SHALL MEET THE REQUIREMENT IN ITEM I AND THE REQUIREMENTS IN EITHER ITEM II OR ITEM III:
3.A.1. CONTROLLED BY A MANUAL ON AND OFF CONTROL SWITCH THAT PERMITS THE AUTOMATIC ACTIONS OF ITEMS II OR III BELOW; AND
3.A.2. CONTROLLED BY A PHOTOCELL AND EITHER A MOTION SENSOR OR AN AUTOMATIC TIME SWITCH CONTROL; OR
3.A.3. CONTROLLED BY AN ASTRONOMICAL TIME CLOCK CONTROL.
CONTROLS THAT OVERRIDE TO ON SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY RETURNS THE AUTOMATIC CONTROL TO ITS NORMAL OPERATION WITHIN 6 HOURS. AN ENERGY MANAGEMENT CONTROL SYSTEM THAT PROVIDES THE SPECIFIED LIGHTING CONTROL FUNCTIONALITY AND COMPLIES WITH ALL REQUIREMENTS APPLICABLE TO THE SPECIFIED CONTROLS MAY BE USED TO MEET THESE REQUIREMENTS.

I. ROOFING AND WEATHERPROOFING

1. ROOF COVERING. ALL ROOF COVERING SHALL BE INSTALLED PER APPLICABLE REQUIREMENTS OF CRC CHAPTER 9 AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ROOF COVERINGS SHALL BE AT LEAST CLASS B RATED IN ACCORDANCE WITH ASTM E 108 OR UL 790, WHICH SHALL INCLUDE COVERINGS OF SLATE, CLAY OR CONCRETE ROOF TILE, EXPOSED CONCRETE ROOF DECK, WOOD SHINGLES, WOOD SHAKES, FERROUS OR COPPER SHINGLES OR SHEETS.
2. ROOF FLASHING. FLASHING SHALL BE INSTALLED AT WALL AND ROOF INTERSECTIONS, AT GUTTERS, WHEREVER THERE IS A CHANGE IN ROOF SLOPE OR DIRECTION, AND AROUND ROOF OPENINGS. WHERE FLASHING IS OF METAL, THE METAL SHALL BE CORROSION–RESISTANT WITH A THICKNESS OF NOT LESS THAN 0.019 INCH (NO. 26 GALVANIZED SHEET). (CRC R903.2.1)
3. CRICKETS AND SADDLES. A CRICKET OR SADDLE SHALL BE INSTALLED ON THE RIDGE SIDE OF ANY CHIMNEY OR PENETRATION MORE THAN 30 INCHES WIDE AS MEASURED PERPENDICULAR TO THE SLOPE. CRICKET OR SADDLE COVERING SHALL BE SHEET METAL OR THE SAME MATERIAL AS THE ROOF COVERING. (CRC R903.2.2).
4. WATER–RESISTIVE BARRIER. A MINIMUM OF ONE LAYER OF NO. 15 ASPHALT FELT SHALL BE ATTACHED TO STUDS OR SHEATHING OF ALL EXTERIOR WALLS. SUCH FELT OR MATERIAL SHALL BE APPLIED HORIZONTALLY, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER MINIMUM 2 INCHES. WHERE JOINTS OCCUR, FELT SHALL BE LAPPED MINIMUM 6 INCHES. THE FELT SHALL BE CONTINUOUS TO THE TOP OF WALLS AND TERMINATED AT PENETRATIONS AND BUILDING APPENDAGES IN A MANNER TO MAINTAIN A WEATHER–RESISTANT EXTERIOR WALL ENVELOPE. (CRC R703.2)
5. DAMPPROOFING. DAMPPROOFING MATERIALS FOR FOUNDATION WALLS ENCLOSING USABLE SPACE BELOW GRADE SHALL BE INSTALLED ON THE EXTERIOR SURFACE OF THE WALL, AND SHALL EXTEND FROM THE TOP OF THE FOOTING TO FINISHED GRADE. (CRC R406.1)
6. WEEP SCREED. A MINIMUM 0.019–INCH (NO. 26 GALVANIZED SHEET GAGE), CORROSION–RESISTANT WEEP SCREED OR PLASTIC WEEP SCREED WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3–1/2 INCHES SHALL BE PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE ON EXTERIOR STUD WALLS IN ACCORDANCE WITH ASTM C 92. THE WEEP SCREED SHALL BE PLACED A MINIMUM 4 INCHES ABOVE THE EARTH OR 2 INCHES ABOVE PAVED AREAS AND SHALL BE OF A TYPE ALLOWING TRAPPED WATER TO DRAIN TO THE EXTERIOR OF THE BUILDING. (CRC R703.7.2.1)

J. DRAINAGE NOTES

1. *SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER APPROVED POINT OF COLLECTION THAT DOES NOT CREATE A HAZARD [CRC R401.3].*
2. *LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS A MINIMUM OF 6 INCHES FOR A DISTANCE OF 10 FEET. EXCEPTION: WHERE SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL FOR 10 FEET, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. WHEN DRAINS OR SWALES ARE USED FOR THIS PURPOSE:*
   2.A. PROVIDE A MINIMUM 5% SLOPE FROM FOUNDATION TO DRAIN/SWALE,
   2.A. DRAIN/SWALE SHOULD BE LOCATED AS FAR AS IS PRACTICAL FROM THE FOUNDATION TO MAXIMIZE FALL AND
   2.B. DRAIN/SWALE IS TO SLOPE A MINIMUM OF 2%
3. *IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING.*
4. *ON GRADED SITES, THE TOP OF ANY EXTERIOR FOUNDATION (FINISH FLOOR ELEVATION) SHALL EXTEND ABOVE THE ELEVATION OF THE STREET GUTTER AT POINT OF DISCHARGE OR THE INLET OF AN APPROVED DRAINAGE DEVICE NOT LESS THAN 12 INCHES PLUS 2 PERCENT(CRC R403.1.7.3).*
5. *ALTERNATE SETBACKS AND CLEARANCES ARE PERMITTED, SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL (CRC R403.1.7.4).*

K. STREET ADDRESSING

1. *BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS IDENTIFICATION. THE ADDRESS IDENTIFICATION SHALL BE LEGIBLE AND PLACED IN A POSITION THAT IS VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. INSTALL STREET ADDRESS NUMERALS, AT LEAST FOUR INCHES HIGH WITH MINIMUM ½–INCH STROKE, MOUNTED ON A CONTRASTING BACKGROUND ON FRONT OF THE BUILDING WHERE ACCESS IS BY MEANS OF A PRIVATE ROAD AND THE BUILDING ADDRESS CANNOT BE VIEWED FROM THE PUBLIC WAY, A MONUMENT, POLE, OR OTHER SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE. ADDRESS IDENTIFICATION SHALL BE MAINTAINED. (CRC R319.1).*

L. NEW CONSTRUCTION ADJACENT TO OPEN SPACE

1. VACAVILLE MUNICIPAL CODE SECTION 15.20.273 ENFORCES DEVELOPMENT STANDARDS FOR NEW CONSTRUCTION ADJACENT TO OPEN SPACE LANDS WHERE WILDFIRE IS A HREAT. THIS STANDARD SHALL APPLY TO NEW RESIDENTIAL DEVELOPMENT LOCATED ON PARCELS ADJOINING OR ADJACENT TO PERMANENT OPEN LANDS AND OTHER OPEN ANDS WHERE NO DEVELOPMENT IS ANTICIPATED IN THE NEAR FUTURE WHERE WILDFIRE IS A THREAT.
2. VMC 15.20.273.160 RESIDENTIAL CONSTRUCTION STANDARDS. THE FOLLOWING REQUIREMENTS SHALL APPLY TO ALL NEWLY CONSTRUCTED RESIDENTIAL UNITS WITHIN THE DEVELOPMENT LOCATED ADJACENT TO OPEN LANDS, (SEE SHEET S4 FOR APPLICABLE COMPLIANCE DETAILS):
   2.A. CLASS A ROOF FIRE–RETARDANT MATERIALS ARE REQUIRED ON ALL STRUCTURES.
   2.B. ALL STRUCTURES SHALL BE CONSTRUCTED WITH NONCOMBUSTIBLE SIDING.
   2.C. ALL STRUCTURES WITH EAVES SHALL BE ENCLOSED, WRAPPED, OR 'BOXED–IN' WITH NONCOMBUSTIBLE MATERIALS TO THE SATISFACTION OF THE BUILDING OFFICIAL.
   2.D. ALL ATTIC AND UNDERFLOOR OPENINGS SHALL BE PROTECTED WITH ONE–EIGHTH–INCH WIRE SCREENS.
3. ADDITIONAL APPLICABLE STANDARDS MUST BE DEPICTED IN THE PLANS SHOULD THEY APPLY. REFER TO THE VACAVILLE MUNICIPAL CODE FOR COMPREHENSIVE DEVELOPMENT PROVISIONS APPLICABLE TO AREAS ADJACENT TO OPEN SPACE.

M. FIRE-RESISTANT CONSTRUCTION FOR EXTERIOR WALLS

1. CONSTRUCTION, PROJECTIONS, OPENINGS AND PENETRATIONS OF EXTERIOR WALLS OF DWELLINGS AND ACCESSORY BUILDINGS SHALL COMPLY WITH TABLE R302.1(1); OR DWELLINGS AND ACCESSORY BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION R313 SHALL COMPLY WITH TABLE R302.1(2).

EXCEPTIONS:
1.A. WALLS, PROJECTIONS, OPENINGS OR PENETRATIONS IN WALLS PERPENDICULAR TO THE LINE USED TO DETERMINE THE FIRE SEPARATION DISTANCE.
1.B. WALLS OF INDIVIDUAL DWELLING UNITS AND THEIR ACCESSORY STRUCTURES LOCATED ON THE SAME LOT.
1.C. DETACHED TOOL SHEDS AND STORAGE SHEDS, PLAYHOUSES AND SIMILAR STRUCTURES EXEMPTED FROM PERMITS ARE NOT REQUIRED TO PROVIDE WALL PROTECTION BASED ON LOCATION ON THE LOT. PROJECTIONS BEYOND THE EXTERIOR WALL SHALL NOT EXTEND OVER THE LOT LINE.
1.D. DETACHED GARAGES ACCESSORY TO A DWELLING LOCATED WITHIN 2 FEET OF A LOT LINE ARE PERMITTED TO HAVE ROOF EAVE PROJECTIONS NOT EXCEEDING 4 INCHES.
1.E. FOUNDATION VENTS INSTALLED IN COMPLIANCE WITH THIS CODE ARE PERMITTED.

TABLE R302.1(1)
EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.3 of the *California Building Code* with exposure from both sides	0 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood[a, b]	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	NA	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

For SI: 1 foot = 304.8 mm.

NA = Not Applicable.

a. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.

TABLE R302.1(2)
EXTERIOR WALLS—DWELLINGS *AND ACCESSORY BUILDINGS WITH AUTOMATIC RESIDENTIAL FIRE SPRINKLER PROTECTION*

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the *California Building Code* with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet[a]
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood[b, c]	2 feet[a]
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	NA	< 3 feet
	Unlimited	0 hours	3 feet[a]
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet[a]

For SI: 1 foot = 304.8 mm.

NA = Not Applicable.

a. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed in accordance with Section R313, the fire separation distance for exterior walls not fire-resistance rated and for fire-resistance-rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

c. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.

TABLE R602.3(1)
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING OF FASTENERS
	Roof		
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2½" × 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2½" × 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie to rafter, face nail or 1¼" × 20 gage ridge strap	3-10d (3" × 0.128")	—
5	Rafter or roof truss to plate, toe nail	3-16d box nails (3½" × 0.135") or 3-10d common nails (3" × 0.148")	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss[j]
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (3½" × 0.135") 3-16d (3½" × 0.135")	—
	Wall		
7	Built-up studs-face nail	10d (3" × 0.128")	24" o.c.
8	Abutting studs at intersecting wall corners, face nail	16d (3 ½" x 0.135")	12" o.c.
9	Built-up header, two pieces with ½" spacer	16d (3½" × 0.135")	16" o.c. along each edge
10	Continued header, two pieces	16d (3½" × 0.135")	16" o.c. along each edge
11	Continuous header to stud, toe nail	4-8d (2½" × 0.113")	—
12	Double studs, face nail	10d (3" × 0.128")	24" o.c.
13	Double top plates, face nail	10d (3" × 0.128")	24" o.c.
14	Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d (3½" × 0.135")	—
15	Sole plate to joist or blocking, face nail	16d (3½" × 0.135")	16" o.c.
16	Sole plate to joist or blocking at braced wall panels	3-16d (3½" × 0.135")	16" o.c.
17	Stud to sole plate, toe nail	3-8d (2½" × 0.113") or 2-16d (3½" × 0.135")	— —
18	Top or sole plate to stud, end nail	2-16d (3½" × 0.135")	—
19	Top plates, laps at corners and intersections, face nail	2-10d (3" × 0.128")	—
20	1" brace to each stud and plate, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
21	1" × 6" sheathing to each bearing, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
22	1" × 8" sheathing to each bearing, face nail	2-8d (2½" × 0.113") 3 staples 1¾"	— —
23	Wider than 1" × 8" sheathing to each bearing, face nail	3-8d (2½" × 0.113") 4 staples 1¾"	— —
	Floor		
24	Joist to sill or girder, toe nail	3-8d (2½" × 0.113")	—
25	Rim joist to top plate, toe nail (roof applications also)	8d (2½" × 0.113")	6" o.c.
26	Rim joist or blocking to sill plate, toe nail	8d (2 ½" × 0.113")	6" o.c.
27	1" × 6" subfloor or less to each joist, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
28	2" subfloor to joist or girder, blind and face nail	2-16d (3½" × 0.135")	—
29	2" planks (plank & beam - floor & roof)	2-16d (3½" × 0.135")	at each bearing
30	Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
31	Ledger strip supporting joists or rafters	3-16d (3½" × 0.135")	At each joist or rafter
	Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing		
32	⅜" - ½"	6d common (2" × 0.113") nail (subfloor, wall)[j] 8d common (2½" × 0.131") nail (roof)[j]	6 / 12[g]
33	19/32" - 1"	8d common nail (2½" × 0.131")	6 / 12[g]
34	1⅛" - 1¼"	10d common (3" × 0.148") nail or 8d (2½" × 0.131") deformed nail	6 / 12
	Other wall sheathing[h]		
35	½" structural cellulosic fiberboard sheathing	1½" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1¼" long	3 / 6
36	25/32" structural cellulosic fiberboard sheathing	1¾" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1½" long	3 / 6
37	½" gypsum sheathing[d]	1¼" galvanized roofing nail; staple galvanized, 1½" long; 1¼ screws, Type W or S	7 / 7
38	⅝" gypsum sheathing[d]	1¾" galvanized roofing nail; staple galvanized, 1⅝" long; 1⅝" screws, Type W or S	7 / 7
	Wood structural panels, combination subfloor underlayment to framing		
39	¾" and less	6d deformed (2" × 0.120") nail or 8d common (2½" × 0.131") nail	6 / 12
40	⅞" - 1"	8d common (2½" × 0.131") nail or 8d deformed (2½" × 0.120") nail	6 / 12
41	1⅛" - 1¼"	10d common (3" × 0.148") nail or 8d deformed (2½" × 0.120") nail	6 / 12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.

a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.
c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
f. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 6 inches on center where the ultimate design wind speed is less than 130 mph and shall be spaced 4 inches on center where the ultimate design wind speed is 130 mph or greater but less than 140 mph.
g. Gypsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C208.
h. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
i. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.
j. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.

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CITY OF VACAVILLE

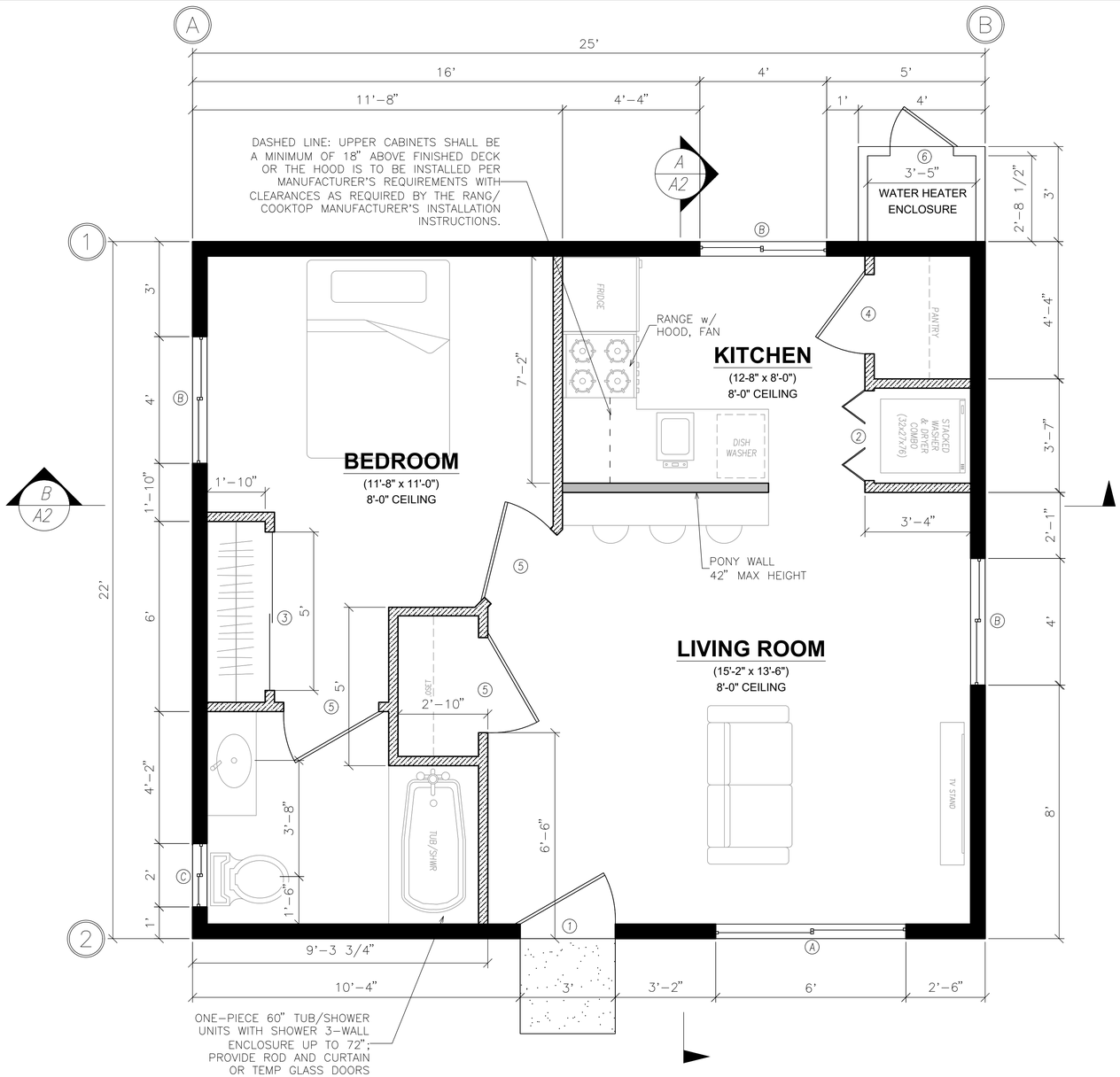
REVISIONS
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PROJECT TITLE: CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM
SHEET DESCRIPTION: COVER
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT
550

DRAWING SCALE

SHEET
C2



WINDOW SCHEDULE

MARK	DIMENSION	TYPE	TEMPERED	NOTES
(A)	6'-0" x 4'-0"	SLIDING	–	–
(B)	4'-0" x 4'-0"	SLIDING	–	–
(C)	2'-0" x 3'-0"	SLIDING	TEMP	–

MINIMUM LI = 0.32 SHGC = 0.28

THE BOTTOM OF THE CLEAR OPENING OF WINDOWS IN SLEEPING ROOMS SHALL NOT BE MORE THAN 44" ABOVE THE FLOOR (CRC R310.2.3)

DOOR SCHEDULE

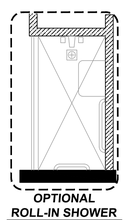
MARK	DIMENSION	TYPE	NOTES
(1)	3'-0" x 6'-8"	SWINGING	1-3/8" SOLID CORE
(2)	2'-6" x 6'-8"	BI-FOLD	LAUNDRY COVERING w/VENTILATION SLATS
(3)	5'-0" x 6'-8"	SLIDING	5'-6" CLOSET
(4)	2'-6" x 6'-8"	SWINGING	1-3/8" HOLLOW CORE
(5)	3'-0" x 6'-8"	SWINGING	1-3/8" HOLLOW CORE
(6)	2'-8" x 6'-8"	SWINGING	GASKETED

LEGEND

EXTERIOR LOAD BEARING 2 x 6 @ 16" o.c., 9 ft PL HT; REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR WALL COVERINGS; 1/2" WALLBOARD INTERIOR; R-21 BATT INSULATION IN STUD CAVITY; APA CDX PLYWD OR OSB SHEATHING ON EXTERIOR FACE OF STUDS; 2 LAYERS NO. 15 BUILDING PAPER OVER PLWD R-5 RIGID INSUL ON EXTERIOR FACE OF SHEATHING.

INTERIOR NON-LOAD-BEARING WALL 2 x 4 @ 16" o.c., 1/2" WALLBOARD INTERIOR

EXTERIOR NON-BEARING WALLS: 2x4 @ 24" O.C. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR WALL COVERINGS



EXCERPT FROM R602.3.3 – BEARING STUDS

WHERE JOISTS, TRUSSES OR RAFTERS ARE SPACED MORE THAN 16 INCHES (406 MM) ON CENTER AND THE BEARING STUDS BELOW ARE SPACED 24 INCHES (610 MM) ON CENTER, SUCH MEMBERS SHALL BEAR WITHIN 5 INCHES (127 MM) OF THE STUDS BENEATH.

AGING-IN-PLACE

AGING-IN-PLACE DESIGN AND FALL PREVENTION. NEWLY CONSTRUCTED DWELLINGS SUBJECT TO THE REQUIREMENTS OF THIS CODE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTIONS R327.1.1 THROUGH R327.1.4.PAGE

REINFORCEMENT FOR GRAB BARS [CRC 327.1.1]

1. AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH THIS SECTION. 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.
2. INFORMATION AND/OR DRAWINGS IDENTIFYING THE LOCATION OF GRAB BAR REINFORCEMENT SHALL BE PLACED IN THE OPERATION AND MAINTENANCE MANUAL IN ACCORDANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS CODE, CHAPTER 4, DIVISION 4.4.
3. REINFORCEMENT SHALL NOT BE LESS THAN 2"x8" NOMINAL LUMBER (1-1/2"x7-1/4" ACTUAL DIMENSION) OR OTHER CONSTRUCTION MATERIAL PROVIDING EQUAL HEIGHT AND LOAD CAPACITY. REINFORCEMENT SHALL BE LOCATED BETWEEN 32 INCHES AND 39-1/4 INCHES ABOVE THE FINISHED FLOOR FLUSH WITH THE WALL FRAMING.
4. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ONE SIDE WALL AND THE BACK WALL.
5. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED.
6. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. ADDITIONALLY, BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6 INCHES (152.4 MM) ABOVE THE BATHTUB RIM.

   EXCEPTIONS:

   6.1. WHERE THE WATER CLOSET IS NOT PLACED ADJACENT TO A SIDE WALL CAPABLE OF ACCOMMODATING A GRAB BAR, THE BATHROOM SHALL HAVE PROVISIONS FOR INSTALLATION OF FLOOR-MOUNTED, FOLDAWAY OR SIMILAR ALTERNATE GRAB BAR REINFORCEMENTS APPROVED BY THE ENFORCING AGENCY.

   6.2. REINFORCEMENT SHALL NOT BE REQUIRED IN WALL FRAMING FOR PRE-FABRICATED SHOWER ENCLOSURES AND BATHTUB WALL PANELS WITH INTEGRAL FACTORY-INSTALLED GRAB BARS OR WHEN FACTORY-INSTALLED REINFORCEMENT FOR GRAB BARS IS PROVIDED.

   6.3. SHOWER ENCLOSURES THAT DO NOT PERMIT INSTALLATION OF REINFORCEMENT AND/OR GRAB BARS SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.

   6.4. BATHTUBS WITH NO SURROUNDING WALLS, OR WHERE WALL PANELS DO NOT PERMIT THE INSTALLATION OF REINFORCEMENT SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS ADJACENT TO THE BATHTUB OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.

   6.5. REINFORCEMENT OF FLOORS SHALL NOT BE REQUIRED FOR BATHTUBS AND WATER CLOSETS INSTALLED ON CONCRETE SLAB FLOORS.

ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROLS [CRC 327.1.2]

ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS. 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.

EXCEPTIONS:

1. DEDICATED RECEPTACLE OUTLETS; FLOOR RECEPTACLE OUTLETS; CONTROLS MOUNTED ON CEILING FANS AND CEILING LIGHTS; AND CONTROLS LOCATED ON APPLIANCES.
2. RECEPTACLE OUTLETS REQUIRED BY THE CALIFORNIA ELECTRICAL CODE ON A WALL SPACE WHERE THE DISTANCE BETWEEN THE FINISHED FLOOR AND A BUILT-IN FEATURE ABOVE THE FINISH FLOOR, SUCH AS A WINDOW, IS LESS THAN 15 INCHES (381 MM).

INTERIOR DOORS [CRC R327.1.3]

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; OR, IN THE CASE OF A TWO- OR THREE-STORY SINGLE FAMILY DWELLING, ON THE SECOND OR THIRD FLOOR OF THE DWELLING IF A BATHROOM OR BEDROOM IS NOT LOCATED ON THE ENTRY LEVEL.

DOORBELL BUTTONS [CRC R327.1.4]

DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48 INCHES MEASURED FROM THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48 INCHES ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL.

OPTIONAL ROLL-IN SHOWER PLAN NOTES

NOTE: OPTIONAL ROLL IN SHOWERS OFFERED FOR CONVENIENCE NOT FOR COMPLIANCE WITH ACCESSIBILITY STANDARDS.

THRESHOLDS [CBC 1127A.5.3.2]

SHALL BE ½" MAX. IN HEIGHT AND SHALL BEBEVELED WITH A SLOPE NO GREATER THAN ONE UNIT VERTICAL IN TWO UNITS HORIZONTAL (50% SLOPE).

FLOOR [CBC 1127A.5.3.4]

SHOWER COMPARTMENT FLOOR SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANCE. THE MAXIMUM SLOPE SHALL BE ¼" PER FOOT IN ANY DIRECTION. WHERE DRAINS ARE PROVIDED, GRATE OPENINGS SHALL BE ½" MAX. AND LOCATED FLUSH WITH THE FLOOR SURFACE.

CONTROLS [CBC 1127A.5.3.5]

CONTROLS, FAUCETS AND SHOWER SPRAY UNITS IN SHOWER COMPARTMENTS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS (22.2 N) MAXIMUM. ALL CONTROLS AND FAUCETS SHALL BE OF A SINGLE-LEVER DESIGN.

STANDARD ROLL-IN SHOWER COMPARTMENTS: [CBC 1127A.5.3.5.1]

OPERABLE PARTS OF SHOWER CONTROLS AND FAUCETS: SHALL BE INSTALLED ON THE BACK WALL OF SHOWER COMPARTMENT ADJACENT TO THE SEAT WALL, 19 INCHES MIN. AND 27 INCHES MAX. FROM THE SEAT WALL. SHALL BE LOCATED ABOVE GRAB BAR, BUT NO HIGHER THAN 48 INCHES ABOVE SHOWER FLOOR WITH THEIR CENTERLINE AT 39 INCHES MIN. AND 41 INCHES MAX. ABOVE SHOWER FLOOR.

HAND-HELD SHOWER SPRAYER UNIT [CBC 1127A.5.3.6]

A FLEXIBLE HAND-HELD SHOWER SPRAY UNIT WITH A HOSE AT LEAST 59 INCHES LONG THAT CAN BE USED BOTH AS A FIXED SHOWER HEAD AND AS A HAND-HELD SHOWER SHALL BE PROVIDED. THE SHOWER SPRAY UNIT SHALL HAVE AN ON/OFF CONTROL WITH A NON-POSITIVE SHUT-OFF. IF AN ADJUSTABLE-HEIGHT SHOWER HEAD ON A VERTICAL BAR IS USED, THE BAR SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE USE OF GRAB BARS.

SHOWER COMPARTMENT SEAT

1. MUST BE FOLDING TYPE, INSTALLED ON THE SIDE WALL ADJACENT TO THE CONTROLS. SEAT SHALL NOT EXTEND FROM THE BACK WALLTO A POINT WITHIN 3 INCHES OF THE COMPARTMENT ENTRY. SEAT SHALL BE LOCATED WITHIN 27 INCHES OF SHOWER CONTROLS. THE TOP OF THE SEAT SHALL BE 17 INCHES MIN. AND 19 INCHES MAX. ABOVE BATHROOM FINISHED FLOOR. WHEN FOLDED THE SEAT SHALL NOT EXTEND MORE THAN 6 INCHES FROM THE MOUNTING WALL. [CBC 1127A.5.3.7]
2. STRUCTURAL ADEQUACY OF MOUNTING HARDWARE AND FASTENERS TO ACCOMMODATE 250 POUND POINT LOAD APPLIED AT ANY POINT ON THE GRAB BAR, FASTENER, MOUNTING DEVICE, OR SUPPORTING STRUCTURE [CBC 1127A.4.4]

SHOWER GRAB BARS

1. GRAB BARS SHALL BE INSTALLED ON THE BACK WALL AND ON THE SIDE WALL OPPOSITE THE SEAT. SHALL BE ABOVE THE SEAT ARE NOT PERMITTED. SHALL BE INSTALLED 6 INCHES MAX. FROM ADJACENT WALLS. [CBC 1127.A.5.3.8.1]
2. SHALL BE INSTALLED IN A HORIZONTAL POSITION, 33 INCHES MIN. AND 36 INCHES MAX. ABOVE THE FINISH FLOOR MEASURED TO THE TOP OF THE GRIPPING SURFACE. [CBC 1127A.4.2]
3. GRAB BARS WITH CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF 1-1/4" MIN. AND 2" MAX. [CBC 1127A.4.3.1]
4. GRAB BARS WITH NON-CIRCULAR CROSS SECTION SHALL HAVE A DIMENSION OF 2" MAX. THE PERIMETER DIMENSION OF GRAB BARS WITH NON-CIRCULAR CROSS SECTION SHALL BE 4 INCHES MIN. AND 4.8" MAX. [CBC 1127A.4.3.2]
5. STRUCTURAL ADEQUACY OF MOUNTING HARDWARE AND FASTENERS TO ACCOMMODATE 250 POUND POINT LOAD APPLIED AT ANY POINT ON THE GRAB BAR, FASTENER, MOUNTING DEVICE, OR SUPPORTING STRUCTURE [CBC 1127A.4.4]
6. A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT TO IT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE ROUNDED EDGES. [CBC 1127A.4.5]
7. WHEN GRAB BARS MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BARS SHALL BE 1-1/2 INCHES. THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS BELOW AND AT THE ENDS SHALL BE 1-1/2 INCHES MIN.

   EXCEPTIONS:

   7.1. THE SPACE BETWEEN THE GRAB BARS AND SHOWER CONTROLS, SHOWER FITTINGS AND OTHER GRAB BARS ABOVE SHALL BE PERMITTED TO BE 11/2 INCHES MIN.

   7.2. FOR L-SHAPED OR U-SHAPED GRAB BARS THE SPACE BETWEEN THE WALLS AND THE GRAB BAR SHALL BE 11/2 INCHES MIN. FOR A DISTANCE OF 6 INCHES ON EITHER SIDE OF THE INSIDE CORNER BETWEEN TWO ADJACENT WALL SURFACES. [CBC 1127A.4.6]

SOAP DISH [CBC 1127A.5.3.9]

WHEN A SOAP DISH IS PROVIDED, IT SHALL BE LOCATED ON THE CONTROL WALL AT A MAXIMUM HEIGHT OF 40 INCHES ABOVE THE SHOWER FLOOR, AND WITHIN THE REACH LIMITS FROM THE SEAT.

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CITY OF VACAVILLE

REVISIONS

PROJECT TITLE	SHEET DESCRIPTION	DATE
CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM	FLOOR PLAN	12/23/2024
	AGENCY	SJV REAP

ADU SQFT

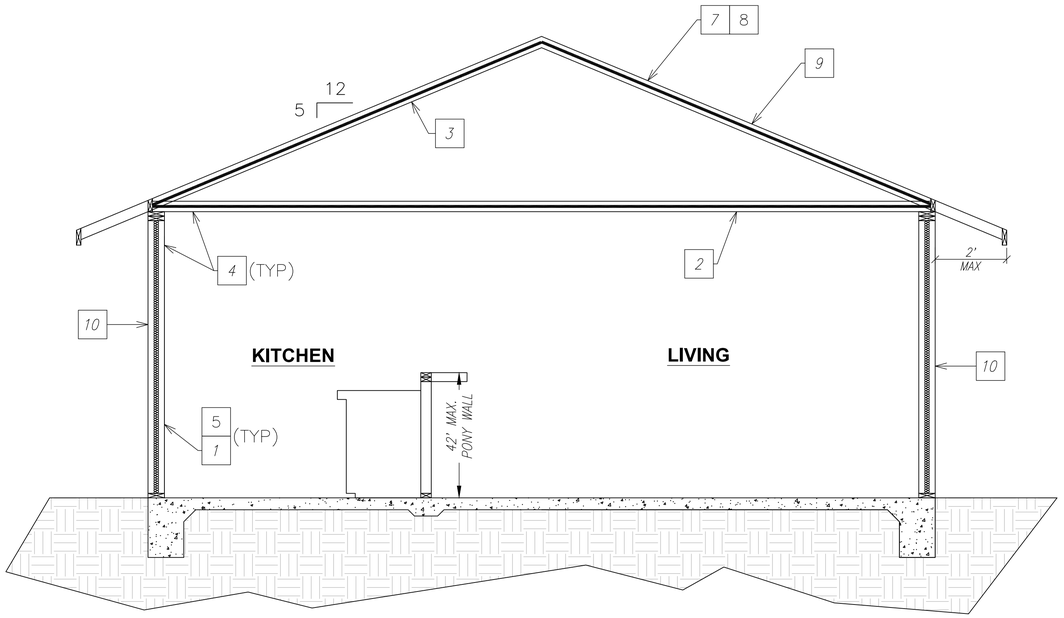
550

DRAWING SCALE

1/2" = 1'

SHEET

A1

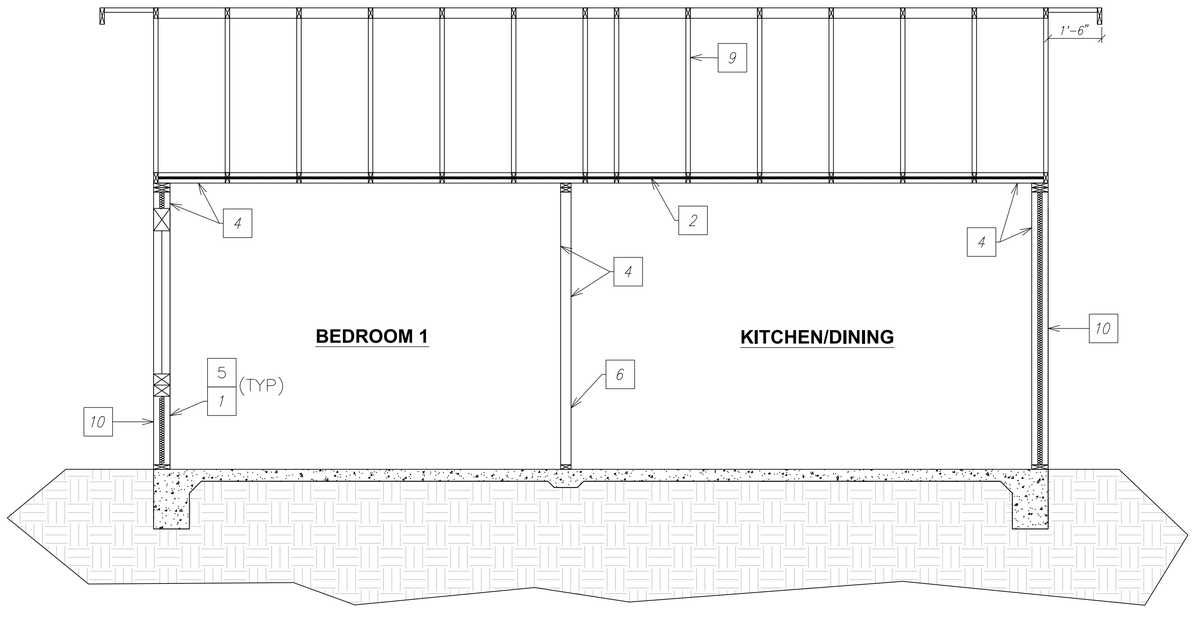


SECTION A - A

SECTION KEYNOTES

1	WALL INSULATION: R21
2	CEILING INSULATION: R38
3	ROOF INSULATION: R19
4	INTERIOR FINISH: ½" GYPSUM BOARD (UNLESS WALL IS FIRE RESISTANT ASSEMBLE)
5	EXTERIOR WALL: 2x6 STUD WALL @ 16" O.C.
6	INTERIOR WALL: 2x4 STUD WALL @ 24" O.C.
7	RADIANT BARRIER IS REQUIRED
8	ROOFING: REFER TO ELEVATIONS
9	PRE–ENGINEERED, PRE–FABRICATED ROOF TRUSSES (REQUIRED BY APPLICANT AT TIME OF SUBMITTAL)
10	EXTERIOR WALL COVERING AS DENOTED AT EXTERIOR ELEVATION. ALL WALL COVERINGS SHALL BE APPLIED OVER WATER RESISTIVE BARRIER APPLIED TO WOOD SHEATHING PER (CRC 703.7.3.1)

NOTE:
1. DESIGN OF ROOF TRUSSES SHALL ACCOMMODATE PHYSICAL DIMENSIONS AND GRAVITY LOAD OF ATTIC MOUNTED AIR HANDLER, AND PV PANEL WEIGHT.
2. VERIFY INSULATION VALUES WITH ENERGY COMPLIANCE REPORT.
3. FOR 1–HOUR FIRE RATED ASSEMBLY" AND "1–HOUR FIRE RATED GABLE END" DETAIL ON SHEETS S4 WHERE REQUIRED. REFER TO SECTION 'M' ON SHEET C2 FOR FIRE–RATED REQUIREMENTS.



SECTION B - B

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CITY OF VACAVILLE

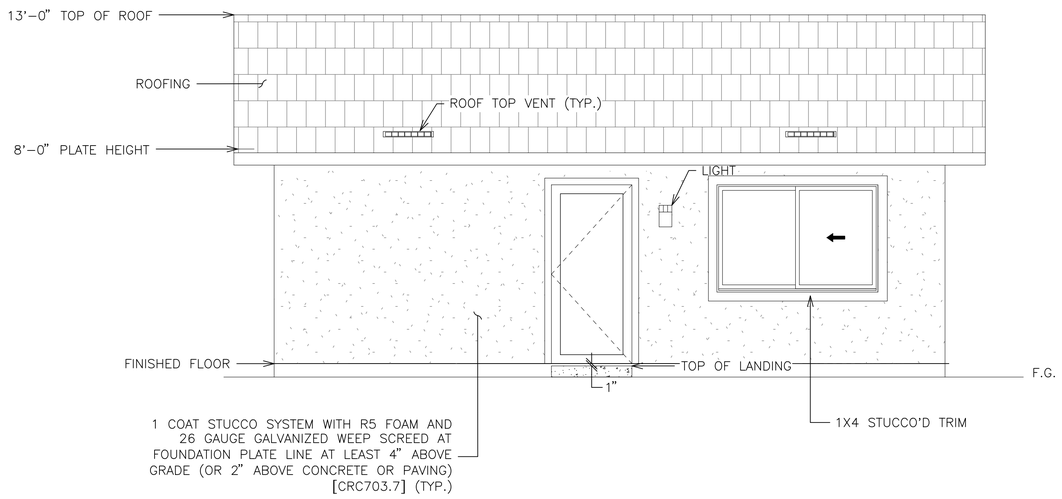
REVISIONS

PROJECT TITLE	CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM
SHEET DESCRIPTION	SECTIONS
DATE	12/23/2024
AGENCY	SJV REAP

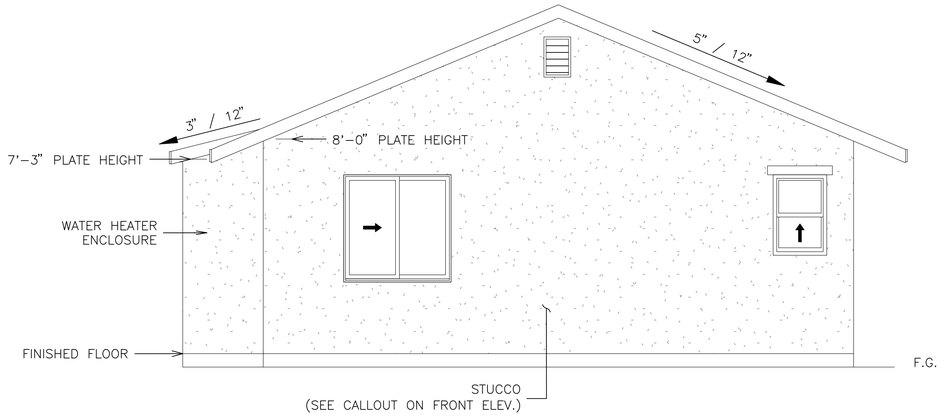
ADU SQFT
550

DRAWING SCALE
1/2" = 1'

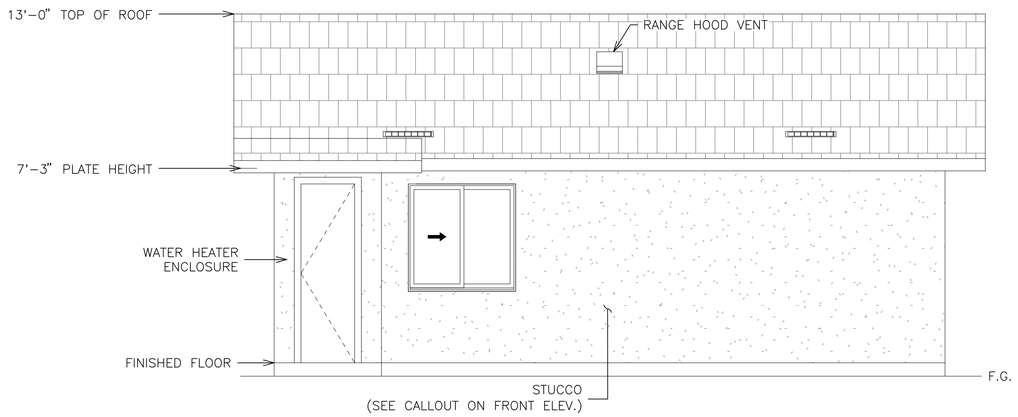
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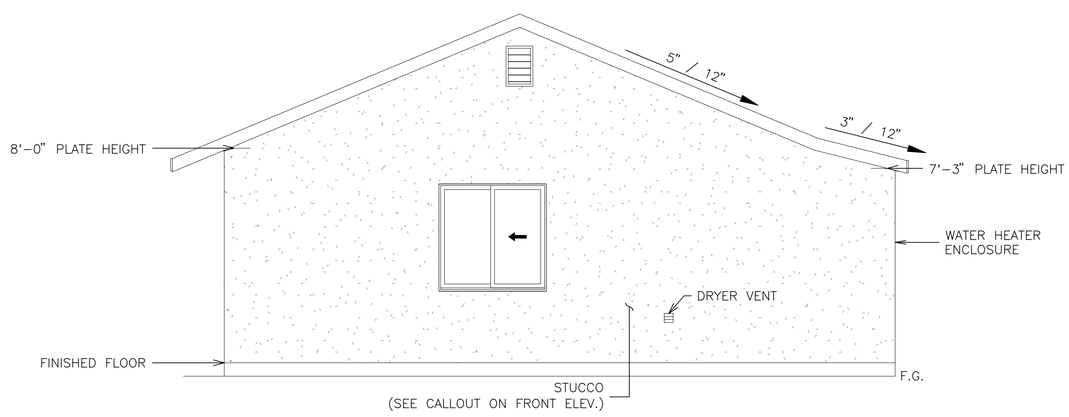
FRONT ELEVATION



LEFT ELEVATION



REAR ELEVATION



RIGHT ELEVATION

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CITY OF VACAVILLE

REVISIONS

PROJECT TITLE: CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM

SHEET DESCRIPTION: ELEVATION A

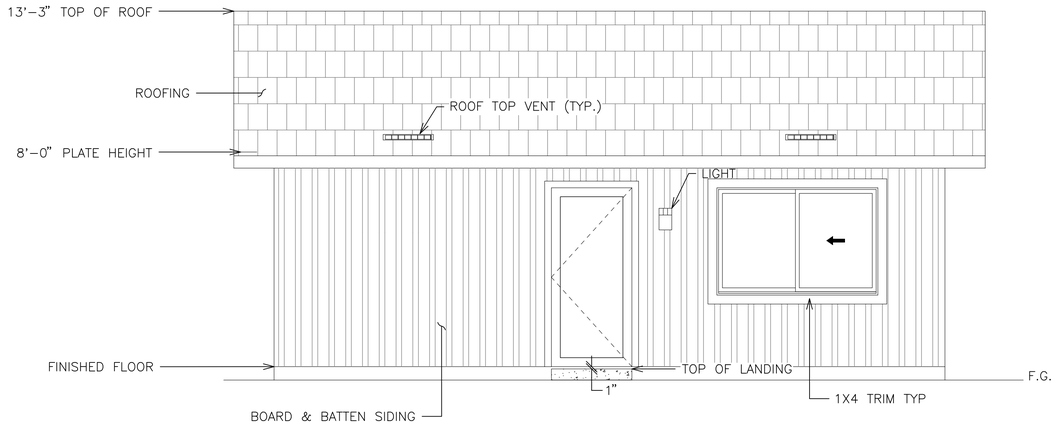
DATE: 12/23/2024

AGENCY: SJV REAP

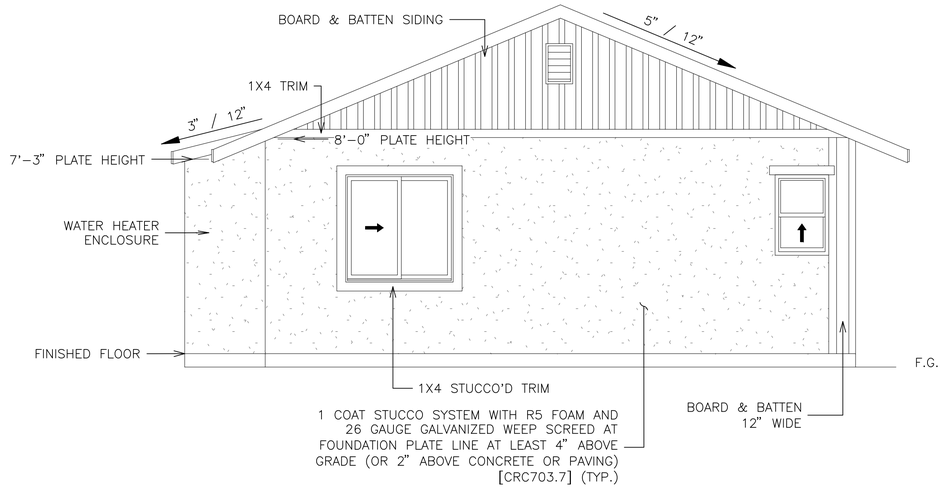
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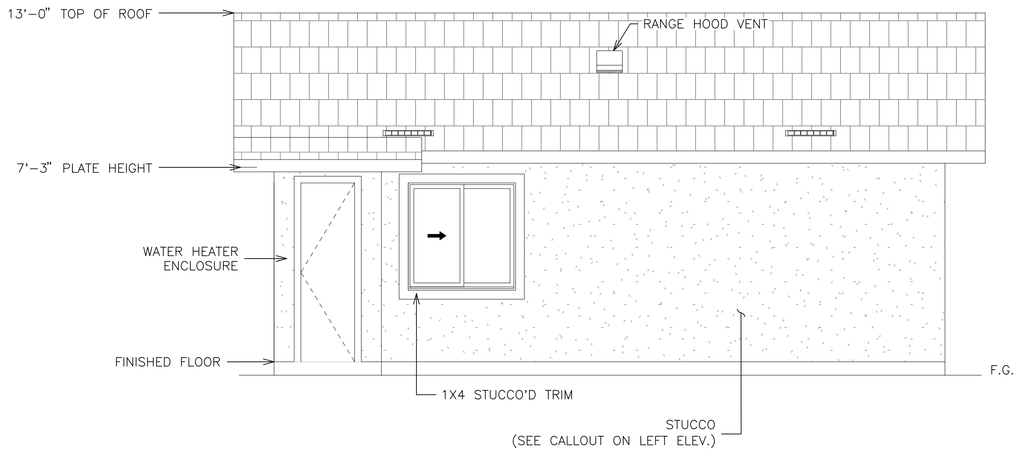
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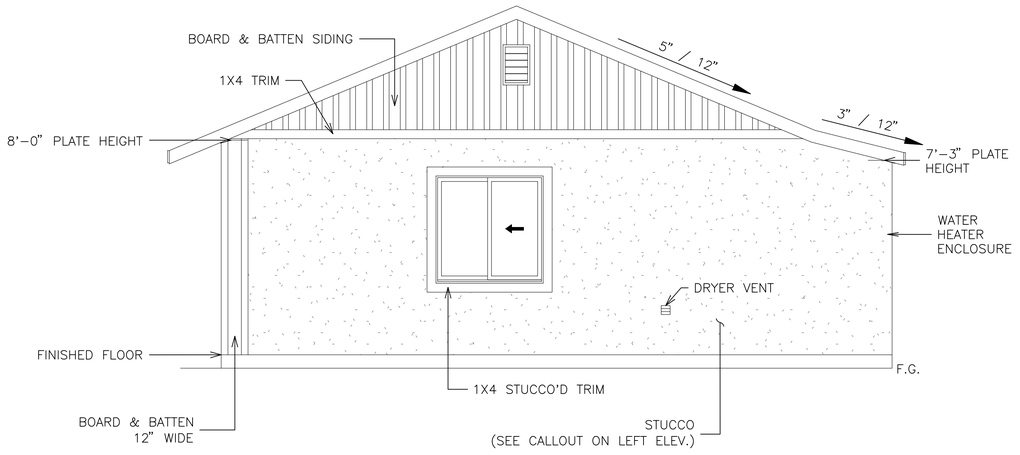
FRONT ELEVATION



LEFT ELEVATION



REAR ELEVATION



RIGHT ELEVATION

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CITY OF VACAVILLE

REVISIONS

PROJECT TITLE	SHEET DESCRIPTION	DATE
CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM	ELEVATION B	12/23/2024
	AGENCY	SJV REAP

ADU SQFT

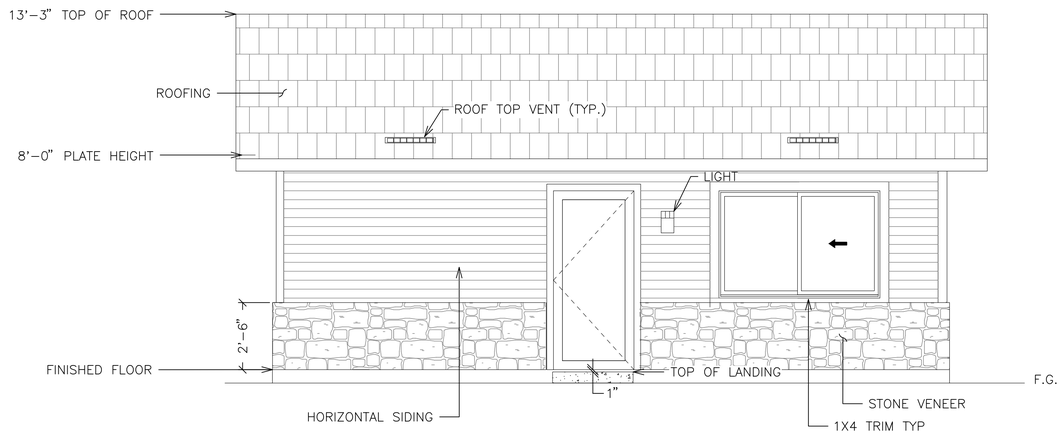
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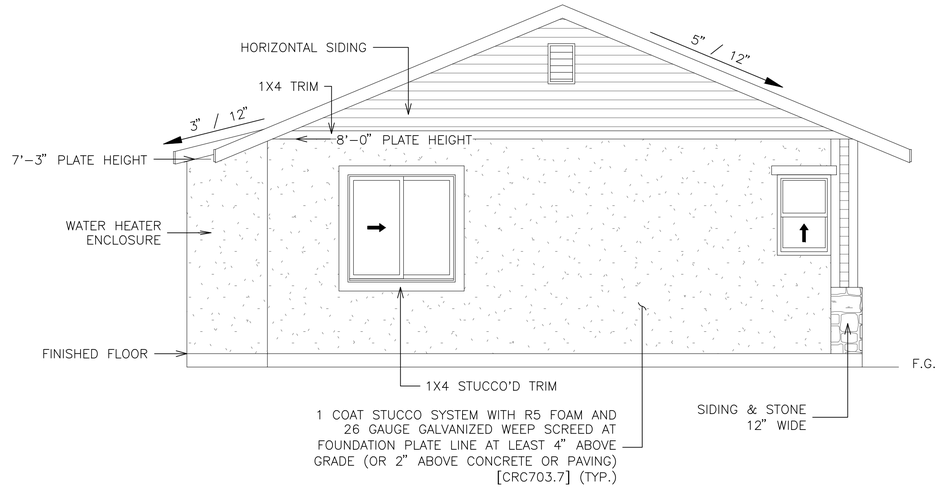
3/8" = 1'

SHEET

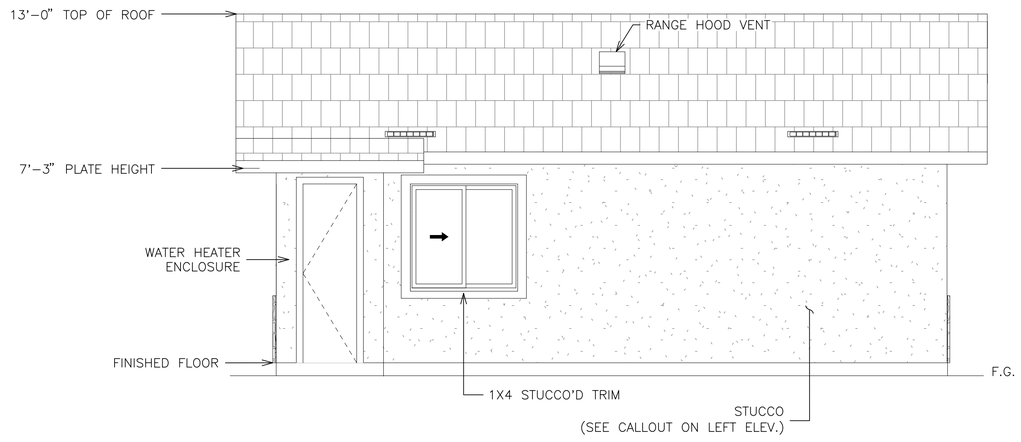
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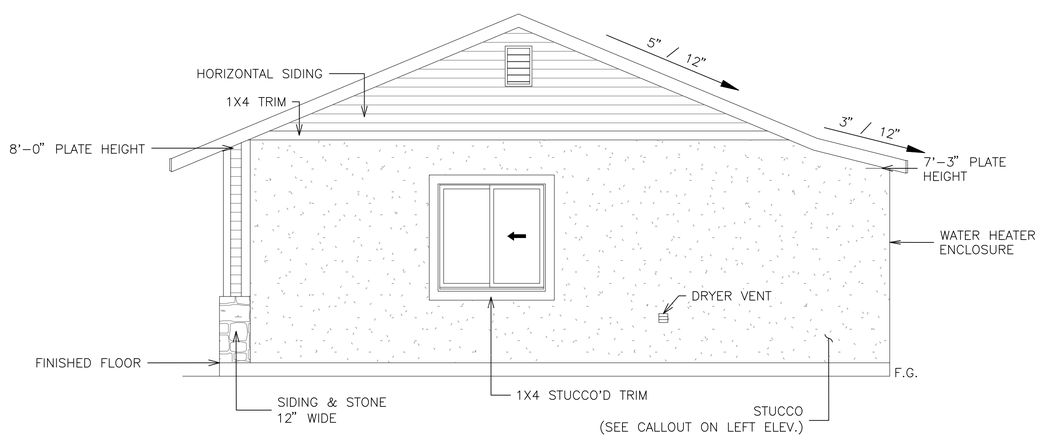
FRONT ELEVATION



LEFT ELEVATION



REAR ELEVATION



RIGHT ELEVATION

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CITY OF VACAVILLE

REVISIONS

PROJECT TITLE: CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM
SHEET DESCRIPTION: ELEVATION C
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT: 550

DRAWING SCALE: 3/8" = 1'

SHEET: A5

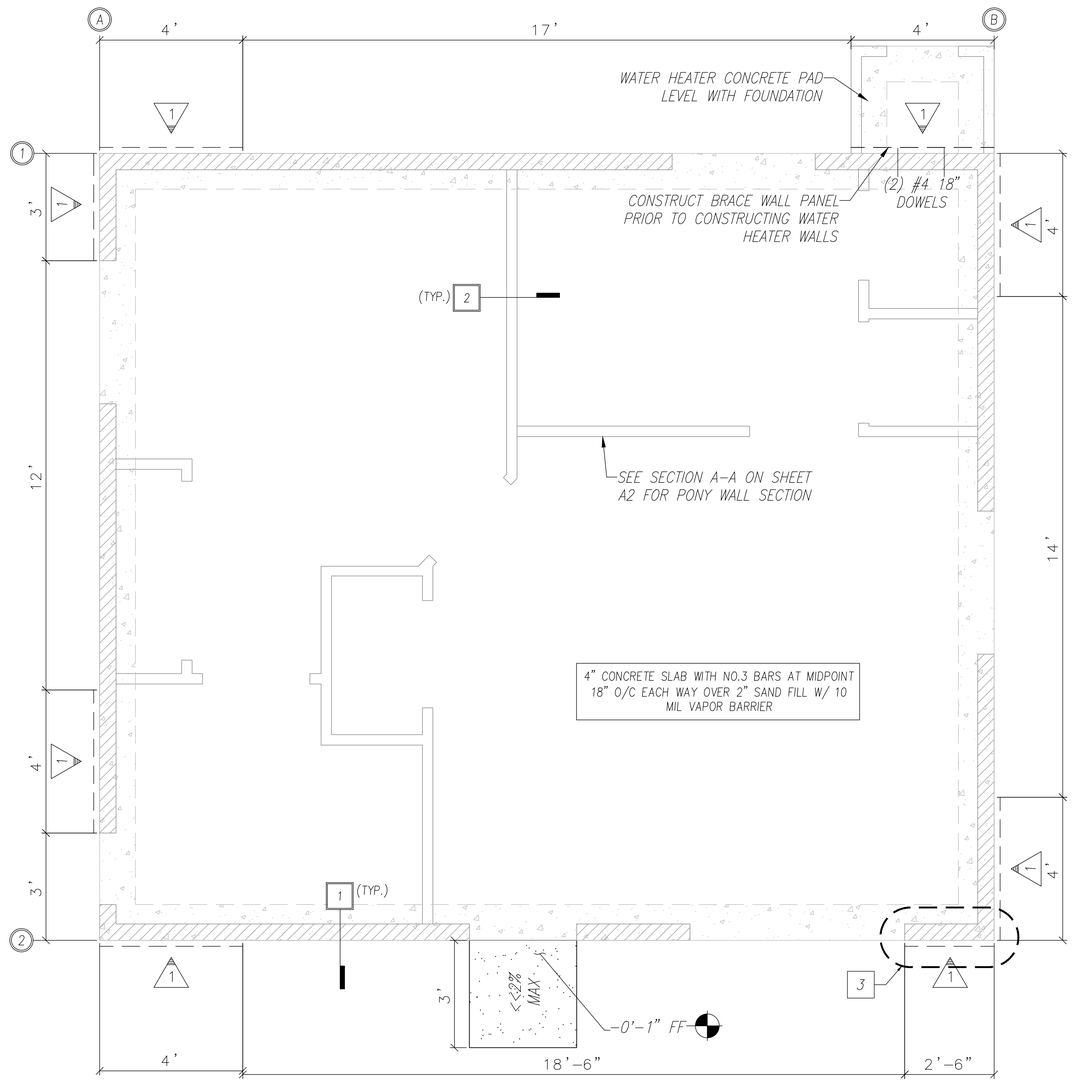
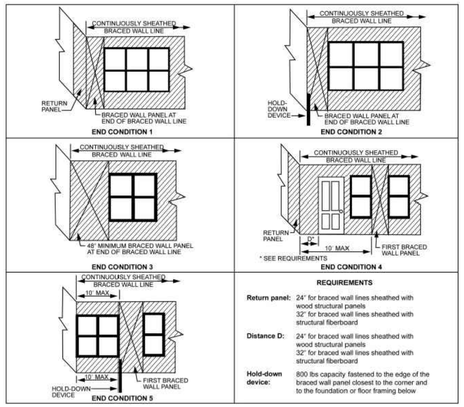


FIGURE R602.10.7
END CONDITIONS FOR BRACED WALL LINES
WITH CONTINUOUS SHEATHING



WALL BRACING NOTES

1. FOR THE PURPOSE OF DETERMINING THE AMOUNT AND LOCATION OF BRACING REQUIRED IN EACH STORY LEVEL OF A BUILDING, BRACED WALL LINES SHALL BE DESIGNATED AS STRAIGHT LINES IN THE BUILDING PLAN PLACED IN ACCORDANCE WITH THIS SECTION.(CRC602.10.1)

2. THE LENGTH OF A BRACED WALL LINE SHALL BE THE DISTANCE BETWEEN ITS ENDS. THE END OF A BRACED WALL LINE SHALL BE THE INTERSECTION WITH A PERPENDICULAR BRACED WALL LINE, AN ANGLED BRACED WALL LINE AS PERMITTED IN SECTION R602.10.1.4 OR AN EXTERIOR WALL AS SHOWN IN FIGURE R602.10.1.1. (CRC602.10.1.1)

3. EACH BRACED WALL LINE SHALL BE LOCATED SUCH THAT NO MORE THAN TWO–THIRDS OF THE REQUIRED BRACED WALL PANEL LENGTH IS LOCATED TO ONE SIDE OF THE BRACED WALL LINE. BRACED WALL PANELS SHALL BE PERMITTED TO BE OFFSET UP TO 4 FEET (1219 MM) FROM THE DESIGNATED BRACED WALL LINE. BRACED WALL PANELS PARALLEL TO A BRACED WALL LINE SHALL BE OFFSET NOT MORE THAN 4 FEET (1219 MM) FROM THE DESIGNATED BRACED WALL LINE LOCATION AS SHOWN IN FIGURE R602.10.1.1.
EXTERIOR WALLS PARALLEL TO A BRACED WALL LINE SHALL BE OFFSET NOT MORE THAN 4 FEET (1219 MM) FROM THE DESIGNATED BRACED WALL LINE LOCATION AS SHOWN IN FIGURE R602.10.1.1.
INTERIOR WALLS USED AS BRACING SHALL BE OFFSET NOT MORE THAN 4 FEET (1219 MM) FROM A BRACED WALL LINE THROUGH THE INTERIOR OF THE BUILDING AS SHOWN IN FIGURE R602.10.1.1. (CRC602.10.1.2)

4. THE SPACING BETWEEN PARALLEL BRACED WALL LINES SHALL BE IN ACCORDANCE WITH TABLE R602.10.1.3. INTERMEDIATE BRACED WALL LINES THROUGH THE INTERIOR OF THE BUILDING SHALL BE PERMITTED. (CRC602.10.1.3)

TABLE R602.10.1.3
BRACED WALL LINE SPACING

APPLICATION	CONDITION	BUILDING TYPE	BRACED WALL LINE SPACING CRITERIA	
			Maximum Spacing	Exception to Maximum Spacing
Wind bracing	Ultimate design wind speed 100 mph to < 140 mph	Detached, townhouse	60 feet	None
Seismic bracing	SDC A – C	Detached	Use wind bracing	
	SDC A – B	Townhouse	Use wind bracing	
	SDC C	Townhouse	35 feet	Up to 50 feet when length of required bracing per Table R602.10.3(3) is adjusted in accordance with Table R602.10.3(4).
	SDC D_0, D_1, D_2	Detached, townhouses, one- and two-story only	25 feet	Up to 35 feet to allow for a single room not to exceed 900 square feet. Spacing of all other braced wall lines shall not exceed 25 feet.
	SDC D_0, D_1, D_2	Detached, townhouse	25 feet	Up to 35 feet when length of required bracing per Table R602.10.3(3) is adjusted in accordance with Table R602.10.3(4).

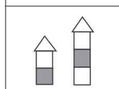
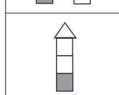
For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 mile per hour = 0.447 m/s.

5. BRACED WALL LINES WITH A LENGTH OF 16 FEET (4877 MM) OR LESS SHALL HAVE NOT LESS THAN TWO BRACED WALL PANELS OF ANY LENGTH OR ONE BRACED WALL PANEL EQUAL TO 48 INCHES (1219 MM) OR MORE. BRACED WALL LINES GREATER THAN 16 FEET (4877 MM) SHALL HAVE NOT LESS THAN TWO BRACED WALL PANELS. (CRC602.10.2.3)

6. TABLE R602.10.3(1) AND THE APPLICABLE ADJUSTMENT FACTORS IN TABLE R602.10.2(2) (CRC602.10.3)

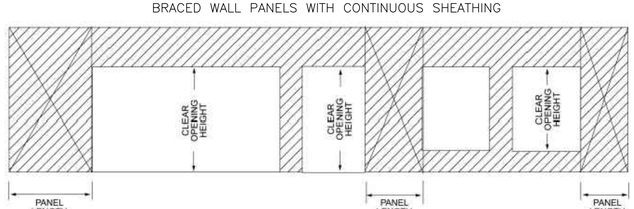
TABLE R602.10.3(3)
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

- SOIL CLASS D[b]
- WALL HEIGHT = 10 FEET
- 10 PSF FLOOR DEAD LOAD
- 15 PSF ROOF/CEILING DEAD LOAD
- BRACED WALL LINE SPACING ≤ 25 FEET

Seismic Design Category	Story Location	Braced Wall Line Length (feet)[c]	MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE[a, f]				
			Method LIB[d]	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB[e]	Method WSP	Methods CS-WSP, CS-G, CS-PF
D_0		10	NP	2.8	2.8	1.8	1.6
		20	NP	5.5	5.5	3.6	3.1
		30	NP	8.3	8.3	5.4	4.6
		40	NP	11.0	11.0	7.2	6.1
		50	NP	13.8	13.8	9.0	7.7
		10	NP	5.3	5.3	3.8	3.2
		20	NP	10.5	10.5	7.5	6.4
		30	NP	15.8	15.8	11.3	9.6
		40	NP	21.0	21.0	15.0	12.8
		50	NP	26.3	26.3	18.8	16.0
		10	NP	7.3	7.3	5.3	4.5
		20	NP	14.5	14.5	10.5	9.0
		30	NP	21.8	21.8	15.8	13.4
		40	NP	29.0	29.0	21.0	17.9
		50	NP	36.3	36.3	26.3	22.3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.
NP = Not Permitted.
a. Linear interpolation shall be permitted.
b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.2 of the *California Building Code*.
c. Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table.
d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches.
e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D_0, D_1 and D_2.
f. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1.

FIGURE R602.10.5
BRACED WALL PANELS WITH CONTINUOUS SHEATHING



KEYNOTES/LEGEND

(#) BRACED WALL LINE

[#] FOUNDATION PLAN DETAIL FOUND ON SHEET S3

INDICATES CONCRETE FOOTING AREA

WALL BRACING SCHEDULE		
TYPE	MATERIAL	NAILING/STAPLING
1	3/8" PLYWD[2]	6d NAILS; EDGES @ 6" O.C. , FIELD NAIL @ 12" O.C.

1. EXPANDED METAL OR WOVEN WIRE LATH STAPLED TO ALL STUDS, TOP AND BTM.
2. STRUCTURAL PANEL SHEATHING TO BE USED ON ALL EXTERIOR SURFACES INCLUDING AREAS ABOVE AND BELOW OPENINGS.

TABLE R602.3(3)
REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES[a, b, c]

MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		ULTIMATE DESIGN WIND SPEED V_{ult} (mph)		
Size	Penetration (inches)				Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category		
							B	C	D
6d Common (2.0" × 0.113")	1.5	24/0	3/8	16	6	12	140	115	110
8d Common (2.5" × 0.131")	1.75	24/16	7/16	16	6	12	170	140	135
				24	6	12	140	115	110

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.
a. Panel strength axis parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.
b. Table is based on wind pressures acting toward and away from building surfaces in accordance with Section R301.2. Lateral bracing requirements shall be in accordance with Section R602.10.
c. Wood structural panels with span ratings of Wall-16 or Wall-24 shall be permitted as an alternate to panels with a 24/0 span rating. Plywood siding rated 16 o.c. or 24 o.c. shall be permitted as an alternate to panels with a 24/16 span rating. Wall-16 and Plywood siding 16 o.c. shall be used with studs spaced not more than 16 inches on center.

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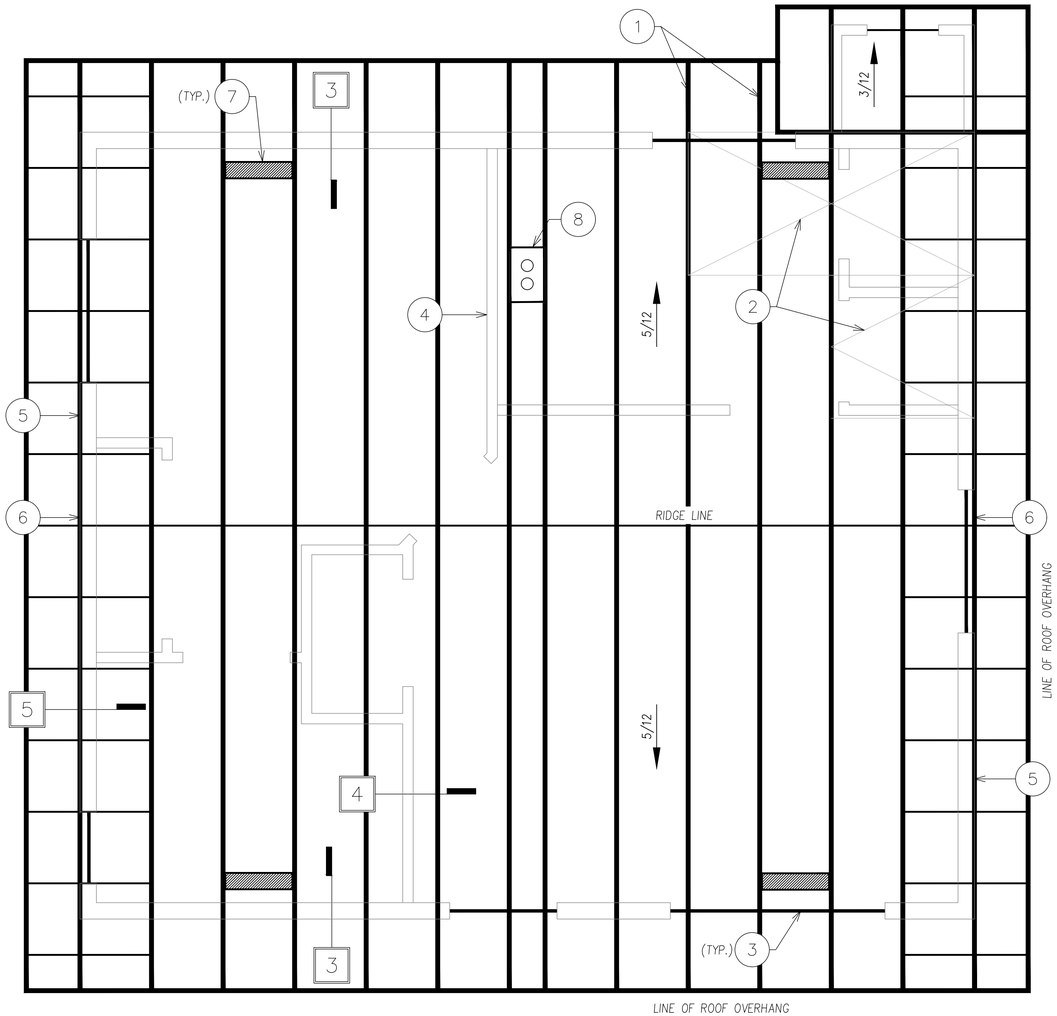
REVISIONS
– 1
– 2
– 3
– 4
– 5

PROJECT TITLE: CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM
SHEET DESCRIPTION: FOUNDATION PLAN
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT
550

DRAWING SCALE
1/2" = 1'

SHEET
S1



KEYNOTES

1. PRE-MFR. TRUSSES @ 24" O.C.
2. 15/32" APA RATED PLYW'D OR OSB, P.I. 32/16, EDGE NAIL W/8D @ 6" O.C. & FIELD NAIL @ 6" O.C.
3. 6X8 D.F. # 2
4. TOP OF NON-BEARING, NON-BRACED WALL. SEE DETAIL 5.
5. SEE DETAIL 3 FOR END WALL TRUSS SHEAR TRANSFER DESIGN REQUIREMENT
6. LOCATION OF 12"x18" GABLE END VENT
7. LOCATION OF 5 ½" x 22 ½" ROOF TOP VENT
8. LOCATION OF RANGE HOOD VENT
- [#] FRAMING PLAN DETAIL FOUND ON SHEET S3

NOTES

1. TRUSS CALCULATIONS (FROM THE TRUSS MANUFACTURER) SHALL BE PROVIDED TO THE BUILDING DEPARTMENT PRIOR TO A REQUEST FOR ROOF AND SHEAR INSPECTION

ATTIC VENTILATION REQUIREMENTS

$\frac{550\ SQFT}{150} \cdot 144\ in/ft = (528\ in^2)$

PROVIDE:

2 – 12"x18" GABLE END VENT (140 in^2) = (280 in^2)

4 – 5-1/2" x 22-1/2" ROOF TOP VENT (83 in^2) = (283 in^2)

TOTAL PROVIDED: = (612 in^2)

TRUSS DESIGN REQUIREMENTS

Design Criteria: 2022 CBC / 2021 IBC

Roof dead load:

Comp. shingles	= 6.0 PSF
Sheathing	= 1.9 PSF
Trusses	= 2.0 PSF
Ceiling	= 3.1 PSF
Insul & Misc.	= 2.0 PSF
DL Total:	= 15.0 PSF

Roof live load:

Slope = 5:12

$R_2 = 1.2 - (.05) = .95$

$L_r = .95(20) = 19$ PSF

Roof Trusses: (Designed by manufacturer)

Roof Beams / Headers

S = 6.5 W = 13.5 (15 + 19) +10 = 469

R = 3.25(469) = 1524#

(X – 1)

Use 6 x 8

Foundation:

$W_{MAX} = 469 + 9(15) = 604$

Use 1'-0" W x 1'-0" into soil cont. ftg. w/ #4 T&B

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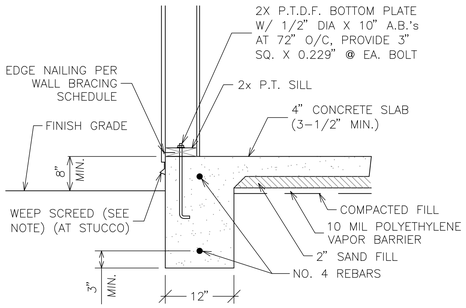
REVISIONS

PROJECT TITLE	SHEET DESCRIPTION	DATE
CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM	ROOF FRAMING PLAN	12/23/2024
	AGENCY: SJV REAP	

ADU SQFT: 550

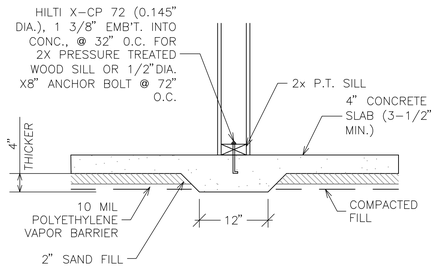
DRAWING SCALE: 1/2" = 1'

SHEET: S2

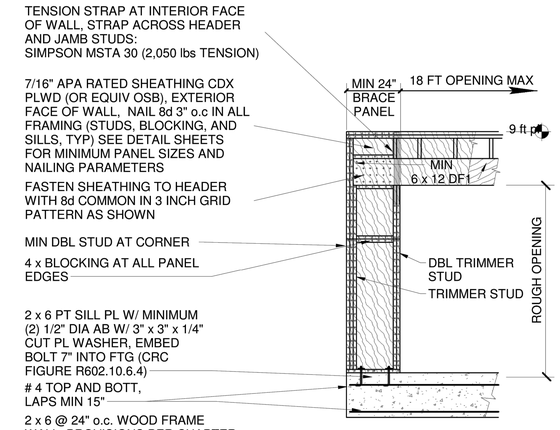


NOTE: STUCCO SHALL HAVE A MINIMUM CLEARANCE TO EARTH OF 4" AND 2" TO PAVED SURFACES WITH AN APPROVED WEEP SCREED

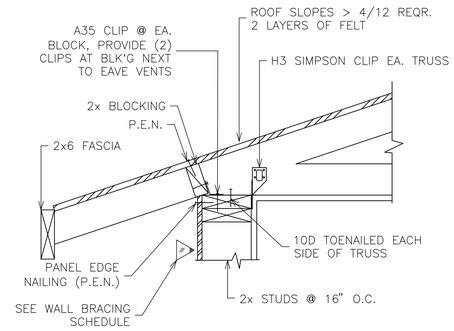
1 EXTERIOR FOOTING
N.T.S.



2 NON-BEARING INTERIOR FOOTING
N.T.S.



3 CS-PF DETAIL
N.T.S.



NOTE: ALL HARDWARE TO BE SIMPSON STRONG TIE OR EQUAL ALTERNATIVELY.

4 EAVE DETAIL
N.T.S.

DISCLAIMER:
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CITY OF VACAVILLE

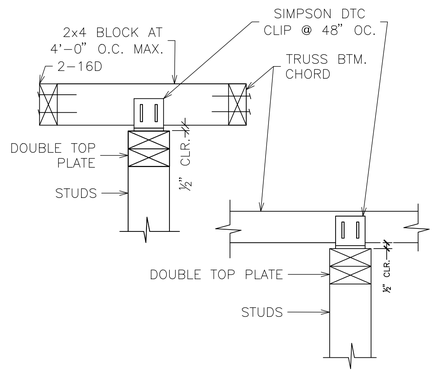
REVISIONS
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PROJECT TITLE: CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM
SHEET DESCRIPTION: DETAILS
DATE: 12/23/2024
AGENCY: SJV REAP

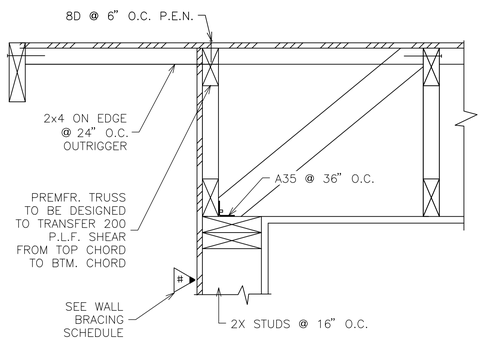
ADU SQFT
550

DRAWING SCALE

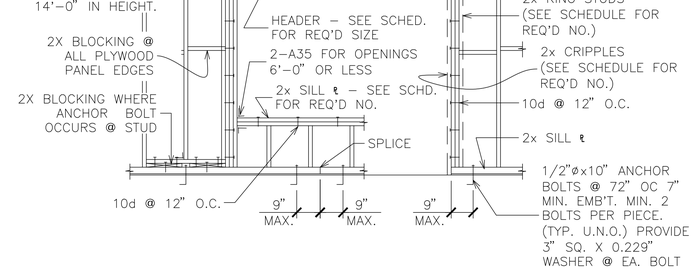
SHEET
S3



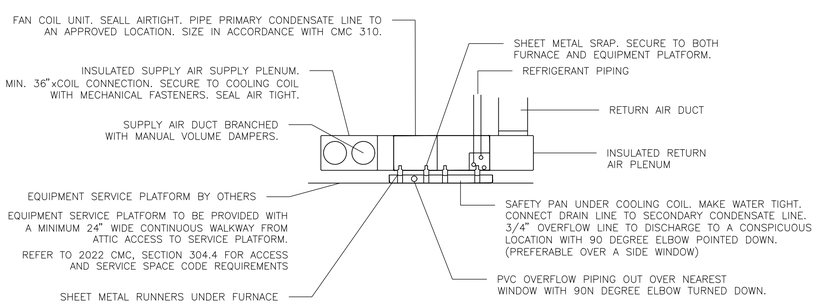
5 NON-BRG., NON-BRACED WALL CONNECTION
N.T.S.



6 GABLE END DETAIL
N.T.S.

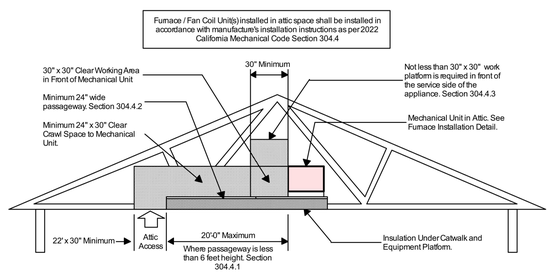


TYP. WALL FRAMING AT OPENING N.T.S.



NOTE: FURNACE/FAN COIL UNIT TO BE INSTALLED AND SECURELY FASTENED IN ACCORDANCE WITH MANUFACTURE'S INSTALLATION INSTRUCTIONS AS PER 2022 CALIFORNIA MECHANICAL CODE SECTION 303.4.

7 FAN COIL INSTALLATION IN ATTIC
N.T.S.



NOTES:
1. ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS. THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE.
[CA. ENERGY CODE 150.0(a)2]

2. FURNACE/FAN COIL UNIT(S) INSTALLED IN ATTIC SPACE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURE'S INSTALLATION INSTRUCTIONS AS PER (CMC 304.4)

8 ATTIC MOUNTED AIR HANDLER
N.T.S.

HEADER SCHEDULE

CLEAR SPAN OF OPENING	HEADER SIZE NOTE 1		NUMBER OF CRIPPLES		NUMBER OF KING STUDS		NUMBER OF SILL PLATES	
	BEARING WALL	NON–BRG WALL	BRG WALL	NON–BRG WALL	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR
UP TO 6'–0"	6 x 8	4 x 6	1	1	1	1	1	1

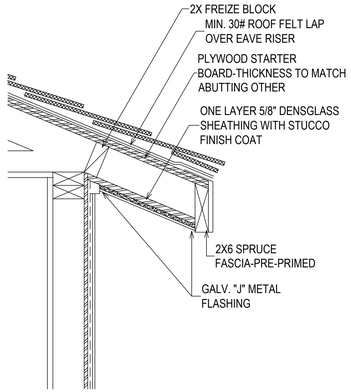
NOTES:

1. 4x HEADER SIZE SHOWN IS FOR 2x4 STUD WALL. REVISE TO 6x FOR 2x6 STUD WALLS AND 8x FOR 2x8 STUD WALLS.
2. DETAILS AND MEMBER SIZES ARE TYPICAL UNLESS OTHERWISE NOTED OR DETAILED.
3. NOTES AND MEMBER SIZES SHOWN ON FRAMING PLANS SHALL TAKE PRECEDENCE OVER SCHEDULE.

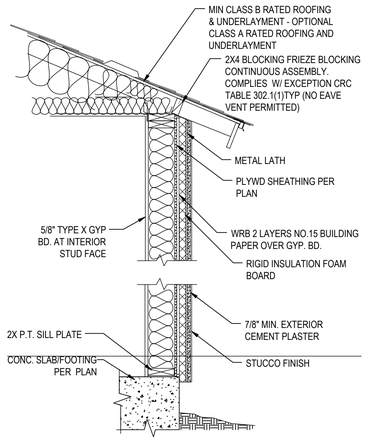
9 HEADER DETAIL
N.T.S.

DETAIL SELECTION

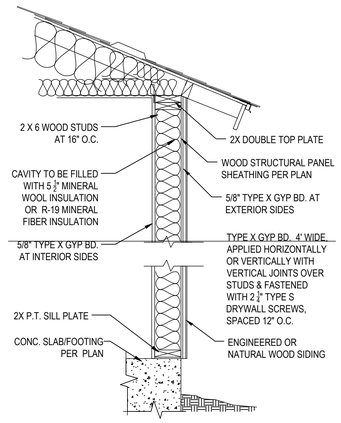
APPLICANT TO CHECK BOX NEXT TO DETAILS SELECTED FOR CONSTRUCTION.
REFER TO SECTION 'M' ON SHEET C2 FOR FIRE–RATED REQUIREMENTS.



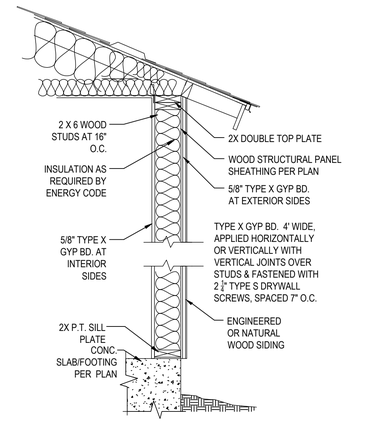
10 **ASPHALT SHINGLE EAVE**
N.T.S.



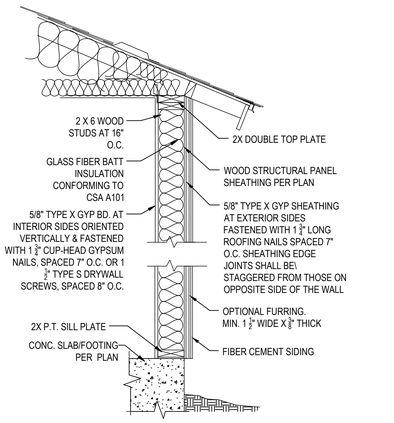
11 **1-HOUR FIRE RATED ASSEMBLY FOR STUCCO FINISH**
N.T.S.



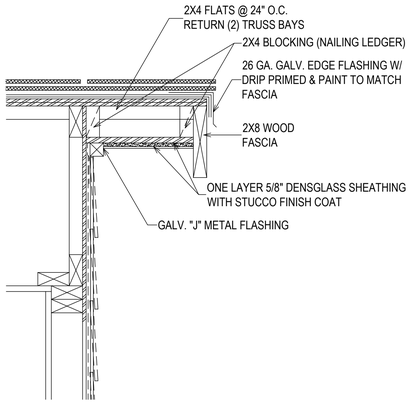
12 **1-HOUR FIRE RATED ASSEMBLY FOR ENGINEERED OR NATURAL WOOD SIDING**
N.T.S.



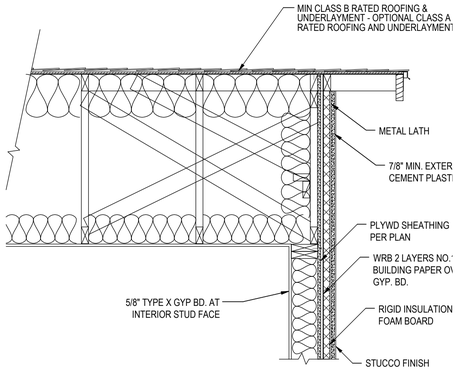
13 **1-HOUR FIRE RATED ASSEMBLY FOR ENGINEERED OR NATURAL WOOD SIDING**
N.T.S.



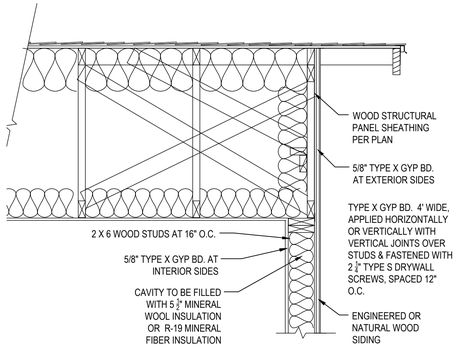
14 **1-HOUR FIRE RATED ASSEMBLY FOR FIBER CEMENT SIDING**
N.T.S.



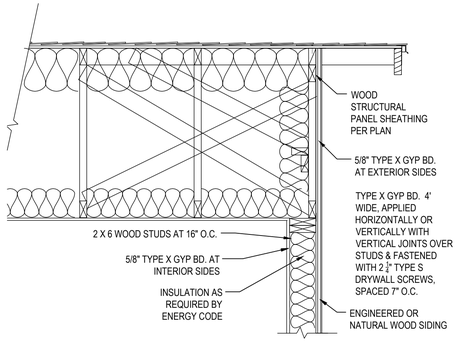
15 **ASPHALT SHINGLE RAKE**
N.T.S.



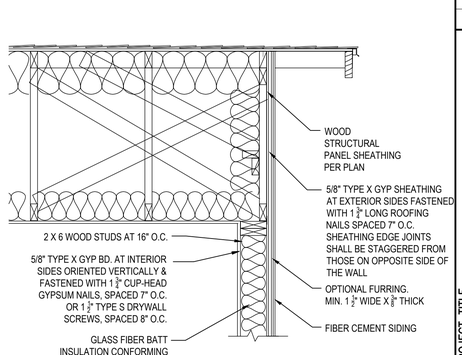
16 **1-HOUR FIRE RATED GABLE END FOR STUCCO FINISH**
N.T.S.



17 **1-HOUR FIRE RATED GABLE END FOR ENGINEERED OR NATURAL WOOD SIDING**
N.T.S.



18 **1-HOUR FIRE RATED GABLE END FOR ENGINEERED OR NATURAL WOOD SIDING**
N.T.S.



19 **1-HOUR FIRE RATED GABLE END FOR FIBER CEMENT SIDING**
N.T.S.

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CITY OF VACAVILLE

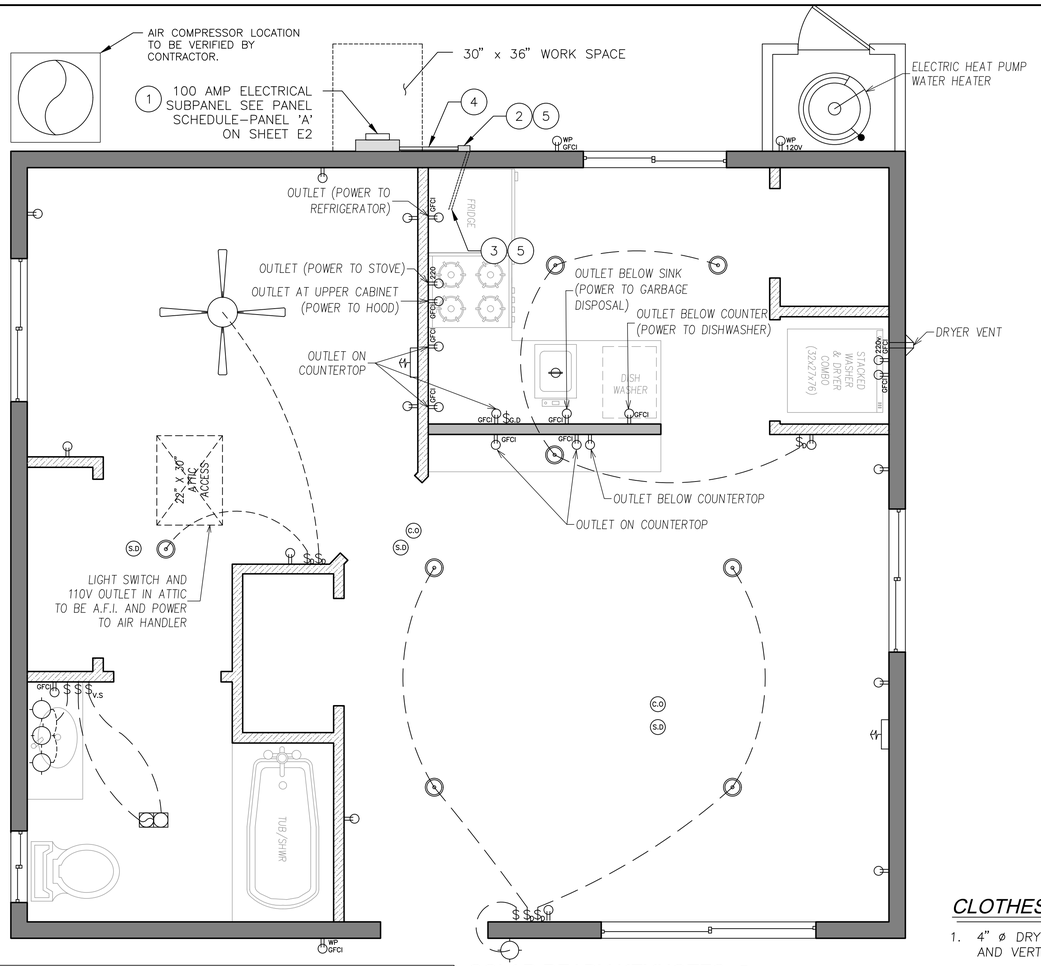
REVISIONS

PROJECT TITLE	CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM	SHEET DESCRIPTION	DETAILS	DATE	12/23/2024
				AGENCY	SJV REAP

ADU SQFT
550

DRAWING SCALE

SHEET
S4



120/240V 1PH 3 WIRE 100 AMP

MLO

NEMA–1 FLUSH MOUNT 30 CK

10KAIC

PANEL SCHEDULE -PANEL 'A'

#498

DESCRIPTION	CKT	OCPD	PHASE A	PHASE B	OCPD	CKT	DESCRIPTION
RECEPTACLES	1	20 AMP	1800	1300	15 AMP	2	LIGHTING
WASHER	3	20 AMP	1800	2700	30 AMP	4	DRYER
RANGE	5	40 AMP	3700	2700	30 AMP	6	DRYER
RANGE	7	40 AMP	3700	1350	20 AMP	8	KITCHEN APPLIANCE
KITCHEN APPLIANCE	9	20 AMP	1350	1800	20 AMP	10	DISH WASHER
RECEPTACLES	11	20 AMP	1800	1800	20 AMP	12	DISPOSAL
EF #1 AND EF #2	13	20 AMP	600	4000	50 AMP	14	COOK TOP
	15			4000	50 AMP	16	COOK TOP
WATER HEATER	17	30 AMP	2400	2400	30 AMP	18	FURNACE
WATER HEATER	19	30 AMP	2400	2400	30 AMP	20	FURNACE
SPACE	21					22	SPACE
SPACE	23					24	SPACE
SPACE	25					26	SPACE
SPACE	27					28	SPACE
SPACE	29					30	SPACE
SPACE	31					32	SPACE
SPACE	33					34	SPACE
SPACE	35					36	SPACE
SPACE	37					38	SPACE
SPACE	39					40	SPACE
SPACE	41					42	SPACE
		TOTAL VA LOAD	14150	11650			
		25% LCU/IML	3538	2913			
		TOTAL LOAD	17688	14563			
		TOTAL LOAD AMPS	64	53			

ELECTRICAL LEGEND

	DUPLEX OUTLET		HUMIFITY CONTROLLED EXHAUST FAN AND LIGHT COMBINATION (HE LIGHT)
GFI	GFCI OUTLET		HIGH EFFICACY LIGHT FIXTURE
WP GFI	WEATHERPROOF GFCI OUTLET		HIGH EFFICACY RECESSED LIGHT
$	WALL SWITCH		GARBAGE DISPOSAL
$G,D	GARBAGE DISPOSAL SWITCH		HVAC AIR DUCT LOCATION
$V,S	VACANCY SENSOR		FAN & LIGHT COMBO
S,D	SMOKE DETECTOR		
C,O	CARBON MONOXIDE ALARM		
$D	DIMMER SWITCH		

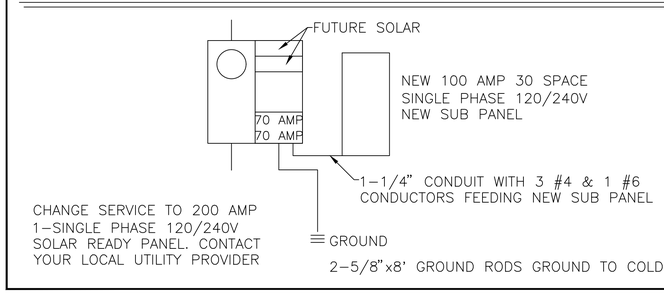
SOLAR READY KEYNOTES (#)

NOTE: SOLAR READY NOTES SHOWN TO DEMONSTRATE PLAN IS SOLAR READY. SEPARATE PERMIT AND FEES ARE REQUIRED. IF REQUIRED, CONTACT A PV/SOLAR PROVIDER FOR PLANS AND PERMITS.

1. THE MAIN ELECTRICAL SERVICE PANEL SHALL NOT BE OF A TYPE WITH A CENTER–FED MAIN CIRCUIT BREAKER AND SHALL INCLUDE RESERVED SPACE ALLOWING FOR INSTALLATION OF DOUBLE–POLE CIRCUIT BREAKERS FOR A FUTURE SOLAR PHOTOVOLTAIC SYSTEM. SUCH RESERVED SPACE SHALL BE POSITIONED AT THE OPPOSITE (LOAD) END FROM THE INPUT FEEDER OR MAIN CIRCUIT BREAKER LOCATION. THE RESERVED SPACE SHALL BE PERMANENTLY AND VISIBLY MARKED AS "FOR FUTURE SOLAR PHOTOVOLTAIC"
2. APPROVED MINIMUM 4–INCH SQUARE ELECTRICAL JUNCTION BOX LOCATED WITHIN 72 INCHES HORIZONTALLY AND 12 INCHES VERTICAL OF MAIN ELECTRICAL SERVICE PANEL
3. MINIMUM 1 INCH DIAMETER LISTED ELECTRICAL METALLIC RACEWAY ORIGINATING AT READILY ACCESSIBLE ATTIC LOCATION WITH PROXIMITY TO SOLAR ZONE AREA AND TERMINATING AT THE REQUIRED ELECTRICAL JUNCTION BOX
4. MINIMUM 1 INCH DIAMETER LISTED ELECTRICAL METALLIC RACEWAY ORIGINATING AT THE REQUIRED ELECTRICAL JUNCTION BOX AND TERMINATING AT THE MAIN ELECTRICAL SERVICE PANEL
5. ELECTRICAL JUNCTION BOX AND SEGMENT OF METALLIC RACEWAY IN THE ATTIC SHALL BE PERMANENTLY AND VISIBLY MARKED AS "FOR FUTURE SOLAR PHOTOVOLTAIC"

SUB-PANEL & SWITCH GEAR FOR FUTURE BATTERY STORAGE

N.T.S.



CLOTHES DRYER VENT NOTES

1. 4" ø DRYER VENT WITH MAXIMUM 14 FOOT COMBINED HORIZONTAL AND VERTICAL LENGTH WITH TWO 90 DEGREE ELBOWS.
2. SMALL APPLIANCE CIRCUIT LOAD
   IN EACH DWELLING UNIT, THE LOAD SHALL BE CALCULATED AT 1500 VOLT–AMPERES FOR EACH 2–WIRE SMALL APPLIANCE BRANCH CIRCUIT AS COVERED BY 2010.11(C)(1). WHERE THE LOAD IS SUBDIVIDED THROUGH TWO OR MORE FEEDERS, THE CALCULATED LOAD FOR EACH SHALL INCLUDE NOT LESS THAN 1500 VOLT–AMPERES FOR EACH 2–WIRE SMALL APPLIANCE BRANCH CIRCUIT. THESE LOADS SHALL BE PERMITTED TO BE INCLUDED WITH THE GENERAL LIGHTING LOAD AND SUBJECTED TO THE DEMAND FACTORS PROVIDED IN TABLE 220.42.
   2.1. THE INDIVIDUAL BRANCH CIRCUIT PERMITTED BY 210.52(B)(1). EXCEPTION NO. 2, SHALL BE PERMITTED TO EB EXCLUDED FROM THE CALCULATION REQUIRED BY 220.52.
3. LAUNDRY CIRCUIT LOAD
   A LOAD OF NOT LESS THAN 1500 VOLT–AMPERES SHALL IN INCLUDED FOR EACH 2–WIRE LAUNDRY BRANCH CIRCUIT INSTALLED AS COVERED BY 210.11(C)(2). THIS LOAD SHALL BE SUBJECTED TO THE DEMAND FACTORS PROVIDED IN TABLE 220.42. [CEC 220.43(B)]
4. APPLIANCE LOAD–DWELLING UNITS
   IT SHALL BE PERMISSIBLE TO APPLY A DEMAND FACTOR OF 75 PERCENT TO THE NAMEPLATE RATING LOAD OF FOUR OR MORE APPLIANCES RATED ¼ HP OR GREATER, OR 500 WATTS OR GREATER, THAT ARE FASTENED IN PLACE AND THAT ARE SERVED BY THE SAME FEEDER OR SERVICE INA ONE–FAMILY,TWO–FAMILY, OR MULTIFAMILY DWELLING. THIS DEMAND FACTOR SHALL NOT APPLY TO: HOUSEHOLD ELECTRIC COOKING EQUIPMENT THAT IS FASTENED IN PLACE, CLOTHES DRYERS, SPACE HEATING EQUIPMENT, ADN AIR–CONDITIONING EQUIPMENT. [CEC 220.53]
5. ELECTRIC CLOTHES DRYER
   THE LOAD FOR HOUSEHOLD ELECTRIC CLOTHES DRYERS INA DWELLING UNIT SHALL BE EITHER 5,000 WATTS OR THE NAMEPLATE RATING, WHICHEVER IS LARGER, FOR EACH DRYER SERVED. THE USE OF THE DEMAND FACTORS IN TABLE 220.54 SHALL BE PERMITTED. WHERE TWO OR MORE SINGLE–PHASE DRYERS ARE SUPPLIED BY A 3–PHASE,4–WIRE FEEDER OR SERVICE, THE TOTAL LOAD SHALL BE CALCULATED ON THE BASIS OF TWICE THE MAX. NUMBER CONNECTED BETWEEN ANY TWO PHASES. KILOVOLT–AMPERES SHALL BE CONSIDERED EQUIVALENT TO KILOWATTS FOR LOADS CALCULATED IN THIS SECTION.

OUTLET NOTES

1. RECEPTACLES SHALL BE INSTALLED SUCH THAT NO POINT MEASURED HORIZONTALLY ALONG THE FLOOR LINE OF ANY WALL SPACE IS MORE THAN 6 FEET FROM A RECEPTACLE OUTLET.[CEC 210.52(A)(1)]
2. GFCI OUTLETS. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) OUTLETS ARE REQUIRED IN BATHROOMS, AT KITCHEN COUNTERTOPS, AT LAUNDRY AND WET BAR SINKS, IN GARAGES, IN CRAWLSPACES, IN UNFINISHED BASEMENTS, AND OUTDOORS. (CEC 210.8)
3. AFCI OUTLETS. ELECTRICAL CIRCUITS IN BEDROOMS, LIVING ROOMS, DINING ROOMS, DENS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS MUST BE PROTECTED BY ARC FAULT CIRCUIT INTERRUPTERS (AFCI). (CEC 210.12)
4. RECEPTACLE OUTLETS SHALL BE LOCATED IN ONE OR MORE OF THE FOLLOWING:
   4.1. ON OR ABOVE COUNTERTOP OR WORK SURFACES: ON OR ABOVE, BUT NOT MORE THAN 20 INCHES ABOVE, THE COUNTERTOP OR WORK SURFACE.
   4.2. IN COUNTERTOP OR WORK SURFACES: RECEPTACLE OUTLET ASSEMBLIES LISTED FOR USE IN COUNTERTOPS OR WORK SURFACES SHALL BE PERMITTED TO BE INSTALLED IN COUNTERTOPS OR WORK SURFACES.
   4.3. BELOW COUNTERTOP OR WORK SURFACES: NOT MORE THAN 12 INCHES BELOW THE COUNTERTOP OR WORK SURFACE. RECEPTACLES INSTALLED BELOW A COUNTERTOP OR WORK SURFACE SHALL NOT BE LOCATED WHERE THE COUNTERTOP OR WORK SURFACE EXTENDS MORE THAN 6 INCHES BEYOND ITS SUPPORT BASE. [CEC 210.52(C)(3)]
5. BATHROOMS
   AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED IN BATHROOMS WITHIN 3FEET OF THE OUTSIDE EDGE OF EACH BASIN. THE RECEPTACLE OUTLET SHALL BE LOCATED ON A WALL OR PARTITION THAT IS ADJACENT TO THE BASIN OR BASIN COUNTERTOP, LOCATED ON THE COUNTERTOP, OR INSTALLED ON THE SIDE OR FACE OF THE BASIN CABINET. IN NO CASE SHALL THE RECEPTACLE BE LOCATED MORE THAN 12 INCHES BELOW THE TOP OF THE BASIN OR BASIN COUNTERTOP RECEPTACLE OUTLET ASSEMBLIES LISTED FOR USE IN THE COUNTERTOPS SHALL BE PERMITTED TO BE INSTALLED IN THE COUNTERTOP. [CEC 210.52(D)]
6. OUTDOOR OUTLETS
   ALL EXTERIOR RECEPTACLES SHALL BE WP/GFCI PROTECTED.
   FOR A ONE–FAMILY DWELLING THAT IS AT GRADE LEVEL, AT LEAST ONE RECEPTACLE OUTLET READILY ACCESSIBLE FROM GRADE AND NOT MORE THAN 6 ½ FEET ABOVE GRADE LEVEL SHALL BE INSTALLED AT THE FRONT AND BACK OF THE DWELLING. [210.52(E)(1)]
7. LAUNDRY AREAS
   IN DWELLING UNITS, AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED IN AREAS DESIGNATED FOR THE INSTALLATION OF LAUNDRY EQUIPMENT. [210.52(F)]
8. GFCI OUTLETS. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) OUTLETS ARE REQUIRED IN BATHROOMS, AT KITCHEN COUNTERTOPS, AT LAUNDRY AND WET BAR SINKS, IN GARAGES, IN CRAWLSPACES, IN UNFINISHED BASEMENTS, AND OUTDOORS. (CEC 210.8)
9. AFCI OUTLETS. ARC FAULT CIRCUIT INTERRUPTERS (AFCI) PROTECTION IS REQUIRED THROUGHOUT ALL 15 AND 20–AMP 120V CIRCUITRY THAT IS NOT GFCI PROTECTED. (CEC 210.12)

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CITY OF VACAVILLE

REVISIONS

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PROJECT TITLE: CITY OF VACAVILLE – PRE–REVIEWED ADU PROGRAM

SHEET DESCRIPTION: ELECTRICAL PLAN

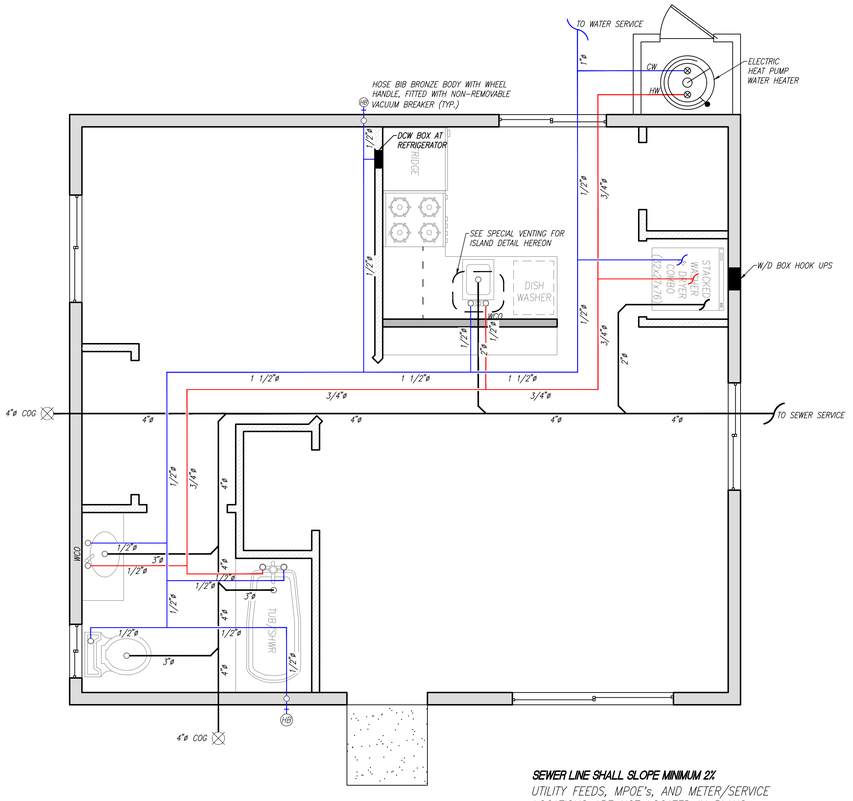
DATE: 12/23/2024

AGENCY: SJV REAP

ADU SQFT: 550

DRAWING SCALE: 1/2" = 1'

SHEET: E1



SEWER LINE SHALL SLOPE MINIMUM 2%

UTILITY FEEDS, MPOE's, AND METER/SERVICE LOCATIONS ARE NOT LOCATED IN PLANS

TABLE 610.4
FIXTURE UNIT TABLE FOR DETERMINING WATER PIPE AND METER SIZES

METER AND STREET SERVICE (inches)	BUILDING SUPPLY AND BRANCHES (inches)	MAXIMUM ALLOWABLE LENGTH (feet)															
		40	60	80	100	150	200	250	300	400	500	600	700	800	900	1000
PRESSURE RANGE — 30 to 45 psi[1]																
3/4	1/2[2]	6	5	4	3	2	1	1	1	0	0	0	0	0	0	0
3/4	3/4	16	16	14	12	9	6	5	5	4	4	3	2	2	2	1
3/4	1	29	25	23	21	17	15	13	12	10	8	6	6	6	6	6
1	1	36	31	27	25	20	17	15	13	12	10	8	6	6	6	6
3/4	1 1/4	36	33	31	28	24	23	21	19	17	16	13	12	12	11	11
1	1 1/4	54	47	42	38	32	28	25	23	19	17	14	12	12	11	11
1 1/2	1 1/4	78	68	57	48	38	32	28	25	21	18	15	12	12	11	11
1	1 1/2	85	84	79	65	56	48	43	38	32	28	26	22	21	20	20
1 1/2	1 1/2	150	124	105	91	70	57	49	45	36	31	26	23	21	20	20
2	1 1/2	151	129	129	110	80	64	53	46	38	32	27	23	21	20	20
1	2	85	85	85	85	85	85	82	80	66	61	57	52	49	46	43
1 1/2	2	220	205	190	176	155	138	127	120	104	85	70	61	57	54	51
2	2	370	327	292	265	217	185	164	147	124	96	70	61	57	54	51
2	2 1/2	445	418	390	370	330	300	280	265	240	220	198	175	158	143	133

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm, 1 pound-force per square inch = 6.8947 kPa

Notes:

1. Available static pressure after head loss.
2. Building supply, not less than 3/4 of an inch (20 mm) nominal size.

FIXTURE UNIT TABLE

FIXTURES	*QTY*	*COLD WATER*		*HOT WATER (COLD WATER VALUE x0.75)*	
		WSFU (EACH)	*WSFU (EACH)*	*WSFU (EACH)*	*WSFU (EACH)*
WATER CLOSET	*1*	*2.5*	*2.5*	*0*	*0*
LAVATORY	*1*	*1*	*1*	*0.75*	*0.75*
SINK	*1*	*1.5*	*1.5*	*1.5*	*1.5*
BATHTUB	*1*	*4*	*4*	*3*	*3*
DISHWASHER	*1*	*1.5*	*1.5*	*1.5*	*1.5*
CLOTHES WASHER	*1*	*4*	*4*	*3*	*3*
HOSE BIB	*2*	*2.5*	*5*	*---*	*---*
SUBTOTALS					*9.75*
TOTAL					*29.25*

610.3 Quantity of Water

The quantity of water required to be supplied to every plumbing fixture shall be represented by fixture units, as shown in Table 610.3. Equivalent fixture values shown in Table 610.3 include both hot and cold water demand.

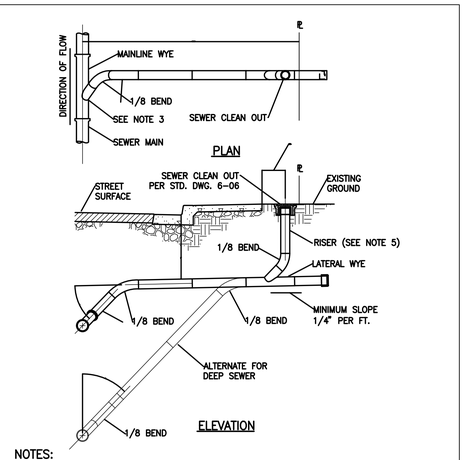
TABLE 610.3
WATER SUPPLY FIXTURE UNITS (WSFU) AND MINIMUM FIXTURE BRANCH PIPE SIZES[3]

APPLIANCES, APPURTENANCES OR FIXTURES[2]	MINIMUM FIXTURE BRANCH PIPE SIZE[1,4] (inches)	PRIVATE	PUBLIC	ASSEMBLY[6]
Bathtub or Combination Bath/Shower (fill)	1/2	4.0	4.0	—
3/4 inch Bathtub Fill Valve	3/4	10.0	10.0	—
Bidet	1/2	1.0	—	—
Clothes Washer	1/2	4.0	4.0	—
Dental Unit, cuspidor	1/2	—	1.0	—
Dishwasher, domestic	1/2	1.5	1.5	—
Drinking Fountain or Water Cooler	1/2	0.5	0.5	0.75
Hose Bibb	1/2	2.5	2.5	—
Hose Bibb, each additional[8]	1/2	1.0	1.0	—
Lavatory	1/2	1.0	1.0	1.0
Lawn Sprinkler, each head[5]	—	1.0	1.0	—
Mobilehome or Manufactured Home, each (minimum)[9]	—	*6.0*	—	—
Sinks	—	—	—	—
Bar	1/2	1.0	2.0	—
Clinical Faucet	1/2	—	3.0	—
Clinical Flushometer Valve with or without faucet	1	—	8.0	—
Kitchen, domestic with or without dishwasher	1/2	1.5	1.5	—
Laundry	1/2	1.5	1.5	—
Service or Mop Basin	1/2	1.5	3.0	—
Washup, each set of faucets	1/2	—	2.0	—
Shower, per head	1/2	2.0	2.0	—
Urinal, 1.0 GPF Flushometer Valve	3/4	See Footnote[7]		—
Urinal, greater than 1.0 GPF Flushometer Valve	3/4	See Footnote[7]		—
Urinal, flush tank	1/2	2.0	2.0	3.0
Urinal with Drain Cleansing Action	1/2	1.0	1.0	1.0
Wash Fountain, circular spray	3/4	—	4.0	—
Water Closet, 1.6 GPF Gravity Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	See Footnote[7]		—
Water Closet, greater than 1.6 GPF Gravity Tank	1/2	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	See Footnote[7]		—

For SI units: 1 inch = 25 mm

Notes:

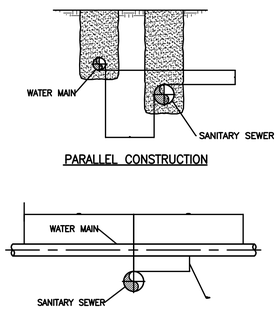
1. Size of the cold branch pipe, or both the hot and cold branch pipes.
2. Appliances, appurtenances, or fixtures not referenced in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency of use.
3. The listed fixture unit values represent their load on the cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both hot and cold water connections shall be permitted to be each taken as three-quarter of the listed total value of the fixture.
4. The listed minimum supply branch pipe sizes for individual fixtures are the nominal (I.D.) pipe size.
5. For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (gpm) (L/s), and add it separately to the demand in gpm (L/s) for the distribution system or portions thereof.
6. Assembly [Public Use (See Table 422.1)].
7. Where sizing flushometer systems, see Section 610.10.
8. Reduced fixture unit loading for additional hose bibbs is to be used where sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water distribution pipe. The fixture branch to each hose bibb shall be sized on the basis of 2.5 fixture units.
9. *For water supply fixture unit values related to lots within mobilehome parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2, Article 5, Section 1278. For water supply fixture unit values related to lots within special occupancy parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2.2, Article 5, Section 2278.*



NOTES:

1. LATERAL WYE, 1/8 BEND AND FITTINGS SHALL BE EITHER PVC (MINIMUM SDR26) OR VCP (EXTRA STRENGTH).
2. WHEN DIRECTED BY THE DIRECTOR OF PUBLIC WORKS OR AS SHOWN ON THE PLANS, THE LATERAL SHALL BE LOWER WHERE NECESSARY TO SERVE EXISTING PLUMBING OR LOW LOTS.
3. IF MAIN AND LATERAL ARE DISSIMILAR MATERIAL CUT OFF BELL ON BRANCH SIDE OF MAINLINE WYE AND INSTALL A MISSION, FERNCO, OR EQUAL FLEXIBLE RUBBER COUPLING WITH STAINLESS STEEL SHEAR BAND.
4. THE CENTER OF CLEANOUT SHALL BE LOCATED 1' TO 3' BEHIND FACE OF CURB WHERE THE SIDEWALK IS NOT ATTACHED TO THE CURB.
5. THE RISER SHALL BE THE SAME MATERIAL AS THE SERVICE LATERAL. SEE SEWER CLEAN OUT STANDARD DRAWING 6-06.

	DRAWING NO.: 6-05	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 02/13/06	
	SCALE: NONE	STANDARD SANITARY SEWER LATERAL
	APPROVED BY: R.C.E. C51420	
	DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	



NOTES:

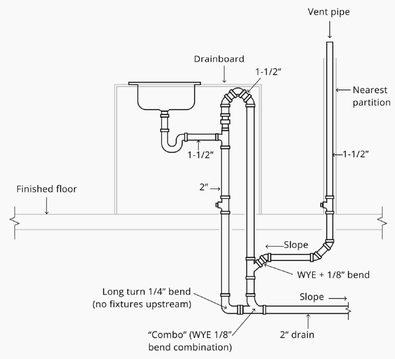
1. FOR WATER MAIN CROSSING A SEWER LINE, INSTALL CROSSING AS CLOSE TO PERPENDICULAR AS POSSIBLE.
2. ADDITIONAL SPECIAL PROVISIONS FOR SEPARATION OF WATER MAINS AND SEWER PER THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES "CALIFORNIA WATERWORKS STANDARDS", SECTION 64630, TITLE 22, CAC.

	DRAWING NO.: 5-29	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 09/09/03	
	SCALE: NONE	SEPARATION OF WATER AND SEWER LINES
	APPROVED BY: R.C.E. C59003	
	DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

NOTES

1. *ASSUMPTION: WATER AND SEWER FACILITIES ARE CONNECTED TO EXISTING ON-SITE SERVICE; THEY WILL NOT BE A SEPARATE SERVICE OR SEPARATE MAIN METER.*
2. *CONNECTION TO CITY MAINS IN THE STREET WILL REQUIRE AN ENCROACHMENT PERMIT FROM THE PUBLIC WORKS DEPARTMENT.*
3. *MINIMUM WATER SERVICE WILL BE 1" AND MINIMUM SEWER SERVICE WILL BE 4"*
   NOTE: FOR BOTH SERVICES, IF THEY ARE EXISTING AND DO NOT MEET THE MINIMUM 4" SEWER/1" WATER CITY REQUIREMENTS, THE ADU APPLICATION WILL TRIGGER A REQUIREMENT TO BRING THE SERVICE UP TO CURRENT STANDARDS.
4. *SEE SITE PLAN FOR CONNECTION TO WATER AND SEWER SERVICE.*

SPECIAL VENTING FOR ISLAND FIXTURES
UPC 909.1



DISCLAIMER:
BY USING THESE STANDARD PLANS, THE USER AGREES TO RELEASE THE CITY OF VACAVILLE FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE, OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS. THE USE OF THESE PLANS DOES NOT ELIMINATE OR REDUCE THE USER'S RESPONSIBILITY TO VERIFY ANY AND ALL INFORMATION.

CITY OF VACAVILLE

REVISIONS
—
—
—
—
—

PROJECT TITLE: CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM
SHEET DESCRIPTION: PLUMBING PLAN
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT
550

DRAWING SCALE
3/8" = 1'

SHEET
P1

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application 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.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building'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.

Note: 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.

Note: 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.

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

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

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

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

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

WATTLES. 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.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. 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.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water 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.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. 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.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Section 4.106.4.1 or 4.106.4.2. Electric vehicle supply equipment (EVSE) shall comply with the *California Electrical Code*.

Exceptions:
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.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall 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 and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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

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

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Section 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 an 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.

4.106.4.2.1 Reserved.

4.106.4.2.2 Multifamily dwellings, hotels and motels

1. EV ready parking spaces with receptacles.

a. Hotels and motels. Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

b. Multifamily parking facilities. Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided but need not exceed forty (40) percent of the total number of assigned parking spaces provided on the site.

Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

c. Receptacle power source. EV charging receptacles in multifamily parking facilities shall be provided with a dedicated branch circuit connected to the dwelling unit's electrical panel, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

d. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations:

1. For 20-ampere receptacles, NEMA 6-20R
2. For 30-ampere receptacles, NEMA 14-30R
3. For 50-ampere receptacles, NEMA 14-50R

2. EV ready parking spaces with EV chargers.

a. Hotels and motels. Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

b. Multifamily parking facilities. Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

Where low power Level 2 EV charging receptacles or Level 2 EV chargers 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 EV chargers shall have a capacity of not less than 30 amperes.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 2, with EV chargers installed shall comply with Section 4.106.4.2.2.1.1.

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

4.106.4.2.2.1.1 Electric vehicle charging stations (EVCS) spaces with EV chargers installed; dimensions and location.

EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 EVCS 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 EVCS space is 12 feet (3658 mm). Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:

a. The EVCS 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.
b. The EVCS space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.
Exception: Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1.

4.106.4.2.2.1.2 Accessible electric vehicle charging station spaces.
In addition to the requirements in Section 4.106.4.2.2.1.1, all EV chargers, where 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.

4.106.4.2.3 Reserved.

4.106.4.2.4 Reserved.

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

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multi-family buildings.
Where 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 EV capable spaces to support future Level 2 electric vehicle supply equipment. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE."

Notes:

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.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) 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.

Note: 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.

4.303.1.1 Water Closets. 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.

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

4.303.1.2 Urinals. 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.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. 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.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by 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.

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

4.303.1.4 Faucets.

4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. 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.

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

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

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

4.303.1.4.5 Pre-rinse spray valves.
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (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.

FOR REFERENCE ONLY: 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).

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray values manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)]

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code*.

4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

NOTE:
THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

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

NOTES:

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: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. 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.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

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.

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

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse 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 amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

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

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

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. 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

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. 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

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

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html 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).

4.410 BUILDING MAINTENANCE AND OPERATION

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

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   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.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope
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.

SECTION 4.502 DEFINITIONS

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

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. 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, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

DIRECT-VENT APPLIANCE. 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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PROJECT TITLE: CITY OF VACAVILLE – PRE-REVIEWED ADU PROGRAM
SHEET DESCRIPTION: CALGREEN FORM
DATE: 12/23/2024
AGENCY: SJV REAP

ADU SQFT
550

DRAWING SCALE

SHEET
G1

DISCLAIMER:*THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (July 2024 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O³/g ROG).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

4.503 FIREPLACES

4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

4.504 POLLUTANT CONTROL

4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system.

4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.

4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

(Less Water and Less Exempt Compounds in Grams per Liter)

ARCHITECTURAL APPLICATIONS	VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

TABLE 4.504.2 - SEALANT VOC LIMIT

(Less Water and Less Exempt Compounds in Grams per Liter)

SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS

2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhtps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL

4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter.Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the *California Energy Code*.

4.507 ENVIRONMENTAL COMFORT

4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS

703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.

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