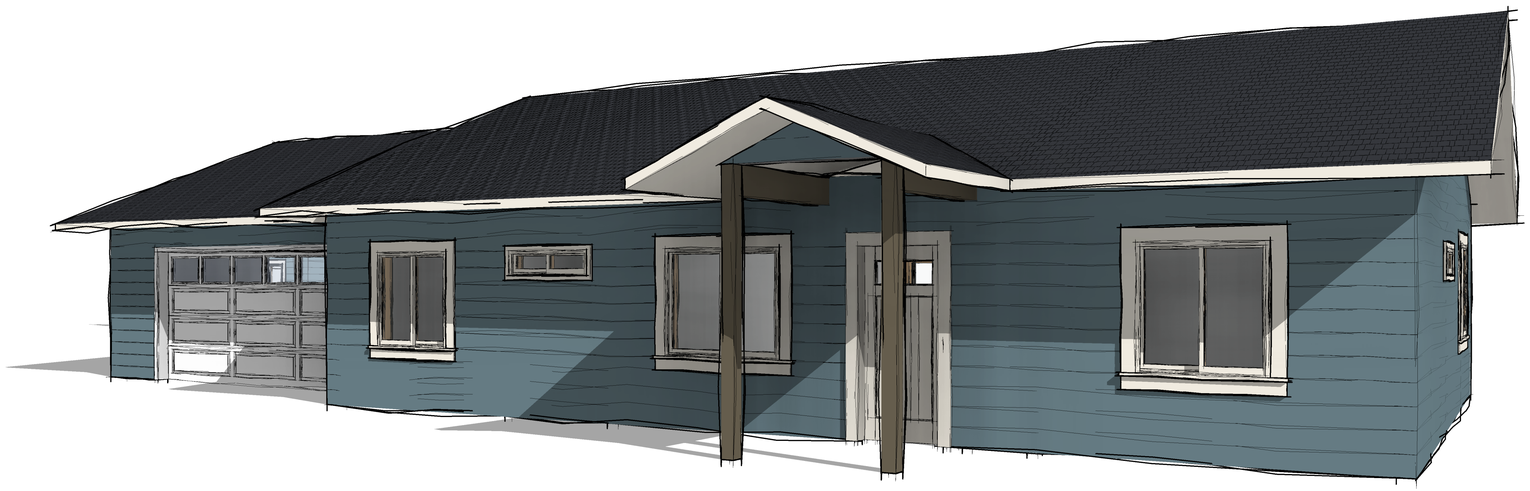


DEFERRED SUBMITTAL:

FIRE SPRINKLERS: PER CRC R313

PV SYSTEM

SITE SPECIFIC SITE PLAN

CODE ANALYSIS:

PROPOSED RESIDNCE:
USE CODE: R3/U
USE: SINGLE FAMILY RESIDENTIAL w/ GARAGE OPT
CONSTRUCTION TYPE: VB

PROPOSED FOOTPRINT(1-4 BED/2 BATH w/DEN OPTS.)

CONDITIONED SPACE:	1,260 SQFT.
PORCHES:	35 SQFT.
2-CAR GARAGE:	580 SQFT.
TOTAL FOOTPRINT	1,875 SQFT.

PROPOSED FOOTPRINT(1-4 BED/2 BATH w/DEN OPTS.)

CONDITIONED SPACE:	1,260 SQFT.
PORCHES:	35 SQFT.
1-CAR GARAGE:	288 SQFT.
TOTAL FOOTPRINT	1,583 SQFT.

PROPOSED FOOTPRINT(1-4 BED/2 BATH w/DEN OPTS.)

CONDITIONED SPACE:	1,260 SQFT.
PORCHES:	35 SQFT.
TOTAL FOOTPRINT	1,295 SQFT.

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SCOPE OF WORK:

THIS PROJECT WILL CONSIST OF A NEW MASTER PLAN FOR A NEW SINGLE FAMILY RESIDENCE WITH ATTACHED GARAGE OR NO GARAGE OPTION FOR USE WITHIN TOWN OF PARADISE, BELOW 2,499 FT. ELEVATION AS DESCRIBED AND DETAILED IN THIS SET OF PLANS. THIS MASTER PLAN IS DESIGNED FOR CONSTRUCTION IN WUI (SRA) AREAS.

DESIGN CODES

2022 CBC	2022 CRC
2022 CEC	2022 CMC
2022 CENC	2022 CPC
2022 CFC	
2022 CALGREEN	
2022 PMC	
ALL OTHER APPLICABLE STATE AND LOCAL CODES	

STRUCTURAL/DESIGNER ENGINEER

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COVER SHEET

THE BIRCH

RANCHO Engineering, Inc.
CIVIL - STRUCTURAL - SEPTIC DESIGN
BUILDING PLANS - DESIGN
6067 SKYWAY, PARADISE, CA 95969
Phone: (530) 877-3700 - Email: ranchoengineering@gmail.com

BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY:	TG
CKD. BY:	JPH
DATE:	5.1.2023
REVISION:	1

DRAWING NUMBER

CS

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PROJECT NOTES:

THIS PROJECT IS DESIGNED AS A MASTER PLAN.

SITE EXCAVATION AND GRADING SHALL COMPLY WITH PARADISE MUNICIPAL CODE 15.02.100 SECTIONS J101.1 THRU J110.4.

THIS PROJECT IS NOT APPROVED FOR CONSTRUCTION IN A FEMA FLOOD HAZARD ZONE.

PLANS ASSUME MAX. SITE SLOPE 10% OR LESS.

WRITTEN AUTHORIZATION BY RANCHO ENGINEERING IS REQUIRED AT EACH SPECIFIC BUILDING SITE FOR EACH SUBSEQUENT BUILDING PERMIT.

NOTE:

GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPE AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN 6" WITHIN THE FIRST 10 FT. (5% SLOPE). PER 2022 CRC SECTION R401.3

MINIMUM EROSION AND SEDIMENT CONTROLS FOR PROJECTS DISTURBING LESS THAN ONE ACRE

THE BMP'S (BEST MANAGEMENT PRACTICES) LISTED BELOW MUST BE IN PLACE DURING THE RAINY SEASON (OCTOBER 15 THROUGH APRIL 15) AND MAY BE REQUIRED AT OTHER TIMES BASED ON WEATHER AND SITE CONDITIONS THROUGHOUT THE YEAR. THE BMP'S LISTED ARE MINIMUM REQUIREMENTS AND ADDITIONAL BMP'S COULD BE REQUIRED BASED ON SITE CONDITIONS.

1. STABILIZED ENTRY: PROVIDE MINIMUM 3" TO 6" FRACTURED ROCK 50' LONG x 15' WIDE BY 6" DEEP OVER CONSTRUCTION GRADE FABRIC.
2. ALL SOILS TRACKED ONTO PAVED ROADWAYS MUST BE CLEANED ON A DAILY BASIS. WHEN STREETS ARE WET OR DURING A RAIN EVENT THERE SHALL BE NO TRACKING OF SOILS ONTO THE STREET.
3. WATTLES SHALL BE INSTALLED PROPERLY, BEHIND CURB OR SIDEWALKS.
4. ROCK BAGS (MINIMUM 2 PER SIDE) AT ALL DRAIN INLET LOCATIONS WITHIN 150' OF THE PROJECT SITE.
5. INTERNAL FILTERS SHALL BE PLACED INSIDE EACH DRAIN INLET.
6. TRASH BARS SHALL BE PLACED ACROSS THE BACK OF ALL DRAIN INLETS.
7. STABILIZE ALL DISTURBED SOILS IN THE FRONT YARD AREAS WITHIN 15' OF THE BACK CURB OR SIDEWALK. (STRAW OR EROSION BLANKETS MAY BE USED FOR THIS APPLICATION)
8. STABILIZE ALL SLOPES WHERE EROSION COULD OCCUR AND CAUSE SILT RUN OFF. (STRAW, VISQUEEN OR EROSION BLANKETS MAY BE USED FOR THIS APPLICATION)
9. ALL PAINT, FUEL, CONSTRUCTION PRODUCTS ETC. SHALL BE STORED IN A COVERED LOCATION AWAY FROM SIDEWALKS AND STORM DRAIN INLETS.
10. PORTABLE CHEMICAL TOILETS IF PROVIDED ON THE SITE MUST BE KEPT OFF OF STREETS AND SIDEWALKS AND A LEAST 50' FROM THE NEAREST STORM DRAIN.
11. ALL TRASH MUST BE COLLECTED AND STORED PROPERLY. DO NOT LET ITEMS SUCH AS DRYWALL MUD BOXES, PAINT BUCKETS, CLEANING MATERIAL CONTAINERS, ETC. COME IN CONTACT WITH ANY RAINFALL OR STORM WATER RUNOFF.
12. PROVIDE A DESIGNATED AREA FOR CONCRETE WASHOUT. HAY BAILS LINED WITH VISQUEEN MAY BE USED FOR THIS APPLICATION. ROLLAWAY BINS MAY ALSO BE USED. ALL CONCRETE WASHOUT SYSTEMS SHALL BE PLACED OFF OF THE PAVED STREETS.
13. AFTER INSTALLATION OF THE ABOVE ITEMS ARE COMPLETE, A MAINTENANCE PROGRAM NEEDS TO BE DEVELOPED TO INSURE THE CONTINUED EFFECTIVENESS OF YOUR BMP'S.

ENERGY CALCULATIONS CLIMATE ZONE 11:

1. REQUIRED SPECIAL FEATURES
   PV SYSTEM - MIN. 3.42 KNDC REQ. PER T-24 (LARGER PV SYSTEM MAY BE REQ. TO MEET DEMAND. CONSULT w/ SOLAR CONTRACTOR.)
   V.C.H.P COMPLIANCE OPT.
   NEEA RATED HEAT PUMP WATER HEATER
   WINDOWS OVERHANGS
2. WINDOWS:
   U-FACTOR=0.30
   SHGC=0.23
3. AIR CONDITIONING: 2.5-TON SPLIT
   HEATING: 9 HSPF2
   COOLING: 15.2 SEER2
   12.5 EER2
4. INSULATION:
   WALLS= R-21
   FLOOR= SLAB / R-19 @ RAISED FLOOR
   ATTIC= R-38
5. ROOF:
   RADIANT BARRIER ON ROOF SHEETING
   VENTILATION= 1/300 SQFT
6. WATER HEATER:
   200K BTU 50 GAL. HEAT PUMP WATER HEATER
   UNIFORM ENERGY FACTOR: 2.9
   NEEA RATED STATE HPX50DHPT
7. HERS TESTING:
   QUALITY INSULATION INSTALLATION (QII)
   INDOOR AIR QUALITY VENTILATION
   KITCHEN RANGE HOOD
   AIRFLOW IN HABITABLE ROOMS
   VERIFIED EER2/SEER2
   VERIFIED REFRIGERANT CHARGE
   VERIFIED HSPF2
   VERIFIED HEAT PUMP RATED HEATING CAP.
   WALL MOUNTED THERMO. IN ROOMS > 150 SQFT.
   DUCTLESS UNITS LOCATED ENTIRELY IN COND. SPACE

GENERAL NOTES:

1. THE OWNER, BUILDER, OR CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND SIZES BEFORE CONSTRUCTION.
2. THE OWNER BUILDER OR CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND QUALITY CONTROL OF THIS PROJECT.
3. THIS SET OF PLANS IS FOR GENERAL CONSTRUCTION PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE OWNER, BUILDER, OR CONTRACTOR TO SELECT, VERIFY SIZES, INSTALL, AND RESOLVE ANY PROBLEMS WITH MATERIALS AND EQUIPMENT. DO NOT SCALE PLANS

FIRE SPRINKLERS:

1. FIRE SPRINKLER SYSTEM IS REQUIRED. FIRE SPRINKLER PLANS SHALL BE SUBMITTED WITH PLANS. FIRE MARSHALL SHALL INSPECT & APPROVE INSTALLED SYSTEM PRIOR TO BUILDING CLOSING IN

INSULATION NOTES:

1. INSULATE ALL WALLS, ROOF, ATTIC, AND FLOOR PER T24 CALCULATIONS

CRAWLSPACE/ATTIC ACCESS:

1. ACCESS MUST BE PROVIDED TO ALL UNDER-FLOOR SPACE THROUGH ONE OF THE FOLLOWING CRC R408.4:
   - 1.1. ACCESS THROUGH THE FLOOR SHALL BE MINIMUM OF 18 INCHES BY 24 INCHES
   - 1.2. ACCESS THROUGH A PERIMETER WALL SHALL BE NOT LESS THAN 16 INCHES BY 24 INCHES
2. ATTIC ACCESS SHALL BE MINIMUM 22 INCHES BY 30 INCHES. CRC R807.1

CONSTRUCTION NOTES:

1. 20-MIN FIRE RATED SOLID CORE DOORS TO GARAGE W/ (2) SPRING HINGES.
2. EGRESS WINDOWS TO HAVE A MAX. SILL HEIGHT OF 44" OFF OF FINISHED FLOOR
3. WINDOWS LOW "E" VINYL PER T-24
4. TEMPERED GLASS @ SHOWER & TUB ENCLOSURES
5. ALL WINDOWS TO HAVE EXTERIOR PANE TEMPERED.
6. MFG. FIREPLACES TO BE U.S. E.P.A. N.S.P.S. RATED AND INSTALLED PER MFG. SPECS
7. NON REMOVABLE BACKFLOW PREVENTION DEVICES REQUIRED AN ALL EXT. HOSE BIBS
8. SHOWER AND TUB ENCLOSURES TO HAVE WATER RESISTANT GYPSUM BOARD AND A FINISHED WITH A HARD NON-ABSORBENT MATERIAL, W/ A MIN. HEIGHT OF 72" FROM DRAIN
9. MATERIALS USED AS BACKERS FOR WALL TILE TUB AND SHOWER AREAS AND WALL PANELS IN SHOWER AREAS SHALL BE MATERIALS LISTED IN TABLE R702.4.2
10. WATER RESISTANT GYPSUM BACKING BOARD SHALL NOT BE USED IN THE FOLLOWING AREAS-
    - 10.1. WHERE THERE WILL BE DIRECT EXPOSURE WATER OR CONTINUOUS HIGH HUMIDITY.
    - 10.2. ON CLGS. WHERE FRAMING SPACING EXCEEDS 12" O.C. FOR 1/2" OR 16" FOR 5/8" THICK GYPSUM BOARD
    - 10.3. OVER A CLASS 1 OR 11 VAPOR RETARDER IN A TUB OR SHOWER COMPARTMENT
11. FOR INTERIOR MOISTURE CONTROL, A MIN. 10-MIL, CLASS A POLYETHYLENE VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6 INCHES BETWEEN THE BASE COURSE OR SUB GRADE AND THE CONCRETE FLOOR SLAP PER CRC R506.2.3 AND A "CAPILLARY BREAK."
    - 11.1. PER CGBC A CAPILLARY BREAK SHALL BE INSTALLED IN COMPLIANCE WITH AT LEAST ONE OF THE FOLLOWING:
    - 11.1.1. A 4" THICK BASE OF 1/2:" 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. SEE ACI 302.2R-06.
    - 11.1.2. OTHER EQUIVALENT METHODS APPROVED BY THE ENFORCING AGENCY
    - 11.1.3. A SLAB DESIGN SPECIFIED BY A LICENSED DESIGN PROFESSIONAL.
12. MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING TO BE NO MORE THAN 19% BEFORE ENCLOSURE.
13. SPECIAL INSPECTORS EMPLOYED BY THE ENFORCING AGENCY MUST BE QUALIFIED AND ABLE TO DEMONSTRATE COMPETENCE IN THE DISCIPLINE THEY ARE INSPECTING.

PLUMBING NOTES:

1. SHOWERS AND TUB-SHOWERS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION. VALVES SHALL BE ADJUSTED PER THE MANUFACTURER'S INSTRUCTIONS TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120 DEGREES FAHRENHEIT. CPC 408.3.2
2. ALL PLASTIC PIPE AND FITTING EXCEPTING THOSE USED FOR GAS, SHALL MEET THE REQUIREMENTS OF NATIONAL SANITATION FOUNDATION
3. ALL PIPE, TUBE, FITTINGS, SOLVENT, CEMENT, THREAD SEALANT, SOLDER, AND/OR FLUX USED IN POTABLE WATER SYSTEMS INTENDED TO SUPPLY DRINKING WATER SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NATIONAL SANITATION FOUNDATION 61
4. PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) INSTALLED IN RESIDENTIAL BUILDINGS SHALL COMPLY WITH THE PRESCRIPTIVE REQUIREMENTS OF CGBSC SECTIONS 4.303.1.1 THROUGH 4.303.1.4.5
5. THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GPF. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS.
6. THE EFFECTIVE FLUSH VOLUME OF WALL MOUNTED URINALS SHALL NOT EXCEED 0.125 GPF. THE EFFECTIVE FLUSH VOLUME OF ALL OTHER URINALS SHALL NOT EXCEED 0.5 GPF.
7. SHOWERHEADS SHALL HAVE A MAX FLOW RATE OF NOT MORE THAN 1.8 GPM @ 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE US EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.
8. 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 GPM @ 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME. (A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD).
9. THE MAX FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GPM @ 60 PSI. THE MIN FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GPM @ 20 PSI.
10. THE MAX 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 GPM @ 60 PSI.
11. METERING FAUCETS WHEN INSTALLED IN RESIDENTIAL BUILDINGS SHALL NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE.
12. KITCHEN FAUCETS SHALL NOT EXCEED 1.8 GPM @ 60 PSI.
13. KITCHEN SINK REQUIRES A CLEANOUT ABOVE THE FLOOR LEVEL OF THE LOWEST FLOOR OF THE BUILDING.

MECHANICAL NOTES:

1. F.A.U. IN ATTIC REQUIREMENTS PROVIDE A 30"X30" WORK PLATFORM AT BURNER, 24" WIDE WALKWAY TO F.A.U. FROM ACCESS, A LIGHT AND 120V OUTLET AT F.A.U. WITH SWITCH AT ACCESS OPENING, AND PROVIDE A SECONDARY WATER TIGHT CORROSION RESISTANCE METAL PAN BELOW CONDENSATE PRODUCING EQUIPMENT (COOLING COILS) INSTALLED IN ATTIC SECONDARY DRAIN MUST BE SHOWN ON POINT WHERE IT CAN BE READILY OBSERVED. (PER CMC)
2. APPLIANCE SHALL BE ACCESSIBLE THROUGH AN OPENING AND PASSAGEWAY NOT LESS THAN THE LARGEST COMPONENT OF THE APPLIANCE, AND NOT LESS THAN 22 INCHES BY 30 INCHES PER CMC22 304.4.
3. WHERE THE HEIGHT OF THE PASSAGEWAY IS LESS THAN 6 FEET, THE DISTANCE FROM THE PASSAGEWAY ACCESS TO THE APPLIANCE SHALL NOT EXCEED 20 FEET MEASURE ALONG THE CENTERLINE OF THE PASSAGEWAY PER 2022 CMC 304.4.1.
4. THE PASSAGEWAY SHALL BE UNOBSTRUCED AND SHALL HAVE A SOLID FLOORING NOT LESS THAN 24 INCHES WIDE FROM THE ENTRANCE OPENING TO THE APPLIANCE PER 2022 CMC 304.4.2.
5. PROVIDE MIN. 4" DIAMETER, MIN. 0.016" THICK AND SHALL BE RIGID METAL AND SHALL HAVE A SMOOTH INTERIOR SURFACE DUCT WITH BACK-DRAFT DAMPER FOR DRYER EXHAUST (14'-0" MAX LENGTH, 2 OR LESS 90 DEGREE BENDS), 2022 CMC 504.4.2 & 504.4.2.1
6. AIR GAP FITTING REQUIRED & DISHWASHER
7. WATER HEATER VENTING SYSTEMS TO HAVE A POSITIVE FLOW
8. WATER HEATER BARRIER 3" DIA. STEEL PIPE EMBEDDED A MIN. OF 18" BELOW GRADE, MIN 30" ABOVE GARAGE FLOOR, CONC FILLED CMC 305.1
9. GAS LINE PRESSURE TESTING IS NOW 10 PSI FOR 15 MINUTES AND WELDED PIPING IS 60 PSI FOR 15 MINUTES
10. A GAS LINE WITH THE CAPACITY TO PROVIDE A MIN. 200,000 BTU/HR TO WATER HEATER SHOULD BE INSTALLED
11. A CATEGORY 111, IV, OR A TYPE B VENT W/ A STRAIGHT PIPE BETWEEN THE OUTSIDE TERMINATION AND THE SPACE WHERE THE WATER HEATER SHALL BE INSTALLED
12. A CONDENSATION DRAIN THAT IS A MIN. OF 2" HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER THAT ALLOWS NATURAL DRAIN WITHOUT PUMP ASSISTANCE SHALL BE INSTALLED
13. WATER HEATER TO HAVE MIN. (2) SEISMIC STRAPS INSTALLED @ THIRD POINTS AND SHALL HAVE AN 18" MIN. PLATFORM.
14. A 120V ELECTRICAL RECEPTACLE SHALL BE INSTALLED WITHIN 3' OF THE WATER HEATER AND ACCESSIBLE TO THE WATER HEATER WITH NO OBSTRUCTIONS.
15. DUCT SYSTEMS ARE TO BE SIZED, DESIGNED, AND EQUIPMENT IS TO BE SELECTED USING THE FOLLOWING METHODS:
    - 15.0.1. ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSI/ACCA 2 MANUAL J-2011 OR EQUIVALENT.
    - 15.0.2. SIZE DUCT SYSTEMS ACCORDING TO ANSI/ACCA 1 MANUAL D-2014 OR EQUIVALENT.
    - 15.1. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S-2014 OR EQUIVALENT.
16. HVAC SYSTEM INSTALLERS ARE TO BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS.

GLAZING NOTES:

1. PER CRC R308.4 GLAZING SHALL BE TEMPERED IN THE FOLLOWING AREAS:
   - 1.1. IN ALL FIXED OPERABLE PANELS OF SWINGING, SLIDING, AND BI-FOLD DOORS. CRC R308.4.1
   - 1.2. IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE FLOOR OR WALKING SURFACE AND IT MEETS EITHER OF THE FOLLOWING CRC R308.4.2:
   - 1.2.1. THE GLAZING IS WITHIN 24 INCHES OF EITHER SIDE OF THE DOOR IN THE PLANE OF THE DOOR IN A CLOSED POSITION.
   - 1.2.2. WHERE THE GLAZING IS ON A WALL LESS THAN 180 DEGREES (3.14 RAD) FROM THE PLANE OF THE DOOR IN A CLOSED POSITION AND WITHIN 24 INCHES (610 MM) OF THE HINGE SIDE OF AN IN-SWINGING DOOR.
   - 1.3. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS CRC R308.4.3:
   - 1.3.1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SQUARE FEET; AND
   - 1.3.2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR; AND
   - 1.3.3. THE TOP EDGE OF THE GLAZING IS MORE THAN 36 INCHES ABOVE THE FLOOR; AND
   - 1.3.4. ONE OR MORE WALKING SURFACES ARE WITHIN 36 INCHES, HORIZONTALLY AND IN A STRAIGHT LINE, OF THE GLAZING.
   - 1.4. GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOM, BATHTUBS AND SHOWERS, AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES, MEASURED VERTICALLY ABOVE THE STANDING OR WALKING SURFACE. CRC R308.4

POLLUTANT CONTROL:

1. DUCT OPENING AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENING SHALL BE COVERED DURING CONSTRUCTION. CGBSC 4.504.1.
2. FINISH MATERIALS SHALL COMPLY WITH SECTIONS 4.504.2 THROUGH 4.504.5.1
3. ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS. CGBSC 4.504.2.1.
4. PAINTS, STAINS AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS. CGBSC 4.504.2.2.
5. AEROSOL PAINTS AND COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS. CGBSC 4.504.2.3.
6. DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED. CGBSC 4.504.2.4.
7. CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS. CGBSC 4.504.3.
8. 80% OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH SPECIFIED VOC CRITERIA. CGBSC 4.504.4.
9. HARDWOOD PLYWOOD, PARTICLE BOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR AND EXTERIOR OF THE BUILDING SHALL COMPLY WITH THE LOW FORMALDEHYDE EMISSION STANDARDS PER CGC 4.504.5.
10. VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY.

WILDLAND-URBAN INTERFACE FIRE AREA (SRA) REQUIREMENTS:

1. WHERE ROOF VALLEY FLASHING IS INSTALLED, THE FLASHING SHALL BE NOT LESS THAN 0.019-INCHES NO. 26 GAGE GALVANIZED SHEET CORROSION-RESISTANT METAL INSTALLED OVER NOT LESS THAN ONE LAYER OF MINIMUM 72-POUND MINERAL-SURFACED NON-PERFORATED CAP SHEET COMPLYING WITH ASTM D3909, AT LEAST 36-INCH WIDE RUNNING THE FULL LENGTH OF THE VALLEY, 2022 CRC SEC. R337.5.3.
2. IF ROOF GUTTERS ARE INSTALLED, THEY SHALL BE OF NON-COMBUSTIBLE MATERIAL AND NON-COMBUSTIBLE MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER SHALL BE PROVIDED. 2022 CRC SEC. R337.5.4
3. NON-COMBUSTIBLE OR IGNITION RESISTANT EXTERIOR WALL COVERINGS SHALL BE INSTALLED PER 2022 CRC SEC. 337.7
4. OPEN EAVES AND GABLE END OVERHANGS SHALL BE CONSTRUCTED WITH NON-COMBUSTIBLE MATERIAL OR IGNITION RESISTANT PLYWOOD PER 2022 CRC SE. R337.7.5.
5. ONE PANE OF WALL WINDOWS SHALL BE TEMPERED PER 2022 CRC SEC R337.8.2.1.
6. EXTERIOR DOORS: THE EXTERIOR SURFACE SHALL BE OF NON-COMBUSTIBLE OR IGNITION-RESISTANT MATERIAL OR BE CONSTRUCTED OF SOLID CORE WOOD 1-3/8" THICK OF HAVE A FIRE-RESISTIVE RATING OF NOT LESS THAN 20 MIN, 2022 CRC SE. R337.8.3.
7. WHERE APPLICABLE, PORCHES CEILINGS AND BREEZEWAYS SHALL BE CONSTRUCTED WITH NON-COMBUSTIBLE OR IGNITION RESISTANT MATERIAL PER 2022 CRC SEC. 337.7.7.
8. VENTILATION OPENINGS SHALL BE FULLY COVERED WITH WILDFIRE FLAME AND EMBER RESISTANT VENTS APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL, OR WUI VENTS TESTED TO ASTM E2886 AND LISTED PER 2022 CRC SE. R337.6.2.
9. DECK WALKING SURFACE MATERIAL OF DECKS PORCHES, BALCONIES AND STAIRS SHALL BE CONSTRUCTED WITH ONE OF THE FOLLOWING MATERIALS PER CRC R337.9:
   - 9.1. MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION R337.9.4 WHEN TESTED IN ACCORDANCE WITH BOTH ASTM E2632 AND ASTM E2726.
   - 9.2. IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION R337.9.4.
   - 9.3. IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARDS 12-7A-4 AND 12-7A-5
   - 9.4. EXTERIOR FIRE RETARDANT TREATED WOOD.
   - 9.5. NONCOMBUSTIBLE MATERIAL.
   - 9.6. ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A WHEN ATTACHED EXTERIOR WALL COVERING IS ALSO COMPOSED OF NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.
10. THE UNDERFLOOR AREA OF ELEVATED OR OVERHANGING BUILDINGS SHALL BE ENCLOSED TO GRADE OR THE EXPOSED UNDERFLOOR MUST BE CONSTRUCTED IN ACCORDANCE WITH 2022 CRC SEC. R337.7.8.

ELECTRICAL NOTES:

1. ELECTRICAL SERVICE TO BE 225 AMP - U.N.O - VERIFY AMPERAGE AND LOCATION.
2. KITCHEN WALL COUNTERTOP RECEPTACLES SHALL BE INSTALLED WITH 12" COUNTERTOP SPACE OR LARGER AND SHALL BE GFCI PROTECTED, 2022 CEC ART. 210.8(A) (6).
3. RECEPTACLES SHALL BE SPACED SO THAT THERE IS NO POINT ALONG THE WALL WHICH IS MORE THAN 6'-0" FROM AN OUTLET. PROVIDE ONE OUTLET MIN. FOR EACH COUNTER SPACE IN KITCHEN WHICH IS 12" OR WIDER. (MAX. 4'-0" O.C.)
4. RECEPTACLES IN BATHROOMS, GARAGES (INCLUDING GARAGE DOOR OPENER), ALL KITCHEN COUNTERS, AND ANY EXTERIOR LOCATIONS SHALL BE GROUND FAULT INTERRUPTION SYSTEM (GFI) PROTECTED. (PER CEC)
5. SMOKE DETECTORS SHALL BE PLACED MORE THAN 12" FROM CEILINGS AND DUCT OPENINGS. SMOKE DETECTORS SHALL BE PERMANENTLY WIRED AND INTERCONNECTED AND SHALL PROTECT SLEEPING AREAS. PROVIDE BATTERY BACKUP WERE THE HIGHEST POINT OF A CEILING IN A ROOM THAT OPENS TO THE HALLWAY SERVING THE BEDROOMS EXCEEDS THAT OF THE OPENINGS INTO THE HALLWAY BY 24" OR MORE. SMOKE ALARMS SHALL BE PROVIDED IN THE FOLLOWING AREAS.
   - 5.1. IN SLEEPING AREAS.
   - 5.2. IN EVERY ROOM IN THE PATH OF THE MEANS OF EGRESS FROM THE SLEEPING AREA TO THE DOOR LEADING FROM THE SLEEPING UNIT.
6. ALL LIGHTING SHALL COMPLY WITH MANDATORY LIGHTING REQUIREMENTS PER CALIFORNIA ENERGY CODE
7. LIGHTING MUST QUALIFY AS HIGH EFFICACY LUMINARIES IN ACCORDANCE WITH TABLE 150.0-A. 2022 CEC150.0(K)
8. EXTERIOR LIGHTING PERMANENTLY MOUNTED TO THE RESIDENTIAL BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT ARE TO BE:
   - 8.1. HIGH EFFICACY LUMINARIES; AND
   - 8.2. CONTROLLED BY A MANUAL ON AND OFF SWITCH; AND
   - 8.2.1. CONTROLLED BY A PHOTOCELL AND MOTION SENSOR, OR
   - 8.2.2. PHOTO CONTROL, OR
   - 8.2.3. ASTRONOMICAL TIME CLOCK, OR
   - 8.2.4. ENERGY MANAGEMENT CONTROL SYSTM (EMCS)
9. PER THE MANDATORY MEASURES FOR RESIDENTIAL LIGHTING, ALL LIGHTS FOR THE HOUSE AND GARAGE SHALL BE HIGH EFFICIANCY LIGHTS. AT LEAST ONE LIGHT IN EACH BATHROOM, GARAGE, WALK-IN CLOSETS, LAUNDRY ROOM, AND UTILITY ROOM MUST BE ON VACANCY SENSORS. IN ADDITION, LIGHTING IN HABITABLE SPACES, INCLUDING BUT NOT LIMITED TO LIVING ROOMS, DINING ROOMS, KITCHENS AND BEDROOMS, SHALL HAVE READILY ACCESSIBLE DIMMING CONTROLS.
10. ALL LIGHTING FIXTURES IN CLOSETS SHALL BE LOCATED 18" MIN. FROM ALL SHELVING
11. OUTLET BOXES IN WALLS BETWEEN THE DWELLING AND GARAGE SHALL BE METAL OR U.L. APPROVED PLASTIC AND TO BE SEPARATED BY A HORIZONTAL DISTANCES OF AT LEAST 24"
12. MINIMUM 2-20 AMP SMALL-APPLIANCE BRANCH CIRCUITS SERVING COUNTER TOP, WALL, AND FLOOR RECEPTACLES ARE REQUIRED IN KITCHENS. THESE SHALL HAVE NO OTHER OUTLETS. C.E.C. 210.11(C).1, 210.52(B) 1.
13. TWO OR MORE 20 AMP #12 WIRE CIRCUITS SHALL BE PROVIDED TO SERVE THE KITCHEN, BREAKFAST, AND DINING AREAS. SUCH SHALL HAVE NO OTHER OUTLETS
14. PROVIDE ONE MIN. 20 AMP BRANCH CIRCUIT TO SERVE THE LAUNDRY ROOM. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. (PER C.E.C.)
15. PROVIDE ONE MIN. 20 AMP BRANCH CIRCUIT TO SERVE EACH BATHROOM. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. (PER C.E.C.)
16. MINIMUM 50 AMP CIRCUIT REQUIRED FOR RANGE AND/OR OVEN. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. (PER C.E.C.)
17. RANGES, OVENS, AND DRYERS SHALL BE ON CONDUCTOR WIRES WITH AN INSULATED NEUTRAL AND A FOUR PRONG/WIRE OUTLET. (PER CEC ART. 250.140)
18. REQUIRED SMALL APPLIANCE CIRCUITS SHALL NOT SUPPLY DISPOSAL, DISHWASHER, OR OTHER LARGE APPLIANCES. (PER C.E.C.)
19. EXTERIOR W.P. OUTLETS AT 18" MIN TO CENTER LINE - U.N.O., PHONE JACKS SHALL BE AT STANDARD OUTLET HEIGHT - U.N.O., TV JACKS SHALL BE AT STANDARD HEIGHT - U.N.O.
20. EXTERIOR WATER PROOF DUPLEX RECEPTACLE SHALL BE 15 & 20 AMP 120V, 2022 CEC ART. 210.52(E) (1) & 210.8
21. ALL INTERIOR OR METALLIC WATER PIPES WHICH MAY BECOME ENERGIZED SHALL BE BONDED TOGETHER AND MADE ELECTRONICALLY CONTINUOUS. A BOND OF BARE #4 COPPER WIRE SHALL BE MADE BETWEEN THE BONDED PIPING SYSTEM AN THE ELECTRODE CONDUCTOR
22. 20'-0" MIN. BARE COPPER WIRE CONDUCTOR (#4 MIN.) OR 20'-0" REBAR ENCASED IN 2" MIN. OF CONCRETE AT THE BOTTOM OF A FOOTING, WHICH IS IN DIRECT CONTACT WITH ADJACENT EARTH. STUB UP ABOVE FINISHED CONCRETE AT METER LOCATION.
23. THE INTERIOR METAL COLD WATER PIPING SYSTEM IS TO BE BONDED TO THE SERVICE EQUIPMENT ENCLOSURE, THE GROUNDING CONDUCTOR AT THE CONDUCTOR AT THE SERVICE, THE GROUNDING ELECTRODE, OR TO ONE OR MORE GROUNDING ELECTRODES USED
24. PROVIDE WHOLE HOUSE VENTILATION FAN WITH THE FOLLOWING REQUIREMENTS PER CALIFORNIA ENERGY STANDARDS SECTION 150(O): (MAY BE INSTALLED AS BATHROOM EXHAUST FAN)
    - 24.1. MINIMUM CFM RATING OF 75 CFM
    - 24.2. MAXIMUM OF 1.0 SONE
    - 24.3. CONTROL SWITCH LABELED AS THE "WHOLE HOUSE VENTILATION"
    - 24.4. FAN SHALL OPERATE WHENEVER HOME IS OCCUPIED.
25. BATHROOM EXHAUST FAN SHALL BE CONTROLLED BY HUMIDISTAT CONTROL CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY OF 50 TO 80% AND BE ENERGYSTAR RATED.
26. BATHROOMS, WATER CLOSET COMPARTMENTS, AND OTHER SIMILAR ROOMS SHALL BE PROVIDED WITH AGGREGATE GLAZING AREA IN WINDOWS OF NOT LESS THAN 3 SQ. FT. ONE HALF OF WHICH MUST OPENABLE UNLESS A MECHANICALLY VENTILATED SYSTEM CAPABLE OF 50 CFM PER MINUTE FOR INTERMITTENT VENTILATION OR 25 CFM FOR CONTINUOUS VENTILATION IS PROVIDED. VENTILATION AIR FROM SPACE SHALL BE EXHAUSTED DIRECTLY OUTSIDE, CRC R303.3
27. ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS, OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
28. STUB-OUT CABLE LEADS TO JACK LOCATIONS, ATTIC AND ELECTRIC SERVICE ENTRANCE AREA
29. VERIFY ALL ELECTRICAL LOCATIONS.
30. PROVIDE FOR AN INTERSYSTEM BONDING ELECTRODE WHICH INCLUDES PROVISIONS FOR CONNECTING AT LEAST THREE GROUNDING OR BONDING CONDUCTORS REQUIRED FOR COMMUNICATIONS SYSTEMS SHALL BE INSTALLED EXTERNALLY AT THE SERVICE ENTRANCE PANEL, AS SPECIFIED IN C.E.C. 800.100 (B) AND C.E.C. 250.94
31. FIXTURES, LAMP HOLDERS AND RECEPTACLES SHALL BE SECURELY SUPPORTED. A FIXTURE THAT WEIGHTS MORE THAN 6 POUNDS OR 16" IN EITHER DIMENSION SHALL NOT BE SUPPORTED BY THE SCREW SHELL OF THE LAMP HOLDER. OUTLET BOXES SHALL NOT BE USED AS THE SOLE SUPPORT FOR CEILING (PADDLE) FANS. (PER 2022 CEC ART. 410.30(A) AND 314.27(A) & (D).
32. PROVIDE STEEL ELECTRICAL BOX IN FIRE RESISTIVE CEILING AND WALLS. SEPARATE ELECTRICAL BOXES BACK TO BACK IN FIRE-RESISTIVE WALLS BY A MIN. OF 24" HORIZONTALLY, BOX AREA SHALL NOT EXCEED 16" SQ. (PER CEC)
33. FOR EACH DWELLING UNIT, INSTALL A LISTED RACEWAY TO ACCOMMODATE A DEDICATED 208/240V BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1 (NOMINAL 1" INSIDE DIA.). THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUB-PANEL 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 40A MIN. DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE. 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" PER CGBC 4.106.4.1.
34. BATHROOMS: AT LEAST ONE WALL RECEPTACLE OUTLET SHALL BE INSTALLED ADJACENT TO EACH BASIN LOCATION. BATHROOM RECEPTACLE OUTLETS SHALL BE SUPPLIED BY AT LEAST ONE 20 AMP GFI BRANCH CIRCUIT. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. RECEPTACLE OUTLETS SHALL NOT BE INSTALLED IN A FACE-UP POSITION IN THE WORK SURFACES OR COUNTERTOPS IN A BATHROOM BASIN LOCATION. (PER CEC)
35. A 120 VOLT, SINGLE PHASE, 15 OR 20 AMP RATED SERVICE RECEPTACLE SHALL BE LOCATED WITHIN 25' OF, AND ON THE SAME LEVEL AS THE EQUIPMENT FOR MAINTENANCE (IN THIS CASE HEATING/AIR-CONDITIONING EQUIP.) THE SERVICE RECEPTACLE SHALL NOT BE CONNECTED ON THE LOAD SIDE OF THE REQUIRED MEANS OF DISCONNECT. (PER CEC)
36. INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT SHALL BE PROVIDED TO THE FIELD INSPECTOR AT THE TIME OF INSPECTION
37. AT LEAST ONE WALL SWITCH-CONTROLLED LIGHTING OUTLET SHALL BE INSTALLED IN EVERY HABITABLE ROOM, IN BATHROOMS, HALLWAYS, STAIRWAYS, ATTACHED GARAGES WITH ELECTRIC POWER, AND AT OUTDOOR ENTRANCES OR EXITS. (PER CEC)
38. PROVIDED FUSES OR APPROVED CIRCUIT BREAKERS AT AIR CONDITIONING UNITS AND HEAT PUMPS. (PER C.E.C.)
39. HYDRO-MASSAGE BATHTUBS AND THEIR ASSOCIATED ELECTRICAL COMPONENTS SHALL BE PROTECTED BY A GFI. (PER C.E.C.)
40. ALL ELECTRICAL RECEPTACLES INCLUDING ATTACHED AND DETACHED GARAGES AND ACCESSORY BUILDINGS SHALL BE TAMPER RESISTANT, 2022 CEC ART. 406.12.
41. ALL 15 AND 20 AMP BRANCH CIRCUITS NOT REQUIRED TO BE GFI PROTECTED SHALL BE AFIC PROTECTED. (PER 2022 CEC ART. 210.2 (B)).
42. AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND SLEEPING UNITS WITHIN WHICH FUEL BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES. CARBON MONOXIDE ALARMS SHALL BE LOCATED OUTSIDE OF EACH SEPARATE SLEEPING AREAS, IN THE IMMEDIATE VICINITY OF THE BEDROOMS. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVER-CURRENT PROTECTION. WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED THEY SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. C.R.C. R315.1.1 AND R315.1.2
43. ALL LIGHTING CONTROL DEVICES AND SYSTEMS, BALLASTS, AND LUMINARIES MUST MEET THE APPLICABLE REQUIREMENTS OF SECTION 110.9.
44. 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.
45. ALL LIGHT FIXTURES TO BE HIGH EFFICACY.
46. LIGHTS OVER TUBS AND SHOWERS ARE TO BE MARKED FOR WET/DAMP LOCATIONS.
47. SERVICE/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."
48. MIN (1) LIGHT IN EA. BATHROOM, GARAGE, & LAUNDRY ROOM SHALL BE ON VACANCY SENSOR PER RESIDENTIAL LIGHTING MANDATORY MEASURES.
49. AUTOMATIC GARAGE DOOR OPENERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 325.
50. GFCI PROTECTION SHALL BE PROVIDED FOR OUTLETS THAT SUPPLY DISHWASHERS LOCATED IN DWELLING UNITS.
51. OUTDOOR CONDENSING UNITS SHALL HAVE A CLEARANCE OF AT LEAST 5' FROM THE OUTLET OF ANY DRYER VENT.
52. AT LEAST ONE 120-VOLT, 20-AMPERE BRANCH CIRCUIT SHALL BE INSTALLED TO SUPPLY RECEPTACLE OUTLETS IN THE GARAGE AND SHALL HAVE NO OTHER OUTLETS. C.E.C. 210.11
53. A MINIMUM 110-160CFM HOOD OVER ELECTRICAL RANGE OR MINIMUM 180-250CFM HOOD OVER NATURAL GAS RANGE INDOOR AIR QUALITY FAN IS REQUIRED IN THE KITCHEN AND SHALL BE HERS VERIFIED.(C.EN.C. 150.0-E, F, & G. 150.0(O) 1G).(VERIFY HOOD SIZE PER TABLE 150.0-G C.EN.C.)
54. SYSTEMS USING A GAS OR PROPANE COOKTOP SHALL INCLUDE A DEDICATED 240-VOLT BRANCH CIRCUIT WITH 3' COOKTOP. THE BRANCH CIRCUIT SHALL BE RATED AT 50 AMPS MINIMUM. THE MAIN ELECTRICAL SERVICE SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER. (C.EN.C. 150.0(U)).
55. SYSTEMS USING A GAS OR PROPANE DRYER SHALL INCLUDE A DEDICATED 240-VOLT RANCH CIRCUIT WITHIN 3' OF THE CLOTHES DRYER. THE BRANCH CIRCUIT SHALL BE RATED AT 30 AMPS MINIMUM. THE MAIN ELECTRICAL SERVICE SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER. (C.EN.C 150.0(V)).
56. SYSTEMS USING A GAS FURNACE SHALL INCLUDE A DEDICATED 240-VOLT RANCH CIRCUIT WITHIN 3' OF THE FURNACE WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT SHALL BE RATED AT 30 AMPS MINIMUM. THE MAIN ELECTRICAL SERVICE SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER. (C.EN.C 150.0(V)).
57. SURGE PROTECTION DEVICE (SPD) REQUIRED FOR ALL SERVICES SUPPLYING DWELLING UNITS. THE SPD SHALL BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR SHALL BE LOCATED IMMEDIATELY ADJACENT TO THERE. THE SPD SHALL BE A TYPE 1 OR TYPE 2 SPD. (CEC 230.67).
58. WATER HEATERS USING GAS OR PROPANE SHALL DESIGNATE A SPACE 2.5' X 2.5' X 7' TALL SUITABLE FOR FUTURE INSTALLATION OF A HEAT PUMP WATER HEATER(C.EN.C 150.0(N):
    - 14.1 IF THE DESIGNATED SPACE IS WITHIN 3 FEET FROM THE WATER HEATER, THEN THIS SPACE SHALL INCLUDE THE FOLLOWING:
      - A. A DEDICATED 125 VOLT, 20 AMP ELECTRICAL RECEPTACLE THAT IS CONNECTED TO THE ELECTRIC PANEL WITH A 120/240 VOLT 3 CONDUCTOR, 10 AWG COPPER BRANCH CIRCUIT, WITHIN 3 FEET FROM THE WATER HEATER AND ACCESSIBLE TO THE WATER HEATER WITH NO OBSTRUCTIONS; AND
      - B. BOTH ENDS OF THE UNUSED CONDUCTOR SHALL BE LABELED WITH THE WORD "SPARE" AND BE ELECTRICALLY ISOLATED; AND
      - C. A RESERVED SINGLE POLE CIRCUIT BREAKER SPACE IN THE ELECTRICAL PANEL ADJACENT TO THE CIRCUIT BREAKER FOR THE BRANCH CIRCUIT IN A ABOVE AND LABELED WITH THE WORDS "FUTURE 240V USE"; AND
      - D. A CONDENSATE DRAIN THAT IS NO MORE THAN 2 INCHES HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER, AND ALLOWS NATURAL DRAINING WITHOUT PUMP ASSISTANCE.
    - 14.2 IF THE DESIGNATED SPACE IS MORE THAN 3 FEET FROM THE WATER HEATER, THEN THIS SPACE SHALL INCLUDE THE FOLLOWING:
      - A. A DEDICATED 240 VOLT BRANCH CIRCUIT SHALL BE INSTALLED WITHIN 3 FEET FROM THE DESIGNATED SPACE. THE BRANCH CIRCUIT SHALL BE RATED AT 30 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY"; AND
      - B. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE HPWH INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE"; AND
      - C. EITHER A DEDICATED COLD WATER SUPPLY, OR THE COLD WATER SUPPLY SHALL PASS THROUGH THE DESIGNATED HPWH LOCATION JUST BEFORE REACHING THE GAS OR PROPANE WATER HEATER; AND
      - D. THE HOT WATER SUPPLY PIPE COMING OUT OF THE GAS OR PROPANE WATER HEATER SHALL BE ROUTED FIRST THROUGH THE DESIGNATED HPWH LOCATION BEFORE SERVING ANY FIXTURES; AND
      - E. THE HOT AND COLD WATER PIPING AT THE DESIGNATED HPWH LOCATION SHALL BE EXPOSED AND READILY ACCESSIBLE FOR FUTURE INSTALLATION OF AN HPWH; AND
      - F. A CONDENSATE DRAIN THAT IS NO MORE THAN 2 INCHES HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER, AND ALLOWS NATURAL DRAINING WITHOUT PUMP ASSISTANCE.
59. A THERMAL EXPANSION TANK SHALL BE INSTALLED ON ALL TANK WATER HEATERS WITH CLOSED PLUMBING WATER HEATING SYSTEMS. [CPC 608.3, CMC 1005.0]
60. EMERGENCY DISCONNECT [CEC 230.85]: FOR ONE- AND TWO-FAMILY DWELLING UNITS, SHALL HAVE A DISCONNECTING MEANS HAVING A SHORT-CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT, INSTALLED IN A READILY ACCESSIBLE OUTDOOR LOCATION. IF MORE THAN ONE DISCONNECT IS PROVIDED, THEY SHALL BE GROUPED. EACH DISCONNECT SHALL BE ONE OF THE FOLLOWING:
    - A. SERVICE DISCONNECTS MARKED AS FOLLOWS : EMERGENCY DISCONNECT, SERVICE DISCONNECT
    - B. METER DISCONNECTS INSTALLED PER 230.82(3) AND MARKED AS FOLLOWS: EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT
    - C. OTHER LISTED DISCONNECT SWITCHES OR CIRCUIT BREAKERS ON THE SUPPLY SIDE OF EACH SERVICE DISCONNECT THAT ARE SUITABLE FOR USE AS SERVICE EQUIPMENT AND MARKED AS FOLLOWS: EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT MARKINGS SHALL COMPLY WITH 110.21(8).

AGING-IN-PLACE DESIGN AND FALL PROTECTION NOTES

1. AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH GRAB BAR REINFORCEMENT. REINFORCEMENT SHALL BE NOMINAL 2X8 LUMBER AND SHALL BE LOCATED BETWEEN 32" AND 39.25" ABOVE THE FINISHED FLOOR. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ON THE SIDE WALL AND THE BACK WALL. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6" ABOVE THE BATHTUB RIM. INFORMATION IDENTIFYING THE LOCATION OF THE REINFORCEMENT SHALL BE PLACED IN THE OPERATIONS AND MAINTENANCE MANUAL. (CRC R327.1.1)

EXCEPTIONS:

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. REINFORCEMENT OF FLOORS SHALL NOT BE REQUIRED FOR BATHTUBS AND WATER CLOSETS INSTALLED ON CONCRETE SLAB FLOORS.

2. ELECTRICAL RECEPTACLES OUTLETS, SWITCHES AND CONTROLS SHALL BE LOCATED NOT MORE THAN 48" MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISHED FLOOR. (CRC R327.1.2)
3. DOORBELL BUTTONS SHALL BE INSTALLED NOT MORE THAN 48" ABOVE THE FINISHED FLOOR MEASURED TO THE TOP OF THE BUTTON. (CRC R327.1.4)

ENERGY STORAGE SYSTEM (ESS):

1. ESS READY. MIN. ONE OF THE FOLLOWING SHALL BE PROVIDED:
   - 1.1. ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS-SUPPLIED BRANCH CIRCUITS, OR
   - 1.2. A DEDICATED RACEWAY FROM THE MAIN SERVICE PANEL TO A PANELBOARD (SUBPANEL) THAT SUPPLIES THE FOLLOWING BRANCH CIRCUITS: REFRIGERATOR, LIGHTING CIRCUIT NEAR PRIMARY EGRESS DOOR, SLEEPING ROOM RECEPTACLE AND ONE ADDITIONAL.
2. THE MAIN PANELBOARD SHALL HAVE A MINIMUM BUSBAR RATING OF 225 AMPS. SPACE SHALL BE RE-SERVED 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 TO ALLOW THE CONNECTION OF BACKUP POWER SOURCE
3. ENERGY STORAGE SYSTEM IN GARAGE OR WITHIN DWELLING UNIT: ROOMS AND AREAS WITHIN DWELLING UNITS, BASEMENTS AND ATTACHED GARAGES IN WHICH ESS ARE INSTALLED SHALL BE PROTECTED BY SMOKE ALARMS IN ACCORDANCE WITH SECTION R314. A HEAT DETECTOR, LISTED AND INTERCONNECTED TO THE SMOKE ALARMS, SHALL BE INSTALLED IN LOCATIONS WITHIN DWELLING UNITS AND ATTACHED GARAGES WHERE SMOKE ALARMS CANNOT BE INSTALLED BASED ON THEIR LISTING [R328.7]. WHERE AN ESS IS INSTALLED IN THE NORMAL DRIVING PATH OF VEHICLE TRAVEL WITHIN A GARAGE, IMPACT PROTECTION COMPLYING WITH SECTION 1207.11.7.3 SHALL BE PROVIDED [R328.8.1]

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GENERAL CONSTRUCTION NOTES

THE BIRCH

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RANCHO ENG. JOB: 23-010

DRAWN BY: TG

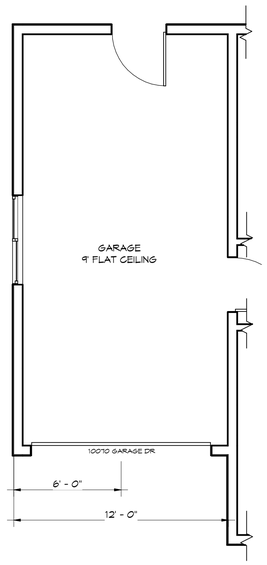
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DATE: 5.1.2023

REVISION: 1

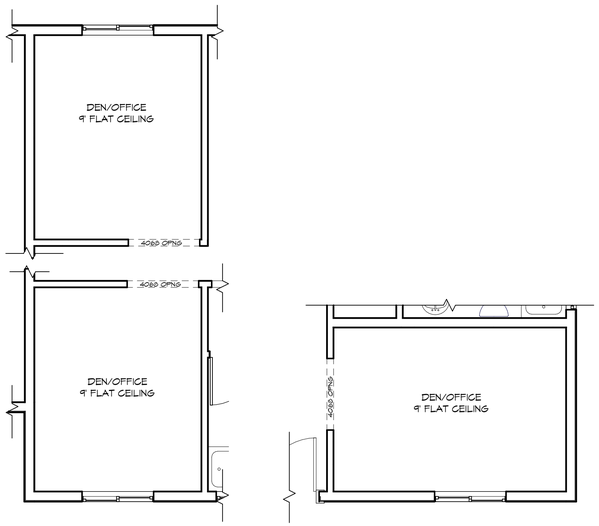
DRAWING NUMBER

CN



FLOOR PLAN LEFT - 1 CAR OPT.

1/4" = 1'-0"



FLOOR PLAN LEFT - BEDROOM/DEN OPTS

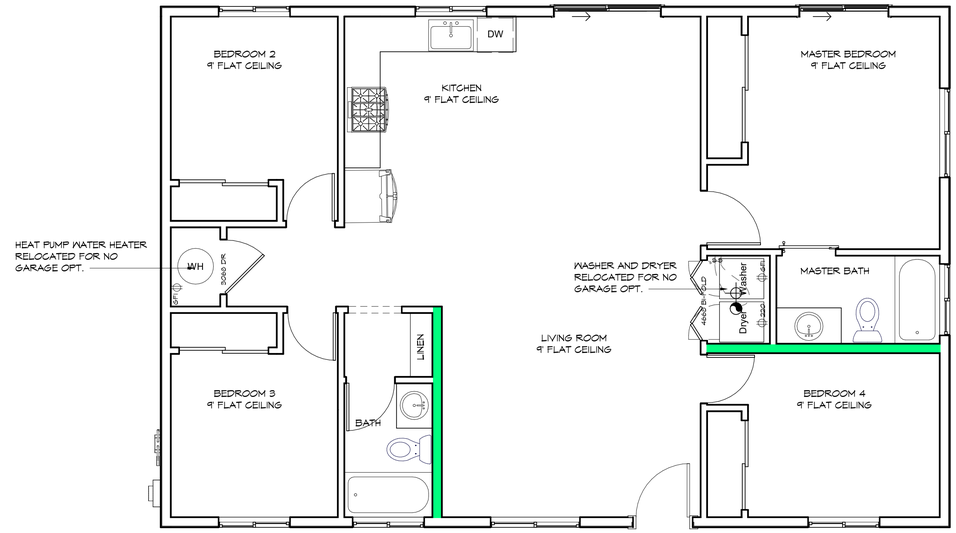
1/4" = 1'-0"

MISC. SYMBOLS

- DUPLEX RECEPTACLE
- AFCI ARC FAULT CIRCUIT INTERRUPTER RECEPTACLE
- 220 DUPLEX RECEPTACLE 220 VOLT
- GFI GROUND FAULT CIRCUIT, AS REQUIRED
- E/V ELECTRIC VEHICLE CHARGING RECEPTACLE
- WP WATER-PROOF GROUND FAULT CIRCUIT
- $ SWITCH @ +42"
- $3 SWITCH 3-WAY
- $S SWITCH W/ VACANCY SENSOR
- RECESSED LED LIGHT FIXTURE
- LED LIGHT
- SD/CM SMOKE/CARBON MONOXIDE DETECTOR
- EXHAUST FAN
- EXHAUST FAN W/ LED LIGHT
- SUBPANELS
- HIGH EFFICACY OUTDOOR LIGHTS
- CEILING FAN W/ LIGHT
- GAS OUTLET

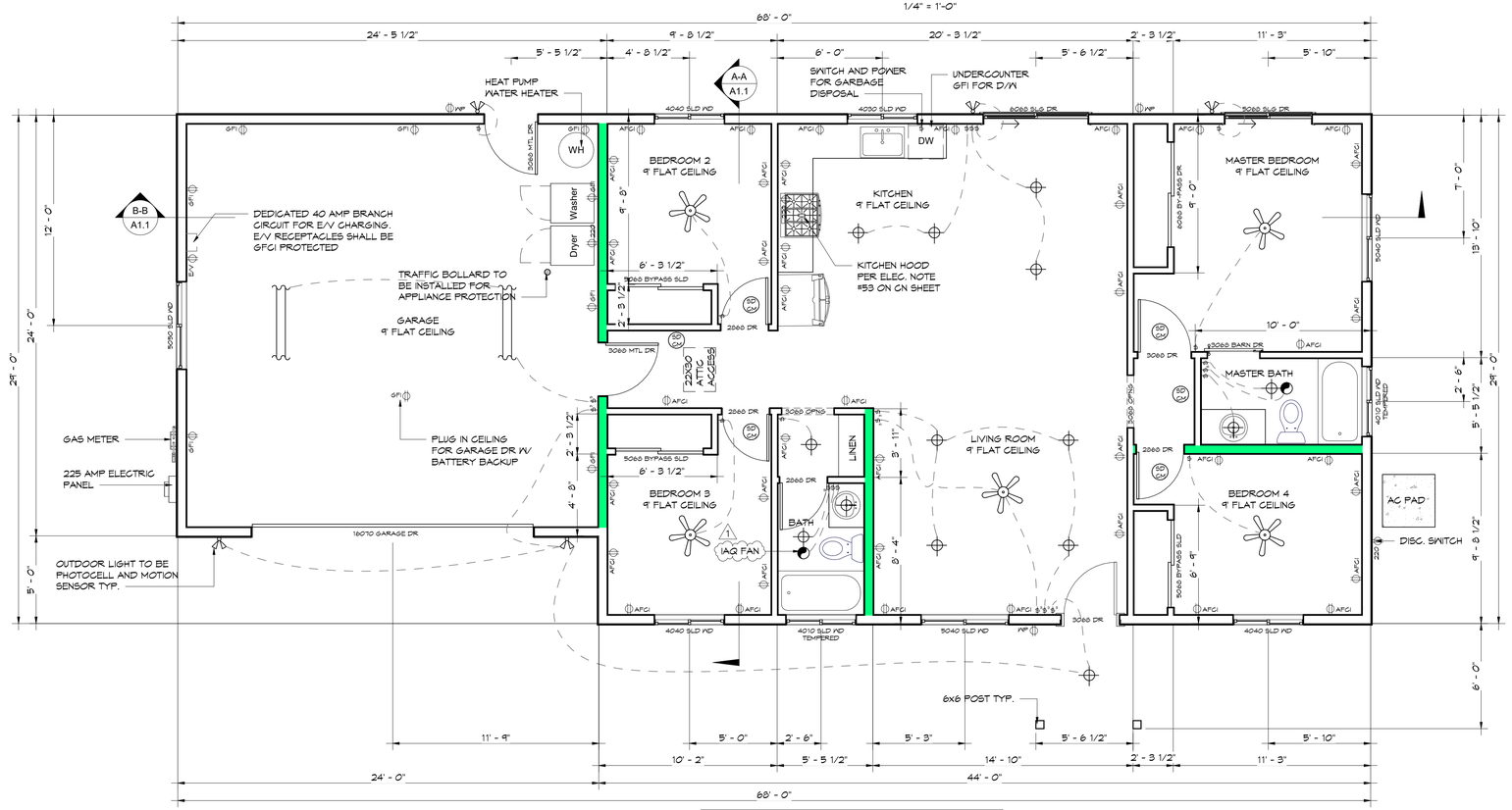
NOTES:

1. BATHROOM, & LAUNDRY ROOM SHALL BE ON VACANCY SENSOR PER RESIDENTIAL LIGHTING MANDATORY MEASURES.
2. A/C MAY BE RELOCATED AS REQ'D.
3. PROVIDE SERVICE LIGHT W/ SWITCH AT ACCESS HOLE. PROVIDE 110V SERVICE OUTLET AT UNIT.
4. GARBAGE DISPOSAL AND DISHWASHER SHALL BE ON SEPARATE BRANCHES TO PROVIDE OVERLOAD PROTECTION FOR MOTOR-OPERATED APPLIANCES. [CEC 422.12(G) AND CEC 430.32]
5. ALL LIGHT FIXTURES TO BE HIGH EFFICACY
6. LIGHTS OVER TUBS AND SHOWERS ARE TO BE MARKED FOR WET/DAMP LOCATIONS
7. GARAGE ACCESS DOOR FROM CONDITIONED SPACE SHALL BE MIN. 1-3/8" THICK SOLID WOOD OR HONEYCOMB CORE STEEL DOOR; OR 20 MIN. FIRE RATED DOOR, SELF CLOSING.
8. SEPARATION WALL BETWEEN LIVING SPACE AND GARAGE. PROVIDE 1/2" GYP. BD. MIN. TO GARAGE SIDE.
9. OUTDOOR LIGHT TO BE PHOTOCELL AND MOTION SENSOR TYP.
10. A CONTINUOUS AIR BARRIER SHALL BE PROVIDED THROUGHOUT THE BUILDING THERMAL ENVELOPE. THE AIR BARRIER SHALL BE PERMITTED TO BE LOCATED ON THE INSIDE OR OUTSIDE OF THE BUILDING ENVELOPE, LOCATED WITHIN THE ASSEMBLIES COMPOSING THE ENVELOPE, OR ANY COMBINATION THEREOF. THE AIR BARRIER SHALL COMPLY WITH SECTIONS C402.1.1 AND C402.1.2. (SEPARATING ATTIC SPACE ABOVE THE GARAGE AND CONDITIONED HOUSE)
11. LIGHTING IN HABITABLE SPACES, INCLUDING BUT NOT LIMITED TO LIVING ROOMS, DINING ROOMS, KITCHENS, AND BEDROOMS, SHALL HAVE READILY ACCESSIBLE DIMMING CONTROLS. (CEC 150(K) 2F).
12. GARAGE DOORS SHALL BE LABELED WITH A PERMANENT LABEL PROVIDED BY THE GARAGE DOOR MANUFACTURER. THE LABEL SHALL IDENTIFY THE GARAGE DOOR MANUFACTURER, THE GARAGE DOOR MODEL/SERIES NUMBER, THE POSITIVE AND NEGATIVE DESIGN WIND PRESSURE RATING, THE INSTALLATION INSTRUCTION DRAWING REFERENCE NUMBER, AND THE APPLICABLE TEST STANDARD. (R609.4.1)
13. THIS STRUCTURE HAS BEEN DESIGNED TO BE BUILT AT EITHER 8'- 0 3/4" OR 9'- 0 3/4" PLATE AS DESIRED.



FLOOR PLAN LEFT - NO GARAGE

1/4" = 1'-0"



FLOOR PLAN - GARAGE LEFT

1/4" = 1'-0"

AT MIN. ONE BATHROOM TO BE INSTALLED WITH GRAB BAR REINFORCEMENT PER AGING-IN-PLACE NOTES ON SHEET GN & DETAIL 6/S5.

RESIDENCE TO BE ESS READY. INSTALL AT MIN. ONE OPTION FROM ESS NOTES ON SHEET GN.

ALL 2X6 INTERIOR WALLS HIGHLIGHTED IN GREEN. SHEET A1 TO BE REPRODUCED IN COLOR ONLY.

FIRST FLOOR:	1,260 SQ. FT.
COVERED PORCHES:	35 SQ. FT.
GARAGE:	580 SQ. FT.

RANCHO ENGINEERING INC. DOES NOT REPRESENT THAT THESE PLANS OR ANY SPECIFICATIONS IN CONNECTION THEREWITH ARE SUITABLE WHETHER OR NOT MODIFIED FOR ANY OTHER SITE THAN THE ONE FOR WHICH THEY WERE SPECIFICALLY PREPARED. RANCHO ENGINEERING INC. DOES NOT ASSUME RESPONSIBILITY FOR THESE PLANS AND SPECIFICATIONS IF THEY ARE USED WHOLE OR IN PART AT ANY OTHER SITE. PLANS ARE NOT VALID UNTIL REVIEWED AND APPROVED BY APPROPRIATE GOVERNMENTAL AGENCIES

THE BIRCH

GARAGE LEFT
FLOOR PLAN,
OPTS. &
ELECTRICAL
PLAN

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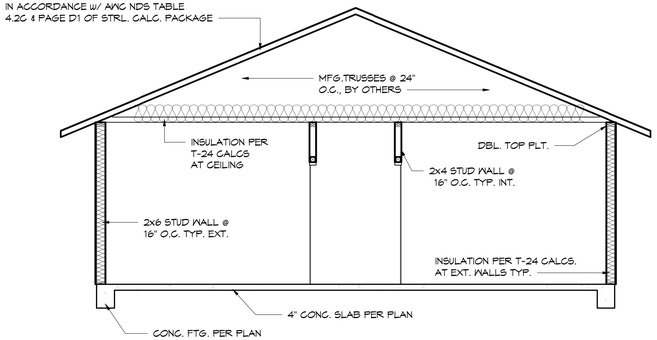
BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY: TG
CKD. BY: JPH
DATE: 5.1.2023
REVISION: 1

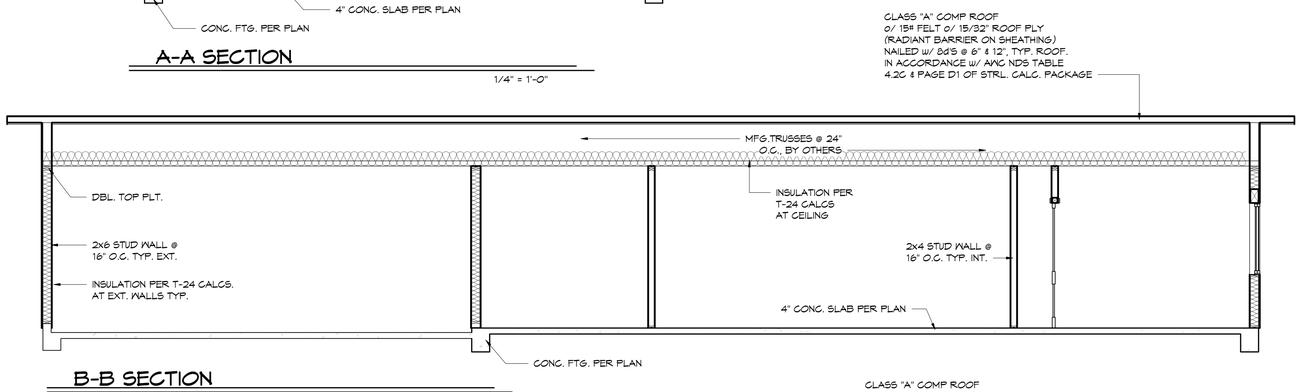
DRAWING NUMBER

A1



A-A SECTION

1/4" = 1'-0"



B-B SECTION

1/4" = 1'-0"

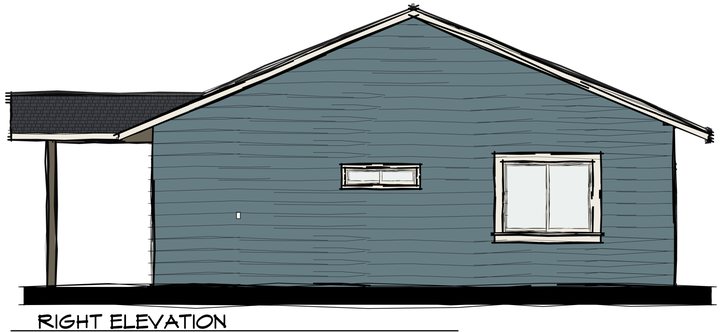
NOTES:

1. EXTERIOR DOORS SHALL BE OF NONCOMBUSTIBLE IGNITION RESISTANT MATERIAL, 20 MINUTE FIRE RATING.
2. ADDRESS SHALL BE CLEARLY VISIBLE & LEGIBLE FROM THE ADJACENT PUBLIC WAY OR STREET. NUMBERS/LETTERS SHALL BE MIN. 4" HIGH W/ MIN. 1/2" STROKE & SHALL CONTRAST W/ THEIR BACKGROUND
3. FOR ROOF SLOPES OF 2:12 AND UP TO 4:12, DOUBLE UNDERLAYMENT ARE REQUIRED PER 1507.2.2
4. EXTERIOR WALL COVERINGS SHALL BE NON-COMBUSTIBLE OR IGNITION RESISTANT MATERIALS (i.e. FIBER CEMENT SIDING OR TRADITIONAL 3-COAT STUCCO.) OTHER MATERIALS REQUIRE SUBMITTAL OF STATE FIRE MARSHALL APPROVED LISTING TO LOCAL JURISDICTION AT TIME OF SITE SPECIFIC PERMITTING PER 2022 CRC SEC. 337.7
5. CLASS "A" ROOFING MATERIAL REQUIRED.



FRONT ELEVATION - NO GARAGE

1/4" = 1'-0"



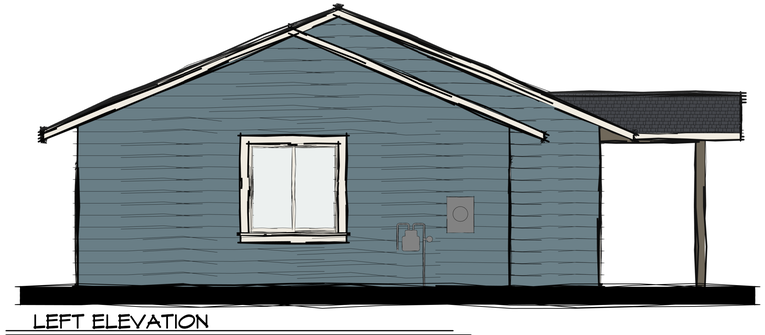
RIGHT ELEVATION

1/4" = 1'-0"



REAR ELEVATION

1/4" = 1'-0"



LEFT ELEVATION

1/4" = 1'-0"



EXTERIOR WALL COVERINGS SHALL BE NON-COMBUSTIBLE OR IGNITION RESISTANT MATERIALS (i.e. FIBER CEMENT SIDING OR TRADITIONAL 3-COAT STUCCO.) OTHER MATERIALS REQUIRE SUBMITTAL OF STATE FIRE MARSHALL APPROVED LISTING TO LOCAL JURISDICTION AT TIME OF SITE SPECIFIC PERMITTING PER 2022 CRC SEC. 337.7

FRONT ELEVATION

1/4" = 1'-0"

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GARAGE LEFT EXTERIOR ELEVATIONS & SECTION

THE BIRCH

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Phone: (530) 877-3700 - Email: ranchoengineering@gmail.com

BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY:	TG
CKD. BY:	JPH
DATE:	5.1.2023
REVISION:	1

DRAWING NUMBER

A1.1

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE CURRENTLY ACCEPTED EDITION OF THE CALIFORNIA BUILDING CODE (CBC) AND CBC STANDARDS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE SHORING AND BRACING DURING CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS.
3. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO DETAILS FOR SIMILAR CONSTRUCTION SHOWN ON PLAN.
4. TYPICAL DETAILS SHALL APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
5. ALL PREFABRICATED CONNECTING HARDWARE SPECIFIED IS SIMPSON PRODUCTS OR APPROVED EQUAL SUCH AS USP. INSTALL PER MANUFACTURES SPECIFICATIONS FOR MAX LOADING.
6. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF RANCHO ENGINEERING AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK AFFECTED.
7. NO STRUCTURAL MEMBERS SHALL BE CUT, NOTCHED, OR OTHERWISE PENETRATED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER IN ADVANCE OR AS SHOWN ON THESE DRAWINGS.
8. PROVIDE OPENINGS, CURBS, FRAMING AND/OR SUPPORTS FOR ITEMS INDICATED ON ANY OF THESE DRAWINGS.
9. DO NOT SCALE DRAWINGS. THESE DRAWINGS ARE NOT MEANT TO BE SCALED. CALL ENGINEER FOR ANY NEEDED CLARIFICATIONS.
10. STAIRS: RISE 4" MINIMUM TO 7.0" MAXIMUM; RUN 11" MINIMUM; HEADROOM 6'-8" MINIMUM; WIDTH 36" MINIMUM PER CBC.
11. UNENCLOSED FLOOR AND ROOF OPENINGS, OPEN AND GLAZED SIDES OF STAIRWAYS, LANDINGS AND RAMPS, BALCONIES OR PORCHES, WHICH ARE MORE THAN 30" ABOVE GRADE OR FLOOR BELOW SHALL BE PROTECTED BY A GUARD RAIL PER CBC.
12. FOUR STEPS OR MORE REQUIRES A CONTINUOUS HANDRAIL 34" TO 38" ABOVE T READ NOSING PER CBC.
13. PROVIDE ATTIC ACCESS FOR ALL ATTIC AREAS WITH 30" OR MORE IN HEIGHT, MIN. ACCESS SIZE IS 22"X30" OR 30"X30" WITH WALK, PLATFORM, AND LIGHT IF FAU IS IN ATTIC.
14. PROVIDE INSPECTION IN ACCORDANCE WITH CBC SECTION 108.
    14.1. NO SPECIAL INSPECTION REQUIRED FOR THIS PROJECT.

DESIGN CRITERIA:

1. THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING CRITERIA:
   1.1. SEISMIC:
   -RISK CATEGORY: II
   -SEISMIC IMPORTANCE FACTOR: 1
   -MAPPED SPECTRAL RESPONSE ACCELERATIONS: Ss = 0.843, S1 = 0.334
   -SEISMIC SITE CLASS: D
   -SEISMIC RESPONSE COEFFICIENTS: SDS = 0.674 SD1 = 0.551, Cs = 0.104
   -SEISMIC DESIGN CATEGORY: D
   -BASIC SEISMIC FORCE RESISTING SYSTEM: LIGHT FRAMED SHEAR WALLS
   -RESPONSE MODIFICATION FACTOR: R = 6.5
   -ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
   1.2. WIND:
   -WIND SPEED: 95 MPH
   -WIND EXPOSURE: C
   -INTERNAL WIND PRESSURE COEFFICIENTS: +/- 0.18
   1.3. LIVE LOADS
   -ROOF CONSTRUCTION LOAD: 20 PSF
   -RESIDENTIAL FLOOR/DECK LOAD: 40 PSF/60 PSF
   -SNOW LOAD: 37 PSF
   -SOLAR DEAD LOAD: 3 PSF

SITE WORK AND FOUNDATION:

1. FOUNDATION SOIL SHALL BE NATIVE UNDISTURBED SOIL OR ENGINEERED FILL AS PER THE PROJECT SOILS REPORT WHERE APPLICABLE. ALL ENGINEERED FILL SHALL BE SPECIAL INSPECTED AND A PAD CERTIFICATION FROM THE TESTING AGENCY SHALL BE PROVIDED.
2. IF NO GEOTECHNICAL REPORT WAS PROVIDED, DESIGN IS BASED ON LOCAL JURISDICTION ALLOWABLE LOADS AND RECOMMENDATIONS, 1,500 PSF BEARING CAPACITY.
3. GRADING SHALL BE PROVIDED TO ACCOMPLISH A 5% SLOPE AWAY FROM HOUSE FOR A MINIMUM OF 10'.
4. NO UTILITY TRENCHES SHALL BE ALLOWED NEAR THE BUILDING TRENCHES WHICH EXTEND DEEPER THAN A 45 DEGREE LINE PROJECTED DOWN AND AWAY FROM THE BOTTOM OUTSIDE CORNER OF ANY FOOTING.

CONCRETE:

1. THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 2500 PSI PER CBC.
2. ALL CEMENT USED SHALL CONFORM TO ASTM C-150 STANDARDS.
3. HORIZONTAL REINFORCING (FOOTING AND STEM WALL): MIN. (1) #4 REBAR 2" BELOW TOP OF STEM WALL AND 3" CLEAR ABOVE BOTTOM OF THE FOOTING AND AT 18" O.C. MAXIMUM HORIZONTAL SPACING.
4. CONCRETE SLAB SHALL BE A MINIMUM OF 4" THICK PER CBC. SLABS UNDER LIVING AREAS AND IN GARAGE SHALL BE REINFORCED WITH REINFORCING BAR OR WIRE MESH. PROVIDE WATERPROOF MEMBRANE BETWEEN SLAB AND ROCK BASE AT ALL LIVING AREAS OR AS RECOMMENDED BY SOILS REPORT.
5. FINE AND COARSE AGGREGATE SHALL CONFORM TO ASTM C-33 FOR STANDARD WEIGHT CONCRETE ANDS ASTM C-330 FOR LIGHT WEIGHT CONCRETE.
6. DRY PACK SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT TO NOT MORE THAN THREE PARTS SAND.
7. CONCRETE SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 10 DAYS OR BY AN APPROVED CURING COMPOUND.
8. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING PLANS FOR MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE AND FLOOR DEPRESSIONS, ETC.
9. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF EXPANSION JOINTS, SCORING, ETC. FOR CONCRETE WALKS, SLABS, AND OTHER FLAT WORK.
10. CONCRETE FOR SLAB ON GRADE SHALL HAVE A MAXIMUM OF 4" SLUMP PER ASTM C-134. 5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. CEMENT TO BE PER ASTM C-150 TYPE 1 OR 2.

REINFORCING STEEL:

1. ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 40 FOR #4 BARS AND SMALLER. ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 FOR #5 BARS AND LARGER. WELDED EIRE FABRIC IS TO BE ASTM A185 WITH LAPPING OF 1 1/2 SPACES.
2. ALL BARS SHALL BE DEFORMED PER ASTM A305.
3. ALL BARS SHALL BE CLEAN AND FREE OF LOOSE FLAKY RUST, GREASE OR OTHER BOND IMPAIRING MATERIALS.
4. ALL BENDS SHALL BE MADE COLD.
5. SPLICING OF BARS IN CONCRETE SHALL HAVE LAPPING OF 30 BAR DIAMETERS OR 24" WHICH EVER IS GREATER. SPLICING OF BARS IN MASONRY SHALL HAVE LAPPING OF 40 BAR DIAMETERS OR 24" WHICH EVER IS GREATER.
6. ALL BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE, NO WET SETTING WILL BE ALLOWED.

ANCHOR BOLTS:

1. TYPICAL SIZE AND SPACING SHALL BE 1/2" Ø WITH A MINIMUM OF 7" EMBED INTO THE FIRST CONCRETE POUR. BOLTS SHALL BE SPACED AT 72" O.C. MAX FOR SINGLE STORY AND 48" O.C. MAX FOR TWO STORY BUILDINGS.
2. PLATE WASHERS A MINIMUM SIZE OF 3"X3"X0.229" SHALL BE USED ON EA. BOLT.
3. FOUNDATION SILL SHALL BE BOLTED TO THE FOUNDATION OR FOUNDATION WALL AT ALL HOUSE AND GARAGE PERIMETER WALLS AND AT ALL INTERIOR SHEAR WALLS.
4. FOUNDATION SILL AT INTERIOR NON-SHEAR WALLS MAY USE SHOT PINS FOR CONNECTION TO SLAB. SHOT PINS MUST BE 0.140" SHANK DIAMETER WITH 0.300" HEAD DIAMETER AND WASHER AND A MINIMUM OF 2.5" LONG.
5. ALL SILL PLATES MUST HAVE A MINIMUM OF ONE ANCHOR BOLT WITHIN 12" OF EACH END, OR TWO BOLTS BETWEEN HOLDOWNS.
6. IF ANCHOR BOLTS ARE MISSED OR MISPLACED CONTACT E.O.R.

HOLDOWNS:

1. ALL HOLDOWNS ARE SIMPSON STRONG-TIE OR EQUIVALENT.
2. LOCATION OF HOLDOWNS ON PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATIONS BASED ON THE LENGTH OF SHEAR WALLS, TYPE OF HOLDOWN AND THE MANUFACTURES RECOMMENDED INSTALLATION.
3. ALL HOLDOWNS ARE TO BE INSTALLED IN PLACE PRIOR TO POURING CONCRETE.

LUMBER AND CARPENTRY:

1. ALL STRUCTURAL LUMBER SHALL BE GRADED IN ACCORDANCE WITH THE STANDARD GRADING RULES NO. 16 FOR WEST COAST LUMBER AND SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19%.
2. ALL STRUCTURAL PLYWOOD SHALL BE STRUCTURAL II OR C-D GRADE WITH EXTERIOR GLUE UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL PLANS.
3. STRUCTURAL PLYWOOD MAY BE SUBSTITUTED WITH AN EQUIVALENT APA RATED ORIENTED STRAND BOARD (OSB).
4. ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR, REDWOOD OR OTHER APPROVED DECAY RESISTANT MATERIAL.
5. STRUCTURAL MEMBERS SHALL NOT BE CUT OR NOTCHED UNLESS SPECIFICALLY NOTED OR DETAILED OR IS IN ACCORDANCE WITH THE CBC.
6. SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS, EXCEPT WHEN LEDGERED.
7. CROSS-BRIDGING SHALL BE PROVIDED AT 8' O.C. FOR DIMENSIONED FLOOR JOIST OVER 10" IN DEPTH. CROSS-BRIDGING SHALL BE PROVIDED AT 10' O.C. FOR DIMENSIONED ROOF RAFTERS OVER 10" IN DEPTH. USE SOLID BLOCKING OR AN APPROVED METAL TYPE BRIDGING.
8. ALL NAILING TO BE PER CBC TABLE 2304.9.1, UNLESS OTHERWISE NOTED.
9. PLYWOOD FLOOR AND ROOF SHEATHING SHALL BE LAID CONTINUOUS OVER TWO OR MORE SPANS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. STAGER ALL PLYWOOD PANELS A MINIMUM OF 4'.
10. FRAMING CONTRACTOR SHALL PROVIDE BACKING AS REQUIRED FOR ALL LIGHT FIXTURES CABINETS, WARDROBES, TOWEL BARS, HANDRAILS, ETC. AS REQUIRED AND REQUESTED BY THE GENERAL CONTRACTOR.
11. EXTERIOR WOOD POSTS AND COLUMNS SUPPORTED BY A CONCRETE SLAB SHALL BE INSTALLED A MINIMUM OF 6" ABOVE EXPOSED EARTH AND AT LEAST 1" ABOVE SLAB ON METAL POST BASE. (EXCEPTION; POSTS OR COLUMNS OF APPROVED WOOD WITH NATURAL RESISTANCE TO DECAY OR TREADED WOOD.) POSTS OR COLUMNS RESTING ON PIERS SURROUNDED BY NATURAL GRADE SHALL BE A MINIMUM OF 8" ABOVE GRADE. ALL ISOLATED INTERIOR AND EXTERIOR POSTS ATTACHED DIRECTLY TO CONCRETE SHALL BE SECURED WITH A SIMPSON PBS ANCHOR OR EQUIVALENT, UNLESS NOTED OTHERWISE.
12. PROVIDE A 2X4 HEADER FOR ALL INTERIOR NONBEARING OPENINGS UP TO 36" IN WIDTH. PROVIDE A 4X4 HEADER FOR ALL INTERIOR NONBEARING OPENINGS 3' TO 6' IN WIDTH. USE A 4X6 HEADER FOR OPENINGS GREATER THAN 6'.
13. ALL EXTERIOR WALLS ADJACENT TO VAULTED CEILINGS SHALL BE BALLOON FRAMED WITH CONTINUOUS STUDS TO BOTTOM CORD OF TRUSS OR RAFTER.
14. PROVIDE SOLID BLOCKING FOR ALL FRAMING MEMBERS AT ALL SUPPORTS.
15. BOLTS FOR TIMBER CONNECTIONS SHALL BE ASTM A307 MACHINE BOLTS UNLESS OTHERWISE NOTED. BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. BOLT HOLES SHALL BE 1/16" SMALLER THAN THE BOLT DIAMETER.
16. HOLES FOR LAG SCREW SHANK SHALL BE THE SAME DIAMETER AND LENGTH AS THE SHANK. THE REMAINING DEPTH OF THE PENETRATION SHALL BE 70% OF THE SHANK DIAMETER.
17. PROVIDE MALLEABLE IRON WASHERS OR CUT PLATE WASHERS UNDER NUTS AND BOLT OR LAG SCREW HEADS THAT BEAR ON WOOD.
18. WHEN REQUIRED NAILING TENDS TO SPLIT WOOD PRE DRILL NAIL HOLES TO 75% OF THE NAIL SHANK DIAMETER.
19. INSTALL FIRE BLOCKS TO CUT OFF ALL HORIZONTAL AND VERTICAL DRAFT OPENINGS BETWEEN TWO STORIES AND ROOF ATTIC SPACES. FIRE BLOCKS SHALL BE OF 2" NOMINAL THICKNESS. LOCATION OF FIRE BLOCKS ARE AS REQUIRED BY THE CBC.
20. ALL BEAMS AND GIRDER TRUSSES TO BE SUPPORTED WITH FULL BEARING TO FOUNDATION UNLESS OTHERWISE NOTED.
21. ALL WALLS ON A FLOOR ARE TO BE SUPPORTED BY DOUBLE JOISTS OR SOLID BLOCKING, UNLESS NOTED OTHERWISE.
22. PROVIDE FURRING AS NECESSARY TO ALIGN NON-SHEAR WALLS WITH SHEAR WALLS AS REQUIRED.
23. PROVIDE SOLID BLOCKING BETWEEN JOISTS AT BEARING WALLS AND AT SHEAR WALLS.
24. REFER TO MANUFACTURES SPECIFICATIONS FOR DRILLING AND CUTTING HOLES IN WEBS OF MANUFACTURED I-JOISTS.
25. EXCEPT WHERE PLANS SHOW SPECIFIC FRAMING ALL FRAMING SHALL COMPLY WITH THE CBC CHAPTER 23, CONVENTIONAL CONSTRUCTION PROVISIONS, AS A MINIMUM.
26. FOR GLUE-LAMINATED BEAMS, FABRICATION SHALL BE PERFORMED IN AN APPROVED FABRICATOR'S SHOP IN ACCORDANCE WITH CBC 1701.7
27. GLUE-LAMINATED BEAM INSPECTION CERTIFICATES SHALL BE SUBMITTED TO THE FIELD INSPECTOR PRIOR TO COMPLETION OF THE FRAME INSPECTION IN ACCORDANCE WITH THE CBC 1704.6.2.

MANUFACTURED WOOD TRUSS:

1. DESIGN AND FABRICATION SHALL BE PER CBC STANDARDS AND ALL ICBO RESEARCH REPORTS.
2. INCREASES IN ALLOWABLE STRESSES FOR ASSEMBLIES OF REPETITIVE FRAMING SHALL NOT BE ALLOWED.
3. WHERE TRUSSES ARE INSTALLED AS BLOCKING, TRUSSES MUST BE DESIGNED TO TRANSMIT DIRECT AXIAL WALL LOADS.
4. PROVIDE TRUSS DRAWINGS SHOWING TRUSSES, REQUIRED BLOCKING, BRACING AND HANGERS, CALCULATIONS WITH SIGNATURE OF RESPONSIBLE LICENSED ENGINEER ON ALL PAGES.
5. INSTALL TRUSSES PER MANUFACTURES RECOMMENDATIONS AND THESE DRAWINGS.
6. ALL GABLE END TRUSSES SHALL BE STRUCTURAL TRUSSES WITH INFILL.
7. ALL LATERAL WEB BRACING IS REQUIRED TO TERMINATE AT AN EXTERIOR BEARING WALL.
8. DO NOT ATTACH TRUSSES TO NONBEARING WALLS UNLESS USING SIMPSON STC CLIPS, UNLESS NOTED OTHERWISE ON PLAN.
9. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY SITE DIMENSIONS TO THOSE OF THE TRUSS CALCULATIONS PRIOR TO ORDERING TRUSSES FOR THE PROJECT.

SHEAR WALL SCHEDULE

A
WALL SYSTEM STRENGTH: 173 PLF SEISMIC, 173 PLF WIND

3/8" STRUCTURAL WOOD PANELS (BLOCKED)

NAILING: 8d (COMMON OR HOT DIPPED GALVANIZED)

6" O.C. @ EDGES
12" O.C. @ FIELD

1/2"Ø ANCHOR BOLT SPACING 72" W/ 2X P.T. SILL

SIMPSON A35 SHEAR TRANSFER @ 36" O.C.
SILL SHEAR TRANSFER NAILING 16d
@ 6" O.C. (COMMON, BOX OR SINKER)

B
WALL SYSTEM STRENGTH: 260 PLF SEISMIC, 365 PLF WIND

3/8" STRUCTURAL WOOD PANELS (BLOCKED)

NAILING: 8d (COMMON OR HOT DIPPED GALVANIZED)

6" O.C. @ EDGES
12" O.C. @ FIELD

1/2"Ø ANCHOR BOLT SPACING 32" W/ 2X P.T. SILL

SIMPSON A35 SHEAR TRANSFER @ 21" O.C.
SILL SHEAR TRANSFER NAILING 16d
@ 4" O.C. (COMMON, BOX OR SINKER)

C
WALL SYSTEM STRENGTH: 349 PLF SEISMIC, 532 PLF WIND

3/8" STRUCTURAL WOOD PANELS (BLOCKED)

NAILING: 8d (COMMON OR HOT DIPPED GALVANIZED)

4" O.C. @ EDGES
12" O.C. @ FIELD

1/2"Ø ANCHOR BOLT SPACING 21" W/ 2X P.T. SILL

SIMPSON A35 SHEAR TRANSFER @ 12" O.C.
SILL SHEAR TRANSFER NAILING 16d
@ 3" O.C. (COMMON, BOX OR SINKER)

D
WALL SYSTEM STRENGTH: 490 PLF SEISMIC, SEE NOTE 1, 685 PLF WIND

3/8" STRUCTURAL WOOD PANELS (BLOCKED)

NAILING: 8d (COMMON OR HOT DIPPED GALVANIZED)

3" O.C. @ EDGES
12" O.C. @ FIELD

1/2"Ø ANCHOR BOLT SPACING 18" W/ 2X P.T. SILL
5/8"Ø ANCHOR BOLT SPACING 24" W/2X P.T. SILL
SIMPSON A35 SHEAR TRANSFER @ 9" O.C.
SILL SHEAR TRANSFER NAILING (2) ROWS
16d @ 4" O.C. (COMMON, BOX OR SINKER)

E
WALL SYSTEM STRENGTH: 665 PLF SEISMIC, SEE NOTE 1, 930 WIND

3/8" STRUCTURAL WOOD PANELS (BLOCKED)
(2) SIDES OR 19/32" STRUCTURAL WOOD PANELS
(BLOCKED) (1) SIDE

NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED)

3" O.C. @ EDGES
12" O.C. @ FIELD

1/2"Ø ANCHOR BOLT SPACING 22" W/ 3X P.T. SILL
5/8"Ø ANCHOR BOLT SPACING 24" W/ 3X P.T. SILL
SIMPSON A35 SHEAR TRANSFER @ 7" O.C.
SILL SHEAR TRANSFER NAILING (2) ROWS
16d @ 3" O.C. (COMMON, BOX OR SINKER)

TYP. SHEAR WALL NOTES

1. WHEN T-1-11 SIDING IS USED FOR SHEAR PLY, INSTALL DOUBLE STUDS STITCH NAILED W/ 16d'S @ 12" O.C. OR 3X MEMBER AT ALL PANEL JOINTS AND EDGE NAIL EACH PANEL AT JOINTS.
2. 8d COMMON OR HOT DIPPED GALVANIZED NAILS TO BE (2 1/2" X 0.131")
3. ALL NAILS FASTENED TO PRESSURE TREATED LUMBER TO BE HOT DIPPED GALVANIZED.
4. PLATE WASHERS TO BE WITHIN 1/2" OF PLYSIDE OF SILL PLATE FOR ALL ANCHOR BOLTS.

TYPICAL FRAMING NOTES

1. ALL HEADERS @ INTERIOR BEARING WALLS & EXTERIOR WALLS ARE 4X12 OR 6X8 UNO.
2. MULTIPLE 2X MEMBERS JOISTS, HEADERS AND BEAMS SHALL BE NAILED TOGETHER WITH 2 ROWS 16d'S @ 12" O.C.
3. WHERE RAKED WALLS OCCUR ALL STUDS SHALL BE BALLOON FRAMED TO BOTTOM CHORD OF TRUSS, RAFTER, ROOF SHEATHING OR CEILING JOIST.
4. PROVIDE SOLID BLOCKING IN FLOOR CAVITY UNDER STRUCTURAL POSTS. PROVIDE MATCHING POSTS EXTENDING TO SUPPORTING BEAM OR FOUNDATION BELOW.
5. ALL METAL HARDWARE NOTED ON THE PLANS ARE PRODUCTS OF SIMPSON STRONG-TIE COMPANY, INC. OR EQUAL.
6. RAFTERS SHALL BE NAILED TO ADJACENT CEILING JOISTS TO FORM A CONTINUOUS TIE. WHERE RAFTERS ARE NOT PARALLEL TO JOISTS, RAFTERS SHALL BE TIED TO MIN. 1X4 CROSS TIES AT 48" O.C. MAX.
7. WHERE GIRDER TRUSS OCCURS, PROVIDE FULL BEARING SUPPORT USING BUILT-UP 2X STUDS OR 4X POST, UNLESS NOTED OTHERWISE.
8. AT CALIFORNIA OVERFRAMING THE LOWER ROOF SHEATHING SHALL BE CONTINUOUS EXCEPT WHERE 22"X30" ACCESS IS REQ'D.
9. ALL FASTENERS PENITRATING PRESSURE TREATED LUMBER TO BE HOT DIPPED GALVANIZED.

TYPICAL LUMBER GRADES

1. 2X, 4X BEAMS, HEADERS AND POSTS DF#2 OR BETTER.
2. 6X BEAMS, HEADERS AND POSTS DF#1 OR BETTER.
3. 2X JOISTS AND RAFTERS DF#2 OR BETTER.
4. 2X STUDS 10' MAX HEIGHT DF#3 OR BETTER.
5. 2X4 STUDS 14' NONBEARING DF#2 OR BETTER.
6. 2X6 STUDS 15' MAX HEIGHT STUD GRADE OR BETTER.
7. 2X6 STUDS 20' NONBEARING DF#2 OR BETTER.
8. GLUE LAMINATED BEAMS 24F-V4 WITH 2000' RADIUS.
9. PARALLEL STRAND LUMBER (PSL)
   Fb=2900 PSI Fv=290 PSI E=2.0X10^6 PSI
10. LAMINATED STRAND LUMBER (LVL)
    Fb=3100 PSI Fv=285 PSI E=2.0X10^6 PSI
    WHEN ATTACHING (2) LVL'S TOGETHER USE (4) 16d'S @ 12" O.C. OR (3) SDS25312 @ 24" O.C. WHEN ATTACHING (3) LVL'S TOGETHER USE SAME PATTER AS ABOVE, BOTH SIDES.
11. ROOF PLY TO BE 1/2" CDX (32/16) OR OSB STAGGER JOINTS & RUN PERPENDICULAR TO ROOF FRAMING. NAIL WITH 8d'S 6" O.C. @ EDGES AND BOUNDARY 12" O.C. FIELD UNO.
12. FLOOR PLY. TO BE 3/4" T/G (48/24) OR EQUIVALENT OSB STAGGER JOINTS & RUN PERPENDICULAR TO FLOOR FRAMING. GLUE AND FASTEN WITH 8d'S 6" O.C. @ EDGES AND BOUNDARY 12" O.C. FIELD UNO.

TABLE OF ABBREVIATIONS

A.B.	ANCHOR BOLT	F.O.C.	FACE OF CONCRETE	O.C.	ON CENTER	VERT.	VERTICAL
ANC.	ANCHOR	F.O.M.	FACE OF MASONRY	O.D.	OUTSIDE DIAMETER	W/	WITH
ARCH.	ARCHITECT	F.O.S.	FACE OF STUD	OPN'G.	OPENING	W/O	WITHOUT
ASSY.	ASSEMBLY	FRM'G.	FRAMING	OPP.	OPPOSITE	W.W.F.	WELDED WIRE FABRIC
BTWN.	BETWEEN	FT.	FOOT	ORIG.	ORIGINAL	&	AND
BLK'G.	BLOCKING	FTG.	FOOTING	PLY.	PLYWOOD	@	AT
BM.	BEAM	GA.	GAGE	PSI.	POUNDS PER SQUARE INCH	X	BY
BOT.	BOTTOM	GALV.	GALVANIZED	PSF	POUNDS PER SQUARE FOOT	℄	CENTERLINE
BR'G.	BEARING	G/L	GLU-LAMINATED	QTY.	QUANTITY	Ø	DIAMETER
C.J.	CONSTRUCTION JOINT	G/N	GANG-NAIL TRUSS	RAD., r.	RADIUS	=	EQUALS
CLR.	CLEAR	HD.	HOLDOWN	REINF.	REINFORCING	#	POUNDS, NUMBER
C.M.U.	CONCRETE MASONRY UNIT	HDR.	HEADER	REQD.	REQUIRED	PL	PLATE
COL.	COLUMN	H.S.B.	HIGH STRENGTH BOLTS	REV.	REVISED, REVISION		
CONC.	CONCRETE	HT.	HEIGHT	RM.	ROOM		
CONN.	CONNECTION	HORIZ.	HORIZONTAL	S.B.	SOLID BLOCKING		
CONST.	CONSTRUCTION	I.D.	INSIDE DIAMETER	SCHED.	SCHEDULE		
CONT.	CONTINUOUS	IN.	INCH	SECT.	SECTION		
DBL.	DOUBLE	INT.	INTERIOR	SIM.	SIMILAR		
DIA.	DIAMETER	J.H.	JOIST HANGER	S.O.G.	SLAB ON GRADE		
DIAG.	DIAGONAL	JST.	JOIST	SPEC.	SPECIFICATION		
DIM.	DIMENSION	JT.	JOINT	SQ.	SQUARE		
DP.	DEEP	LT.	LIGHT	STD.	STANDARD		
DRWG.	DRAWING	LT.WT.	LIGHT WEIGHT				
"E"	EXISTING	MAX.	MAXIMUM				
		M.B.	MACHINE BOLT				

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STRUCTURAL NOTES

THE BIRCH

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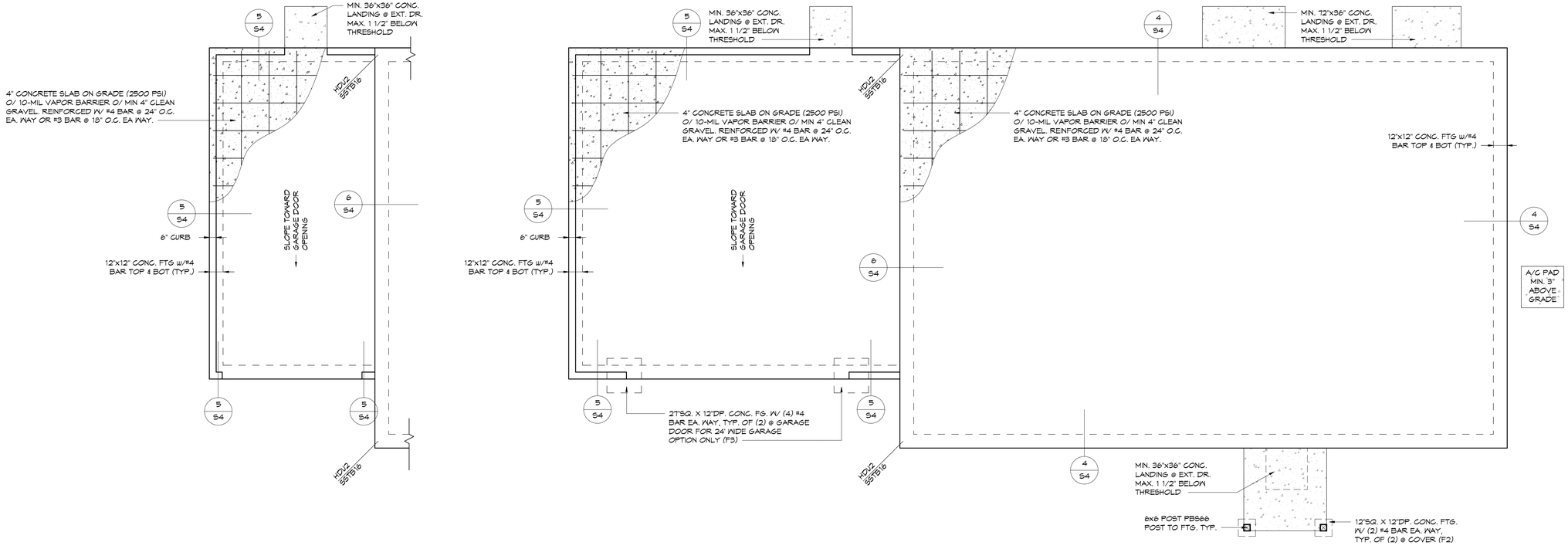
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REVISION: 1

DRAWING NUMBER

S1



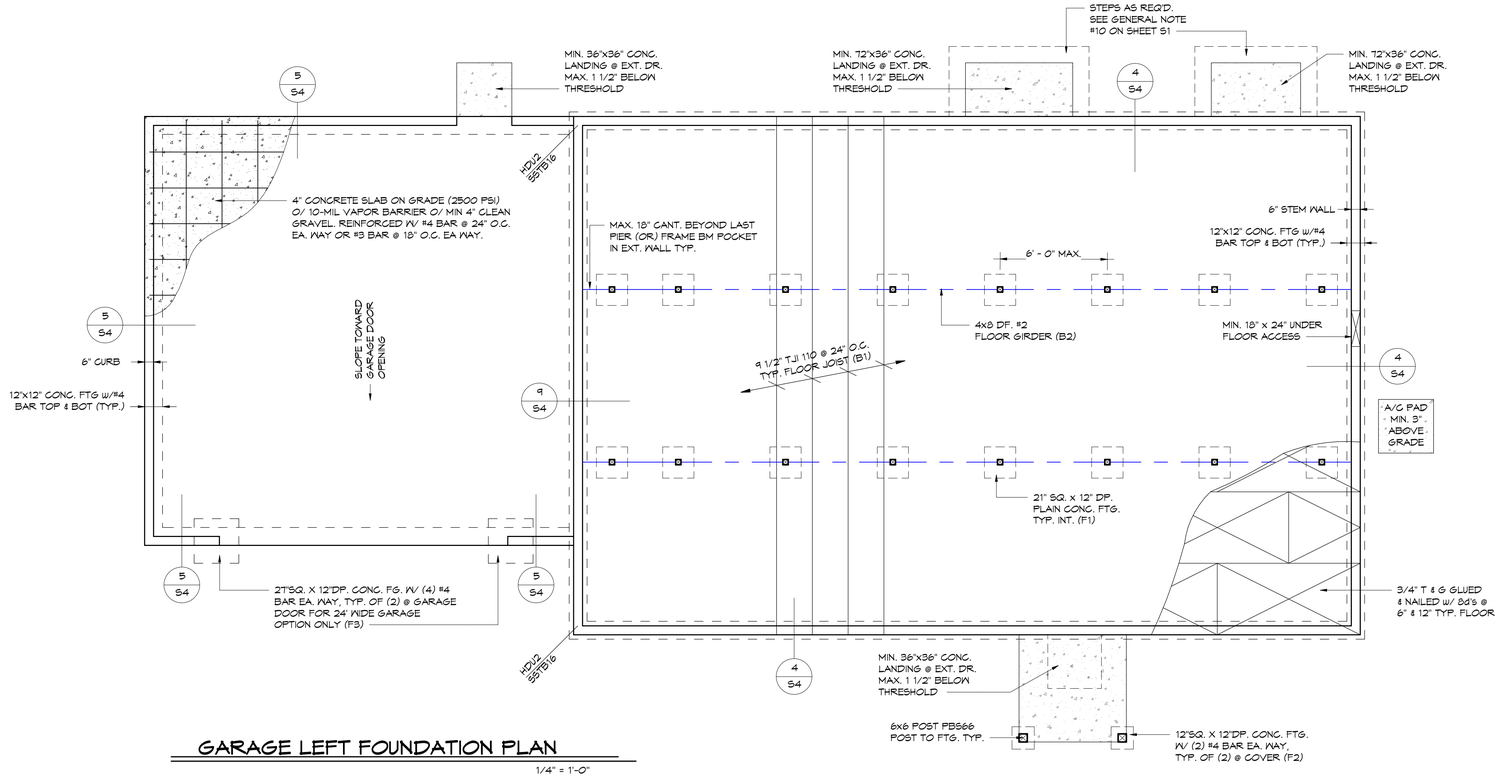
NOTES:

1. CONT. BEARING IS REQ'D UNDER ALL ENG. BMS, AND GIRDER TRUSSES TO FTG./FND. (I.E. MULTI-PLY D.F. NO. 2 STUD COLUMNS STITCH NAILED TOGETHER W/ 16d @ 6" O.C. STAGGERED ALIGNED UNDER MULTI-PLY GIRDER TRUSSES TO MATCH PLY OR HEADERS TO MATCH WIDTH PER COLUMN SPECIFICATIONS OR PER DETAIL 1/S4.
2. ALL ANCHOR BOLTS ARE TO BE PLACED PRIOR TO FOUNDATION & CONC. POUR
3. LONGITUDINAL REINFORCEMENT NOT REQ'D FOR INT. PAD FTG. PER CBC 1905.1.7 EXCEPTION (B)
4. IF STEPPED FTG. OR RETAINING WALL ARE REQ'D, CONTACT ENGINEER OF RECORD FOR DESIGN DETAILS
5. ALL TRIMMER AND KING STUDS TO BE PER DETAIL 1/S5 U.O.N

FLOOR VENTILATION CALCULATION	
DESC	NEW CONST.
TOTAL UNDER FLOOR SPACE	1,260 SQFT
TOTAL VENT REQ'D (1/150)	8.4 SQFT(1209 SQIN)
FLOOR VENT SIZE	41 SQIN FFA
QTY OF FLOOR VENTS	30
FLOOR VENT PROVIDED	8.54 SQFT(1230 SQIN)

NOTES:
1. UNDER FLOOR VENT OPENINGS TO BE VULCAN BRAND OR EQUIV. AND MADE OF NONCOMBUSTABLE MATERIALS PER CBC22 706A.

2. PROVIDE (30) 6"X14" FOUNDATION VENTS. UNDER FLOOR VENTS SHALL BE EVENLY SPACED AROUND STRUCTURE AND WITHIN 3-FEET OF EACH CORNER.



GARAGE LEFT FOUNDATION PLAN

1/4" = 1'-0"

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THE BIRCH

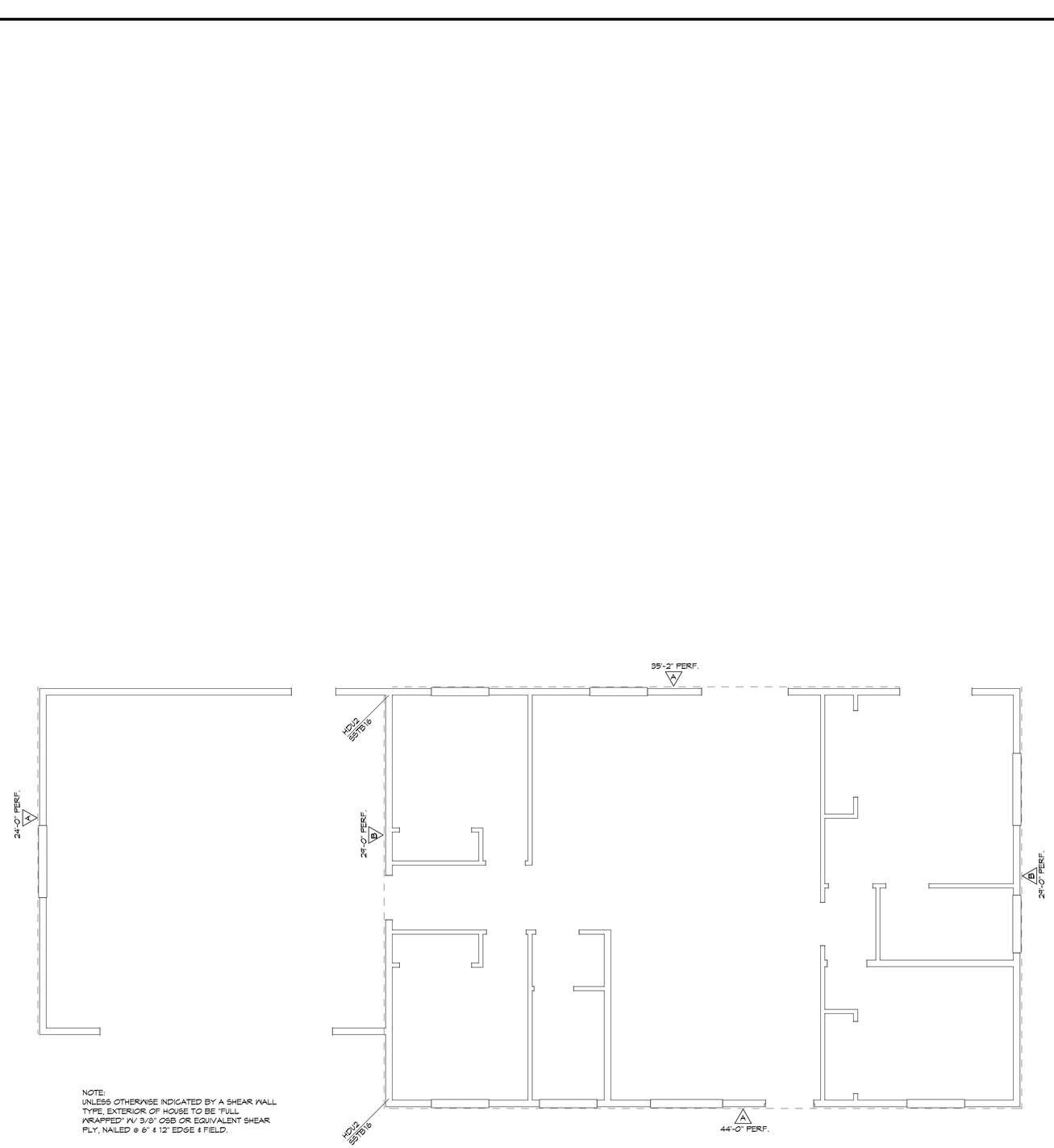
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S2.1



NOTE:
UNLESS OTHERWISE INDICATED BY A SHEAR WALL TYPE, EXTERIOR OF HOUSE TO BE "FULL WRAPPED" W/ 3/8" OSB OR EQUIVALENT SHEAR PLY, NAILED @ 6" & 12" EDGE & FIELD.

GARAGE LEFT SHEAR & HOLDOWNS PLAN

1/4" = 1'-0"

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THE BIRCH

GARAGE LEFT
SHEAR &
HOLDOWN
PLAN

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VENTILATION CALCULATION - 1 CAR	
DESC	VALUE
TOTAL ATTIC SPACE	1,503 SQFT.
*TOTAL VENT REQ'D (1/300)	5.28 SQFT
REQ'D UPPER VENT (1/600)	2.64 SQFT
REQ'D LOWER VENT (1/600)	2.64 SQFT
RIDGE VENT SIZE	18 SQIN./FT.
QTY OF RIDGE VENT	24 FT.
RIDGE VENT PROVIDED	3.0 SQFT.
TOTAL UPPER VENT	3.0 SQFT
EAVE VENT SIZE	22x3.5 (41 SQIN)
QTY OF EAVE VENTS	10
LOWER VENT PROVIDED	2.85 SQFT

*REDUCED VENTILATION ALLOWABLE PER EXCEPTIONS CRC22 R806.2

PROVIDE MIN. 24 FT. OF RIDGE VENT w/ (10) 22x3.5 VULCAN BRAND EAVE VENTS OR EQUIV. FREE FLOW AREA, EVENLY DISTRIBUTED THROUGHOUT FOR ATTIC VENTILATION.

VENTS MUST BE EITHER LISTED ON THE STATE FIRE MARSHAL WEBSITE OR LISTED TO ATSM E2886

UPPER VENTS TO BE LOCATED NOT MORE THAN 3' BELOW RIDGE OR HIGHEST POINT

VENTILATION CALCULATION - NO GARAGE	
DESC	VALUE
TOTAL ATTIC SPACE	1,295 SQFT
*TOTAL VENT REQ'D (1/300)	4.32 SQFT
REQ'D UPPER VENT (1/600)	2.16 SQFT
REQ'D LOWER VENT (1/600)	2.16 SQFT
RIDGE VENT SIZE	18 SQIN./FT.
QTY OF RIDGE VENT	20 FT.
RIDGE VENT PROVIDED	2.5 SQFT.
TOTAL UPPER VENT	2.5 SQFT
EAVE VENT SIZE	22x3.5 (41 SQIN)
QTY OF EAVE VENTS	8
LOWER VENT PROVIDED	2.3 SQFT

*REDUCED VENTILATION ALLOWABLE PER EXCEPTIONS CRC22 R806.2

PROVIDE MIN. 20 FT. OF RIDGE VENT w/ (8) 22x3.5 VULCAN BRAND EAVE VENTS OR EQUIV. FREE FLOW AREA, EVENLY DISTRIBUTED THROUGHOUT FOR ATTIC VENTILATION.

VENTS MUST BE EITHER LISTED ON THE STATE FIRE MARSHAL WEBSITE OR LISTED TO ATSM E2886

UPPER VENTS TO BE LOCATED NOT MORE THAN 3' BELOW RIDGE OR HIGHEST POINT

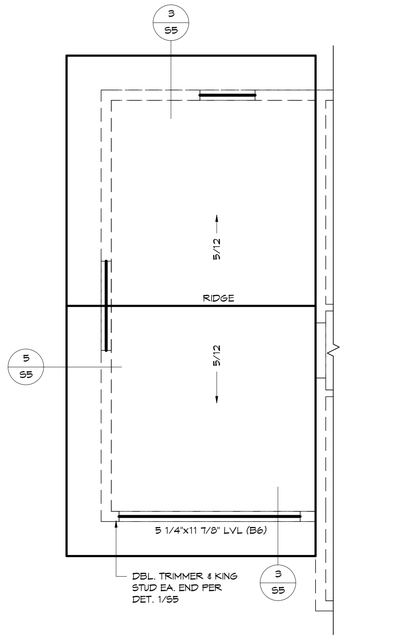
VENTILATION CALCULATION - 2 CAR	
DESC	VALUE
TOTAL ATTIC SPACE	1,875 SQFT
*TOTAL VENT REQ'D (1/300)	6.25 SQFT
REQ'D UPPER VENT (1/600)	3.13 SQFT
REQ'D LOWER VENT (1/600)	3.13 SQFT
RIDGE VENT SIZE	18 SQIN./FT.
QTY OF RIDGE VENT	25 FT.
RIDGE VENT PROVIDED	3.13 SQFT.
TOTAL UPPER VENT	3.13 SQFT
EAVE VENT SIZE	22x3.5 (41 SQIN)
QTY OF EAVE VENTS	12
LOWER VENT PROVIDED	3.41 SQFT

*REDUCED VENTILATION ALLOWABLE PER EXCEPTIONS CRC22 R806.2

PROVIDE MIN. 25 FT. OF RIDGE VENT w/ (12) 22x3.5 VULCAN BRAND EAVE VENTS OR EQUIV. FREE FLOW AREA, EVENLY DISTRIBUTED THROUGHOUT FOR ATTIC VENTILATION.

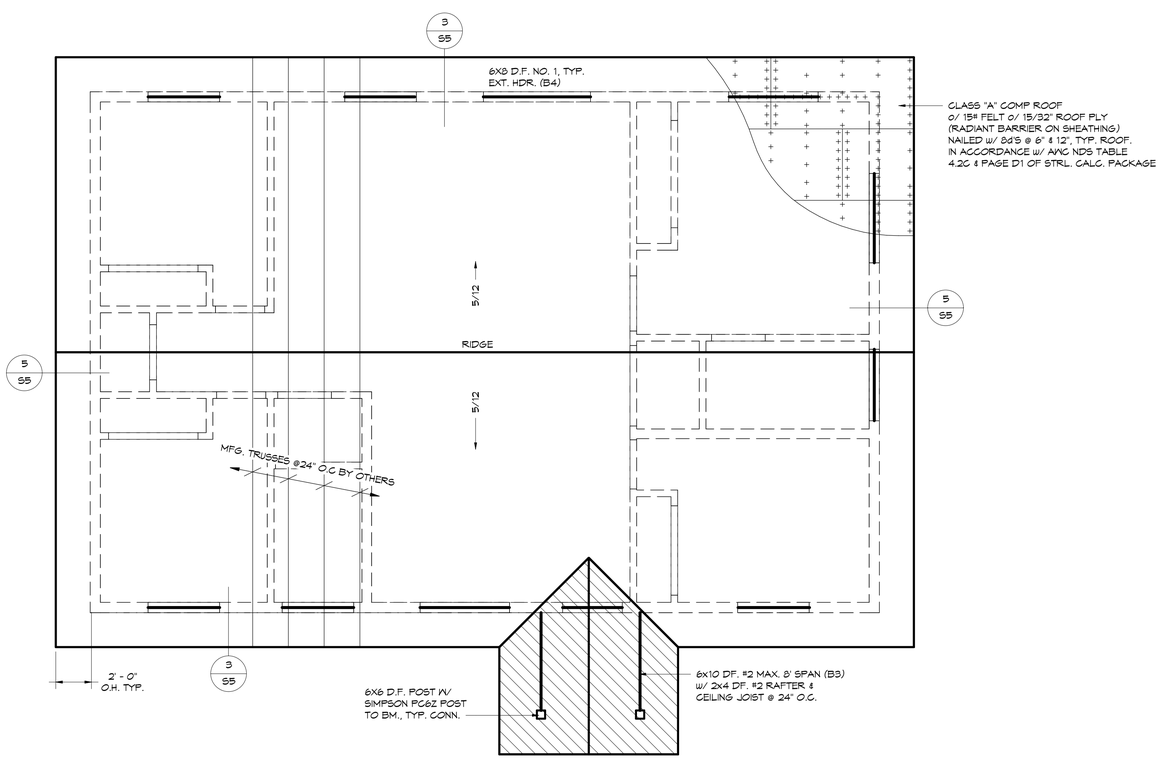
VENTS MUST BE EITHER LISTED ON THE STATE FIRE MARSHAL WEBSITE OR LISTED TO ATSM E2886

UPPER VENTS TO BE LOCATED NOT MORE THAN 3' BELOW RIDGE OR HIGHEST POINT



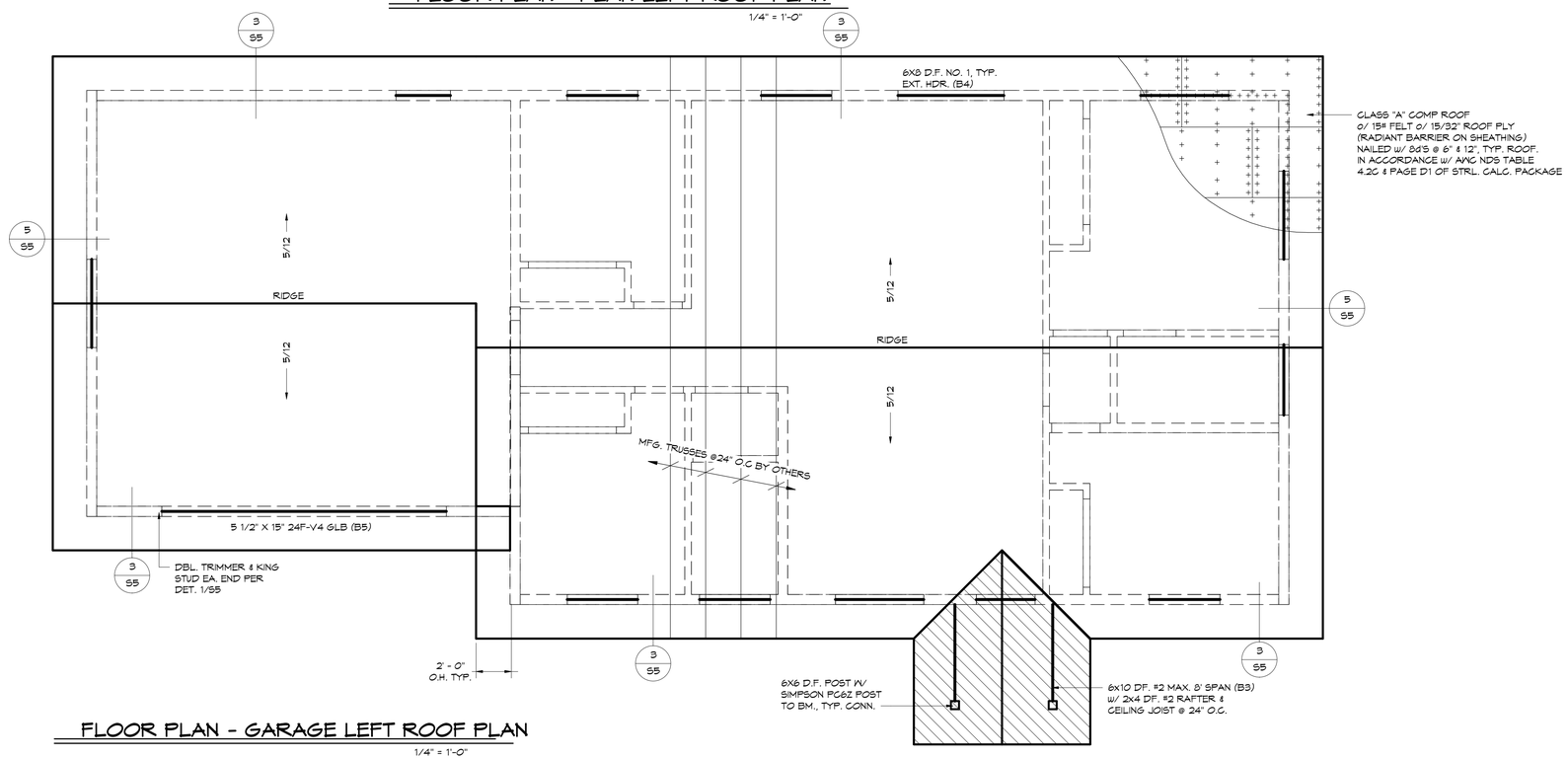
FLOOR PLAN - 1 CAR GARAGE LEFT

1/4" = 1'-0"



FLOOR PLAN - PLAN LEFT ROOF PLAN

1/4" = 1'-0"



FLOOR PLAN - GARAGE LEFT ROOF PLAN

1/4" = 1'-0"

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GARAGE LEFT ROOF PLAN

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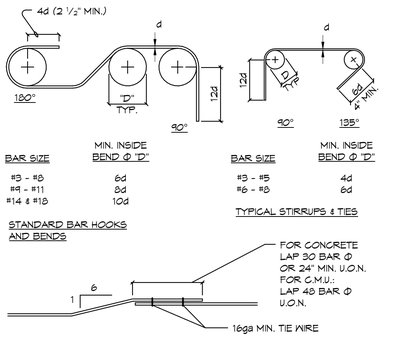
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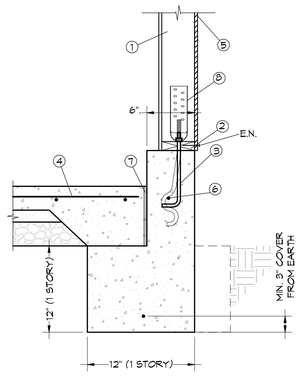
BAR SIZE	MIN. INSIDE BEND Ø "D"
#3 - #8	6d
#9 - #11	8d
#14 & #18	10d

BAR SIZE	MIN. INSIDE BEND Ø "D"
#3 - #5	4d
#6 - #8	6d

TYPICAL STIRRUPS & TIES

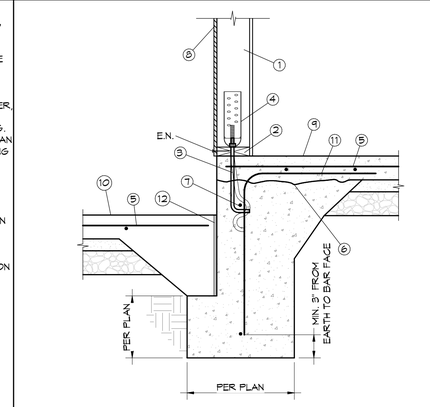
STANDARD BAR HOOKS AND BENDS

TYPICAL HOOKS & BENDS — 1



1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. T.T. SILL PLATE AS REQUIRED FOR SHEAR WALL.
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SEE FOUNDATION PLAN FOR SLAB REINFORCING AND UNDERLAYMENT.
5. SHEAR PLY. PER PLANS
6. (1) #4 REBAR TOP & BOT.
7. OPTIONAL EXPANSION STRIP
8. SIMPSON HDU HOLDOWN, SEE PLAN FOR SIZE AND LOCATION

CONN. @ FOUNDATION — 5



1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. P.T.D.F SILL PLATE.
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SIMPSON HOLDOWN, SEE PLAN FOR SIZE AND LOCATION
5. REINFORCING PER PLAN
6. OPTIONAL COLD JOINT FOR TWO POUR, 4" MAX. SECOND POUR.
7. (1) #4 REBAR WITHIN SHEAR CONE OF A.B.'S, (1) #4 REBAR TOP & BOT MAX. 18" O.C. VERT. SPACING, MAX. 36" STEM HEIGHT FROM TOP OF FOOTING.
8. SHEAR PLY. PER PLANS
9. CONCRETE SLAB PER PLAN
10. GARAGE SLAB SLOPE TO FRONT
11. #4 DOWEL, MIN. 24" INTO SLAB @ 32" O.C. @ TWO POUR CONDITION
12. EXPANSION JOINT OPTIONAL

IF TWO-POUR CONDITION EXISTS, SIMPSON ANCHOR BOLTS MUST BE UPSIZED BY (1) EX.
SSTB16 -> SSTB20
SSTB20 -> SSTB24

ADDITIONALLY, INSTALL COMMON A.B. PER "ANCHOR BOLT NOTES" NOTE 1 ON SHEET S1. INSTALL SIMPSON ANCHOR BOLTS PER MFG. SPEC.

CONN. @ FND. TO GARAGE — 6

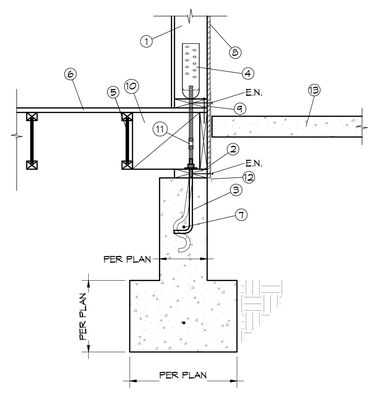


ELEVATION

SECTION

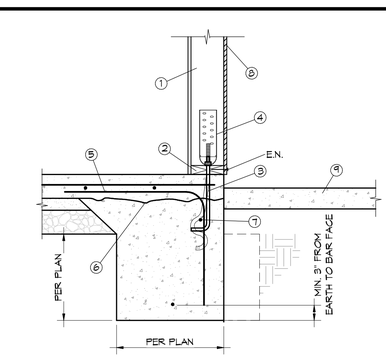
1. INSIDE SLEEVE DIA. IS PIPE DIA +1" MIN.
2. NO PENETRATION ALLOWED WITH IN BOTTOM 1/3 OF FTG.
3. DEEPEN FOOTING IF PIPE IS TO RUN BELOW BOTTOM OF FOOTING
4. NO EXCAVATION ALLOWED BELOW THIS LINE
5. 4" MIN BELOW BOT. OF FOUNDATION
6. 6" MIN. COVER BELOW PIPE SLEEVE

TYPICAL PIPE PENETRATION — 3



1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. P.T. SILL PLATE
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SIMPSON HDU HOLDOWN, SEE PLAN FOR SIZE AND LOCATION.
5. FLOOR JOIST SEE PLAN.
6. FLOOR PLY SEE PLAN.
7. (1) #4 REBAR WITHIN SHEAR CONE OF A.B.'S, (1) #4 REBAR TOP & BOT MAX. 18" O.C. VERT. SPACING, MAX. 36" STEM HEIGHT FROM TOP OF FOOTING.
8. SHEAR PLY. PER PLANS.
9. SILL NAILING PER SHEAR SCHEDULE.
10. BLK'G @ 48" O.C.
11. SIMPSON CNW & ALLTHREAD EXTENTION.
12. FLASHING AS REQ'D
13. CONC. SLAB WHERE OCCURS.

SHEAR/HOLDOWN CONN. @ FND — 4



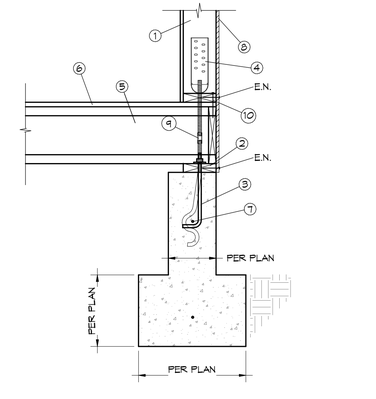
IF TWO-POUR CONDITION EXISTS, SIMPSON ANCHOR BOLTS MUST BE UPSIZED BY (1) EX.
SSTB16 -> SSTB20
SSTB20 -> SSTB24

ADDITIONALLY, INSTALL COMMON A.B. PER "ANCHOR BOLT NOTES" NOTE 1 ON SHEET S1. INSTALL SIMPSON ANCHOR BOLTS PER MFG. SPEC.

FOOTING MAY BE FORMED AS "T" FOOTING AS REQ'D

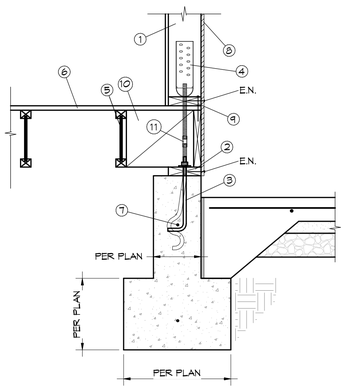
1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. P.T.D.F SILL PLATE.
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SIMPSON HOLDOWN, SEE PLAN FOR SIZE AND LOCATION
5. #4 DOWEL @ 36" O.C. @ TWO POUR CONDITION.
6. OPTIONAL COLD JOINT FOR TWO POUR, 4" MAX. SECOND POUR.
7. (1) #4 REBAR TOP & BOT U.N.O.
8. SHEAR PLY. PER PLANS
9. CONCRETE SLAB ON GRADE WHERE OCCURS

SHEAR/HOLDOWN CONN. @ FND — 4



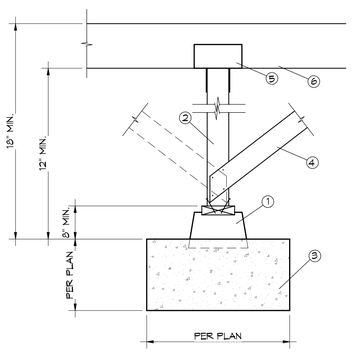
1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. P.T. TREATED SILL PLATE
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SIMPSON HDU HOLDOWN, SEE PLAN FOR SIZE AND LOCATION.
5. FLOOR JOIST SEE PLAN.
6. FLOOR PLY SEE PLAN.
7. (1) #4 REBAR WITHIN SHEAR CONE OF A.B.'S, (1) #4 REBAR TOP & BOT MAX. 18" O.C. VERT. SPACING, MAX. 36" STEM HEIGHT FROM TOP OF FOOTING.
8. SHEAR PLY. PER PLANS.
9. SIMPSON CNW & ALLTHREAD EXTENTION.
10. SILL NAILING PER SHEAR SCHEDULE.

SHEAR/HD. CONN. @ RAISED FND — 8



1. DOUBLE 2X FRAMING OR 4x POST FOR HOLDOWN.
2. P.T. SILL PLATE
3. ANCHOR BOLT W/ 3X3X.229 PLATE WASHER, SEE SHEAR SCHEDULE FOR SIZE AND SPACING.
4. SIMPSON HDU HOLDOWN, SEE PLAN FOR SIZE AND LOCATION.
5. FLOOR JOIST SEE PLAN.
6. FLOOR PLY SEE PLAN.
7. (1) #4 REBAR WITHIN SHEAR CONE OF A.B.'S, (1) #4 REBAR TOP & BOT MAX. 18" O.C. VERT. SPACING, MAX. 36" STEM HEIGHT FROM TOP OF FOOTING.
8. SHEAR PLY. PER PLANS.
9. SILL NAILING PER SHEAR SCHEDULE.
10. BLK'G @ 48" O.C.
11. SIMPSON CNW & ALLTHREAD EXTENTION.
12. SIMPSON PC POST CAP AT EA. POST TO GIRDER CONN. INSTALLED PER MFR. SPEC.
13. GIRDER SEE PLAN

SHEAR/HD. CONN. @ RAISED FND — 9



1. PRE-CAST FOUNDATION PIER w/ DECAY RESISTANT NAILER
2. POST PER PLAN
3. FOOTING SEE PLAN
4. BRACING REQUIRED IN BOTH DIRECTIONS WHEN POSTS ARE GREATER THAN 48"
5. PLYWOOD (MIN. 8"x10"x0.5" EA. SIDE) OR, 2x GUSSET ((4) 16d TO POST AND (6) 16d TO THE GIRDER) OR SIMPSON PC POST CAP AT EA. POST TO GIRDER CONN. INSTALLED PER MFR. SPEC.
6. GIRDER SEE PLAN

PIER FOOTING — 10

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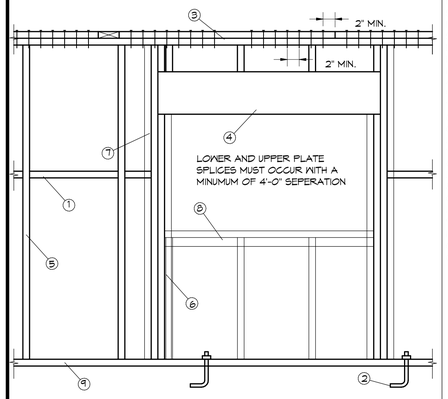
BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY: TG
CKD. BY: JPH
DATE: 5.1.2023
REVISION: 1

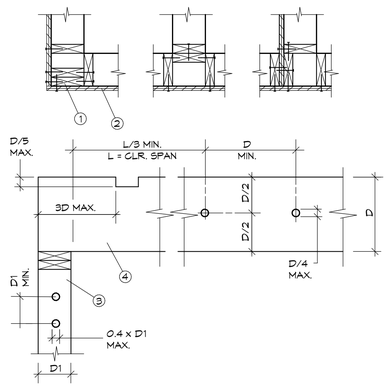
DRAWING NUMBER

S4



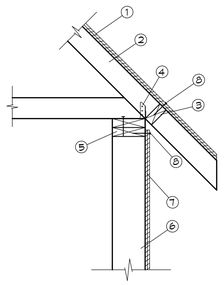
1. 2X BLOCKING AS REQ'D FOR PLY EDGE NAILING.
2. ANCHOR BOLTS SEE PLAN.
3. DOUBLE 2X TOP PLATE WITH 4'-0" MIN SPLICE, (14) 16d SINKERS REQUIRED EACH SIDE OF SPLICE OR PLATE BREAK. REQ'D @ ALL EXT. AND INT. SHEAR WALL LINES.
4. HEADER SEE PLAN.
5. 2X STUDS @ 16" O.C. TYP.
6. (2) TRIMMERS REQ'D @ OPENINGS 8'-0" OR LARGER.
7. (2) KING STUDS REQ'D @ OPENINGS 6'-0" OR LARGER.
8. (2) SILLS REQ'D @ OPENINGS 6'-0" OR LARGER.
9. 2X SILL PLATE P.T.D.F W/ MIN (1) 1/2"Ø A.B. @ 6' O.C. AND (1) WITH IN 12" OF EA. END OF PLATE.

TYPICAL WALL FRAMING — 1



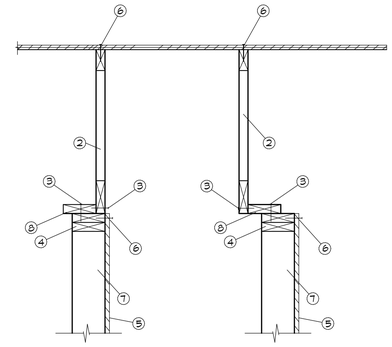
1. 2X FRAMING OR POST AS REQUIRED FOR HOLDOWN, SEE PLAN
2. PLY. SEE PLAN FOR REQUIREMENTS.
3. 2X WALL FRAMING.
4. 2X FLOOR FRAMING, REFER TO MANUFACTURES RECOMMENDATIONS FOR MANUFACTURED FLOOR JOIST PRODUCTS.

TYP. CORNER/NOTCHES/HOLES — 2



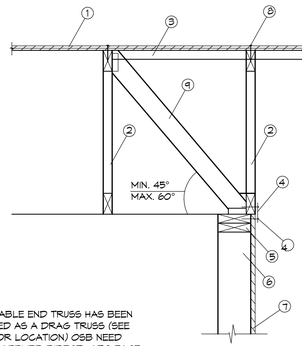
1. ROOF PLY.
2. MANUFACTURED TRUSS.
3. 2X BLOCKING W/ (2) 8d TO TRUSS @ EA. END
4. SIMPSON H1 EA TRUSS.
5. DOUBLE TOP PLATES
6. 2X STUDS @ 16" O.C.
7. SHEAR PLY AS REQ'D SEE SHEAR WALL SCHEDULE FOR PLY. NAILING.
8. EDGE NAILING

SHEAR CONN. @ EAVE — 3



1. ROOF PLY.
2. MANUFACTURED TRUSS OR FRAMING PER PLAN.
3. 16d'S MATCH SILL NAILING OF TYPE BELOW
4. DOUBLE TOP PLATES
5. SHEAR PLY AS REQ'D SEE SHEAR WALL SCHEDULE FOR PLY. NAILING.
6. EDGE NAILING
7. 2X STUDS @ 16" O.C.
8. 2X BACKING

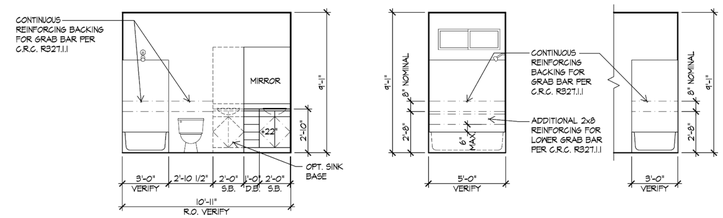
INT. SHEAR TRANSFER — 4



1. ROOF PLY.
2. MANUFACTURED TRUSS OR FRAMING PER PLAN.
3. FLAT OUTLOOKER @ 36" O.C.
4. SIMPSON LTP4 EA. TRUSS TO TOP PLATE @ 24" O.C.
5. DOUBLE TOP PLATES
6. 2X STUDS @ 16" O.C.
7. SHEAR PANEL AS REQ'D SEE SHEAR WALL SCHEDULE.
8. EDGE NAILING
9. 2X KICKER @ 8' O.C. ATTACHED AT EA. END WITH SIMPSON A35 CLIP. MAX 2X4 UNBRACED LENGTH IS 6'-0" MAX 2X6 UNBRACED LENGTH IS 8'-0"

NOTE:
WHEN GABLE END TRUSS HAS BEEN DESIGNED AS A DRAG TRUSS (SEE PLAN FOR LOCATION) OSB NEED NOT BE APPLIED DIRECTLY TO FACE OF THE TRUSS. GABLE END DRAG TRUSSES MAY EXTEND 3/8" BEYOND THE FACE OF THE STUD FRAMING TO FLUSH WITH OSB BELOW.

SHEAR CONN. @ GABLE END — 5



AGING-IN-PLACE — 6

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FRAMING DETAILS

THE BIRCH

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BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY: TG
CKD. BY: JHP
DATE: 5.1.2023
REVISION: 1

DRAWING NUMBER
S5

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

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

Y	N/A	RESPON. PARTY
X		owner contractor

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

Exceptions:
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 Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

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

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

Exceptions:

1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

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

Notes:

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

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

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

Exception: Areas of parking facilities served by parking lifts.

4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

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

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

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

Notes:

a.Construction documents shall show locations of future EV spaces.

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

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

Exception: Areas of parking facilities served by parking lifts.

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

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

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

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

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

1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2.The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

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 and Section 4.106.4.2.2.1.2, Item 3.

4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.
The charging spaces shall be designed to comply with the following:

1.The minimum length of each EV space shall be 18 feet (5486 mm).

2.The minimum width of each EV space shall be 9 feet (2743 mm).

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

a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.2.1.3 Accessible EV spaces.
In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

4.106.4.2.3 EV space requirements.
1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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

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

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

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

4.106.4.2.5 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 multifamily buildings.
When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

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.

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.*

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BID SET

RANCHO ENG. JOB: 23-010

DRAWN BY: TG
CKD. BY: JPH
DATE: 5.1.2023
REVISION: 1

DRAWING NUMBER
GS1

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

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 ROC).
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.

https://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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