THE APPROVAL OF ALL PLUMBING / MECHANICAL / **ELECTRICAL** IS SUBJECT TO FIELD INSPECTION



(E) WATER -

PLACE STRAW ROLLS

AROUND CONSTRUCTION AREA, TYP. -

(E) LANDSCAPE

TO REMAIN, TYP.

(E) 6' H. WD

FENCE/GATE

(E)LANDSCAPE TO

———(E) 12" SEWER MAIN

METER

ENERGY COMPLIANCE REQUIREMENTS

ation R-Value at: Ceiling 38 Wall 15 Floor 19

MAN PHAN'S RESIDENCE

BLOCK AS REQ'D

BLOCK AS REQ'D

pplaton on Apr 26, 2023

7560 RUBENS PARKWAY, SACRAMENTO, CA 95823

(N) 200 AMPS PAN

PART OF SMUD PROGRAM

(E) ELECTRIC

(E) 6' H. WD FENCE

(E) GARAGE 270 S.F.

(E) DRIVEWAY

MIN.5% SLOPE FROM BLDG WITHIN 10 FEET, TY

NEW ADU 1,169 S.F.

—(E) CLEAN OUT

MIN.5% SLOPE FROM BLDG WITHIN 10 FEET, TYP

(E) HOUSE

(E) SEWER

CLEANOUT

PROPERTY LINE 80.22'

SITE NOTE

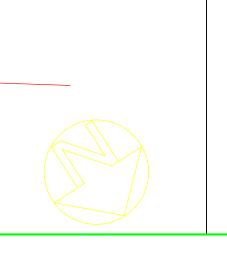
- DESIGNATE ONE AREA OF THE CONSTRUCTION SITE FOR THE STAGING OF VEHICLES, MATERIAL DELIVERIES, AUTOS AND EQUIPMENT, CONSTRUCTION RELATED ITEMS STORED ON-SITE SHALL BE CONFINED TO THIS AREA. REFUELING AND ROUTINE VEHICLE AND EQUIPMENT MAINTENANCE SHALL BE PERFORMED IN THE DESIGNATED AREA. THE DESIGNATED AREA SHALL BE WELL AWAY FROM STREAMS OR OTHER SURFACE STORM DRAINAGE SYSTEMS, SO AS TO AVOID POTENTIAL CONTAMINATION OF THE RUN-OFF. THE LOCATION SHALL BE COORDINATED WITH THE BUILDING
- 2. EQUIPMENT UTILIZED ON THE PROJECT SHALL BE WELL MAINTAINED AND IN GOOD WORKING THAN THAT NEEDED FOR THE INTENDED FUNCTION, BASED UPON THE WORK BEING PERFORMED. WASHING OF EQUIPMENT SHALL NOT BE PERFORMED ON-SITE
- MAINTAIN A DUMPSITE FOR CONSTRUCTION DEBRIS. PLACE DUMPSTER UNDER A ROOF OR COVERED BY TARP SECURED AROUND THE OUTSIDE OF THE DUMPSTER. DO NOT CLEAN OUT A DUMPSTER BY HOSING DOWN ONTO THE CONSTRUCTION SITE.
- MAINTAIN PORTABLE TOILETS ON-SITE FOR THE USE OF THE CONSTRUCTION PERSONNEL. CHECK FOR LEAKS TO ENSURE THAT THEY ARE IN GOOD WORKING ORDER.
- SCHEDULE EXCAVATION AND GRADING ACTIVITIES FOR DRY WEATHER PERIODS. COVER EXPOSED PILES OF SOIL OR STOCKPILES OF CONSTRUCTION MATERIALS WITH PLASTIC SHEETING OR TEMPORARY ROOFS AND PROTECT FROM WIND. SWEEP OR CLEAN DUST AND DEBRIS ACCUMULATED ON PAVING OR SIMILAR SURFACES THAT DRAIN INTO STORM WATER SYSTEMS PRIOR TO THE ONSET OF INCLEMENT WEATHER. DO NOT HOSE-DOWN SUCH SURFACES WHERE MATERIALS HAVE SPILLED.
- AVOID CREATING EXCESSIVE AMOUNTS OF DUST WHEN BREAKING AND REMOVING ASPHALT OF CONCRETE PAVING. SHOVEL OR VACUUM SAW-CUT SLURRY AND REMOVE FROM SITE. COVER OR BARRICADE STORM DRAIN INLETS DURING SAW-CUTTING AS NECESSARY. DO NOT HOSE-DOWN STREETS TO CLEAN UP DEBRIS.
- AVOID PAVING AND SEAL COATING IN WET WEATHER, OR IF RAIN IS IMMINENT BEFORE FRESH PAVEMENT WILL HAVE TIME TO CURE. COVER AND SEAL CATCH BASINS AND MANHOLES WHEN APPLYING SLURRY OR SEAL COATS.
- WHEN CLEANING UP AFTER CONCRETE PAVING WORK, WASH FINES AND EXCESS MATERIALS INTO DIRT AREAS. WASH OUT CONCRETE MIXERS ONLY IN DESIGNATED AREAS WHERE WATER WILL FLOW INTO CONTAINMENT PONDS OR ONTO DIRT AREAS. DISPOSAL OF WASHOUT INTO THE STREET OR STORM DRAINAGE SYSTEM IS PROHIBITED BY LAW.
- MAKE EVERY EFFORT TO RECYCLE WASTE PRODUCTS WHERE POSSIBLE. TYPICALLY, SOLVENTS, WATER BASED PAINTS, VEHICLE FLUIDS, BROKEN ASPHALT AND CONCRETE, WOOD AND CLEARED VEGETATION CAN BE RECYCLED. THOSE MATERIALS WHICH ARE NOT RECYCLABLE SHALL BE DISPOSED OF AT AN APPROPRIATE LANDFILL SITE OR TREATED AS HAZARDOUS WASTE AS REQUIRED. IN NO CASE SHALL WASTE PRODUCTS BE BURIED ON-SITE.
- KEEP POLLUTANTS OFF OF EXPOSED SURFACES. CLEANUP SPILLED MATERIALS IMMEDIATELY. CLEAN UP SPILLS ON DIRT AREAS BY REMOVING AND PROPERLY DISPOSING OF CONTAMINATED SOIL. SURFACES WHERE MATERIALS HAVE BEEN SPILLED SHALL NOT BE HOSED-DOWN, USE DRY CLEANUP METHODS WHENEVER POSSIBLE. WHERE WATER MUST BE USED, USE IT SPARINGLY. SIGNIFICANT HAZARDOUS SPILLS SHALL BE REPORTED TO THE APPROPRIATE SPILL AGENCY IMMEDIATELY AND/OR DIAL 911 AS NECESSARY.
- 11. CONSTRUCTION SITE SHALL COMPLY WITH APPLICABLE PROVISIONS OF THE CFC CHAPTER 33 AND COUNTY STANDARD DETAIL AND SPECIFICATION SI-7
- 12. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CITY OF SACRAMENTO STANDARD SPECIFICATION, DATED JUNE 2007.
- 12.1. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL EXISTING UTILITIES AND FOR THE PROTECTION OF AND REPAIR OF DAMAGE TO THEM. CONTACT UNDERGROUND SERVICE ALERT 1-800-642-2444, 48 HOURS BEFORE WORK IS TO
- THE CONTRACTOR SHALL PROVIDE EROSION, SEDIMENT, AND POLLUTION CONTROL BEST MANAGEMENT PRACTICES (BMPS) WHEN AND WHERE APPLICABLE PER THE CITY OF SACRAMENTO STANDARD SPECIFICATIONS SECTION 16-3.
- DIRECT ALL NEW DOWNSPOUTS ONTO NATURAL GROUND OR LANDSCAPED AREAS WHERE FEASIBLE.
- FLOOD ZONE X PANEL 0302
- NO PERMANENT STRUCTURE (INCLUDING WITHOUT LIMITATION GARAGES, PATIOS, CONCRETE SLABS, TOOL SHED, ROOF OVERHANGS AND SIMILAR STRUCTURES) SHALL BE CONSTRUCTED ON TOP OF WATER, SEWER OR DRAINAGE PIPELINES OR ANYWHERE WITHIN THE ASSOCIATED UTILITY EASEMENTS. (ORD. 2001-033)
- 12.6. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATIONS AND PROTECTION OF ALL EXISTING MAINS AND LINES. YOU CAN CONTACT CITY CREWS AT 311 TO LOCATE SERVICES. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO DETERMINE THE LOCATION OF ANY EASEMENTS OF RECORD ENCUMBERED WITHIN THE PROPERTY

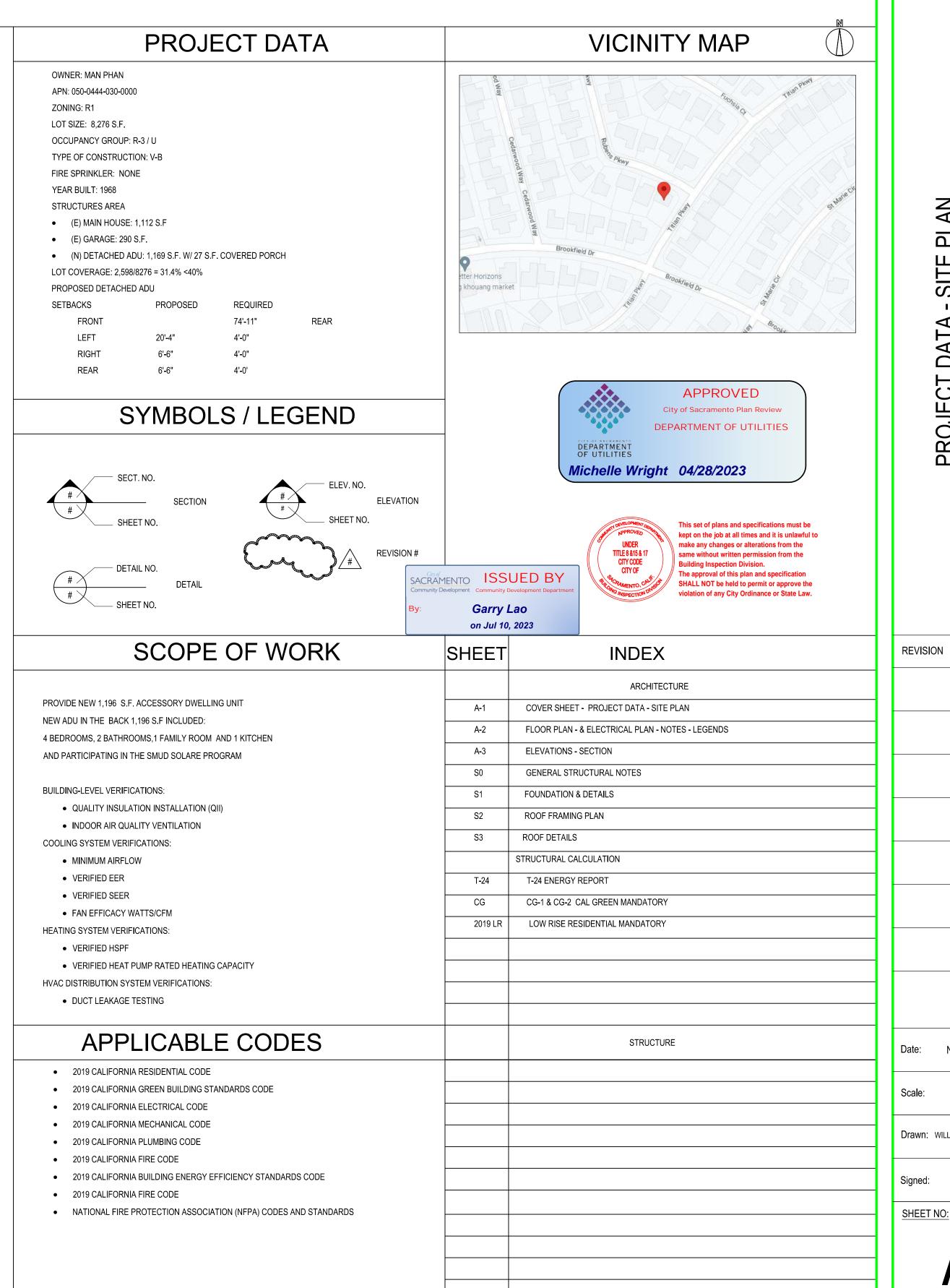
THE APPROVAL OF ALL PLANNING/PRESERVATION WORK IS SUBJECT TO FIELD INSPECTIONS. SACRAMENTO City of Sacramente Plans

> Adrienne Spease on Apr 27, 2023

SITE PLAN - SCALE: 1 / 8" = 1'-0"

RUBENS PARKWAY



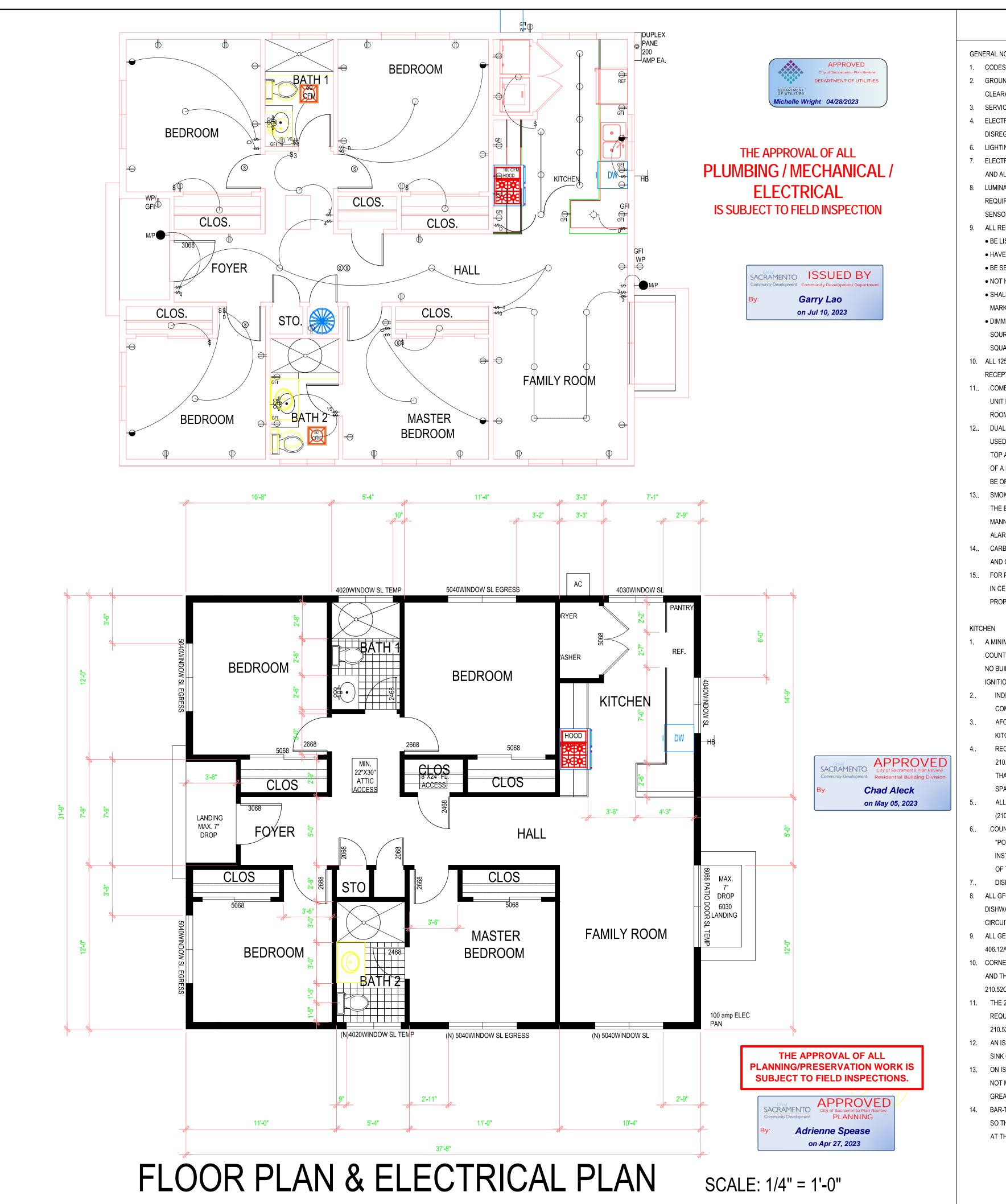


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REVISION BY NOVEMBER 2022 Scale: AS SHOWN Drawn: WILLIAM TRAN & LUYEN HONG NGUYEN



ELECTRICAL NOTES

- 1. CODES: 2019 CALIFORNIA ELECTRICAL CODE (CEC)
- SERVICE PANEL: ELECTRICAL CONTRACTOR TO VERIFY SIZE & LOAD OF SERVICE PANEL.
- 4. ELECTRICAL SYMBOLS LISTED ON THE ELECTRICAL PLAN LEGEND ARE FOR GENERAL USE.
- 6. LIGHTING ELECTRICAL SWITCHES ARE TO BE WALL MOUNTED AT 48" HIGH (TYP).
- 7. ELECTRICAL OUTLETS, SWITCHES, JACKS, ETC. SHALL BE FURNISHED WITH MATCHING WALL PLATES
- 8. LUMINARIES THAT ARE OR CONTAIN LIGHT SOURCES THAT MEET REFERENCE JOINT APPENDIX JA8 REQUIREMENT FOR DIMMING, AND THAT ARE NOT CONTROLLED BY OCCUPANCY OR VACANCY SENSORS, SHALL HAVE DIMMING CONTROLS. [CEnC 150.0(k)2.1]
- BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINAIRE HOUSING AND CEILING.
- SHALL CONTAIN LIGHT SOURCES THAT COMPLY WITH REFERENCES JOINT APPENDIX JA8 AND ARE
- DIMMERS OR VACANCY SENSORS SHALL CONTROL ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCE JOINT APPENDIX JA8. EXCEPTIONS: CLOSETS LESS THAN 70 SQUARE FEET AND HALLWAYS
- 10. ALL 125-VOLT, 15-AND 20-AMPERE RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES PER CEC 406.11
- 11.. COMBINATION TYPE ARC-FAULT CIRCUIT INTERRUPTERS (AFI) SHALL BE INSTALLED IN ALL DWELLING UNIT FAMILY ROOMS, LIVING ROOMS, BEDROOMS, CLOSETS, HALLWAYS, AND SIMILAR ROOMS/AREAS. (CEC 210.12)
- USED FOR SLEEPING, IN THE IMMEDIATE VICINITY OUTSIDE THESE AREAS/ROOMS AND AT BOTH THE TOP AND BOTTOM LANDING OF THE INTERIOR STAIRCASE. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN, BATHROOM, OR ROOM CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE.
- THE BUILDING WIRING, BE EQUIPPED WITH BATTERY BACK-UP AND BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL SMOKE AND CARBON MONOXIDE
- AND ON EVERY LEVEL.
- IN CEILING HEIGHT (SLOPED, PITCHED ETC.), REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER PLACEMENT
- A MINIMUM OF TWO 20-AMP SMALL APPLIANCE BRANCH CIRCUITS ARE REQUIRED TO SERVE COUNTERTOP AND WALL RECEPTACLES IN THE KITCHEN, PANTRY AND DINING ROOM (CEC 210.11A) NO BUILT-IN APPLIANCES ARE ALLOWED ON THESE CIRCUITS (EXCEPT AN ELECTRIC CLOCK OR THE IGNITION OF A GAS RANGE).
- COMPACTORS, AND DISHWASHERS. (CEC210.19A1B)
- AFCI (ARC-FAULT CIRCUIT-INTERRUPTER) PROTECTION IS REQUIRED FOR ALL 120V 15-& 20-AMP KITCHEN CIRCUITS. (CEC210.12A)
- RECEPTACLES SHALL BE INSTALLED AT EACH COUNTERTOP SPACE ≥ 12 IN. IN WIDTH (CEC SPACING BETWEEN RECEPTACLES, MEASURED ON THE WALL-COUNTERTOP LINE, IS 48 INCHES
- ALL RECEPTACLES SERVING KITCHEN COUNTERTOP SURFACES SHALL HAVE GFCI PROTECTION
- DISHWASHERS REQUIRE GFCI PROTECTION, INCLUDING 240-VOLT DISHWASHERS
- 8. ALL GFCI DEVICE CONTROLS MUST BE IN READILY ACCESSIBLE LOCATIONS. OUTLETS BEHIND A DISHWASHER ARE NOT READILY ACCESSIBLE. GFCI PROTECTION CAN BE PROVIDED BY USING A GFCI CIRCUIT BREAKER
- 10. CORNER SINKS SEPARATE THE SPACE ON EACH SIDE WHEN THE DISTANCE BETWEEN THE CORNER
- REQUIRE ONLY ONE RECEPTACLE PER COUNTERTOP SPACE, REGARDLESS OF LENGTH (CEC 210.52C2&3)
- AN ISLAND OR PENINSULA IS CONSIDERED DIVIDED INTO SEPARATE COUNTERTOP SPACES WHEN A SINK OR RANGE IS INSTALLED AND DOES NOT HAVE 12 INCHES OF SPACE BEHIND IT
- 13. ON ISLANDS AND PENINSULAS ONLY, RECEPTACLES ARE ALLOWED ON THE SIDE OF THE CABINET GREATER THAN 6 INCHES (CEC 210.52C5 EXC.)
- 14. BAR-TYPE COUNTERS ARE CONSIDERED WALL SPACE. WALL SPACES ≥ 2 FT. REQUIRE RECEPTACLES SO THAT NO PORTION OF THE WALL IS MORE THAN 6 FT. FROM A RECEPTACLE OUTLET, MEASURED AT THE FLOOR/WALL LINE (CEC 210.52A1&2)

GENERAL NOTES:

- 2. GROUNDS: GROUND SERVICE PANEL TO U.F.E.R. GROUND & GARAGE. MAINTAIN WORKING CLEARANCES PER NEC AT SUB PANEL.
- DISREGARD ANY SYMBOL NOT INDICATED ON THE PLAN.
- AND ALL ELECTRICAL BOXES LOCATED WITHIN EXTERIOR
- 9. ALL RECESSED LUMINAIRES SHALL:
- BE LISTED FOR ZERO CLEARANCE INSULATION CONTACT.
- HAVE A LABEL THAT CERTIFIES THE LUMINAIRE IS AIRTIGHT.
- NOT HAVE SCREW BASED SOCKETS.
- MARKED "JA8-2016-E".

- 12.. DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE ALARMS ARE REQUIRED IN ALL AREAS/ROOMS
- 13.. SMOKE DETECTOR AND CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM
- 14.. CARBON MONOXIDE ALARMS ARE REQUIRED IN THE IMMEDIATE VICINITY OUTSIDE SLEEPING ROOMS
- 15.. FOR PLACEMENT OF SMOKE ALARMS AND CARBON MONOXIDE ALARMS IN ROOMS WITH VARIATIONS
- INDIVIDUAL (DEDICATED) CIRCUITS ARE REQUIRED FOR GARBAGE DISPOSALS, MICROWAVES,
- 210.52C1). RECEPTACLES SHALL BE INSTALLED SO THAT NO POINT ALONG THE WALL LINE IS MORE THAN 24 INCHES HORIZONTALLY FROM AN OUTLET IN THAT SPACE [CEC 210.52C1]. THE MAXIMUM
- COUNTERTOP RECEPTACLES SHALL NOT BE INSTALLED IN A FACE UP POSITION (CEC 406.5E). LISTED
- "POP-UP" RECEPTACLES ARE ALLOWED [CEC 210.52C5]. RECEPTACLES OR STRIP OUTLETS CAN BE INSTALLED ON THE UNDERSIDE OF THE CABINET ABOVE THE COUNTERTOP IF WITHIN 20 INCHES OF THE COUNTERTOP
- ALL GENERAL PURPOSE AND COUNTERTOP RECEPTACLES MUST BE TAMPER-RESISTANT. (CEC
- AND THE SINK IS < 18 INCHES. IF ≥ 18 IN., THE 2 FT. / 4 FT. RULE CONTINUES BEHIND THE SINK [CEC
- THE 24-INCH/48-INCH RULE DOES NOT APPLY TO ISLAND OR PENINSULAR COUNTERTOPS. THESE
- NOT MORE THAN 12 INCHES BELOW THE COUNTERTOP AND WITH NO OVERHANGING COUNTERTOP

15. A RANGE HOOD / MICROWAVE COMBINATION CAN BE CORD-AND-PLUG CONNECTED IF THE CIRCUIT IS

- AN INDIVIDUAL (DEDICATED) BRANCH CIRCUIT. THE RECEPTACLE OUTLET SHALL BE A SINGLE TYPE, NOT A DUPLEX RECEPTACLE THAT WOULD ACCEPT TWO PLUGS (CEC 422.16B4)
- OUTLET BOXES SHALL BE INSTALLED SO THE FRONT EDGE OF THE BOX, PLASTER RING, EXTENSION RING, OR LISTED EXTENDER WILL NOT BE SET BACK OF THE FINISHED SURFACE MORE THAN 1/4". INSTALLATION OF NEW COUNTER BACKSPLASH OR OTHER WALL FINISHES MAY REQUIRE THE EXTENSION OF EXISTING BOXES. (CEC 314.20)
- FOR THE SMALL APPLIANCE LOADS (INCLUDING REFRIGERATION EQUIPMENT) IN THE KITCHEN, DINING ROOM, PANTRY, BREAKFAST ROOM, ELECTRIC CLOCK RECEPTACLE, AND ELECTRIC LOADS ASSOCIATED WITH GAS FIRED APPLIANCES; BUT THESE CIRCUITS ARE TO HAVE NO OTHER OUTLETS.
- RECEPTACLES SHALL BE PROTECTED WITH GFCI(S) PER CEC SECTION 210.8(A) (6). REFRIGERATION EQUIPMENT IS EXEMPT FROM THE GFCI REQUIREMENTS. 210.52(B1 EXCEPTION #2 SHALL BE PERMITTED TO BE SUPPLIED FROM INDIVIDUAL BRANCH CIRCUIT.
- BRANCH CIRCUIT CONDUCTORS SUPPLYING RANGES, OVENS AND OTHER COOKING APPLIANCES SHALL HAVE AN AMPACITY RATING OF NOT LESS THAN THE MAXIMUM LOAD SERVED. FOR RANGES 83/4 KW OR MORE RATING, THE MINIMUM BRANCH-CIRCUIT RATING SHALL BE 40 AMPERES PER CEC SECTION 210.19(A) (3). A MINIMUM 40-AMPERE RATING WOULD BE NO. 8 TYPE TW COPPER OR NO. 6 TYPE TW ALUMINUM.

- All installed lighting shall be high efficacy. (CNC 150.0(k)1A)
- ! At least one light shall be controlled by a vacancy sensor (a manual—on, automatic—off occupancy sensor). (CNC 150.0(k)2AJ)
- Exhaust fans must be switched separate from lighting, with the exception that lighting integral to an exhaust fan can be on the same switch if the fan is controlled by a humidistat that continues its operation after the
- All receptacle outlets in bathrooms shall be GFCI protected (CEC 210.8A1)
- All receptacle outlets in bathrooms shall be tamper resistant (CEC
- When a bathtub or shower stall is in an area not technically considered a bathroom (by the definitions in the electrical code), receptacles within 6 ft. of the tub/shower stall must be GFCI—protected. (CEC210.8A9)
- A receptacle outlet is required within 3 feet of each wash basin location. It may be on the wall, or an adjacent partition, or on the face or side of the cabinet not more than 12 inches below the top of the basin (CEC 210.52D)
- Receptacles cannot be face—up in a vanity surface; listed pop—up receptacles are allowed (CEC 406.5E & 210.52D)
- A minimum of one 20-amp circuit is required for the receptacles in the bathroom(s). This circuit can have no other outlets, including lights (CEC 210.11C3). If a 20-amp circuit serves only one (1) bathroom, lights and fans can be on the same circuit with the receptacles in that bathroom (CEC 210.11C3 exception)
- Recessed light fixtures in shower enclosures must be listed for a damp or wet location (CEC 410.10A)
- NO PART OF A HANGING FIXTURE IS ALLOWED CLOSER THAN 8 FEET ABOVE THE TUB RIM OR 3 FEET HORIZONTALLY FROM THE TUB RIM PER

aundry Rooms

3-WAY SWITCH

4-WAY SWITCH

DIMMER SWITCH

- All new or altered lighting shall be high efficacy. (CNC 150.0(k)1A)
- At least one light shall be controlled by a vacancy sensor (a manual—on, automatic-off occupancy sensor). (CNC 150.0(k)2AJ)
- All 125-volt receptacles in laundry areas GFCI protection, including the clothes washer receptacle. (CEC 210.8A10)
- Receptacle outlets shall be tamper-resistant except those within dedicated space for an appliance not easily moved from one place to another (behind clothes washer). (CEC 406.12A)
- A separate 20—amp circuit is required for the laundry equipment. The lights and other receptacles in the room cannot be on that circuit (CEC
- All circuits supplying outlets or devices in the laundry area (including

ABBREVIATION, LEGEND & SYMBOL (E) EXISTING WP WEATHERPROOF VACANCY SENSOR MOTION SENSOR W/ GFI GROUND FAULT INTERRUPTOR CIRCUIT PHOTO CELL DUPLEX RECEPTACLE PENDENT LIGHT FIXTURE 220V DUPLEX RECEPTACLE () RECESSED LIGHT FIXTURE FLOUR DUPLEX RECEPTACLE □ DUPLEX RECEPTACLE SMOKE ALARMS - INTERCONNECTED W/ - BAT. BACK UP CARBON MONOXIDE ALARMS

EXTERIOR WALL MOUNTED FIXTURE

HB HORSE BID

GRAPHIC DESIGN

NOVEMBER 2022

Drawn: WILLIAM TRAN & LUYEN HONG NGUYEN

AS SHOWN

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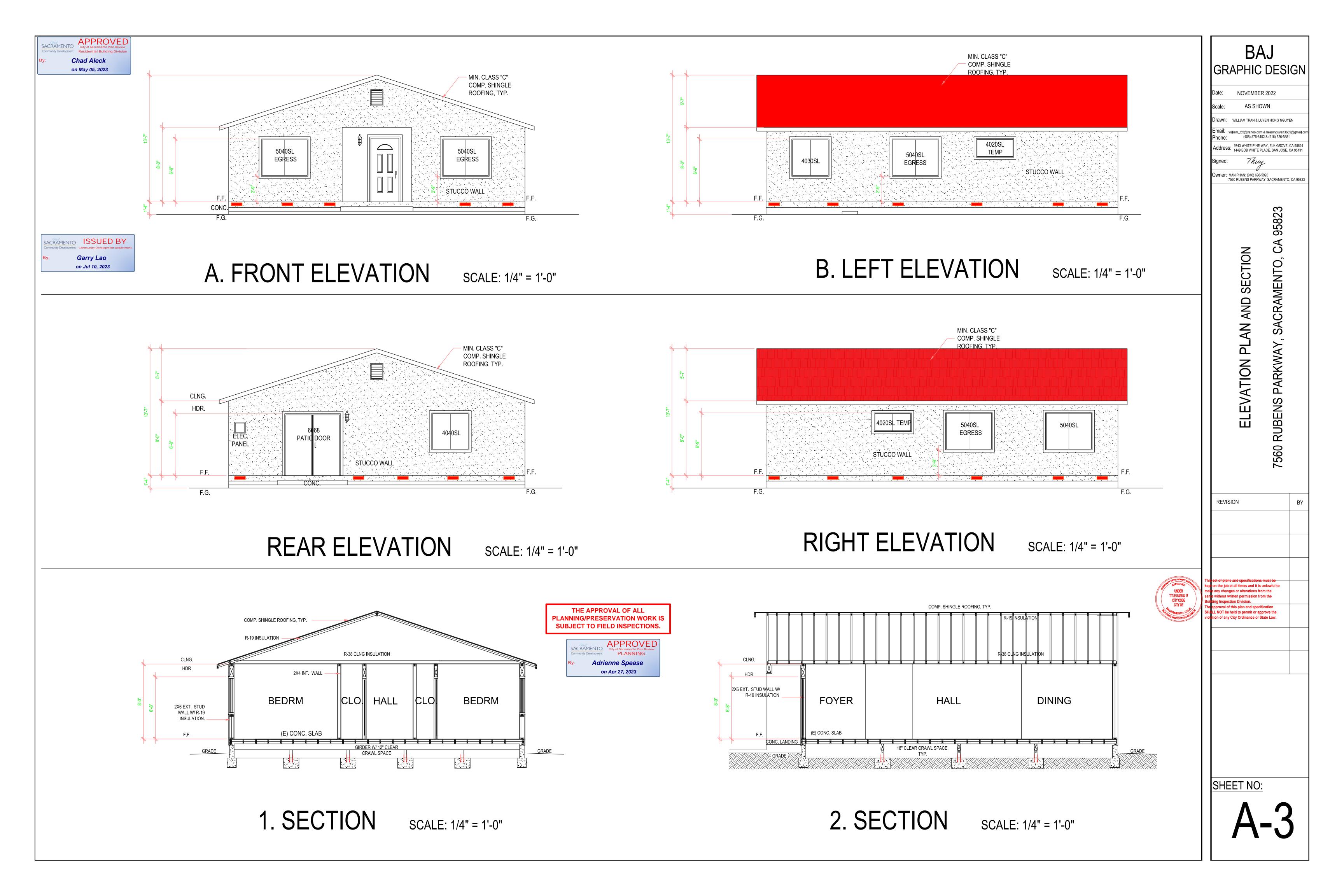
Owner: MAN PHAN: (916) 698-5920 7560 RUBENS PÁRKWAY, SACRAMENTO, CA 95823

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kept on the job at all times and it is unlawful to he approval of this plan and specificati SHALL NOT be held to permit or approve the

BY

REVISION



GENERAL NOTES

- 101. ALL WORK PERFORMED IN THIS PROJECT SHALL COMPLY WITH <u>2019CBC</u> AND ALL PERTINENT LOCAL CODE REQUIREMENTS, LAWS AND ORDINANCES.
- 102. ALL WORK PERFORMED SHALL COMPLY WITH THESE GENERAL REQUIREMENTS UNLESS OTHERWISE NOTED ON PLANS OR SPECIFICATIONS.
- 103. CONTRACTOR SHALL COORDINATE ALL DRAWINGS, VERIFY ALL DIMENSIONS, ELEVATIONS AND CONNECTIONS BEFORE CONSTRUCTION.
- 104. CONTRACTOR SHALL BE RESPONSIBLE FOR ON SITE VERIFICATION OF CONDITIONS. 105. DRAWINGS ARE NOT TO BE SCALED. DIMENSIONS NOT SPECIFIED, WHEN
- REQUIRED BY FIELD CONDITION, SHALL BE DETERMINED BY ENGINEER. 106. ENGINEER SHALL BE NOTIFIED FOR ANY FIELD CONDITIONS DIFFERENT FROM THOSE INDICATED ON DRAWINGS.
- 107. ENGINEER SHALL BE NOTIFIED FOR ANY QUESTIONS WHICH MAY ARISE PERTAINING TO THE DRAWINGS AND SPECIFICATIONS
- 108. GENERAL CONTRACTOR AND HIS/HER SUBCONTRACTORS ARE RESPONSIBLE FOR ALL THE EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND THE PROTECTION OF THE ADJACENT PROPERTY, STRUCTURES, STREET AND UTILITIES.
- 109. TYPICAL DETAILS ON THESE SHEETS SHALL APPLY WHERE NO SPECIFIC DETAILS OR SECTIONS ARE GIVEN.
- 110. MATERIAL NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER
- STRUCTURAL NOTES CONTAINED HEREIN. 111. ALL DRAWINGS AND SUBSEQUENT REVISIONS IF ANY SHALL BE APPROVED BY BUILDING OFFICIAL PRIOR TO STARTING CONSTRUCTION.
- 112. ALL DRAWINGS AND SUBSEQUENT REVISIONS IF ANY SHALL BE MADE WITH WRITTEN APPROVAL OF ENGINEER.
- 113. CONTRACTOR SHALL VERIFY ALL HEATING, VENTILATING, PLUMBING AND ELECTRICAL OPENINGS AND NOTIFY THE ENGINEER FOR ANY DEVIATIONS
- FROM THE DRAWINGS. 114. THE STRUCTURAL DRAWINGS SHOW STRUCTURAL FEATURE ONLY. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND OTHER DRAWINGS FOR NON-STRUCTURAL ITEMS.
- 115. EXCEPT AS NOTED HEREIN. NO STRUCTURAL MEMBERS SHALL BE OMITTED, NOTCHED, CUT, BLOCKED OUT, OR RELOCATED WITHOUT PRIOR APPROVAL BY
- THE ENGINEER OF RECORD. 116. THE STRUCTURAL DRAWINGS FOR THIS PROJECT DESCRIBE THE BUILDING STRUCTURE ONLY, AND ARE NOT INTENDED TO SHOW NON—STRUCTURAL ITEMS COORDINATION FOR AND INSTALLATION OF MECHANICAL. ELECTRICAL. ARCHITECTURAL AND MISCELLANEOUS NON-STRUCTURAL ITEMS SHOWN ELSEWHERE IN THE PROJECT PLANS SHALL BE THE RESPONSIBILITY OF GENERAL CONTRACTOR
- 117. SUBCONTRACTORS FOR STRUCTURAL PORTIONS OF THE BUILDING, INCLUDING BUT NOT LIMITED TO FOUNDATIONS AND STRUCTURAL FRAME, ARE ADVISED TO REVIEW ALL DIVISIONS OF THE PLANS AND SPECIFICATIONS FOR NON-STRUCTURAL ITEMS WHICH MAY BE EMBEDDED IN, ATTACHED TO OR OTHERWISE CONNECTED TO THE STRUCTURAL ELEMENTS OF THE BUILDING
- BEFORE SUBMITTING THEIR BIDS 118. IN CASE OF CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

FRAMING NOTES:

- 201. CONTRACTOR SHALL REVIEW ALL TYPICAL FRAMING DETAILS (e.g. TOP PLATE SPLICE. WALL CORNER CONNECTIONS, SHEAR PANEL NAILING, etc.), SILL NAILING AND BLOCK REQUIREMENTS PER FOOTNOTES IN SHEAR WALL SCHEDULE PRIOR TO STARTING ANY FRAME WORK,
- 202. BEAM-TO-POST (ISOLATED) CONNECTIONS SHALL BE PROPERLY ALIGNED AND CONNECTED WITH BRACKETS U.N.O.
- 203. WHERE PARTITION WALLS PARALLEL TO THE FRAMING BELOW, DOUBLE JOISTS SHALL BE PROVIDED BELOW THE WALL. WHERE PERPENDICULAR, 2x BLOCKING SHALL BE PROVIDED BETWEEN JOISTS.
- 204. 2x BLOCKINGS SHALL BE PROVIDED BETWEEN THE FLOOR JOISTS AT THE ENDS AND AT EACH SUPPORT OF THE FLOOR, SUCH AS BEARING WALL, STRUCTURAL BEAM, etc. BLOCKING MAY BE OMITTED ONLY AS SPECIFIED ON PLAN OR AT THE ENDS OF FLOOR JOISTS WHERE THEY ARE NAILED TO A HEADER, BEAM, OR RIM JOIST.
- 205. BOTTOM OF POSTS SHALL HAVE FULL BEARING IN A TIGHT-FIT CONDITION
- WITH THE SUPPORTING STRUCTURAL MEMBER BELOW. 206. WHERE POST TERMINATED ON FLOOR WITH STUD WALLS OR BEAM BELOW, THE SPACE BETWEEN THE BOTTOM OF THE POST AND THE TOP OF THE PLATE OR THE BEAM SHALL BE SOLIDLY FILLED WITH 2x BLOCKING AND THE
- STUD WALL BELOW SHALL HAVE MATCHING POST AT SAME LOCATION. 207. U.O.N. BOTTOM OF ISOLATED POST WHEN TERMINATED ON FLOOR SHALL
- BE FIXED TO THE FLOOR DIAPHRAGM BY 2-A35 CLIPS. 208. PROVIDE A35 CLIP ON EACH SIDE OF GIRDER TRUSS AT BEARING WALLS.
- 209. PROVIDE 3/8" CDX(OSB) AT FIREPLACE FRAMING.
- 210. CUTTING BEAMS, JOISTS, AND RAFTERS: NOTCHED FROM TOP EDGE AND BORED HOLES SHALL BE: 1) LIMITED TO 1/6 MEMBER DEPTH: 2) LOCATED AWAY FROM BEARING NOT MORE THAN 3 TIMES MEMBER DEPTH. ALL OTHER CUTS, NOTCHES, AND BORED HOLES EXCEEDING 2" DIAMETER ARE PERMITTED ONLY WHEN APPROVED IN ADVANCE.
- 211. ALL FRAMING, BRACING, NAILING, NOTCHING, DRILLING, OR BORING SHALL BE IN ACCORDANCE WITH IBC UNLESS MORE STRINGENT REQUIREMENTS
- 212. U.O.N ALL WINDOW AND DOOR OPENINGS 6 FT AND WIDER (EXTERIOR WALLS) SHALL HAVE DOUBLE KING STUDS & TRIMMERS. PROVIDE A35 CLIP AT TOP AND BOTTOM OF DOUBLE KING STUDS AT EXTERIOR WALLS.
- 213. U.O.N. ALL FLUSH MOUNTED SAWN LUMBER BEAMS OR MULTIPLE JOISTS SHALL HAVE "HHUS" HANGERS WHERE FLUSH MOUNTED. FLUSH MOUNTED GLU—LAM BEAMS SHALL BE AS INDICATED ON PLAN. 214. U.O.N ALL FLUSH MOUNTED SINGLE FLOOR JOISTS(TJI) SHALL HAVE "IUS"
- HANGERS AND ALL FLUSH MOUNTED SINGLE ROOF RAFTERS (>8'-0" LONG) SHALL HAVE "LSU26" HANGER.
- 215. ALL EXTERIOR WALL CORNERS SHALL BE TIED WITH ST2215'S AT SLOPING PLATE CONDITIONS.
- 216. POSTS OR MULTI-STUDS SHALL BE PROVIDED AT LOWER FLOOR UNDER POSTS OR MULTI-STUDS ABOVE.
- 217. U.O.N. ALL BEARING AND/OR SHEAR WALLS WHICH ARE PLUMBING WALLS SHALL BE 2x6 WALL.
- 218. ALL CALIFORNIA FRAMING SHALL BE 2x6 RAFTERS AT 24" O.C WITH CRIPPLE WALLS SUPPORT AT 8'-0" ON CENTER AT HIGH ROOF.

SHEATHING NOTES:

- 301. ANY PLYWOOD SHEATHING PANELS USED ON ROOF, FLOOR AND SHEAR WALLS SHALL NOT BE LESS THAN 24" WIDE UNLESS ALL EDGES OF THE UNDERSIZE SHEETS ARE SUPPORTED BY FRAMING MEMBER OR BLOCKING.
- 302. ROOF PLYWOOD SHALL BE 1/2" CDX(OSB) APA 24/0. FACE GRAIN PERPENDICULAR TO FRAMING MEMBERS BELOW. STAGGER ADJACENT PANELS BY 4 FEET. NAILED WITH 8d COMMON NAILS AT 6"O.C. ALL PLYWOOD PANEL EDGES AND 12"O.C. ALL INTERMEDIATE SUPPORTS.
- 303. FLOOR PLYWOOD SHALL BE 3/4" CDX APA 48/24 TONGUE AND GROOVE FACE GRAIN PERPENDICULAR TO FRAMING MEMBER BELOW. STAGGER ADJACENT PANELS BY 4 FEET. NAILED WITH 10d COMMON NAILS AT 6"O.C
- 304. ALL FLOOR PLYWOOD SHALL BE GLUED TO THE JOISTS. THE FIELD-GLUED FLOOR SYSTEM SHALL BE INSTALLED ACCORDING TO THE RECOMMENDATION OF THE APA. GLUE SHALL BE APPLIED TO JOISTS AND THE GROOVE IN THE EDGE OF THE T&G PANEL. GLUE SHALL MEET THE REQUIREMENTS OF THE APA ADHESIVE SPEC. AFG—DI AND SHALL BE APPLIED AS DIRECTED BY THE GLUE MANUFACTURER. GLUE MAY BE APPLIED MANUALLY OR WITH

AT ALL PLYWOOD EDGES AND AT 10"O.C. AT ALL INTERMEDIATE SUPPORTS

- ELECTRIC EQUIPMENT. 305. SHEAR WALL PLYWOOD SHALL BE 1/2" CDX(OSB) APA 24/0. ALL PLYWOOD PANEL EDGES BLOCKED AND NAILED PER SHEAR WALL SCHEDULE. ALL PLYWOOD PANEL INTERMEDIATE SUPPORTS SHALL BE
- NAILED WITH 8d(10d) COMMON OR GALVANIZED BOX NAILS AT 12 "O.C 306. SHEAR WALL CDX(OSB) SHALL BE PLACED ON THE DESIGNED SIDE OF STUDS AS SHOWN ON PLANS. THE CDX MAY BE PLACED ON THE OPPOSITE SIDE PROVIDED: 1) THERE ARE NO PERPENDICULAR WALLS INTERSECTING FULL LENGTH OF SHEAR WALL. 2) SHEAR WALL CDX(OSB) IS CONTINUOUSLY PLACED ACROSS PERPENDICULAR WALL FRAMING. OR 3) SHEAR WALL CORNER DETAIL IS PROPERLY FOLLOWED.
- 307. ÁLL CALIFORNIA ROOF FRAMING SHALL HAVE ROOF CDX(OSB) AT BOTH
- UPPER AND LOWER ROOF. 308. ALL ROOF AND FLOOR BEAMS AND COLLECTORS(COLL.) SHALL RECEIVE CDX(OSB) EDGE NAILING ALONG ITS FULL LENGTH.

MISCELLANEOUS NOTES:

- 401. U.N.O PROVIDE ST6236 AT TOP PLATES AT PLUMBING PENETRATIONS. 402. ALL SIMPSON CS STRAPS SHALL BE ATTACHED TO FRAMING WITH 8d NAILS
- IN EVERY OTHER HOLE IN EACH ROW. 403. ALL FRAMING ANCHORS, STRAPS, HANGERS, POST CAPS, COLUMN BASES, HOLDOWNS, HINGE CONNECTORS, ANGLES AND CLIPS SHALL BE MANUFACTURED BY SIMPSON OR EQUAL. NAILING SCHEDULE SHALL BE IN ACCORDANCE WITH PRODUCT REQUIREMENTS.
- 404. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE APPROPRIATE SIZE AND CONFIGURATION OF CONNECTORS FROM THE SERIES DESIGNED ON DRAWINGS. UNLESS NOTED OTHERWISE. 405. UNLESS NOTED OTHERWISE ALL NAILS SHALL BE COMMON NAILS.
- 406. ALL TOE NAILING SHALL BE 8d NAILS. 407. ALL NAILS EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED
- 408. CONVENTIONAL LET-IN BRACINGS ARE NOT REQUIRED IN THIS PROJECT. 409. NELSON STUDS SHALL BE MANUFACTURED AND FABRICATED PER TRW
- 410. ALL ITEMS (SPRINKLER PIPES, MECHANICAL EQUIPMENTS...ect.) INTENDED TO BE SUPPORTED ON, OR FROM THE STRUCTURE, UNLESS WITHIN THE STRUCTURAL DRAWINGS, SHALL BE SUBMITTED TO THE ENGINEER PRIOR
- 411. UNLESS NOTES OTHERWISE, SEE ARCHITECTURAL DRAWING FOR DIMENSIONS, WALKS. RAMPS, PATIOS, ELEVATIONS, ROOF PITCHES etc.

LUMBER NOTES:

NELSON REQUIREMENTS

- 501. ALL LUMBER SHALL HAVE MOISTURE CONTENT NOT EXCEEDING 19% PRIOR TO INSTALLATION.
- 502. WOOD MEMBER AGAINST CONCRETE AND OTHER MEMBERS LOCATED WITHIN 8" OF FINISH GRADE SHALL BE PRESSURE TREATED DOUGLAS FIR LARCH. 503. 2x4 STUD SHALL BE DOUGLAS FIR LARCH STANDARD GRADE OR BETTER.
- 504. 2x6 STUD SHALL BE DOUGLAS FIR LARCH #2 OR BETTER. 505. TOP & SOLE PLATES SHALL BE DOUGLAS FIR LARCH #2 OR BETTER
- 506. 3x & 4x POST SHALL BE DOUGLAS FIR LARCH #2 OR BETTER. 507. 2x & 4x JOISTS AND BEAMS SHALL BE DOUGLAS FIR LARCH #2 OR BETTER. 508. 6x & 8x Framing members shall be douglas fir larch #1 or better. 509. SIMPLY SUPPORTED GLUED-LAM BEAMS SHALL BE 24F-V4 DFL/DFL.
- SUPPORTS SHALL BE 24F-V8 DFL/DFL. 511. GLUED-LAM BEAMS SHALL BEAR WCLIB CERTIFICATES AND SUBMITTED TO THE

510. GLUED-LAM BEAMS CANTILEVERED AT ENDS OR CONTINUOUSLY ACROSS

- BUILDING OFFICIAL. 512. GLU—LAMINATED FABRICATION SHALL BE PERFORMED IN AN APPROVED
- FABRICATOR'S SHOP IN ACCORDANCE WITH CBC 1701.7 513. PSL SHALL BE 2.0E BY I-LEVEL TRUS JOIST ICC ESR-1387 AND HUD MR 1303. LVL SHALL BE 1.9E BY I-LEVEL TRUS JOIST ICC ESR-1387 AND HUD MR 925.
- LSL SHALL BE 1.5E BY I-LEVEL TRUS JOIST ICC ESR-1387 AND HUD MR 1265. 514. HARDY FRAME'S ICC REPORT NUMBER IS ESR-2089

FOUNDATION NOTES:

601. SOILS REPORT PREPARED BY: NO REPORT

- -602. FOUNDATION PLANS AND PERTINENT DETAILS SHALL BE REVIEWED AND APPROVED BY THE ABOVE SOILS ENGINEER PRIOR TO ANY FOUNDATION WORK -603. SOIL REPORT SHALL TAKE PRECEDENCE OVER STRUCTURAL NOTES AND DETAILS.
- –604. SITE GRADING, SUBGRADE PREPARATION, CUTTING SLOPES, EXCAVATION AND PLACEMENT OF ENGINEERED FILL MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH THE SOIL REPORT AND/OR GRADING PLAN. -605. FOR SLAB—ON—GRADE CONSTRUCTION, THE SOIL REPORT SHALL BE
- REFERENCED REGARDING COMPACTION, SOAKING, MOISTURE BARRIER, SUB BASE . GRAVEL, SAND, etc. 606. FINISH GRADE SHALL BE SLOPED AWAY FROM THE FOUNDATION AND
- MINIMUM 8 INCHES BELOW THE SILL PLATE 607. SITE DRAINAGE REQUIREMENTS INCLUDING FINAL PAD GRADES, ROOF DRAINAGE DOWN SPOUTS SHALL BE REFERENCED TO GRADING & PLOT PLANS.

608. REFER TO ARCHITECTURAL PLANS FOR LOCATION AND DIMENSION OF UNDER—

FLOOR VENTILATION, CONCRETE DRIVEWAY, DOOR PADS AND OTHER SIMILAR ITEMS.

CONCRETE NOTES:

- 701. FOUNDATION CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. SPECIAL INSPECTION IS NOT REQUIRED SINCE 2500 PSI IS USED IN CALCULATION.
- 702. REBARS, DOWELS AND OTHER EMBEDDED ELEMENTS SHALL BE SECURED IN PLACE AND APPROVED BY THE BUILDING OFFICIAL BEFORE POURING
- 703. COLD JOINTS MAY BE USED WHERE SHOWN. JOINT SURFACE SHALL BE CLEAN FREE OF FOREIGN MATERIAL AND INTENTIONALLY ROUGHENED. 704. SPECIAL INSPECTION REQUIRED WHERE CONCRETE STRENGTH GREATER THAN 3000psi IF SPECIFIED.

REINFORCEMENT NOTES:

- 801. REINFORCING STEEL SHALL BE DEFORMED BARS OF BILLET OR AXLE STEEL BAR ASTM A615 GRADE 60.
- 802. REINFORCEMENT SHALL BE CLEAN AND FREE OF EXTRANEOUS MATERIAL.
- 803. ALL REINFORCEMENT SHALL BE PLACED AND SUPPORTED IN A TRUE LINE AS SHOWN. 804. 3 INCHES CLEARANCE SHALL BE PROVIDED WHERE CONCRETE IS CASTED
- AGAINST EARTH, 2 INCHES CLEARANCE FOR CONCRETE EXPOSED TO EARTH OR WEATHER BUT DEPOSITED AGAINST FORMS, AND 3/4" CLEARANCE FOR SLABS AND WALLS WHERE CONCRETE IS NOT EXPOSÉD TO EARTH OR WEATHER. LAP ALL REINFORCING SPLICES A MINIMUM 60 BAR DIAMETERS BUT IN NO
- CASE LESS THAN 24 INCHES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 CONTRACTOR SHALL INFORM ENGINEER 48 HOURS PRIOR TO POURING STRUCTURAL CONCRETE FOR REVIEWING THE WORK.

ANCHORAGE NOTES:

- 901. U.O.N. ON FOUNDATION PLAN, SILL PLATE FOR ALL EXTERIOR, INTERIOR BEARING AND SHEAR WALL SHALL BE ANCHORED TO CONCRETE FOUNDATION WITH 5/8" Ø ANCHOR BOLTS AT MAXIMUM 4 FEET ON CENTER, ANCHOR BOLT SHALL BE INSTALLED WITH SIMPSON BP5/8-3
- (3" x 3" x 1/4") BEARING PLATES. FOR 2x6 WALL USE 5x5x1/4" PLATE 902. BEARING WALL, SHEAR WALL AND EXTERIOR WALL SILLS RECEIVING ANCHOR BOLTS SHALL HAVE THE FIRST BOLT AT 6" FROM EACH CUT END OF THE SILL.
- TWO FASTENERS MINIMUM PER EACH PIECE. 903. INTERIOR NON-BEARING WALL SILLS TO RECEIVE THE FIRST FASTENER AT 6 INCHES FROM EACH CUT OF THE SILL.
- 904. ANCHOR BOLT MATERIAL SHALL BE ASTM A307. 905. POWER DRIVEN ANCHOR PINS (HILTI X-CP 72 P8 S23, ICC REPORT ESR-2379) MAY BE USED ON INTERIOR NON-SHEAR WALLS ONLY.
- POWER DRIVEN ANCHOR PINS SHALL BE SPACED AT MAXIMUM 16" O.C 907. UNLESS HELD IN PLACE WHEN POURING CONCRETE, FASTENERS TO BE INSTALLED AFTER THE CONCRETE HAS SET FOR 7 DAYS MINIMUM.

908. ANCHOR BOLTS SHALL BE EMBEDDED 7" MINIMUM INTO CONCRETE OR

- REINFORCED MASONRY AND 15" MINIMUM INTO UNREINFORCED GROUTED USE 12" LONG ANCHOR BOLTS W/ 3x SILLS TO MAINTAIN 7" MIN. EMBEDMENT. 909. U.O.N., HTT AND HDU HOLDOWNS SHALL BE ATTACHED TO 4x4 POST MIN.
- WITH SHEAR EDGE NAILING ALONG FULL HEIGHT. 910. CONTRACTOR SHALL VERIFY LOCATION OF HOLDOWNS AND ANCHOR BOLTS WITH ROUGH FRAMING TO ASSURE PROPER AND ACCURATE INSTALLATION.
- 911. U.O.N. INDIVIDUAL ISOLATED POSTS SHALL BE ANCHORED BY PB CONNECTORS 912. HOLDOWNS SHALL BE TIED ON PLACE PRIOR TO INSPECTION.

NAILING SCHEDULE (MINIMUM)

THIS NAILING SCHEDULE TO BE USED ONLY IF NOT SPECIFIED ELSEWHERE IN STRUCTURAL DRAWINGS.

ACCORDANCE WITH 2019 CBC TABLE 2304.10.1

1001. ALL NAILING SPECIFIED ON DRAWING AND THIS SCHEDULE SHALL BE IN

	0.01115071011		Γ
1	CONNECTION	7 04	
1.	Blocking between ceiling joists, rafters or trusses to top plate or other framing below.	3—8d common 3—3"x0.131 nails 3—3" 14gage staples	each end, toenail
	Ceiling joist to top plate	3–8d common 3–3"x0.131 nails 5–3" 14gage staples	each joist, toenail
3.	Ceiling joists not attached to parallel rafters, laps over partitions (no thrust)	3–16d common 4–3"x0.131 nails 4–3" 14gage staples	face nail
4.	Ceiling joist to // rafters(heel joint)	PER TABLE 2308.7.3.1	face nail
5.	Collar tie to rafter	3—10d common 4—3"x0.131 nails 4—3" 14qaqe staples	face nail
6.	Rafter or roof truss to top plate	3–10d common 4–3"x0.131 nails 4–3" 14gage staples	toenail
	Roof rafters to ridge, valley or hip rafters; or roof rafter to 2—inch ridge beam.	2-16d common 3-3"x0.131 nails 3-3" 14gage staples 3-10d common	end nail toenail
		4-3"x0.131 nails 4-3" 14gage staples	
8.	Stud to stud (not at braced wall panels)	16d common @ 24"o.c. 3"x0.131 nail @ 16"o.c. 3—3"14gage staple @ 16"o.c.	face nail
9.	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common @ 16"o.c. 3"x0.131 nail @ 12"o.c. 3–3"14gage staple @ 12"o.c.	face nail
10.	Built—up header (2" to 2" header)	16d common @ 16"o.c.	each edge, face nail
11.	Continuous header to stud	4–8d common	toenail
12.	Top plate to top plate.	16d @ 16"o.c. 3"x0.131 nail @ 12"o.c. 3"14gage staple @ 12"o.c.	typical face nail
13.	Double top plates, at end joints	8–16d common 12–3"x0.131 nails 12–3" 14gage staples	lap splice min. 24" splice
	Bottom plate to joist, rim joist, band joist or blocking (non-braced panels) *also see s.w.s.	16d @ common 16" o.c. 3"x0.131" nails @ 12"o.c. 3" 14 gage staples @12"o.c.	typical face nail
15.	Bottom plate to joist, rim joist, band joist or blocking (braced panels) *also see s.w.s.	3–16d at 16" 4–3"x0.131 nails at 16" 4–3" 14gage staple per 16"	typical face nail
16.	Stud to top or bottom plate	4—8d common 4—3"x0.131 nails 4—3" 14gage staples	toenail
		2—16d common 3—3"x0.131 nails 3—3" 14gage staples	end nail
17.	Top plates, laps @ corners and intersections	2—16d common 3—3"x0.131 nails 3—3" 14gage staples	face nail
18.	1" diagonal brace to each stud and plate	2—8d common 2—3"x0.131 nails 2—3" 14gage staples	face nail
19.	1"x6" sheathing to each bearing	2-8d common	face nail
20.	1"x8" and wider sheathing to brg.	3–8d common	face nail
21.	,,,, 3	3—8d common 3—3"x0.131" nails 3—3" 14 gage staples	toenail
	Rim joist, band joist, or blocking to top plate, sill or other framing below.	8d @ 6"o.c. 3"x0.131 nail @ 6"o.c. 3"14gage staple @ 6"o.c.	toenail
<i>23</i> .	1"x6" subfloor or less to each jst.	2-8d common	face nail
24.	2" subfloor to joist or girder	2-16d common	face nail
25. 26.	2" planks (plank&beam-floor&roof) Built-up girder & beams, 2" lumber layers	16d common 20d common @ 32"o.c. 3"x0.131 nail @ 24"o.c. 3"14gage staple @ 24"o.c. 2-20d common 3-3"x0.131 nails 3-3" 14gage staples	face nail, each bearing face nail at top and bott staggered on opposite sides face nail at ends and each splice
27.	Ledger strip supporting joists or rafters	3–16d common 4–3"x0.131 nails 4–3" 14qaqe staples	face nail, each joist or rafter
28.	Joist to band joist or rim joist	3–16d common 4–3"x0.131 nails 4–3" 14gage staples	end nail
29.	Bridging or blocking to joist, rafter or truss	2-8d common 2-3"x0.131" nails 2-3" 14 gage staples	toenail each end

- 1002. ANY CONTINUOUS WALL LINES CONTAINING SHEAR WALL SEGMENTS SHALL HAVE THEIR TOP PLATES SPLICED ACCORDING TO THE DETAIL "TYPICAL TOP PLATES SPLICE" LOCATED ON STRUCTURAL DETAIL SHEET.
- 1003. ALL MACHINE BOLTS SHALL CONFORM TO ASTM A307. 1004. BOLT HOLES SHALL BE 1/32" TO 1/16" LARGER THAN THE BOLT DIAMETER. 1005. A METAL PLATE, METAL STRAP, OR WASHER NOT LESS THAN A STANDARD CUT WASHER SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND
- BETWEEN THE WOOD AND THE NUT. 1006. HOLES FOR NAILS SHALL BE PRE-DRILLED WHERE SPLITTING OF WOOD MAY OCCUR.

EARTHQUAKE DES	IGN DATA
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL PROCEDURE
RESPONSE MODIFICATION FACTOR (R)	6.5
OVER STRENGTH FACTOR	2.5
INPORTANT FACTOR:	1
RISK CATEGORY	II, STANDARD
SPECTRAL RESPONSE ACCELERATIONS Ss & S1	0.566, 0.251
SPECTRAL RESPONSE COEFFICIENTS Sds, Sd1	0.509, 0.251
SEISMIC DESIGN CATEGORY (SDC)	D
BASIC SEISMIC FORCE RESISTING SYSTEMS:	BEARING WALL SYSTEM LIGHT—FRAMED WALLS SHEATHED W/ WOOD STRUCTURAL PANELS
DESIGN BASE SHEAR:	0.055W (ASD)

WIND DESIGN DAT	TA
WIND SPEED:	95MPH
WIND EXPOSURE:	В
DESIGN METHOD:	ENVELOPE PROCEDURE
TOPOGRAPHIC FACTOR Kzt	1
WIND DIRECTIONALITY FACTOR Kd:	.85
VERTICAL DESIGN	LOADS
01 11	

FOUNDATION	DESIGN DATA
ALLOWABLE BEARING PRESSURE	1500psf (NO REPORT)
ACTIVE PRESSURE	
PASSIVE PRESSURE	
CONCRETE / SOIL FRICTION	
SKIN FRICTION	

15

40

SHEAR MALL SCHEDULE

TYPE	ALLOWABLE SHEAR (plf)	SHEAR MATERIAL	EDGE NAILLING	FIELD NAILING (intermediate)	SILL NAILING @ ea 16" o.c. (footnote 2)	BLOCK NAILING @ ea 16" o.c. (footnote 3)	MUDSILL AND ANCHOR BOLT
P1	260	1/2" CDX (OSB)	8d Common or Galv Box @ 6"o.c. block all edges	8d Common or Galv Box @ 12"	2x W/3-16d	(1)- A35 OR A35 @ 16"O.C.	2x W/ 5/8"ø @ 4'-0"O.C.
P2	350	1/2" CDX (OSB)	8d Common or Galv Box @ 4"o.c. block all edges	8d Common or Galv Box @ 12"	2x W/4-16d	(2)- A35 OR A35 @ 12"O.C.	2x W/ 5/8"ø @ 2'-8"O.C.
P3	490	1/2" CDX (OSB)	8d Common or Galv Box @ 3"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges	8d Common or Galv Box @ 12"	2x W/6–16d in 2 rows w/4x member below diaphragm	(2)−A35 OR A35 @ 10"O.C.	3x W/ 5/8"ø @ 2'-0"0.C.
P4	640	1/2" CDX (OSB)	8d Common or Galv Box @ 2"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges	8d Common or Galv Box @ 12"	2x w/8–16d in 2 rows w/ 4x member below diaphragm	(2)–A35 OR A35 @ 8"O.C.	3x W/ 5/8"ø @ 1'-4"O.C.
P8	770	1/2" CDX (OSB)	10d Common or Galv Box @ 2"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges	10d Common or Galv Box @ 12"	3x w/(4)SDS1/4ø x6" Wood Screws w/4x member below diaphragm	(3)–A35 OR A35 @ 6"O.C.	3x W/ 5/8"ø @ 1'-4"O.C.
P9	870	5/8" CDX (OSB) or 1/2" STRUCTURAL I	10d Common or Galv Box @ 2"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges	10d Common or Galv Box @ 12"	3x w/(5)SDS1/4ø x6" Wood Screws w/4x member below diaphragm	(3)–A35 OR A35 @ 6"O.C.	3x W/ 5/8"ø @ 1'-4"O.C.
P3D	980	1/2" CDX (OSB) BOTH SIDE (footnote 4)	8d Common or Galv Box @ 3"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges offset panel joints	8d Common or Galv Box @ 12"	3x w/(6)SDS1/4ø x6" Wood Screws w/4x member below diaphragm	(3)–A35 OR A35 @ 5"O.C.	3x W/ 5/8"ø @ 1'-0"O.C.
P4D	1280	1/2" CDX (OSB) BOTH SIDE (footnote 4)	8d Common or Galv Box @ 2"o.c. Staggered, 3x at all adjoin'g panel edges & 3x mudsill block all edges offset panel joints	8d Common or Galv Box @ 12"	3x w/(7)SDS1/4ø x6" Wood Screws w/4x member below diaphragm	(4)–A35 OR A35 @ 4"O.C.	3x W/ 5/8"ø @ 8"O.C.

- A) CONTRACTOR SHALL REVIEW ALL TYPICAL SHEAR WALL CONNECTION DETAILS & NOTES BEFORE CONSTRUCTION. B) U.N.O. CONTRACTOR SHALL ENSURE THAT ALL SHEAR MATERIAL SHALL EXTEND FROM HORIZONTAL DIAPHRAGM (PLYWOOD CDX OR EQUAL) TO HORIZONTAL DIAPHRAGM.
- 2. A) SILL NAILING IS THE FASTENING OF THE SILL (SOLE) PLATE LOCATED AT THE BOTTOM OF SHEAR WALLS TO BLOCKING, RIM JOISTS OR BEAM BENEATH THE HORIZONTAL DIAPHRAGM (FLOOR SHEATHING CDX). CARE MUST BE TAKEN TO ENSURE THE PENETRATION TO THESE FASTENERS INTO THE BLOCKING, RIM JOISTS OR BEAM BELOW.
- B) SILL NAILING DOES NOT APPLY WHEN THE ABOVE MENTIONED SILL PLATE IS RESTING DIRECTLY ON CONCRETE SURFACE. IN THIS CASE, THE SILL ANCHOR REQUIREMENTS AS INDICATED ON THE FOUNDATION PLAN AND DISCUSSED IN THE ANCHORAGE NOTES ON THIS SHEET SHALL BE FOLLOWED.
- C) SILL NAILING INDICATED ON SHEAR WALL SCHEDULE MAY BE OMITTED AND REPLACED WITH A MINIMUM OF 2-16d AT 16"O.C FOR THE FOLLOWING CONDITIONS: A) AT ALL NON—SHEAR WALLS.
- B) AT PERIMETER SHEAR WALLS WITH THE SHEAR MATERIAL (OF UPPER SHEAR WALL) OCCURRING AT THE EXTERIOR FACE OF BUILDING AND EXTENDING PASS THE SILL PLATE. EDGE NAILING MUST BE PROVIDED AT BLOCKING OR RIM JOIST IN ADDITION TO THE EDGE NAILING AT THE MUD SILL / TOP PLATES
- A) BLOCK NAILING IS THE FASTENING OF BLOCKING, RIM JOISTS OR BEAM DIRECTLY BELOW THE SHEAR WALL TO THE TOP PLATES OR BEAMS IMMEDIATELY BELOW. B) ALL BLOCKING OTHER THAN THOSE LOCATED UNDERNEATH THE SHEAR WALL SHALL BE HELD IN PLACE
- BY A35 PER BLOCK OR A35 AT 16"O.C.. C) BLOCK NAILING INDICATED ON SHEAR SCHEDULE MAY BE OMITTED AND REPLACED WITH 8d TOE NAILS AT 6 INCHES ON CENTER WHERE SHEAR MATERIAL OF LOWER SHEAR WALL IS EXTENDED ABOVE THE
- TOP PLATES AND NAILED INTO BLOCKING OR RIM JOIST. IN ADDITION TO THIS NAILING, EDGE NAILING SHOULD ALSO BE PROVIDED AT TOP PLATES OF LOWER SHEAR WALL
- D) LS50 OR LTP4 CLIPS CAN BE USED TO SUBSTITUTE A35 CLIPS AS INDICATED IN THE TABLE. 4. A) WHERE PLYWOOD IS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 INCHES ON CENTER ON EITHER SIDE, PANEL JOISTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS
- OR FRAMING SHOULD BE 3-INCHES NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED. B) WHERE PLYWOOD IS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6"O.C. ON EITHER SIDE. 3x SILL IS REQUIRED.
- A) PLYWOOD EDGE AND FIELD NAILING SHALL BE COMMON NAILS OR GALVANIZED BOX NAILS AS INDICATED IN SHEAR WALL SCHEDULE.
- FASTENERS. HARDWARE IN CONTACT WITH PRESSURE—TREATED AND FIRE—RETARDENT TREATED WOOD SHALL BE
- FOR ROOF VENT: DOUBLE UP THE CLIPPING AT ADJACENT BLOCK. FOR FOUNDATION VENT: DOUBLE UP THE CLIPPING AT ADJACENT BLOCK AND EDGE NAIL AROUND THE VENT.

OF HOT-DIPPED ZINC COATED GALVANIZED, STAINLESS STEEL

ABBREVIATIONS

SACRAMENTO ISSUED BY

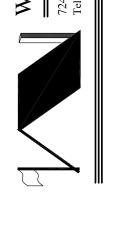
Garry Lao

on Jul 10, 2023

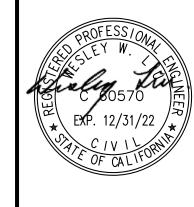
ANCHOR BOLTS EXPANSION NOT TO SCALE TOP AND BOTTOM TONGUE AND GROOVE **ADJACENT** FINISH FLOOR TIEDOWN OR HOLDOWN ON CENTER ABOVE FINISH FLOOR A.F.F. FULL HEIGHT OPN'G OPFNING TOF NAII AMERICAN PLYWOOD ASSO. ARCHITECTURAL OPTIONAI TOP OF CONCRETE ORIENTED STRAND BOARD TOP OF SUB-FLOOR FULL LENGTH OF MEMBER FACE NAILED BLOCKING TOP OF WALL PLYWOOD EDGE NAILING PERIMETER PERIM FND FOUNDATION TRIMMFR 3FARIN(F.P. FIREPLACE PLYWD PLYWOOD CAMREE FRAM'G FRAMING PRESSURE TREATED U.N.O. UNLESS NOTED OTHERWISE CANT'L **CANTILEVER** UNLESS OTHERWISE NOTED CEILING JOIST RAFTERS U.O.N. C.J. CLG **FOOTING** UP SIDE DOWN U-S-DREQUIRED CEILING *GALVANIZED* WDW. WINDOW REQUIREMENT CLEARANCE STEEL WIDE FLANGE RETAINING CONC CONCRETE GEN. GLB GR GENERAL WELDED WIRE FABRIC **WWF** C.M.U. CONC. MASONARY UNIT GLU-LAM BEAM ROOF RAFTER CONNECT, CONNECTION SEE ARCH DRW'GS WITHOUT CONST CONT CS'K CONSTRUCTION STRUCTURAL GABLE END CONTINUOUS STRONG BACK COUNTERSINK INFORMATION SCH SECT SCHEDULE COLLAR TIE OUBLE JOIST HANGER PERPENDICULAR SIMII AR DOUGLAS FIR DIAMETER SHEATHING KING POST CENTER LINE SIMPSON COMPANY **SPACING** DIMENSION LATERAL(LOAD) **APPROXIMATELY** SPECIFICATIONS Ī OCATION MANUFACTURER SEE STR. DRW'GS DRW'G DRAWING MATFRIAI MAXIMUM STRUCTURAL MACHINE BOLT SHEAR WALL SCHEDULE MANUFACTURING SHEAR WALL TYPE MRFDMFN MINIMUM EDGE NAILING MOUNTED NOT APPLICABLE EACH WAY EACH FACE E.W.E.F NAIL'G NAILING

> This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the **Building Inspection Division.** CITY OF The approval of this plan and specification SHALL NOT be held to permit or approve the iolation of any City Ordinance or State Law.

REVISIONS



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APPROVED SACRAMENTO Chad Aleck on May 05, 2023

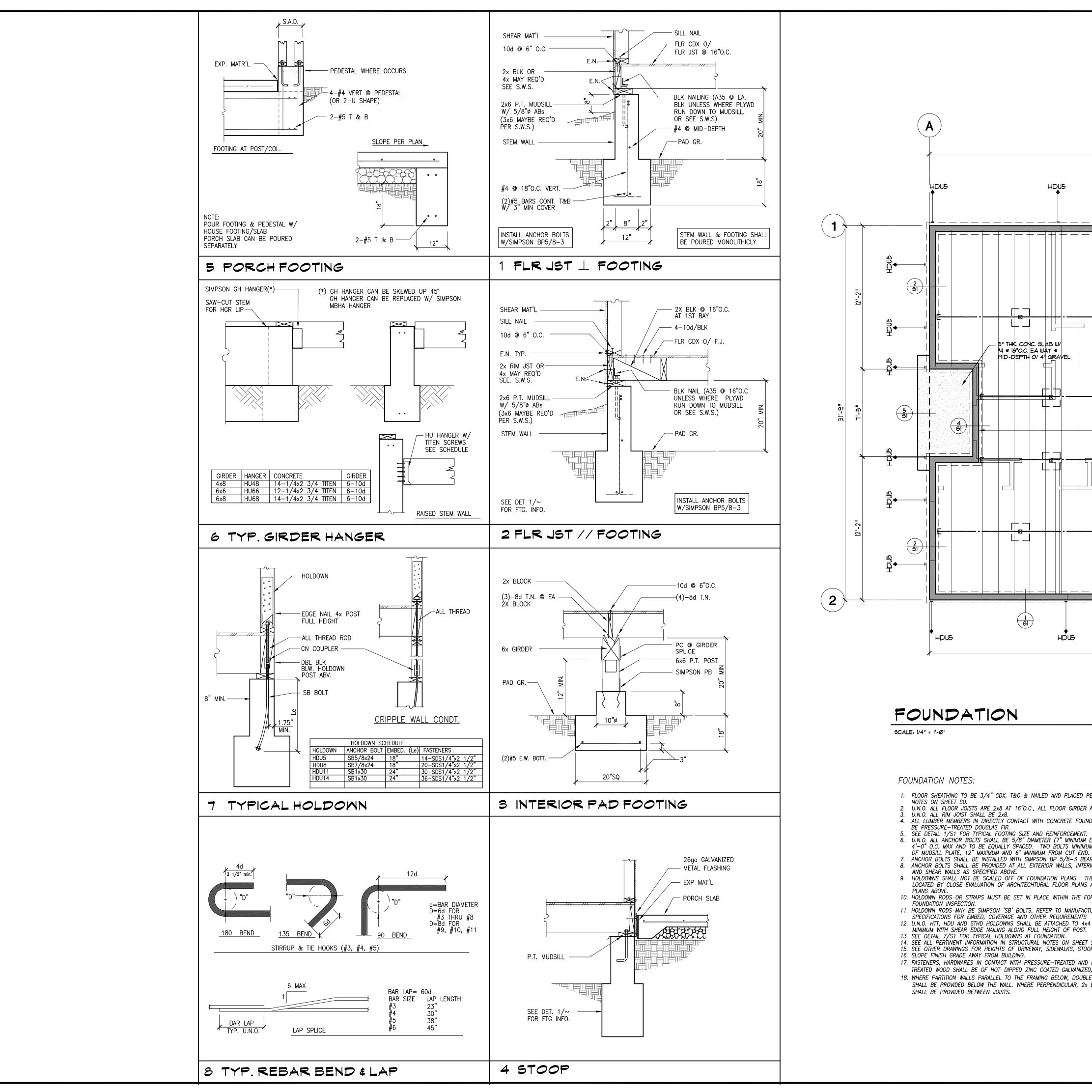
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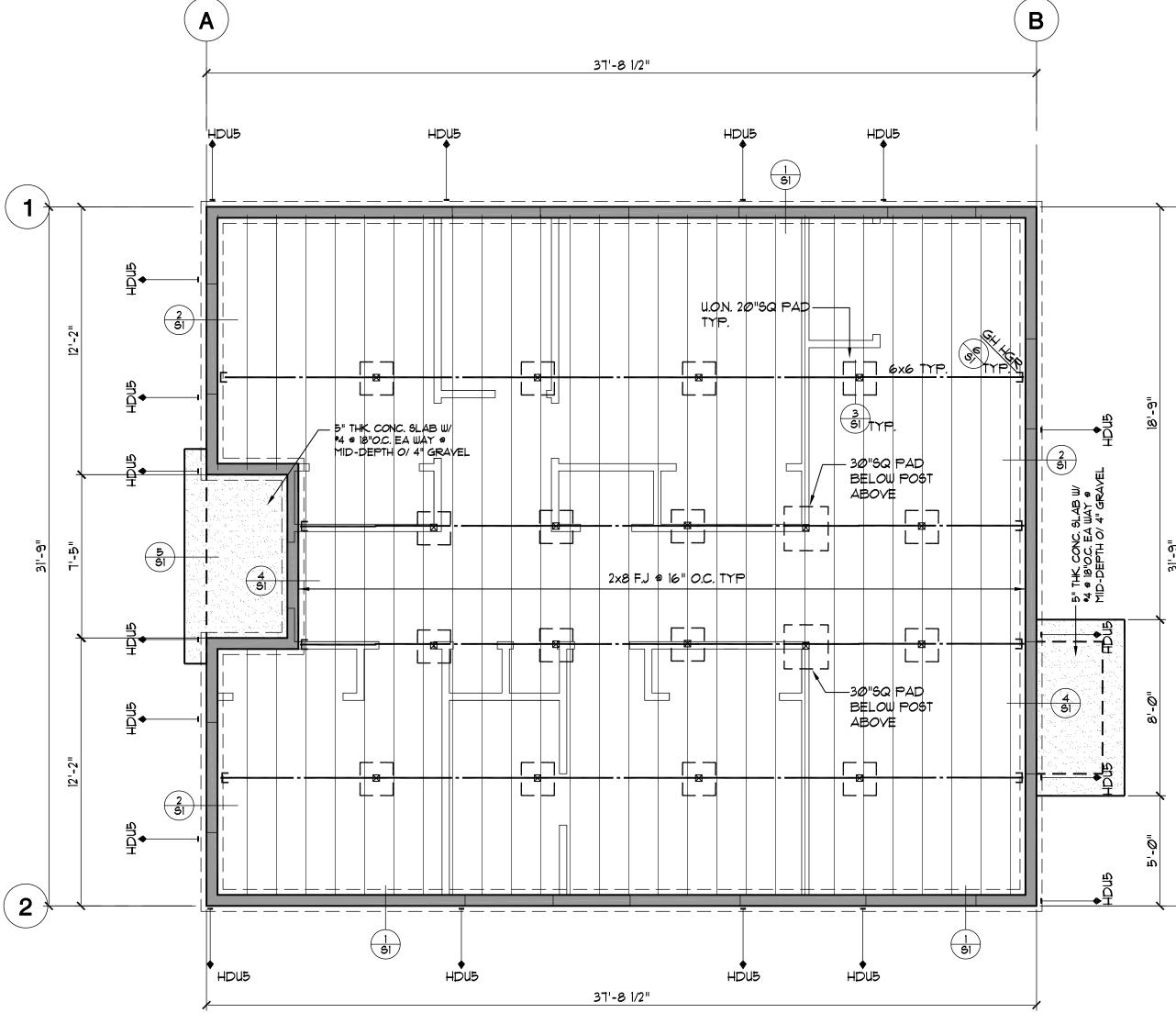
3/4'' = 1'-0''

W.L hecked

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FOUNDATION

SCALE: 1/4" = 1'-0"

FOUNDATION NOTES:

- 1. FLOOR SHEATHING TO BE 3/4" CDX, T&G & NAILED AND PLACED PER STRUCTURAL NOTES ON SHEET SO.
- 2. U.N.O. ALL FLOOR JOISTS ARE 2x8 AT 16"O.C., ALL FLOOR GIRDER ARE 6X8 DF#1. 3. U.N.O. ALL RIM JOIST SHALL BE 2x8.
- 4. ALL LUMBER MEMBERS IN DIRECTLY CONTACT WITH CONCRETE FOUNDATION SHALL BE PRESSURE-TREATED DOUGLAS FIR.
- 5. SEE DETAIL 1/S1 FOR TYPICAL FOOTING SIZE AND REINFORCEMENT.
 6. U.N.O. ALL ANCHOR BOLTS SHALL BE 5/8" DIAMETER (7" MINIMUM EMBEDMENT) AT 4'-0" O.C. MAX AND TO BE EQUALLY SPACED. TWO BOLTS MINIMUM PER LENGTH
- ANCHOR BOLTS SHALL BE INSTALLED WITH SIMPSON BP 5/8-3 BEARING PLATES. 8. ANCHOR BOLTS SHALL BE PROVIDED AT ALL EXTERIOR WALLS, INTERIOR BEARING
- AND SHEAR WALLS AS SPECIFIED ABOVE. 9. HOLDOWNS SHALL NOT BE SCALED OFF OF FOUNDATION PLANS. THEY SHALL BE
- LOCATED BY CLOSE EVALUATION OF ARCHITECHTURAL FLOOR PLANS AND FRAMING PLANS ABOVE.
- 10. HOLDOWN RODS OR STRAPS MUST BE SET IN PLACE WITHIN THE FORMS PRIOR TO
- FOUNDATION INSPECTION. 11. HOLDOWN RODS MAY BE SIMPSON 'SB' BOLTS, REFER TO MANUFACTURE
- SPECIFICATIONS FOR EMBED, COVERAGE AND OTHER REQUIREMENTS 12. U.N.O. HTT, HDU AND STHD HOLDOWNS SHALL BE ATTACHED TO 4x4 POST
- MINIMUM WITH SHEAR EDGE NAILING ALONG FULL HEIGHT OF POST. 13. SEE DETAIL 7/S1 FOR TYPICAL HOLDOWNS AT FOUNDATION.
- 14. SEE ALL PERTINENT INFORMATION IN STRUCTURAL NOTES ON SHEET SO. 15. SEE OTHER DRAWINGS FOR HEIGHTS OF DRIVEWAY, SIDEWALKS, STOOPS.
- 16. SLOPE FINISH GRADE AWAY FROM BUILDING. 17. FASTENERS, HARDWARES IN CONTACT WITH PRESSURE—TREATED AND FIRE—RETARDENT
- TREATED WOOD SHALL BE OF HOT-DIPPED ZINC COATED GALVANIZED, STAINLESS STEEL, 18. WHERE PARTITION WALLS PARALLEL TO THE FRAMING BELOW, DOUBLE JOISTS
- SHALL BE PROVIDED BELOW THE WALL. WHERE PERPENDICULAR, 2x BLOCKING SHALL BE PROVIDED BETWEEN JOISTS.



make any changes or alterations from the same without written permission from the **Building Inspection Division.** The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

SACRAMENTO ISSUED BY Garry Lao on Jul 10, 2023

> 10/17/2022 1/4'' = 1'-0''W.L. Checked 221001

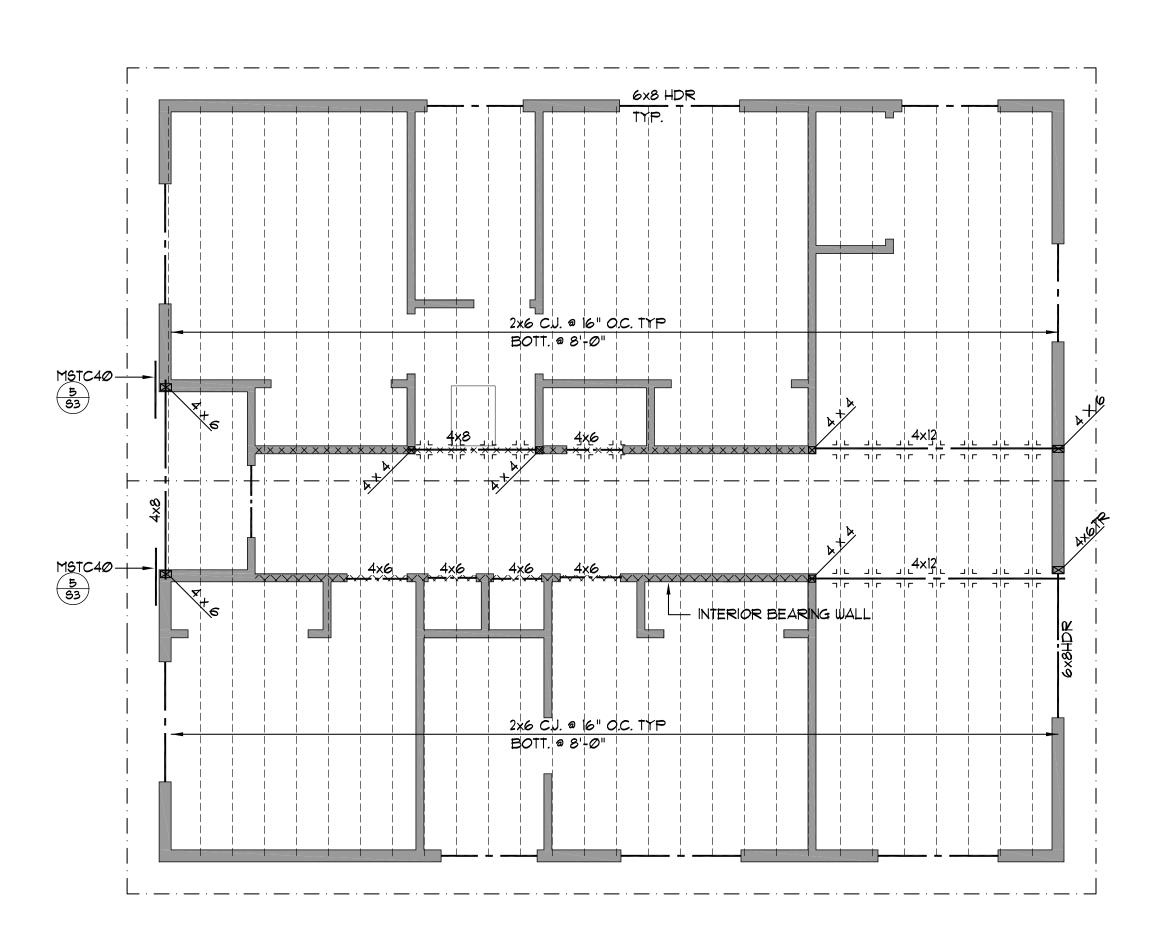
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REVISIONS

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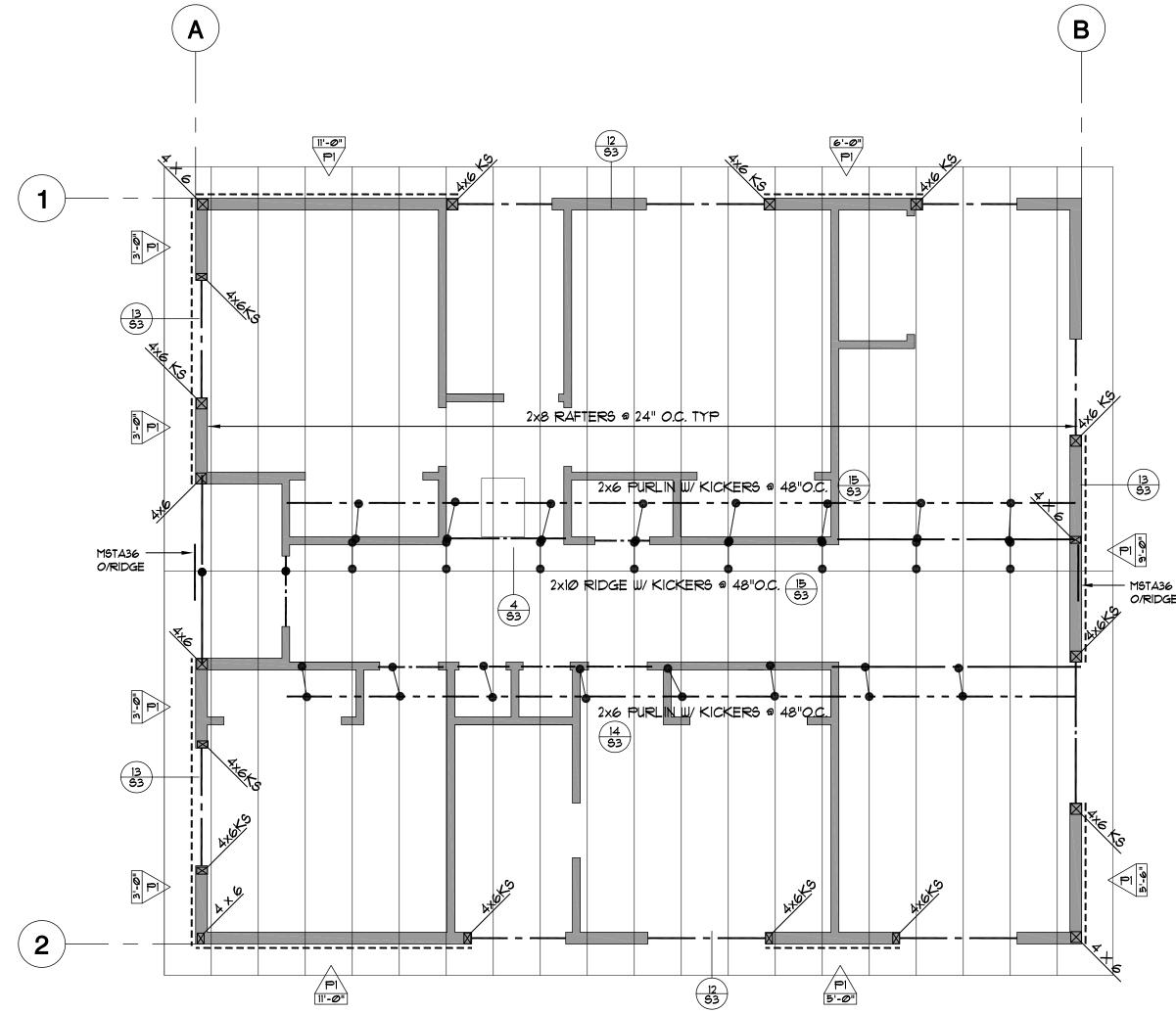
CEILING FRAMING PLAN

SCALE: 1/4" = 1'-0"

CEILING FRAMING NOTES:

- 1. 2x8 DF#2 @ 16"O.C. MAXIMUM SPAN 18'-0"
 2. 2x6 DF#2 @ 16"O.C. MAXIMUM SPAN 14'-0"
 3. REFER TO SHEAR WALL SCHEDULE FOR SHEAR WALL BLOCK NAILINGS AT CEILING LEVEL.
 4. U.O.N. ALL EXAMPLE WALL HEADERS SHALL BE 4x12 DF#2 @ 2x4 WALLS OR 6x8
- DF#1 AT 2x6 WALLS.
- 5. U.O.N. ALL EXTERIOR WALL EXCEED 10 FEET IN HEIGHT SHALL BE 2x6 @ 16"O.C.
 6. U.O.N. FOR NON—BEARING WALL, 2x4 STUD @ 16"O.C. CAN BE UP TO 14 FEET AND 2x6 STUD @ 16"O.C. CAN BE UP TO 20 FEET HEIGHT.
- 7. U.O.N. SHEAR MATERIAL (PLYWOOD) SHALL BE APPLIED UP TO ROOF. 8. ALL EXTERIOR WALL AND ALONG THE INTERIOR SHEAR WALL SHALL HAVE CONTINUOUS TOP PLATES PER DETAIL 1/S3
 9. SEE ALL PERTINENT INFORMATION IN STRUCTURAL NOTES ON SHEET SO.





ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES:

- ROOF SHEATHING TO BE 1/2" CDX NAILED & PLACED PER STRUCTURAL NOTES ON SHEET SO.
 U.O.N. ROOF RAFTER SHALL BE 2x8 @ 24"O.C.
- 3. U.O.N. ALL HIPS, VALLEYS & RIDGES SHALL BE 2x10.
 4. U.O.N. PURLIN SHALL BE 2x6 W/2x6 KICKERS @ 48"O.C. TO BEAM/BEARING WALL
- 5. ALL CALIFORNIA ROOF FRAMING SHALL HAVE ROOF CDX AT BOTH UPPER AND LOWER
- 6. PROVIDE 2x6 COLLAR TIES AT 48"O.C. WITH 5–16D AT EACH END TO RAFTER.
 7. ALL EXTERIOR WALLS AND STRUCTURAL WALLS SHALL REFER TO DETAIL 1/S3 FOR TOP PLATE CONTINUITY.
- 8. U.O.N. ALL EXTERIOR WALL HEADERS SHALL BE 4x12 DF#2 @ 2x4 WALLS OR 6x8 DF#1 AT 2x6 WALLS.
- 9. U.O.N. ALL EXTERIOR WALL EXCEED 10 FEET IN HEIGHT SHALL BE 2x6 @ 16"O.C.
 10. U.O.N. FOR NON-BEARING WALL, 2x4 STUD @ 16"O.C. CAN BE UP TO 14 FEET AND 2x6 STUD @ 16"O.C. CAN BE UP TO 20 FEET HEIGHT.
- 11. U.O.N. SHEAR MATERIAL (PLYWOOD) SHALL BE APPLIED UP TO ROOF.
- 13. SEE ALL PERTINENT INFORMATION IN STRUCTURAL NOTES ON SHEET SO. 14. RAFTER SPAN MORE THAN 8'-0" SHALL HAVE LUS26 HANGER TO RIDGE/HIP/VALLEY. 15. KICKERS SHALL BE 2x6. USE (2)2x4 WHERE KICKER LONGER THAN 6'-0".
- 16. WRAP ALL EXTERIOR WALLS WITH CDX OR OSB. 17. CONTRACTOR SHALL REVIEW ALL TYPICAL FRAMING DETAILS (e.g. TOP PLATE SPLICE. WALL CORNER CONNECTIONS, SHEAR PANEL NAILING, etc.), SILL NAILING AND BLOCK REQUIREMENTS PER FOOTNOTES IN SHEAR WALL SCHEDULE

ROOF IS DESIGNED FOR COMPOSITION SHINGLE (5psf MAX.)

PRIOR TO STARTING ANY FRAME WORK,



SACRAMENTO ISSUED BY Garry Lao on Jul 10, 2023

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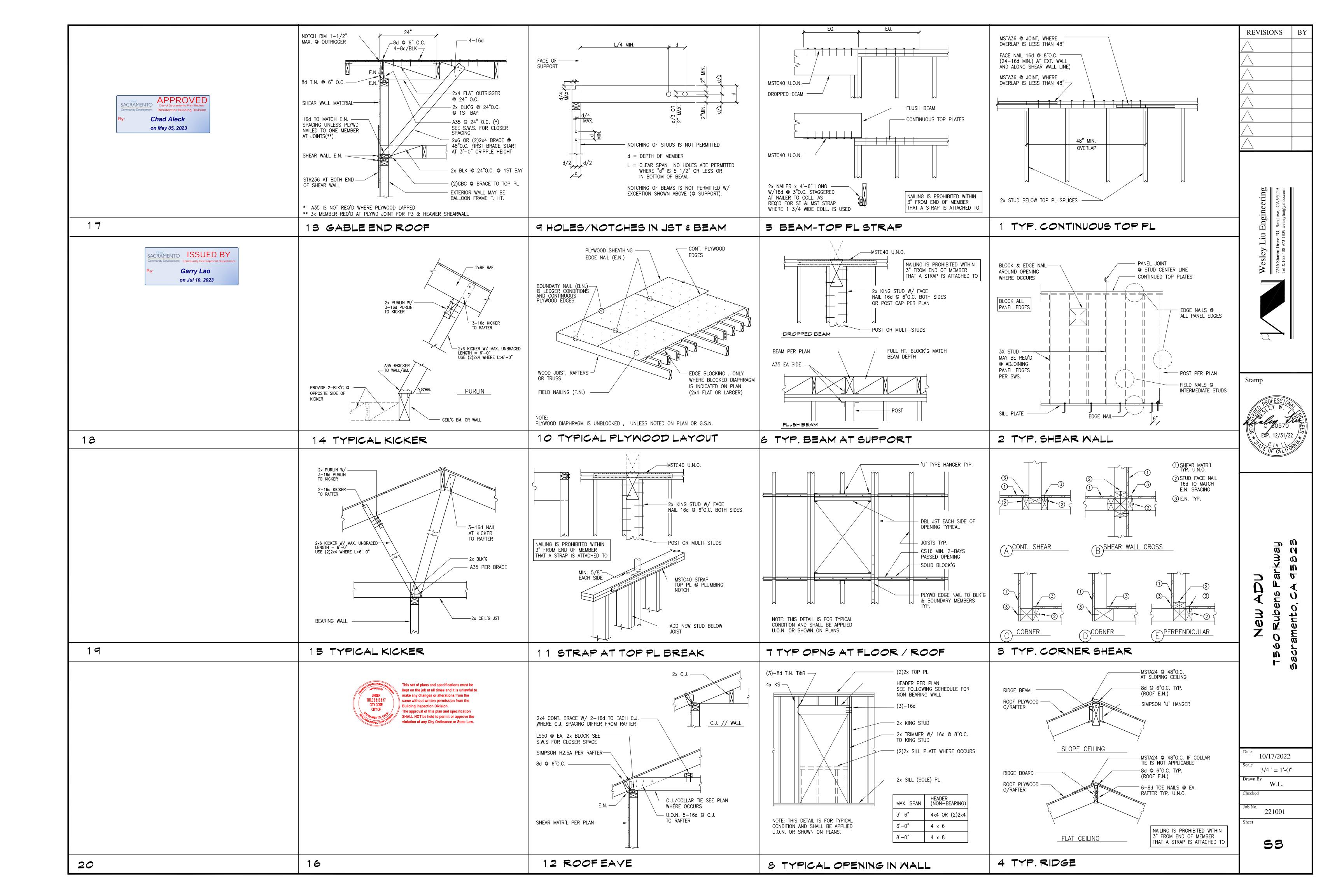
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Checked

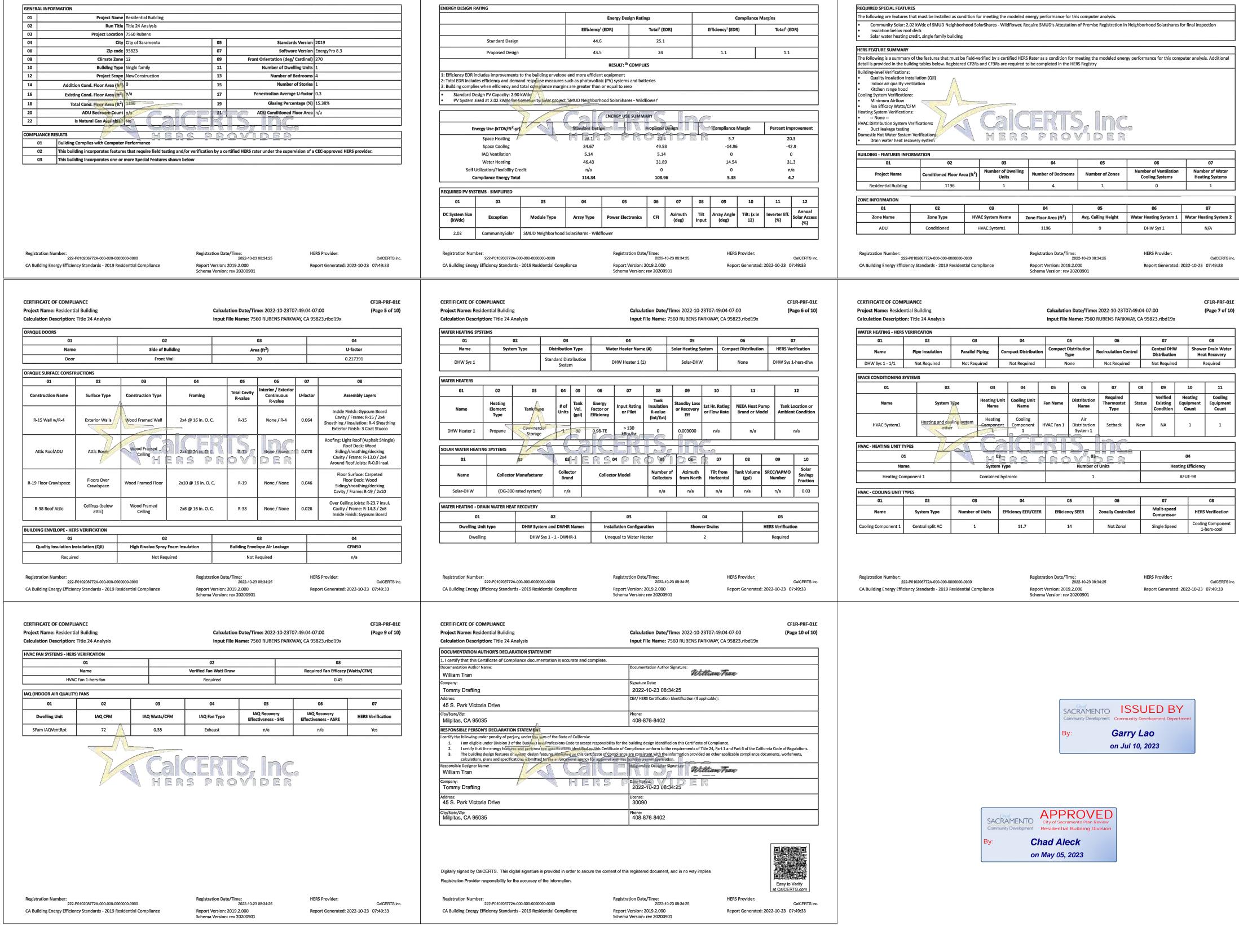
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CF1R-PRF-01E

(Page 2 of 10)

Calculation Date/Time: 2022-10-23T07:49:04-07:00

Input File Name: 7560 RUBENS PARKWAY, CA 95823.ribd19x

CF1R-PRF-01E

(Page 1 of 10)

Calculation Date/Time: 2022-10-23T07:49:04-07:00

Input File Name: 7560 RUBENS PARKWAY, CA 95823.ribd19x

CERTIFICATE OF COMPLIANCE

Project Name: Residential Building

Calculation Description: Title 24 Analysis

CERTIFICATE OF COMPLIANCE

Project Name: Residential Building

Calculation Description: Title 24 Analysis

				CF1R-PRF-01E (Page 3 of 10)	CERTIFICATE OF COMPL Project Name: Resident Calculation Description	ial Building							Г07:49:04-0 (WAY, CA 9!		9x		CF1R-PRF-01I (Page 4 of 10		
EQUIRED SPECIAL FEATURES							OPAQUE SURFACES								:				
he following are features that	must be installed as cond	lition for meeting the modeled	d energy performance for th	is computer analysis.			01	02	03	04		05		06		07			08
Insulation below roof de	eck	ood SolarShares - Wildflower.	Require SMUD's Attestation	of Premise Registration i	in Neighborhood Solarshares	for final inspection	Name	Zone	Construction	Azimuth	C	rientation	Gro	ss Area (f	t ²) W	/indow and Area (ft2)		Ti	ilt (deg)
Solar water heating cred	art, single family building						Front Wall	ADU	R-15 Wall w/R-4	0		Left		250		60			90
ERS FEATURE SUMMARY							Left Wall	ADU	R-15 Wall w/R-4	270		Front		300		40			90
he following is a summary of t	the features that must be	field-verified by a certified HE	RS Rater as a condition for	meeting the modeled ene	ergy performance for this con	puter analysis. Additional	Rear Wall	ADU	R-15 Wall w/R-4	180		Right		250		56			90
etail is provided in the buildng						. ,	Right Wall	ADU	R-15 Wall w/R-4	90		Back		300		48			90
uilding-level Verifications:							Roof	ADU	R-38 Roof Attic	n/a		n/a	1	1196		n/a	i		n/a
Quality insulation installa Indoor air quality ventila							Raised Floor	ADU	R-19 Floor Crawlspace	n/a		n/a		1196		n/a			n/a
Kitchen range hood										•									
ooling System Verifications: Minimum Airflow							ATTIC	1											
Fan Efficacy Watts/CFM	The second second						01	01 02 03 04 05 06			07		08						
leating System Verifications: None					in .		Name	Construction	Турс	Roof Rive (1)	n 12) - Roo	f Reflectance	Roc	of Emittan	ce	Radiant Bar	rrier	Co	ool Roof
IVAC Distribution System Verifi	fications:			5. III	_		Attic ADU	Attic RoofAD	Ven lated			0.1	8 8	0.85		Yes			No
Duct leakage testing Comestic Hot Water System Ve	rification						FENESTRATION / GLAZING		ME						16				
Drain water heat recover	T		SPRO		ζ,					04					40	- 44	1 42	42	
							01	02	03	04	05	06 (7 08	09	10	11	12	13 SHGC	14
UILDING - FEATURES INFORM 01	MATION 02	03	04	05	06	07	Name	Туре	Surface	Orientation	Azimuth	Width He (ft) (f		Area (ft²)	U-factor	U-factor Source	SHGC		Exterior Shading
Project Name	Conditioned Floor Are	Number of Dwelling	Number of Bedrooms	Number of Zones	Number of Ventilation	Number of Water	Window	Window	Front Wall	Left	0		1	40	0.3	NFRC	0.35	NFRC	Bug Screen
- Troject Haine	Conditioned Floor Are	Units	ivaliber of beardons	realistics of zones	Cooling Systems	Heating Systems	Window 2	Window	Left Wall	Front	270		1	40	0.3	NFRC	0.35	NFRC	Bug Screen
Residential Building	1196	1	4	1	0	1	Window 3	Window	Rear Wall	Right	180		1	16	0.3	NFRC	0.35	NFRC	Bug Screen
ONE INFORMATION							Patio Door	Window	Rear Wall	Right	180		1	40	0.3	NFRC	0.35	NFRC	Bug Screen
01	02	03	04	05	06	07	Window 4	Window	Right Wall	Back	90		1	48	0.3	NFRC	0.35	NFRC	Bug Screen
Zone Name	Zone Type		Zone Floor Area (ft ²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2		<u> </u>		•		•	•	•				•	
l l																			

CERTIFICATE OF CO	MPLIANCE											CF1R-PRF-0		
Project Name: Resid	dential Building					Calculati	on Date	e/Time: 2022	-10-23T07:49:04-0	7:00		(Page 8 of		
Calculation Descrip	tion: Title 24 Anal	ysis				Input Fil	e Name	: 7560 RUBE	NS PARKWAY, CA 9	5823.ribd1	.9x			
HVAC COOLING - HER	S VERIFICATION													
01		02		03			04		05			06		
Name	'	erified Airflow	Airf	low Target			Verified	EER	Verified SI	EER	Verified I	Refrigerant Charg		
Cooling Compoi 1-hers-cool		Required		350		ı	Not Requ	uired	Not Requi	red	No	ot Required		
HVAC - DISTRIBUTION														
01	02	03	04	05	06		07	08	09	10	11	12		
			Duct Ins	s. R-value	_ D	uct Locat	ion	Surl	ace Area					
Name	Туре	Design Type	Supply	Return	Sup	ply F	eturn	Supply	Return	Bypass Duct	Duct Leaka	ige HERS Verificatio		
Air Distribution System 1	Unconditioned	Non Verifie	R.	R-8	Att	ic	Attic	n/a	n/a	No Bypass Duct	Sealed an Tested	Air Distributio System 1-hers-dis		
HVAC DISTRIBUTION	- HERS VERIFICATIO						2		IC.					
01	02	03	HB	R\$	Pos	RC	DV		07		08	09		
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified I		Verified Desi		Bur	ried Ducts	Deeply Buried Ducts		akage Air ndler	Low Leakage Ducts Entirely i Conditioned Space		
Air Distribution System 1-hers-dist	Yes	5.0	Not Requ	uired	Not Rec	quired	uired Not Re		Credit not taken	Not F	tequired	No		
HVAC - FAN SYSTEMS														
	01			02					03			04		
	Name			Туре				Fan Pow	er (Watts/CFM)		ı	Name		
	HVAC Fan 1			HVAC Fa			1	0.45				HVAC Fan 1-hers-fan		

Registration Date/Time:

Report Version: 2019.2.000

2022-10-23 08:34:25



Registration Date/Time: 2022-10-23 08:34:25

Report Version: 2019.2.000

Schema Version: rev 20200901



Registration Number: 222-P010208772A-000-000-0000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Number: 222-P010208772A-000-000-000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance



SHEET NO:

NOVEMBER 2022

(408) 876-8402 & (916) 526-5881

AS SHOWN

Address: 1449 BOB WHITE PLACE, SAN JOSE, CA 95131

7560 RUBENS PARKWAY, SACRAMENTO, CA 95823

9582;

CA

ACRAMENTO,

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TITLE PARKWAY,

RUBENS

260

BY

REVISION

Signed: William Tran

Owner: MAN PHAN (916)698-5920

Drawn: WILLIAM TRAN & LUYEN HONG NGUYEN Email: william_t55@yahoo.com & helennguyen3689@gmail.com

CalCERTS inc.

CalCERTS inc.

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2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020** HCD SHL 615 (New 01/20)

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

2019 CALGREEN CODE					
SECTION	REQUIREMENTS				
Chapter 1 – A	DMINISTRATION				
	Scope				
101.3.1	Applies to ALL newly constructed residential buildings: low-rise, high-rise, and hotels/motels.				
102.3	Requires a completed Residential Occupancies Application Checklist or alternate method acceptable to the enforcing agency to be used for documentation of conformance.				

	conformance.
Chapter 3 –	GREEN BUILDING
	Additions and alterations
301.1.1	Applies to additions or alterations of residential buildings where the addition or alteration increases the building's conditioned area, volume, or size.
	Requirements only apply within the specific area of the addition or alteration.
	Low-rise and high-rise residential buildings
301.2	Banners identify provisions applying to low-rise only [LR] or high-rise only [HR].

Mixed occupancy buildings Requires each portion of mixed occupancy buildings to comply with CALGreen

measures applicable for the specific occupancy. Exceptions:

circuit.

4.106.4.2.3

302.1

- Accessory structures and accessory occupancies serving residential buildings to comply with Chapter 4 and Appendix A4, as applicable.
- Live/work units complying with the California Building Code Section 419 shall not be considered a mixed occupancy. Live/work units are required to comply with Chapter 4 and Appendix A4, as applicable.

Page 1 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020** HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. 2019 CALGREEN CODE

SECTION REQUIREMENTS Chapter 4 – RESIDENTIAL MANDATORY MEASURES

Division 4.1 – PLANNING AND DESIGN

Storm water drainage and retention during construction Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.

Grading and paving

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

Exception: Additions and alterations which do not alter the existing drainage path. Electric vehicle (EV) charging for new construction

Comply with Section 4.106.4.1, 4.106.4.2 or 4.106.4.3 for future installation and use of EV chargers.

Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code. Article 625.

Exceptions:

4.106.4

1. On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon 1 of the following:

1.1. Where there is no commercial power supply.

1.2. Verification that meeting requirements will alter the local utility infrastructure design requirements on the utility side of the meter increasing costs to the homeowner/developer by more than \$400.00 per dwelling unit.

2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities.

Note: For definitions of Accessory Dwelling Units and Junior Accessory Units, see CALGreen Chapter 2.

Page 2 of 16



EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20) See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE

SECTION REQUIREMENTS

4.106.4.1

4.106.4.2

EV charging: 1- & 2-family dwellings/townhouses with attached private garages

- Install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit.
- Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter).
- Raceway shall originate at the main service or subpanel and terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger.
- Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces.
- Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Identification

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

EV charging for multifamily dwellings

- Applies to all multifamily dwelling units with parking facilities on the site.
- 10% of the total number of parking spaces provided for all types of parking facilities, but in no case less than 1, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the number of EV spaces shall be rounded up to the nearest whole number.

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

Page 3 of 16



HCD SHL 615 (New 01/20) See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE SECTION REQUIREMENTS

EV charging space (EV space) locations

4.106.4.2.1 Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least 1 EV space shall be located in the common use parking areas and shall be available for use by all residents.

EV charging stations (EVCS)

When EV chargers are installed, EV spaces (required by Section 4.106.4.2.2, Item 3,) shall comply with at least 1 of the following options:

4.106.4.2.1.1

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

Exception: EVCS designed and constructed in compliance with the California Building Code Chapter 11B are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

EV charging space (EV space) dimensions

EV spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet.

2. The minimum width of each EV space shall be 9 feet.

4.106.4.2.2

- 3. 1 in every 25 EV spaces, but not less than 1, shall also have an 8-foot wide minimum aisle. A 5-foot wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet.
 - a. Surface slope for this EV space and aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.

Page 4 of 16



CAL Green.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020** HCD SHL 615 (New 01/20)

See s	pecific referenced sections for complete details on CALGreen mandatory requirement	er
	2019 CALGREEN CODE	
SECTION	REQUIREMENTS	

Single EV space required
 Install a listed raceway capable of accommodating a 208/240-volt dedicated brane

- Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). Raceway shall originate at the main service or subpanel and shall terminate into a
- listed cabinet, box or enclosure in close proximity to the proposed location of the EV
- Construction documents shall identify the raceway termination point.
- Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Multiple EV spaces required

- Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics, and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces 4.106.4.2.4 at the full rated amperage of the EVSE.
 - Plan design shall be based upon a 40-ampere minimum branch circuit.
 - Required raceways and related components planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Identification

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

Page 5 of 16



CALGreen.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020**

uirements
L

	2019 CALGREEN CODE		
SECTION	REQUIREMENTS		
		EV charging for hotels and motels	

- Applies to all newly constructed hotels and motels
- **4.106.4.3** Construction documents shall identify the location of EV spaces.

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

4.106.4.3.1

4.106.4.3.2

Number of required EV spaces Table 4.106.4.3.1 shows the number of required EV spaces based on the total number of parking spaces provided for all types of parking facilities.

EV charging space (EV space) dimensions

EV spaces shall be designed to comply with the following:

- Minimum length of each EV space shall be 18 feet.
- Minimum width of each EV space shall be 9 feet.
- Single EV space required (similar to 4.106.4.2.3) Install a listed raceway capable of accommodating a 208/240-volt dedicated branch
- Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter).

- Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV
- Construction documents shall identify the raceway termination point.
- Service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Page 6 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020** HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements.				
	2019 CALGREEN CODE			
SECTION	REQUIREMENTS			

Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the

Multiple EV spaces required (similar to 4.106.4.2.4)

- 4.106.4.3.4
 - full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit.

Required raceways and related components planned to be installed underground,

Identification (similar to 4.106.4.2.5)

- enclosed, inaccessible or, in concealed areas and spaces shall be installed at the time of original construction.
- **4.106.4.3.5** Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Accessible EV spaces

4.106.4.3.6 In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for EV charging stations in the California Building Code, Chapter 11B.

Division 4.2 – ENERGY EFFICIENCY

5.201.1

- Energy efficiency requirements for low-rise residential (Section 4.201.1) and highrise residential/hotels/motels (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen.
 - Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2019 California Energy

Scope

Page 7 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

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

EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)

2019 CALGREEN CODE SECTION REQUIREMENTS Division 4.3 – WATER EFFICIENCY AND CONSERVATION Water conserving plumbing fixtures and fittings

Plumbing fixtures and fittings shall comply with the following: **4.303.1.1** – Water closets: ≤ 1.28 gal/flush.

4.303.1.2 – Wall mounted urinals: ≤ 0.125 gal/flush; all other urinals ≤ 0.5 **4.303.1.3.1** − Single showerheads: ≤ 1.8 gpm @ 80 psi. **4.303.1.3.2** – Multiple showerheads: combined flow rate of all showerheads 4.303.1

controlled by a single valve shall not exceed 1.8 gpm @ 80 psi, or only 1 shower outlet is to be in operation at a time. **4.303.1.4.1** − Residential lavatory faucets: maximum flow rate ≤ 1.2 gpm @ 60

psi; minimum flow rate ≥ 0.8 gpm @ 20 psi. **4.303.1.4.2** – Lavatory faucets in common and public use areas of residential buildings: ≤ 0.5 gpm @ 60 psi. **4.303.1.4.3** − Metering faucets: \leq 0.2 gallons per cycle.

4.303.1.4.4 − Kitchen faucets: ≤ 1.8 gpm @ 60 psi; temporary increase to 2.2

Outdoor potable water use in landscape areas

masonry or a similar method acceptable to the enforcing agency to prevent passage of

gpm allowed but shall default to 1.8 gpm. Standards for plumbing fixtures and fittings

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

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

Division 4.4 – MATERIAL CONSERVATION & RESOURCE EFFICIENCY Rodent proofing Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete

Page 8 of 16





his set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the **Building Inspection Division.** The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law

BAJ GRAPHIC DESIGN **NOVEMBER 2022** AS SHOWN Scale:

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Signed: Owner: MAN PHAN (916)698-5920 7560 RUBENS PARKWAY, SACRAMENTO, CA 95823

\$ 8 8 EEN MANDATORY CHEPARKWAY, SACRAMENTO, (S S) CALGI RUBEN 2019 7560 F

REVISION

BY

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020**

HCD SHL 615 (New 01/20) See specific referenced sections for complete details on CALGreen mandatory requirements.

2019 CALGREEN CODE

SECTION REQUIREMENTS

Construction waste management

Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Provide documentation to the enforcing agency per Section 4.408.5.

Exceptions: 4.408.1

1. Excavated soil and land-clearing debris.

2. Alternative waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.

3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

Construction waste management plan

Submit a construction waste management plan meeting Items 1 through 5 in Section 4.408.2. Plans shall be updated as necessary and shall be available for examination during construction.

Waste management company

Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.

Page 9 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. **2019 CALGREEN CODE**

Waste stream reduction alternative [LR]

4.408.4

4.408.4.1

SECTION REQUIREMENTS

Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

Operation and maintenance manual

At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which covers 10 specific subject areas shall be placed in the building.

Recycling by occupants

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

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.

Division 4.5 – ENVIRONMENTAL QUALITY

Fireplaces - General

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

Page 10 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020**

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

HCD SHL 615 (New 01/20)

2019 CALGREEN CODE SECTION REQUIREMENTS

4.504.2.1

Protection of mechanical equipment during construction

At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air intake and distribution component openings shall be covered. Tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.

Adhesives, sealants and caulks

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

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products shall also comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations (CCR), Title 17, commencing with Section 94507.

Paints and coatings

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

Page 11 of 16



2019 CALGREEN RESIDENTIAL MANDATORY MEASURES **EFFECTIVE JANUARY 1, 2020**

HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. **2019 CALGREEN CODE**

Aerosol paints and coatings

4.504.2.3 4.504.2.4

SECTION REQUIREMENTS

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

Documentation is required per Section 4.504.2.4.

Carpet systems

Carpet installed in the building interior shall meet the testing and product requirements of 1 of the following:

1. Carpet and Rug Institute's Green Label Plus Program.

2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).

3. NSF/ANSI 140 at the Gold level.

Scientific Certifications Systems Indoor Advantage™ Gold.

Carpet cushion

4.504.3.1 Carpet cushion installed in the building interior shall meet the requirements of the

Carpet and Rug Institute's Green Label program.

Carpet adhesive 4.504.3.2

Page 12 of 16

Carpet adhesives shall meet the requirements of Table 4.504.1.



CALGreen.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. 2019 CALGREEN CODE

SECTION REQUIREMENTS

Resilient flooring systems

Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with 1 or more of the following:

4.504.4

Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.

1. Products compliant with the California Department of Public Health, "Standard

2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program).

3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore

4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).

Composite wood products

4.504.5

Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in the Air Resources Board's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), as shown in Table 4.504.5.

 Documentation is required per Section 4.504.5.1. 4.504.5.1

> Definition of Composite Wood Products: Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" do not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-joined lumber, all as specified in CCR, Title 17, Section 93120.1(a).

> > Page 13 of 16



CA/Green

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

EFFECTIVE JANUARY 1. 2020 HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. 2019 CALGREEN CODE

SECTION REQUIREMENTS

4.505.2.1

Concrete slab foundations

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

Capillary break

A capillary break shall be installed in compliance with at least 1 of the following:

 A 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.

2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.

Moisture content of building materials

Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified in compliance with the following:

. Moisture content shall be determined with either a probe-type or a contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements in Section 101.8.

2. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified.

3. At least 3 random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

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

Page 14 of 16



CA/Green.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

EFFECTIVE JANUARY 1, 2020 HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. 2019 CALGREEN CODE

SECTION REQUIREMENTS 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 2. Unless functioning as a component of a whole house ventilation system, fans

must be controlled by a humidity control. a. Humidity controls shall be capable of manual or automatic adjustment

between a relative humidity range of ≤ 50% to a maximum of 80%. b. A humidity control may be a separate component to the exhaust fan and is

Note: For CALGreen, a bathroom is a room which contains a bathtub, shower, or tub/shower combination. Fans or mechanical ventilation is required in each bathroom.

not required to be integral or built-in.

Heating and air-conditioning system design

Heating and air-conditioning systems shall be sized, designed and equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J – 2016 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.

2. Duct systems are sized according to ANSI/ACCA 1 Manual D – 2016 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.

3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S – 2014 (Residential Equipment Selection) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems

Page 15 of 16

function are acceptable.



CA/Green.

2019 CALGREEN RESIDENTIAL MANDATORY MEASURES

EFFECTIVE JANUARY 1, 2020

HCD SHL 615 (New 01/20)

See specific referenced sections for complete details on CALGreen mandatory requirements. 2019 CALGREEN CODE SECTION REQUIREMENTS CHAPTER 7 - INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

HVAC system installers shall be trained and certified in the proper installation of HVAC systems and equipment by a recognized training or certification program. Examples of acceptable HVAC training and certification programs include, but are not limited to, the

1. State certified apprenticeship programs.

inspecting.

702.1

2. Public utility training programs.

3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.

Installer training

4. Programs sponsored by manufacturing organizations.

5. Other programs acceptable to the enforcing agency

Special inspection When required by the enforcing agency, special inspectors must be qualified and able to demonstrate competence to the enforcing agency in the discipline in which they are

Documentation

Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.

Page 16 of 16

SACRAMENTO ISSUED BY Garry Lao on Jul 10, 2023



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GRAPHIC DESIGN

AS SHOWN

NOVEMBER 2022

BY

2019 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.

(01/2020)			
Building Envel	lope Measures:		
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*		
§ 110.6(a)5:	Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).		
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*	l'ables	
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be cagasketed, or weather stripped.	aulked,	
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Househo and Services (BHGS).	ld Goods	
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).		
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roo material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the 0		
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consu	ımer Affair	
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attainsulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be instained direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but to placing insulation either above or below the roof deck or on top of a drywall ceiling.*	ached alled in	
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.		
§ 150.0(c):	Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masc must meet Tables 150.1-A or B.*		
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*		
- (,	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material al	one withou	

3 10010(4)1	
	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without
	facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
0.450.07.14	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor

	•		•	•	•	•	(0)		
	Vapor Retarde	er. In climate zones 1	through 16, the earth floo	or of unvented crav	vl space mus	t be covere	d with a C	Class I or Class II vapor	
150.0(g)1:	retarder. This re	equirement also app	lies to controlled ventilation	on crawl space for b	ouildings com	plying with	the excep	ption to § 150.0(d).	
	Vapor Retarde	er. In climate zones 1	14 and 16, a Class I or Cla	ass II vapor retarde	r must be ins	talled on th	e conditio	oned space side of all	
150.0(g)2:	insulation in all	exterior walls, vente	ed attics, and unvented att	ics with air-permea	ble insulation	١.			
	Fenestration F	Products. Fenestrati	ion, including skylights, se	parating conditione	ed space from	n uncondition	oned spac	ce or outdoors must have a	
150.0(a):	mayimum II-fac	ctor of 0.58; or the w	pinhted average Lifactor	of all fenestration n	nuet not evce	ed 0.58 *			

§ 150.0(q):	maximum U-factor of 0.58; or the weighted average U-factor of	of all fenestration must not exceed 0.58."
Fireplaces, Dec	corative Gas Appliances, and Gas Log Measures:	
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for	or indoor and outdoor fireplaces.

3 110.0(0)	The might continuously builting photographic and not allowed for integer and categories in options.
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
8 150 0/a)3·	Flue Damper, Masonry or factory-built firenlaces must have a flue damper with a readily accessible control.*

§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue of	damper with a readily accessible control.*	
Space Conditioning, Water Heating, and Plumbing System Measures:			
§ 110.0-§ 110.3:	Certification. Heating, ventilation and air conditioning (HVAC) equi	pment, water heaters, showerheads, faucets, and all other regulated	

9 110.0-9 110.3:	appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*

	compression newaring to ringiter attack and out on temperature for cappionnemary medianing.
	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a
§ 110.2(c):	setback thermostat."
	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units mu
§ 110.3(c)4:	meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of

1	§ 110.3(c)4:	meet the air release valve, backnow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of
١		§ 110.3(c)4.
١		Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose
١	§ 110.3(c)6:	bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
		Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except
١	§ 110.5:	appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*

2019 Low-Rise Residential Mandatory Measures Summary
 Olemana Air condition or and heat name antideer condensing units must have a cleaned of at least five fact from the

§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must ha minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, a wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by

150.0(j)3:	Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.

		Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification
	£ 450.0(n)2.	Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing
	§ 150.0(n)3:	agency that is approved by the Executive Director.
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Ducts and Fans	s Measures:
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*

	Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes.

	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed

	§ 150.0(m)9:	to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
	§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
ı		Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an
	§ 150.0(m)11:	occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in
		accordance with \$ 450 0(m)44 and Deference Decidential Annuality DA2

	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
9 150.0(111)11.	accordance with § 150.0(m)11 and Reference Residential Appendix RA3.

§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

rtoquii oiii oiito i	or Ventilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, florate, piping, filters, and valves.*
Lighting Measu	res:

§ 150.0(p):	rate, piping, filters, and valves.*		
Lighting Measur	res:		
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*		
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.		
Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not core other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacance fan speed control.			
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.		
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.		
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.		

	Light Sources in Drawers, Cabinets, and Linen Closets, Light sources internal to drawers, cabinetry or linen closets are not required to
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).*
§ 150.0(k)1E:	controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.

150.0(k) 111.	temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.		
150.0(k)1I:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.		
150.0(k)2A:	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.		
150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.*		
	Interior Switches and Controls Lighting must have readily accessible wall mounted controls that allow the lighting to be manually		

	§ 150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems."
	§ 150.0(k)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
	§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
ſ	\$ 150 0/k)2F.	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to

§ 150.0(k)2F: Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.



2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.			
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.			
§ 150.0(k)2l:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces middle by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.			
§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls."			
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.			
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to obuildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS			
Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply w with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.				
Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must compute applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.				
§ 150.0(k)4: Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than power as determined according to § 130.0(c).				
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.			
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior			
§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.			
Solar Ready Bui	ldings:			
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).			
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).			
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*			
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.			
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.*			
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.*			
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.			
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.			
§ 110.10(d):	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.			
§ 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.			
	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit			
§ 110.10(e)2:	breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".			





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