



**RURAL MOUNTAIN** 

# MONO COUNTY PROTOTYPE ACCESSORY DWELLING UNIT - PLAN 2

MONO COUNTY, CA

# SHEET INDEX

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# **SUPPORTING DOCUMENTS**

**ROOF FRAMING DETAILS** 

S-422

Grand total: 42

**ENERGY COMPLIANCE** PREPARED BY: CARSTAIRS ENERGY INC. DATE PREPARED: 08/04/2022 JOB NUMBER: 22-051011

# **DEFERRED SUBMITTALS**

TRUSS DESIGN AND CALCULATIONS. SLAB ON GRADE PROJECT REQUIRES A 1.64 kWdc PV SYSTEM. RAISED FOUNDATION PROJECT REQUIRES A 1.71 kWdc PV

SYSTEM SHALL BE COMPLETED PRIOR TO FINAL INSPECTION

# PROJECT DIRECTORY

APPLICANT		(TO BE PROVIDED BY OWNER)
	ADDRESS:	
	CONTACT:	
	EMAIL:	
	PHONE:	
ARCHITECT	RRM DESIGN GROUP	
	ADDRESS:	3765 S HIGUERA ST, SUITE 102
		SAN LUIS OBISPO, CA 93401
	CONTACT:	
	EMAIL:	
	PHONE:	P:(805) 543-1794

# PROJECT INFORMATION

# **PROJECT SCOPE:**

1. CONSTRUCTION OF A NEW DETACHED 1 STORY 615 SF ACCESSORY OR PRIMARY DWELLING UNIT WITH 1 BEDROOMS AND 1 BATH(S). 2. ALL SITE WORK WITHIN THE PROPERTY LINE.

3. ALL THE WORK SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

# **SITE INFORMATION:**

LOT COVERAGE

STREET ADDRESS:

(TO BE PROVIDED BY COUNTY OF MONO OR TOWN OF MAMMOTH LAKES)

APN:	
ZONING:	
LOT SIZE:	
LAND USE:	
EXISTING USE:	
PROPOSED USE:	
FLOOR AREA RATIO (TO BE PROVIDED BY COUNT)	Y OF MONO OR TOWN OF MAMMOTH LAKES)
MAXIMUM FAR:	
PROPOSED FAR:	

#### BUILDING: HARDSACPE/PAVING: LANDSCAPE:

(TO BE PROVIDED BY OWNER)

(TO BE PROVIDED BY COUNTY OF MONO OR TOWN OF MAMMOTH LAKES)

	REQUIRED	
FRONT:		
REAR:	4' - 0" (A.B. NO. 68)	
SIDES:	4' - 0" (A.B. NO. 68)	
-		
-		

#### **BUILDING INFORMATION:** (TO BE PROVIDED BY COUNTY OF MONO OR TOWN OF MAMMOTH LAKES)

IT OF WOND OR TOWN OF WANNING IN LAKES)	(10 BE PROVIDED BY COUNTY
	NUMBER OF STORIES:
R-	OCCUPANCY GROUP:
V-I	CONSTRUCTION TYPE:
	SPRINKLERED:
ER 2019 CBC TABLE 504.3) / (ASSEMBLY BILL 68) 40' / 16	MAX. HEIGHT ALLOWED:(PER 2
ER COUNTY OF MONO)	MAX. HEIGHT ALLOWED: (PER
REFER TO ELEVATIONS. VARIES BY STYLE	MAX. HEIGHT PROPOSED:
CLASS A	ROOF RATING:
REFER TO 'WILDLAND-URBAN INTERFACE FIRE	HIGH FIRE ZONE:
AREA' AND 'VERY-HIGH FIRE SEVERITY ZONE	

SECTIONS ON SHEET

# **BUILDING AREAS**

AREAS - PLAN 2	
CONDITIONED	
PLAN 2 FLOOR	615 SF
UNCONDITIONED	
PLAN 2 FRONT PORCH - RM	60 SF
PLAN 2 SIDE PORCH - RM	40 SF

# FIRE-RESISTANCE REQ.

**SELECT THE APPROPRIATE BOX BELOW (ONLY 1):** NOTE: EXTERIOR WALLS SHALL HAVE A MINIMUM FIRE SEPARATION DISTANCE OF 4'-0" FROM PROPERTY LINE. ALL ROOF EAVES ARE 10" DEEP.

FIRE SEPARATION DISTANCE: ≥5'-0" (EXTERIOR WALLS, PROJECTIONS, OPENINGS, AND PENETRATIONS)	NO FIRE-RESISTANCE RATING REQUIRED
FIRE SEPARATION DISTANCE: 4'-0" - 5'-0" (EXTERIOR WALLS, OPENINGS, AND PENETRATIONS) PROJECTION SEPARATION DIST.: ≥3'-0"	
OPENINGS, AND PENETRATIONS	NO FIRE-RESISTANCE RATING REQUIRED
EXTERIOR WALLS AND PROJECTIONS	1-HR FIRE-RESISTANCE REFER TO EAVE AND RAKE DETAILS FOR MORE INFO

SPRINKLERED	
FIRE SEPARATION DISTANCE: ≥4'-0" (EXTERIOR WALLS, OPENINGS, AND PENETRATIONS)	NO FIRE-RESISTANCE RATING REQUIRED

# **VICINITY MAP**

NON-SPRINKLERED

#### (TO BE PROVIDED BY OWNER)

# PROJECT CHECKLIST

### **FOUNDATION**

NOTE: THIS PROJECT ASSUMES A SITE WITH STANDARD SOIL CONDITIONS IF THE ADU IS TO BE LOCATED ON A SITE WITH EXPANSIVE OR OTHERWISE UNUSUAL SOIL, THE APPLICANT MUST PROCURE A GEOTECHNICAL REPORT AND MAY REQUIRE A NEW FOUNDATION DESIGN.

- ☐ SLAB ON GRADE
- □ RAISED FOUNDATION

#### **WASTE WATER**

☐ SEWER

☐ SEPTIC (REQUIRES APPROVAL)

# FIRE SPRINKLERS

DOES THE PRIMARY RESIDENCE HAVE NFPA 13D SPRINKLERS?

□ NO

☐ YES

REQUIRED AT PROPOSED ADU:

NO (NOT REQUIRED IF THE PRIMARY RESIDENCE IS UNSPRINKLERED

YES (REQUIRED IF THE PRIMARY RESIDENCE IS SPRINKLERED

#### FIRE SPRINKLERS NOTES

- 1. IF FIRE SPRINKLERS ARE REQUIRED AT PROPOSED ADU THEN THE FOLLOWING NOTES APPLY.
- 2. AUTOMATIC FIRE SPRINKLER SYSTEM AN AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE INSTALLED AS PER NFPA 13D THE MOST CURRENT EDITION. DETAILED SPRINKLER PLANS SHALL BE SUBMITTED TO THE FIRE PREVENTION BUREAU AND APPROVED PRIOR TO INSTALLATION. PLANS AND INSTALLATION MUST BE BY A C16 LICENSED SPRINKLER CONTRACTOR.
- SECTION 903.2.1 GROUP R AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 9033 SHALL BE PROVIDED THROUGHOUT ALL BUILDINGS WITH A GROUP R FIRE AREA. THIS INCLUDES SINGLE FAMILY DWELLINGS, MULTI-FAMILY DWELLINGS AND ALL RESIDENTIAL CARE FACILITIES REGARDLESS OF OCCUPANT LOAD.
- SECTION 903.2.1.1 ADDITIONS AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH 903.3 MAY BE REQUIRED TO BE INSTALLED THROUGHOUT STRUCTURES WHEN THE ADDITION IS MORE THAN 50% OF THE EXISTING BUILDING OR WHEN THE ALTERED BUILDING WILL EXCEED A FIRE FLOW OF 1,500 GALLONS PER MINUTE AS CALCULATED PER SECTION 507.3. THE FIRE CODE OFFICIAL MAY REQUIRE AN AUTOMATIC SPRINKLER SYSTEM BE INSTALLED IN BUILDINGS WHERE NO WATER MAIN EXISTS TO PROVIDE THE REQUIRED FIRE FLOW OR WHERE A SPECIAL HAZARD EXISTS SUCH AS: POOR ACCESS ROADS GRADE, BLUFFS AND CANYON RIMS, HAZARDOUS BRUSH AND RESPONSE TIMES GREATER THAN 5 MINUTES BY A FIRE DEPARTMENT.
- 5. **SECTION 903.2.1.2** REMODELS OR RECONSTRUCTION AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3 MAY BE REQUIRED IF THE SCOPE OF WORK INCLUDES SIGNIFICANT MODIFICATION TO THE INTERIOR AND/OR ROOF OF THE BUILDING, AND THE COST OF THE INSTALLATION DOES NOT EXCEED 15 PERCENT OF THE CONSTRUCTION COSTS OF THE REMODEL.
- 6. LOCATION AND SIZE OF WATER SERVICE UNDERGROUND SHALL BE INSTALLED AS SHOWN ON APPROVED FIRE SPRINKLER PLANS. A MINIMUM 1 INCH WATER SHALL BE INSTALLED.
- 7. A FIRE UNDERGROUND FLUSH CERTIFICATION SHALL BE REQUIRED AT FINAL INSPECTION.
- 8. A HYDRO INSPECTION OF THE FIRE SPRINKLER SYSTEM IS REQUIRED PRIOR TO FRAME INSPECTION. ONLY THE NEW PIPING SHALL BE TESTED.

### ONSITE PARKING REQUIRED

- NONE, EXCEPTION USED:
  - THE ADU IS LOCATED WITHIN 1/2 MILE OF PUBLIC TRANSIT.
  - OFF STREET PARKING PERMITS ARE REQUIRED BUT NOT OFFERED TO THE OCCUPANT OF THE ADU.
  - WHEN THERE IS A CAR SHARE VEHICLE LOCATED WITHIN ONE BLOCK OF THE ADU.
- ONE PARKING SPACE (STUDIO OR 1-BEDROOM ADU)
- TWO PARKING SPACES (2-BEDROOM ADU)

# WILDLAND-URBAN INTERFACE FIRE AREA

- 1. PORTIONS OF THE COUNTY OF MONO ARE LOCATED IN WITHIN THE WILDLAND-URBAN INTERFACE FIRE AREA (AS DEFINED BY 2019 CRC R337.2). a. AREA DEFINED BY STATE AS A "FIRE HAZARD SEVERITY ZONE"
- b. AREA DESIGNATED BY ENFORCING AGENCY TO BE AT A SIGNIFICANT RISK

NO DEVIATIONS, ALTERATIONS, OR OPTIONS BEYOND THOSE SPECIFICALLY

ISSUING JURISDICTION AND CHIEF BUILDING OFFICIAL. ANY UNAPPROVED PLAN MODIFICATIONS MAY BE DEVELOPED THROUGH RRM DESIGN GROUP AND THE

- 2. AN ADU WITHIN THE WILDLAND-URBAN INTERFACE FIRE AREA SHALL COMPLY WITH THE 2019 CRC SECTION R337.
- THIS PROTOTYPE PLAN IS DESIGNED TO COMPLY WITH THE PROVISIONS REQUIRED BY THE 2019 CRC SECTION R337, REGARDLESS IF LOCATED IN A WILDLAND-URBAN INTERFACE FIRE AREA.

#### **REQUIRED W.U.I. DETAILS**

APPROVING JURISDICTION IF REQUIRED.

SIGNATURE:

- 1. REFER TO "W.U.I. REQUIREMENT NOTES" ON SHEET G-101.
- ROOF DETAILS: SHEETS AD-902, AD-903, AD-904, AD-905, AND AD-906
- VENTS: W.U.I. COMPLIANT ATTIC VENT, SEE LEGEND ON ROOF PLANS SHEET
- ☐ EXTERIOR WALL COVERING DETAIL: SEE EXTERIOR ELEVATIONS LEGEND
- ☐ EXTERIOR WINDOWS: "WINDOW GENERAL NOTE" #6 ON FLOOR PLANS SHEET
- EXTERIOR DOORS: "DOOR GENERAL NOTE" #6 ON FLOOR PLANS SHEET

# **VERY-HIGH FIRE SEVERITY ZONE**

- ☐ YES
- 1. IN ACCORDANCE WITH THE 2019 CFC SECTION 4906, STRUCTURES LOCATED IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SHALL PROVIDE & MAINTAIN A FUEL MODIFICATION ZONE. FUEL MODIFICATION ZONES: THE APPLICANT SHALL PROVIDE & MAINTAIN FIRE/FUEL BREAKS TO THE SATISFACTION OF THE LOCAL FIRE DEPARTMENT. FIRE/FUEL BREAKS SHALL BE SHOWN ON THE GRADING, MAP, AND BUILDING PLANS.
- HOMEOWNER TO PROVIDE COMPLIANT VENTS/ICC REPORT IF IN A HIGH FIRE

# **EXTERIOR WALL MATERIAL**

- ☐ CEMENT PLASTER STUCCO
- FIBER CEMENT BOARD AND BATTEN SIDING
- FIBER CEMENT LAP SIDING
- FIBER CEMENT SHINGLE SIDING

#### **WINDOW MATERIAL ROOF MATERIAL**

- ☐ COMPOSITION SHINGLES ☐ FIBERGLASS ■ STANDING SEAM METAL ROOF
- ☐ WOOD
  - ☐ CLAY ROOF TILES
- ☐ ALUMINUM CLAD WOOD

# **SNOW LOADING CATEGORIES**

- < 65 PSF
- ☐ 66 PSF 80 PSF 81 PSF - 120 PSF
- 220 PSF 235 PSF

# STYLE SELECTION

NOTE: WHEN SELECTING ONE OF THE TWO ARCHITECURAL STYLES, PLEASE SELECT THE OPTION THAT IS THE SAME OR A SIMILAR DESIGN TO THE PRINCIPAL RESIDENCE. THE ADU BUILDING COLORS AND MATERIALS SHALL BE THE SAME OR SIMILAR TO THE PRINCIPAL RESIDENCE.

RURAL MOUNTAIN

\*STRIKE THROUGH HIGH DESERT SHEETS: A1-122, A1-202, AD-904

HIGH DESERT

\*STRIKE THROUGH RURAL MOUNTAIN SHEETS: A1-121, A1-201, AD-903

3765 SOUTH HIGUERA STREET, SUITE 102 SAN LUIS OBISPO, CA 93401 RRM DESIGN GROUP COPYRIGHT 2022 RRM IS A CALIFORNIA CORPORATION

CONSULTANT		

**AGENCY** 

S

DATE

PROJECT MANAGER	1
RR	
DRAWN BY	CHECKED BY
DATE	
6/30/2022	

2340-01-CU21

**PROJECT NUMBER** 

- a. HANDRAIL: SHALL NOT BE LESS THAN 34" AND NOT MORE THAN 38" ABOVE THE SLOPED PLANE ADJOINING STAIR TREAD NOSING. (2019 CRC
- b. THE HAND GRIP PORTION OF THE HANDRAIL SHALL BE A MINIMUM DIAMETER OF 1-1/4" AND A MAXIMUM DIAMETER OF 2" IN CROSS SECTION (2019 CRC R311.7.8.5) AND SHALL HAVE A SPACE OF NOT LESS THAN 1-1/2" CLEAR FROM THE WALL. (2019 CRC R311.7.8.3)
- c. ALL HANDRAILS SHALL RETURN OR TERMINATE IN A NEWEL OR SAFETY POST. (2019 CRC R311.7.8.4)
- d. HEADROOM: PROVIDE A MÍNIMUM OF 6'-8" CLEAR ABOVE ALL PORTIONS OF THE STAIRS AND LANDINGS. THIS DIMENSION SHALL BE MEASURED FROM A PLANE TANGENT TO THE STAIRWAY TREAD NOSING. (2019 CRC R311.7.2)
- e. GUARDS ON THE OPEN SIDES OF STAIRS ALSO SERVING AS A HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38". (2019 CRC R312.1.2 EXC #2)
   f. USABLE SPACE UNDER STAIRS SHALL BE PROTECTED ON THE ENCLOSED
- SIDE WITH 1/2" GYPSUM BOARD. (2019 CRC R302.7)
  g. GUARDS ON THE SIDE OF STAIRS SHALL BE SPACED SUCH THAT A SPHERE
- 4 3/8" DIA CANNOT PASS THROUGH. (2019 CRC R312.1.3 EXC #2)

  1. MINIMUM TREAD DEPTH SHALL BE 10". 3/8" MAXIMUM VARIATION CRC (2019 CRC R311.7.5.2) THE MINIMUM WINDER DEPTH AT THE WALK LINE (MEASURED AT A RIGHT ANGLE TO THE TREAD'S LEADING EDGE AT A
- (MEASURED AT A RIGHT ANGLE TO THE TREAD'S LEADING EDGE AT A POINT 12" FROM WHERE THE TREAD ARE NORROWEST) SHALL BE 10", MINIMUM WINDER TREAD DEPTH SHALL BE 6". (2019 CRC R311.7.5.2.1)

  i. MAXIMUM RISE SHALL BE 7.75". 3/8" MAXIMUM VARIATION (2019 CRC
- R311.7.5.1)

  j. STAIRS SHALL BE NOT LESS THAN 36" CLEAR WIDTH AT ALL POINTS ABOVE THE PERMITTED HANDRAIL HEIGHT AND BELOW THE REQUIRED HEADROOM HEIGHT. MINIMUM CLEAR WIDTH OF THE STAIRWAY AT AND BELOW THE HANDRAIL HEIGHT IS 31 1-1/2" WHERE A HANDRAIL IS

INSTALLED ON ONE SIDE, AND 27" WHERE HANDRAILS ARE INSTALLED ON

- BOTH SIDES. (2019 CRC R311.7.1)

  k. RADUIS OF NOSING SHALL NOT BE LESS THAN 3/4" BUT NOT GREATER
  THAN 1 1/4". (2019 CRC R311.7.5.3)

  l. SPACE BETWEEN HANDGRIP AND WALL SHALL BE NOT LESS THAN 1 1/2".
- (2019 CRC R311.7.8.3)
  m. HANDRAILS ARE REQUIRED ON AT LEAST ONE SIDE OF EACH CONTINUOUS
- m. HANDRAILS ARE REQUIRED ON AT LEAST ONE SIDE OF EACH CONTINUOUS RUN OF TREADS WITH FOUR OR MORE RISERS. (2019 CRC R311.7.8)

  WATER HEATER: (REFER TO BUILDING ANALYSIS REPORT)
- WITH R-4 OR GREATER (FIRST 5 FEET IN UNCONDITIONED SPACES).

  b. PROVIDE A TEMPERATURE AND PRESSURE RELIEF VALVE WITH A FULL SIZE DRAIN OF GALVANIZED STEEL OR HARD DRAWN COPPER TO THE OUTSIDE OF THE BUILDING WITH THE END OF THE PIPE PROTRUDING 6" MINIMUM @ 2' MAX. ABOVE GRADE POINTING DOWNWARD TO THE

a. HOT WATER INLET AND OUTLET PIPES INSULATED: EXTERNALLY WRAPPED

- TERMINATION UNTHREADED.

  COMBUSTION AIR PER MANUFACTURE REQUIREMENTS.
- d. CLEARANCES PER MANUFACTURE REQUIREMENTS.
- e. THE BURNERS AND BURNER IGNITION DEVICES SHALL BE LOCATED 18" ABOVE THE GARAGE FLOOR UNLESS LISTED AS FLAMABLE VAPOR IGNITION RESISTANT (NFPA54:9.1.10.2) (CPC 508.14)
- f. WHEN INSTALLED IN A GARAGE THE WATER HEATER SHALL BE GUARDED AGAINST DAMAGE. (CPC 508.14.)

  PROVIDE (2) LAYERS OF GRADE D PAPER OR FOLIAL WHEN PLASTER IS
- PROVIDE (2) LAYERS OF GRADE D PAPER OR EQUAL WHEN PLASTER IS
  INSTALLED OVER WOOD BASED SHEATHING. (2019 CRC R703.7.3)
- 4. CLOTHES DRYER MOISTURE EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND HAVE A BACK-DRAFT DAMPER. EXHAUST DUCT IS LIMITED TO 14'-0" W/ TWO ELBOWS. THIS SHALL BE REDUCED 2'-0" FOR EVERY ELBOW IN EXCESS OF TWO. MIN. DIA. 4", SMOOTH, METAL DUCT. (CMC 504.3)
- ALL MANUFACTURED EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATION AND DIMENSIONS VERIFIED WITH
- INSTALLATION REQUIREMENTS.

  5. SHOWERS AND TUB-SHOWER COMBINATIONS: CONTROL VALVES MUST BE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES. (CPC 418.0.)
- 7. PROVIDE TEMPERED GLAZING IN DOORS AND ENCLOSURES FOR SHOWERS, BATHTUBS, SAUNAS, STEAM ROOMS, HOT TUBS & SIMILAR USES WHERE THE BOTTOM EXPOSED EDGE IS LESS THAN 60-INCHES ABOVE A STANDING SURFACE. (2019 CRC R308.4.5)
- B. HEATING AND AIR-CONDITIONING SYSTEM DESIGN SHALL CONFORM TO CALGREEN SEC. 4.507, ENVIRONMENTAL COMFORT.
- 9. FORCED AIR UNITS: REFER TO BUILDING ENERGY ANALYSIS REPORT.
  COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL
  EQUIIPMENT DURING CONSTRUCTION SHALL BE REQUIRED PER CALGREEN
  SEC. 4.504.1. ALL DUCTS AND OTHER RELATED AIR DISTRIBUTION COMPONENT
  OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER
  METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE
  AMOUNT OF DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM.
- a. PROVIDE WORKING EQUIPMENT PLATFORM PER CMC 904.11.1.
  b. NIGHT SETBACK THERMOSTAT REQUIRED (MINIMUM 2 PERIODS PER 24
- HOURS).
  c. CLEARANCES PER MANUFACTURER'S RECOMMENDATIONS.
  d. THE BURNERS AND BURNER IGNITION DEVICES SHALL BE LOCATED 18"
  ABOVE THE GARAGE FLOOR UNLESS LISTED AS FLAMABLE VAPOR
- e. PROVIDE MIN. 30" DEEP AND 30" HIGH, UNOBSTRUCTED WORKING SPACE IN FRONT OF FAU.

IGNITION RESISTANT (NFPA54:9.1.10.2) CPC 508.14.

- f. FAU OR ALCOVE SHALL BE 12" WIDER ON ALL SIDES AND REAR THAN THE FURNACE BEING INSTALLED, CMC TABLE 3-1. REQUIRED CLEARANCES MAY BE REDUCED PER CMC TABLE 3-2.
- g. USE MIN. 0.019-INCH THICK SHEET METAL DUCTS IN GARAGE AND DUCTS PENETRATING WALLS AND CEILINGS OF GARAGE, CBC EXCEPTIONS SEC 406.1.4 ITEM 2.
   h. PASSAGEWAY TO THE ATTIC FURNACE SHALL BE UNOBSTRUCTED AND
- HAVE CONTINUOUS SOLID FLOORING NOT LESS THAN 24" WIDE, NOT MORE THAN 20' IN LENGTH. CMC, SEC. 904.11.2 & 904.11.3.

  i SOURCE OF COMBUSTION AIR TO FURNACE SHALL COME FROM OUTSIDE
- i. SOURCE OF COMBUSTION AIR TO FURNACE SHALL COME FROM OUTSIDE AIR.
   i. WHEN INSTALLED IN A GARAGE THE APPLIANCE SHALL BE GUARDED
- 10. PROVIDE 5/8" TYPE "X" GYPSUM BOARD AT GARAGE SIDE OF WALLS AND CEILINGS COMMON TO DWELLING AND COVER ALL BEAMS & POSTS, AS WELL AS SOFFITS & FURRED SPACES. ALSO AT UNDERSIDE OF ACCESSIBLE UNDER STAIR AREAS. ONE HOUR CONSTRUCTION FOR ALL WALLS & SOFFITS.
- 11. WATER CLOSETS.
  a. CLEARANCES: 24" MIN. FRONT, 30" MIN COMPARTMENT WIDTH.
  b. PROVIDE A MIN 3 SF WINDOW, 1/2 OF WHICH SHALL BE OPENABLE OR AN EXHAUST FAN 50 CFM FOR INTERMITTENT OR 20 CFM FOR CONTINUOUS.,
- DIRECT VENT TO OUTSIDE WITH BACKDRAFT DAMPER. (2019 CRC R303.3)

  NEW WATER CLOSETS AND ASSOCIATED FLUSHOMETER VALVES, IF ANY SHALL USE NO MORE THAN 1.28 GALLONS PER FLUSH AND SHALL MEET PERFORMANCE STANDARDS ESTABLISHED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS STANDARD A112.19.2. H & S CODE, SECTION 17921.3(B).
- 12. BATH ACCESSORIES: PROVIDE MINIMUM 1 TOILET PAPER HOLDER AND 1 TOWEL BAR PER BATHROOM. PROVIDE NECESSARY BLOCKNG FOR TOILET PAPER HOLDER AND TOWEL BARS.
- 13. WHOLE-BUILDING MECHANICAL VENTILATION SYSTEM PER ASHRAE STANDARD 62.2. PROVIDE THE COUNTY INSPECTOR THE FOLLOWING INFORMATION AT OR BEFORE THE TIME OF INSPECTION:

  a. CALCULATIONS FOR REQUIRED VENTING RATES.
- a. CALCULATIONS FOR REQUIRED VENTING RATES.
  b. CALCULATION ADJUSTMENTS FOR INTERMITTENT SYSTEMS IF APPLICABLE.
  c. DUCT DIAMETER AND MAXIMUM DUCT LENGTH PER ASHRAE 62.2 TABLE 7.1.
  d. TYPE OF SYSTEM USED AND PROVIDE COMPLETED CF-6R-MECH-05 FORM.
- e. FANS SHALL BE A MAXIMUM OF 1 SONE.
  f. FANS SHALL BE PROVIDED A COVER OF R-4.2 WHEN OFF.
- 14. ATTIC ACCESS:
  a. PROVIDE 30" MIN. HEADROOM IN THE ATTIC SPACE (2019 CRC R807.1)
  b. IN ATTIC, PROVIDE LIGHT AND SWITCH, AND ALL NECESSARY ELECTRICAL. PROVIDE UNOBSTRUCTED PASSAGEWAY 24" WIDE OF SOLID CONTINUOUS FLOORING FROM ACCESS TO EQUIPMENT AND IT'S CONTROLS. ALSO PROVIDE UNOBSTRUCTED WORK SPACE IN FRONT OF EQUIPMENT 30"

DEPTH MINIMUM. PROVIDE COMBUSTION AIR AND CONDENSATE LINE TO

- OUTSIDE OR AN APPROVED DRAIN FOR OPTIONAL AIR CONDITIONING.

  c. BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT EXCEED 30 SQUARE FEET AND HAVE A VERTICAL HEIGHT OF 30-INCHES OR GREATER. THE VERTICAL HEIGHT SHALL BE MEASURED FROM TOP OF THE CEILING FRAMING MEMBERS TO THE UNDERSIDE OF THE ROOF FRAMING
- MEMBERS.
  d. THE ROUGH-FRAMED OPENING SHALL NOT BE LESS THAN 22" X 30" AND SHALL BE LOCATED NOT OVER 20 FEET FROM THE EQUIPMENT. (2019 CRC
- e. PROVIDE A 120V RECEPTACLE AND A LIGHT NEAR THE EQUIPMENT WITH LIGHT SWITCH LOCATED AT THE ATTIC ACCESS.

# **ELECTRICAL NOTES**

- CONFORM WITH CURRENT CEC, NFPA, MFR'S, AND LOCAL REQUIREMENTS. ELECTRICAL SYSTEM GROUND TO BE PROVIDED PER NEC ARTICLE 250-81. ALL MATERIALS TO BE U.L. LABELED.
- METER: "SQUARE D", 120 VOLT/ 240 VOLT, 1 AND 3 WIRE GROUND OR EQUAL.
   MAIN PANEL: FLUSH MOUNT, 30" CLEARANCE. 200 AMP SIZED TO PROVIDE FOUR FULL SIZE SPARE CIRCUIT SPACES FOR FUTURE EXPANSION.
- FULL SIZE SPARE CIRCUIT SPACES FOR FUTURE EXPANSION.

  CONDUCTORS: TW, THW, COPPER, MINIMUM 14 AT LIGHTING, 12 AT OTHER
- CIRCUITS.

  7. LAMPS: FOR GENERAL LIGHTING IN KITCHENS AND BATH SHALL HAVE AN EFFICIENCY OF NOT LESS THAN 40 LUMENS/ WATT. ALL SOCKETS FILLED WITH INCANDESCENT: SOFT-WHITE, 55 WATT FLUORESCENT: COOL WHITE, RS, SOUND RATING "A", 40 WATT (U.O.N.).
- 8. ALL ELECTRICAL OUTLETS INSTALLED IN BATHROOMS, GARAGES, BASEMENTS, CRAWL SPACES, OUTDOORS, KITCHEN COUNTERS, AND AT WET BAR SINKS SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION IN COMPLIANCE WITH NEC Art. 210-8, CONSISTING OF 125 VOLT, SINGLE-PHASE, 15- AND 20- AMPERE RECEPTACLES.
- 9. ALL BATHROOM RECEPTACLE OUTLETS SHALL BE SUPPLIED BY A MINIMUM OF ONE 20-AMPERE BRANCH CIRCUIT. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. THIS DEDICATED CIRCUIT MAY SERVE MORE THAN ONE BATHROOM. NEC ART. 210-52(d). RECEPTACLES SHALL BE ADJACENT TO AND WITHIN 36" OF THE OUTSIDE EDGE OF EACH BASIN.
- 10. PROVIDE ELECTRIC OUTLET AND PUSH-BUTTON WIRE FOR GARAGE OPENER.(INCLUDE OPENER).
- 11. THERMOSTAT SHALL BE A PROGRAMMABLE TYPE, HONEYWELL TH8320 OR EQUAL.

  12. RECESSED LUMINAIRES INSTALLED IN AREAS TO RECEIVE INSULATION SHALL BE

  "IC" LUMINAIRES AND ARE CERTIFIED AND LABELED AS AIRTIGHT TO THE
- STANDARDS PRESCRIBED BY THE RESIDENTIAL ENERGY CODE.

  13. RECESSED LIGHT FIXTURES INSTALLED IN A FIRE RATED ASSEMBLY SHALL BE INSTALLED PER THE APPROVED LISTING OR PROCTECTED BY AN APPROVED METHOD.
- 14. BATHROOM RECEPTACLES MUST BE ON A 20 AMP. CIRCUIT (OR CIRCUITS) WITH NO OTHER OUTLETS.
- 15. CEILING-SUSPENDED (PADDLE) FANS SHALL BE SUPPORTED INDEPENDENTLY OF AN OUTLET BOX OR BY LISTED OUTLET BOX OR OUTLET BOX SYSTEMS IDENTIFIED FOR THE USE AND INSTALLED IN ACCORDANCE WITH CEC 314-27(D). CEC 422-18.
   16. ALL LUMINARIES AND LAMPHOLDERS SHALL BE LISTED CEC 410-6.
- 17. ALL 120-VOLT, SINGLE PHASE 15- AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, LIVING ROOMS, DINING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. CEC 210-12(B).
- 18. ALL NON-LOCKING TYPE 125-VOLT, 15 AND 20 AMPERE RECEPTACLES IN A DWELLING UNIT SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES. EXCEPTIONS: (1) RECEPTACLES MORE THAN 5'6" ABOVE THE FLOOR, (2) RECEPTACLES PART OF A LUMINAIRE OR APPLIANCE, (3) A SINGLE RECEPTACLE OR A DUPLEX RECEPTACLE FOR TWO APPLIANCES THAT ARE NOT EASILY MOVED AND LOCATED WITHIN DEDICATED SPACE AND ARE CHORD-AND-PLUG CONNECTED AS PER CEC 400.7, AND (4) NON-GROUNDING RECEPTACLES USED FOR REPLACEMNETS AS PERMITTED IN CEC 406.4(D)(2)(A).
- 19. HIGH EFFICACY LUMINAIRES OTHER THAN OUTDOOR HID LIGHTING CONTAIN ONLY ONLY HIGH EFFICACY LAMPS AS OUTLINED IN TABLE 150-C OF THE RESIDENTIAL ENERGY CODE AND NOT CONTAIN A MEDIUM SCREW BASE SOCKET.
- BALLAST FOR LAMPS 13 WATTS OR GREATER SHALL BE ELECTRONIC AND HAVE AN OUTPUT FREQUENCY NO LESS THAT 20 kHz.
   SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND PROVIDED WITH A BATTERY BACK-UP. ALL SMOKE DETECTORS SHALL BE INTERCONNECTEED. ALL SMOKE DETECTORS SHALL MAINTAIN A MINIMUM 3
- FOOT CLEARANCE TO HVAC SUPPLY OR RETURN AIR REGISTERS.

  22. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND PROVIDED WITH A BATTERY BACK-UP. ALL CARBON MONOXIDE ALARAMS SHALL BE INTERCONNECTEED.
- 23. OMITTED
  24. LIGHTS IN OTHER THAN KITCHENS, BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS MUST BE CONTROLLED BY A DIMMER OR CONTROLLED BY A MANUAL-ON OCCUPANT SENSOR. SUCH SENSORS SHALL BE CAPABLE OF AUTOMATICALLY TURNING OFF THE LIGHTS NO MORE THAN 30 MINUTES AFTER THE
- AREA HAS BEEN VACATED.

  25. ALL OUTDOOR LIGHTING ATTACHED TO BUILDINGS MUST BE HIGH EFFICACY, CONTROLLED BY A MOTION SENSOR WITH PHOTO-CONTROL. OR PHOTO CONTROL AND AUTOMATIC TIME SWITCH CONTROL. PHOTO-CONTROL IS AN ELECTRIC DEVICE THAT DETECTS CHANGE IN ILLUMINATION AND THEN CONTROLS ITS ELECTRIC LOAD
- AT PREDETERMINED ILLUMINATION LEVELS.

  26. EXHAUST FANS WILL BE CONTROLLED BY A HUMIDISTAT PER THE GREEN BUILDING
  STANDARDS CODE SECTION 4 506
- STANDARDS CODE SECTION 4.506.

  27. BRANCH SUPPLYING GARAGE RECEPTACLE(S) SHALL NOT SUPPLY OUTLETS OUTSIDE OF THE GARAGE.
- 28. FOR EACH DWELLING UNIT, INSTALL A MINIMUM 1" INSIDE DIAMETER LISTED RACEWAY TO ACCOMMODATE A DEDICATED 208/240V BRANCH CIRCUIT. RACEWAY SHALL ORIGINATE AT MAIN OR SUB PANEL AND TERMINATE IN A LISTED BOX IN CLOSE PROXIMITY TO THE PROPOSED EV CHARGER LOCATION. RACEWAYS MUST BE CONTINUOUS AT ENCLOSED, INACCESSIBLE, OR CONCEALED SPACES. SERVICE PANEL SHALL PROVIDE CAPACITY TO INSTALL 40 AMP MINIMUM DEDICATED BRANCH CIRCUIT AND SPACES RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERRENT DEVICE, IDENTIFY THE RESERVED.
- TERMINATION FOR FUTURE EV AS "EV CAPABLE."

  29. OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A SINGLE FAMILY DWELLING OR OTHER BUILDINGS IN THE SAME LOT SHALL BE HIGH EFFICACY AND MUST BE CONTROLLED BY AN ON/OFF SWITCH THAT DOES TO OVERRIDE TO ON THE ITEMS LISTED BELOW. ALSO, THE LIGHING MUST BY ONE OF THE FOLLOWING METHODS:

   i) CONTROLLED BY PHOTOCELL AND MOTION SENSOR, CONTROLS THAT
- i) CONTROLLED BY PHOTOCELL AND MOTION SENSOR. CONTROLS THAT OVERRIDE TO ON SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY REACTIVATES THE MOTION SENSOR WITHIN 6 HOURS, OR
- ii) CONTROLLED BY ANY OF THE FOLLOWING:
   1. PHOTOCELL AND AUTOMATIC TIME SWITCH CONTROL. CONTROLS THAT OVERRIDE TO ON SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY RETURN THE PHOTOCONTROL AND AUTOMATIC TIME SWITCH CONTROL TO ITS NORMAL OPERATION WITHIN 6 HOURS, OR
- 2. ASTRONOMICAL TIME CLOCK. CONTROLS THAT OVERRIDE TO ON SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY RETURN THE ASTRONOMICAL CLOCK TO ITS NORMAL OPERATION WITHIN 6 HOURS AND WHICH IS PROGRAMMED TO AUTOMATICALLY TURN THE OUTDOOR LIGHTING OFF DURING DAYLIGHT HOURS, OR
- 3. ENERGY MANAGEMENT CONTROL SYSTEMS WHICH MEETS ALL OF THE FOLLOWING REQUIREMENTS. AT A MINIMUM PROVIDES THE FUNCTIONALITY OF AN ASTRONOMICAL CLOCK IN ACCORDANCE WITH SECTION 110.9 OF THE STANDARDS; MEETS THE INSTALLATION CERTIFICATION REQUIREMENTS IN SECTION 130.4 OF THE STANDARDS; MEETS THE REQUIREMENTS FOR AN EMCS IN SECTION 130.5 OF THE STANDARDS; DOES NOT HAVE AN OVERRIDE OR BYPASS SWITCH THAT ALLOWS THE LUMINAIRE TO BE ALWAYS ON; AND, IS PROGRAMMED TO AUTOMATICALLY TURN THE OUTDOOR LIGHTING OFF
- DURING THE DAYLIGHT HOURS.

  30. AT LEAST ONE LUMINAIRE EACH BATHROOM, GARAGE, LAUNDRY ROOM, AND UTILITY ROOM SHALL BE CONTROLLED BY A MANUAL ON/AUTOMATIC-OFF VACANCY SENSOR.
- 31. EXCEPT FOR CLOSETS LESS THAN 70 SQUARE FEET AND HALLWAYS, ALL LUMINAIRES THAT ARE INSTALLED WITH JA8-CERTIFIED LIGHT SOURCES ARE REQUIRED TO BE CONTROLLED BY EITHER A DIMMER, VACANCY SENSOR OR FAN SPEED CONTROL.
- 32. THE NUMBER OF ELECTRICAL BOXES LOCATED MORE THAN 5 FEET ABOVE FINISHED FLOOR THAT DOES NOT CONTAIN A LUMINAIRE OR OTHER DEVICE SHALL NOT EXCEED THE NUMBER OF BEDROOMS. THESE BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR, OR FAN SPEED CONTROL.

# MECHANICAL NOTES

- CONFORM WITH CURRENT ADOPTED CRC, CMC, SMACCNA, NFPA AND LOCALREQUIREMENTS.
- 2. DUCTWORK: SMACCNA "LOW VELOCITY DUCT CONSTRUCTION" NFPA STANDARD #90A. ALL TRANSVERSE DUCT PLENUM AND FITTING JOINTS SHALL BE SEALED WITH PRESSURE SENSITIVE NON-CLOTH TAPE MEETING THE REQUIREMENTS OF UL181, 181A, OR 181B, OR MASTIC TO PREVENT AIR LOSS. DUCTS SHALL BE INSULATED AS REQUIRED BY THE UMC. SEE FLOOR PLAN FOR F.A.U. AND FIREPLACES. DUCTS PENETRATING A WALL OR FLOOR-CEILING BETWEEN GARAGE & DWELLING TO BE MINIMUM 26 GAUGE METAL WITHOUT OPENING IN GARAGE. FIRE DAMPER REQUIRED OTHERWISE.
- 3. GRILLES AND REGISTERS, DIFFUSERS, ETC: SUBJECT TO OWNERS APPROVAL. "CARNES" OR EQUAL FANS: DIRECTLY VENTED TO OUTSIDE, BACK DRAFT DAMPERS ARE REQUIRED (PER TABLE 2-53V, TITLE 24 C.A.C.).
- 4. THE RETURN AIR PLENUM SERVING THE MECHANICAL EQUIPMENT MUST BE FULLY DUCTED FROM THE EQUIPMENT TO THE CONDITIONED SPACE. DROP CEILINGS, WALL CAVITIES AND EQUIPMENT PLATFORMS MAY NOT BE USED AS PLENUMS.
- 5. PROVIDE COMBUSTION AIR OPENINGS WITHIN 12" OF THE FLOOR AND CEILING FOR GAS BURNING EQUIPMENT, DIRECT TO OUTSIDE. HEIGHT TO COMBUSTIBLE MATERIAL ABOVE KITCHEN RANGES: 30" UNPROTECTED, 24" PROTECTED.
- LAUNDRY DRYER VENT TO EXTERIOR TO BE 14 FEET MAXIMUM, LESS 2 FEET PER 90 DEGREE TURN PER CMC 504.3.2.2. IF VENT IS OVER 14' AN APPROVED POWER ASSISTED DEVICE.
   BATHS: PROVIDE A MINIMUM OF 5 AIR CHANGES PER HOUR MASTER BATH: 2
- SONES MAXIMUM OTHER BATHS & LAUNDRY: 3 SONES MAXIMUM.

  8. BATHROOM EXHAUST FANS (BATHROOM APPLIES TO ROOMS CONTAINING BATHTUB, SHOWER, SPA OR SIMILAR SOURCE OF MOISTURE) WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE
- FOLLOWING:

  a. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING MIN 3' FROM OPENINGS.
- b. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT. (2016 CBC SEC. 4.506.1)
- 9. EXHAUST FANS SHALL PROVIDE 5 AIR CHANGES PER HOUR (50 CFM MIN.).
  10. PER CGBC 4.506.1- BATHROOM EXHAUST FANS. EACH BATHROOM SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING: 1. FANS SHALL BE ENERY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING. 2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL. A. HUMIDITY CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF </E>

  AMAXIMUM OF 80 PERCENT. A HUMIDITY CONTROL MAY UTILIZE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT. B. A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL(I.E. BUILT IN)
- 11. PER CEnC 150(m) PORTIONS OF SUPPLY-AIR AND RETURN-AIR DUCTS AND PLENUMS SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-4.3 (OR ANY LEVEL HIGHER LEVEL REQUIRED BY CMC SECTION 605) OR BE ENCLOSED ENTIRELY IN CONDITIONED SPACE.

# **PLUMBING NOTES**

- 1. CONFORM WITH CURRENT CPC AND LOCAL REQUIREMENTS.
- PIPING:
   a. DOMESTIC WATER (WITHIN BUILDING): COPPER OR PEX PIPE OR APPROVED
- b. GAS, EXPOSED TO WEATHER: GALVANIZED

  AIR CHAMBERS: 12" LONG CAPPED NIPPLE AT END OF EACH BRANCH TO
- c. AIR CHAMBERS: 12" LONG CAPPED NIPPLE AT END OF EACH BRANCH TO EACH FIXTURE.
- d. DIELECTRIC UNIONS "F.P.C.O." REQUIREMENT AT ALL DISSIMILAR MATERIAL CONNECTIONS.
   e. WHEN "OPTIONAL" SOFT-WATER LOOP INTALLED, PROVIDE WITH 2 GATE
- VALVES.
  3. WATER SERVICE PIPE SHALL BE PER CIVIL PLANS OR AS REQUIRED BY THE
- JURISDICTION
  4. WATER METER: 1" U.O.N. (REFER SIZE W/FIRE SPRINKLER PLANS)
- SHOWER HEADS AND FAUCETS: CEC CERTIFIED.
   PIPE INSULATION: REFER TO TITLE 24- MANDATORY MEASURES "SPACE CONDITIONING, WATER HEATING & PLUMBING SYSTEM MEASURES"
- STRAPS AND HANGERS: PROVIDE AS NECESSARY TO INSURE A STABLE
   INSTALLATION.
   SEE TITLE-24 FOR WATER HEATER REQUIREMENTS.
- ALL HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL HAVE APPROVED BACK FLOW PREVENTION DEVICES.
   PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL MEET THE STANDARDS REFERENCED IN
- CALGREEN TABLE 4.303.3.

  11. WATER HEATER SHALL BE PROVIDED WITH A TEMPERATURE AND PRESSURE RELIEF VALVE. PER [505.4,505.5 CPC] THE RELIEF VALVE SHALL BE PROVIDED WITH A DRAIN LINE WHICH EXTENDS FROM THE VALVES TO THE OUTSIDE OF
- THE BUILDING. PER [608.5 CPC]

  12. PER CPC 603.4.7 OUTLETS WITH HOSE ATTATCHMENTS. POTABLE WATER OUTLETS WITH HOSE ATTACHMENTS, OTHER THAN WATER HEATER DRAINS, BOILER DRAINS, AND CLOTHES WASHER CONNECTIONS, SHALL BE PROTECTED BY A NONREMOVABLE HOSE BIBB TYPE BACKFLOW PREVENTER, A NONREMOVABLE HOSE BIBB TYPE VACUMM BREAKER, OR BY AN ATMOSPHERE VACUUM BREAKER INSTALLED NOT LESS THAN 6 INCHES ABOVE THE HIGHEST POINT OF USAGE LOCATED ON THE DISCHARGE SIDE OF THE LAST VALVE. IN CLIMATES WHERE FREEZING TEMPERATURES OCCUR, A LISTED SELF DRAINING FROST-PROOF HOSE BIBB WITH AN INTEGRAL BACKFLOW PREVENTER OR VACUUM BREAKER SHALL BE USED.

# **SOLAR READY NOTES**

SOLAR READY REQUIREMENTS PER CeNC 110.10(b) THROUGH 110.10(d)

- SOLAR ZONE:

  1. MINIMUM AREA. THE SOLAR ZONE SHALL HAVE A MINIMUM TOTAL AREA AS DESCRIBED BELOW. THE SOLAR ZONE SHALL 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 HURSDICTION.
- ADOPTED BY A LOCAL JURISDICTION.

  2. THE SOLAR ZONE TOTAL AREA SHALL BE COMPRISED OF AREAS THAT HAVE NO DIMENSION LESS THAN FIVE 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.

  A. SINGLE FAMILY RESIDENCES. THE SOLAR ZONE SHALL BE LOCATED ON THE

250 SQUARE FEET.

EXCEPTION 1 TO SECTION 110.10(B)1A: SINGLE FAMILY RESIDENCES WITH A PERMANENTLY INSTALLED DOMESTIC SOLAR WATER-HEATING SYSTEM MEETING THE INSTALLATION CRITERIA SPECIFIED IN THE REFERENCE RESIDENTIAL

ROOF OR OVERHANG OF THE BUILDING AND HAVE A TOTAL AREA NO LESS THAN

EXCEPTION 3 TO SECTION 110.10(B)1A: SINGLE FAMILY RESIDENCES LOCATED IN THE WILDLAND-URBAN INTERFACE FIRE AREA AS DEFINED IN TITLE 24, PART 2 AND HAVING A WHOLE HOUSE FAN AND HAVING A SOLAR ZONE TOTAL AREA NO LESS THAN 150 SQUARE FEET.

APPENDIX RA4 AND WITH A MINIMUM SOLAR SAVINGS FRACTION OF 0.50.

EXCEPTION 5 TO SECTION 110.10(B)1A: SINGLE FAMILY RESIDENCES HAVING A SOLAR ZONE TOTAL AREA NO LESS THAN 150 SQUARE FEET AND WHERE ALL THERMOSTATS ARE DEMAND RESPONSIVE CONTROLS AND COMPLY WITH SECTION 110.12(A), AND ARE CAPABLE OF RECEIVING AND RESPONDING TO DEMAND RESPONSE SIGNALS PRIOR TO GRANTING OF AN OCCUPANCY PERMIT BY THE ENFORCING AGENCY.

# **TITLE 24 COMPLIANCE**

- ALL INTERIOR RESIDENTIAL LIGHTING IS TO BE HIGH EFFICACY.
   THE FOLLOWING LIGHTING IS HIGH EFFICACY: PIN BASED LINEAR
  FLUORESCENT, PIN BASED COMPACT FLUORESCENT, PULSE-START METAL
  HALIDE, HIGH PRESSURE SODIUM, GU-24 (OTHER THAN LED'S),
  INSEPARABLE SOLID STATE LUMINAIRES (SSL'S) INSTALLED OUTDOORS OR
  INSEPARABLE SSL LUMINAIRES WITH COLORED LIGHT SOURCES FOR
- DECORATIVE LIGHTING PURPOSES.

  3. THE FOLLOWING LAMPS AND LIGHT SOURCES ARE HIGH EFFICACY IF THEY ARE JOINT APPENDIX JA8-CERTIFIED. JA-8 CERTIFIED LAMPS AND LIGHT SOURCES ARE MARKED AS "JA8-2016" OR "JA8-2016-E". THESE FIXTURES INCLUDE: LED LUMINAIRES WITH INTEGRAL SOURCES THAT ARE CERRTIFIED TO THE ENERGY COMMISION, SCREW-BASED LED LAMPS (A-LAMPS, PAR LAMPS, ETC.), PIN BASED LED LAMPS (MR-16,AR-111, ETC.), GU-24 BASED LED LIGHT SOURCES AND OTHER LUMINAIRES.

  LISTING OF CA CERTIFIED FIXTURES IS LOCATED ON THE CALIFORNIA
- ENERGY COMMISSION WEBSITE AT:
  HTTP://APPLIANCES.ENERGY.CA.GOV/ADVANCEDSEARCH/ASPX
  RECESSED LUMINAIRES INSTALLED IN AREAS TO RECEIVE INSULATION
- SHALL BE "IC" LUMINAIRES AND ARE CERTIFIED AND LABELED AS AIRTIGHT TO THE STANDARDS PRESCRIBED BY THE RESIDENTIAL ENERGY CODE.

  5. ADDITIONAL REQUIREMENTS FOR ANY RECESSED DOWNLIGHTS IN CEILINGS
- ADDITIONAL REQUIREMENTS FOR ANY RECESSED DOWNLIGHTS IN CEIL
  ARE AS FOLLOWS. THEY
- a. SHALL NOT HAVE SCREW BASED SOCKETS,
  b. SHALL CONTAIN JA8-CERTIFIED LIGHT SOURCES AND
  c. SHALL MEET PERFORMANCE REQUIREMENTS OF CEC SECTION
- 150.0(K)1C.

  6. THE NUMBER OF ELECTRICAL BOXES LOCATED MORE THAN 5 FEET ABOVE FINISHED FLOOR THAT DO NOT CONTAIN ALUMINAIRE OR OTHER DEVICE SHALL NOT EXCEED THE NUMBER OF BEDROOMS. THESE BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR OR FAN SPEED CONTROL. CECS
- 150(K)1(B)

  7. UNDERCABINET LIGHTING MUST BE SWITCHED SEPARATE FROM ALL OTHER
- LIGHTING.

  8. ALL LIGHTING MUST HAVE READILY ACCESSIBLE MANUAL CONTROLS

  9. EXHAUST FANS MUST BE SWITCHED SEPARATE FROM LIGHTING OR UTILIZE
- A DEVICE WHERE LIGTING CAN BE TURNED OFF WHILE THE FAN IS RUNNING.

  10. FOR ALL SPACE TYPES EXCEPT HALLWAYS AND CLOSETS THAT ARE 70 SF
  OR SMALLER, VANCANY SENSORS OR DIMMERS ARE REQUIRED WHEN
  USING A SOURCE REGULATED BY JA8.
- 11. IN KITCHENS, IF THE LUMINAIRE IS AN ENCLOSED OR RECESSED LUMINAIRE, YOU MUST USE A DIMMER OR VACANY SENSOR.
- 12. AT LEAST ONE LUMINAIRE IN THE BATHROOM, GARAGE, LAUNDRY ROOM AND UTILITY ROOM MUST BE CONTROLLED BY A VACANY SENSOR.
- 13. OMITTED14. THE BUILDER MUST PROVIDE NEW HOMEWONERS WITH A LUMINAIRE SCHEDULE THAT INCLUDES A LIST OF INSTALLED LAMPS AND LUMINARIES.

# **ENERGY CODE - UPDATE**

- 1. ALL JOINTS, PENETRATIONS AND OTHER OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WETHER-STRIPPED OR OTHERWISE SEALED TO
- LIMIT INFILTRATION AND EXFILTRATION CEnC 110.7

  2. ATTTIC ACCESS DOORS SHALL HAVE PERMENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS. THE ATTIC ACCESS SHALL
- BE GASKETED TO PREVENT AIR LEAKAGE CEnC 150.0(a)2

  3. PERMENTLY INSTALLED NIGHT LIGHTS AND NIGHT LIGHTS INTEGRAL TO INSTALLED LUMINAIRES OR EXHAUST FANS SHALL BE RATED TO CONSUME NO MORE THAN FIVE WATTS OF POWER PER LUMINAIRE OR EXHUAST FAN AS DETERMINED IN ACCORDANCE WITH SECTION 130.0(c). NIGHT LIGHTS SHALL NOT BE REQUIRED TO BE CONTROLLED BY
- VACANCY SENSORS CEnC 150(k)1E.

  4. ALL INSTALLED LUMINAIRES SHALL BE HIGH EFFICACY IN ACCORDANCE WITH CEnC TABLE 150.0-A. CEnC 150(k)1A.
- WITH CEnC TABLE 150.0-A. CEnC 150(k)1A.

  5. THE NUMBER OF ELECTRICAL BOXES THAT ARE MORE THAN 5 FEET ABOVE THE FINISHED FLOOR AND DO NOT CONTAIN A LUMINAIRE OR OTHER DEVICE SHALL BE NO GREATER THAN THE NUMBER OF BEDROOMS. THESE ELECTRICAL BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR CONTROL, OR FAN SPEED CONTROL. CEnC 150(k)1B

# W.U.I. REQUIREMENT NOTES

- ROOF COVERING SHALL COMPLY WITH 2019 CRC R337.5.2.UNDERLAYMENT SHALL BE ONE LAYER OF OF MINUMIM 72 POUND MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909 INSTALLED
- OVER THE COMBUSTIBLE DECKING.

  2. ROOF VALLEYS SHALL COMPLY WITH 2019 CRC R337.5.3. VALLEY FLASHING SHALL BE NOT LESS THAN 26 GAGE GALVANIZED SHEET CORROSIVE RESISTANT METAL INSTALLED OVER NOT LESS THAN ONE LAYER OF MINUMIM 72 POUND MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909, AT LEAST 36 INCHES WIDE RUNNING THE
- FULL LENGTH OF THE VALLEY.

  ROOF GUTTERS SHALL COMPLY WITH 2019 CRC R337.5.4. ROOF GUTTERS SHALL BE PROVIDE WITH THE MEANS TO PREVENT THE ACCUMULATION OF
- 4. VENTILATION OPENINGS SHALL COMPLY WITH 2019 CRC R337.6 VENTILATION OPENINGS FOR ENCLOSED ATTICS, ENCLOSED EAVE SOFFIT
  SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE
  APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND
  UNDERFLOOR VENTILATION OPENINGS SHALL BE FULLY COVERED WITH
  METAL WIRE MESH, VENTS, OTHER MATEIALS, OR OTHER DEVICES. REFER
- TO **SECTIONS R337.6.1** THROUGH **R337.6.3** FOR ADDITIONAL INFORMATION. EXTERIOR COVERINGS SHALL COMPLY WITH **2019 CRC R337.7** EXTERIOR WALL COVERINGS OR WALL ASSEMBLIES SHALL COMPLY WITH ONE OF THE FOLLOWING REQUIREMENTS: BE OF NONCOMBUSTIBLE MATERIAL, IGNITION-RESISTANT MATERIAL, HEAVY TIMBER EXTERIOR WALL ASSEMBLY, LOG WALL CONSTRUCTION ASSEMBLY, OR WALL ASSEMBLIES THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE TEST SET FORTH IN SFM STANDARD 12-7A-1. REFER TO **SECTIONS R337.7.1** THROUGH **R337.7.9** FOR ADDITIONAL INFORMATION.

# **UNDER-FLOOR VENTING NOTES**

- THE SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING EXCEPT SPACES OCCUPIED BY BASEMENTS OR
- CELLARS SHALL BE PROVIDED WITH VENTILATION (CBC 2019 1202.4)

  2. VENTILATION OPENINGS THROUGH FOUNDATION WALLS SHALL BE PROVIDED. THE OPENINGS SHALL BE PLACED SO AS TO PROVIDE CROSS VENTILATION OF THE UNDER-FLOOR SPACE. THE NET AREA OF VENTILATION OPENINGS SHALL BE IN ACCORDANCE WITH SECTION 1202.4.1.1 OR 1202.4.1.2. VENTILATION OPENINGS SHALL BE COVERED FOR THEIR HEIGHT AND WIDTH WITH ANY OF THE FOLLOWING MATERIALS, PROVIDED THAT THE LEAST DIMENSION OF THE COVERING SHALL BE NOT GREATER THAN 1/4
- PERFORATED SHEET METAL PLATES NOT LESS THAN 0.070 INCH THICK.
   EXPANDED SHEET METAL PLATES NOT LESS THAN 0.047 INCH THICK.
   CAST-IRON GRILL OR GRATING.
- EXTRUDED LOAD-BEARING VENTS.
   HARDWARE CLOTH OF 0.035 INCH WIRE OR HEAVIER.
   CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION NOT
- GREATER THAN 1/8 INCH.

  7. OPERABLE LOUVERS, WHERE VENTILATION IS PROVIDED IN ACCORDANCE WITH SECTION 1202.4.1.2.

  3. THE NET AREA OF VENTILATION OPENINGS FOR CRAWL SPACES WITH
- UNCOVERED EARTH FLOORS SHALL BE NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF CRAWL SPACE AREA. (CBC 2019 1202.4.1.1)

  4. THE NET AREA OF VENTILATION OPENINGS FOR CRAWL SPACES WITH THE GROUND SURFACE COVERED WITH A CLASS I VAPOR RETARDER SHALL BE NOT LESS THAN 1 SQUARE FOOT FOR EACH 1,500 SQUARE FEET OF CRAWL SPACE AREA. (CBC 2019 1202.4.1.2)
- CRAWL SPACÈS SHALL BE PROVIDED WITH NOT LESS THAN ONE ACCESS OPENING THAT SHALL BE NOT LESS THAN 18 INCHES BY 24 INCHES. (CBC 2019 1208.1)

# PROJECT GENERAL NOTES

**USE OF PLANS:** THESE PLANS ARE THE PROPERTY OF RRM AND MAY NOT BE USED WITHOUT THE EXPRESS, WRITTEN CONSENT.

# THESE NOTES APPLY TO ALL PORTIONS, PHASES AND SUBCONTRACTORS OF THIS PROJECT.

 2019 CALIFORNIA RESIDENTIAL CODE AND ITS APPENDICES AND STANDARDS.

APPLICABLE CODES AND STANDARDS:

- 2019 CALIFORNIA BUILDING CODE AND ITS APPENDICES AND STANDARDS.
- 2019 CALIFORNIA PLUMBING CODE AND ITS APPENDICES AND STANDARDS.
- 2019 CALIFORNIA MECHANICAL CODE AND ITS APPENDICES AND STANDARDS.
   2019 CALIFORNIA FIRE CODE AND ITS APPENDICES AND STANDARDS.
- 2019 CALIFORNIA ELECTRICAL CODE AND ITS APPENDICES AND STANDARDS.
- 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
  2019 CALIFORNIA GREEN BUILDING STANDARDS CODE AND ITS
- APPENDICIES AND STANDARDS.
  CURRENT MONO COUNTY MUNICIPAL CODE.
  CALIFORNIA ASSEMBLY BILL NO. 86 (ACCESSORY DWELLING UNITS).
- 1. ALL WORK DESCRIBED IN THE DRAWINGS SHALL BE VERIFIED FOR DIMENSION, GRADE, EXTENT AND COMPATIBILITY WITH EXISTING SITE CONDITIONS. ANY DISCREPANCIES AND UNEXPECTED CONDITIONS THAT AFFECT OR CHANGE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY. DO NOT PROCEED WITH THE WORK IN THE AREA OF DISCREPANCIES UNTIL ALL

SUCH DISCREPANCIES ARE RESOLVED. IF THE CONTRACTOR CHOOSES TO

- DO SO, HE/SHE SHALL BE PRECEDING AT HIS/HER OWN RISK.

  2. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER DRAWING SCALE OR PROPORTION. LARGER SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS. ALL DIMENSIONS ARE ROUGH AND TO FACE OF
- SMALLER SCALE DRAWINGS. ALL DIMENSIONS ARE ROUGH AND TO FACI FRAMING.

  3. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS
- REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

  4. IN THE EVENT OF THE UNFORESEEN ENCOUNTER OF MATERIALS SUSPECTED TO BE OF AN ARCHAEOLOGICAL OR PALEONTOLOGICAL NATURE, ALL GRADING AND EXCAVATION SHALL CEASE IN THE IMMEDIATE AREA AND THE CONTRACTOR SHALL NOTIFY THE OWNER. THE FIND SHALL BE LEFT UNTOUCHED UNTIL AN EVALUATION BY A QUALIFIED
- ARCHAEOLOGIST OR PALEONTOLOGIST IS MADE.

  5. CONTRACTOR IS TO BE RESPONSIBLE FOR BEING FAMILIAR WITH THESE
- DOCUMENTS INCLUDING ALL CONTRACT REQUIREMENTS.

  6. CONTRACTOR TO REVIEW CALIFORNIA GREEN CODE REQUIREMENTS FOR CONTRACTOR REQUIREMENTS.
- 7. TEMPORARY FACILITIES: CONTRACTOR SHALL PAY FOR, PROVIDE AND MAINTAIN TEMPORARY FACILITIES FOR PROJECT PROTECTION AND CONSTRUCTION, AND AS REQUIRED BY LOCAL REGULATION AND THESE DOCUMENTS. SUCH FACILITIES INCLUDE, BUT ARE NOT LIMITED TO: TOILETS, LIGHTS, HEATERS, POWER, GAS, FANS, WATER, PHONES, FENCES, SIGNS, SHEDS, ETC. REMOVE FROM SITE UPON COMPLETION OF WORK. OBTAIN BUILDING OFFICIAL OR FIRE MARTIAL APPROVAL PRIOR TO USE OF ANY
- TEMPORARY HEATING DEVICE.

  8. CONTRACTOR SHALL PROVIDE FOR PROTECTION AND SAFETY:
  RESPONSIBLE FOR ALL ITEMS (SIGNS, LIGHTS, FENCES, BRACING, ANCHORAGE, FIRE-EXTINGUISHERS, ETC.) NECESSARY FOR THE PROTECTION OF THE PUBLIC, WORKERS, MATERIALS, CONSTRUCTION AND PROPERTY PER LOCAL, STATE AND FEDERAL REQUIREMENTS (INCLUDING EARTHQUAKES, FIRES, SPILLS, ACCIDENTS, EROSION, MUD, DUST, ETC.).
- CONTRACTOR TO PROVIDE COMPLETE DETAILS OF ENGINEERED TEMPORARY SHORING OR SLOT CUTTING PROCEDURES ON PLANS. CALL FOR INSPECTION BEFORE EXCAVATION BEGINS.
   THE SOILS ENGINEER IS TO APPROVE THE KEY OR BOTTOM AND LEAVE A CERTIFICATE ON THE SITE FOR THE GRADING INSPECTOR. THE GRADING
- BOTTOM INSPECTION, BEFORE FILL IS PLACED. FILL MAY NOT BE PLACED WITHOUT APPROVAL OF THE GRADING INSPECTOR.

  11. A SEPERATE OFFICER, ACCESS EASEMENT/AGREEMENT, AND/OR RECIPRICAL ACCESS EASEMENT/AGREEMENT MAY BE REQUIRED TO FNSURE THAT THE PROPOSED PRIVATE ACCESS ROADWAY WILL REMAIN

OF BUILDING PERMIT.

INSPECTOR IS TO BE NOTIFIED BEFORE ANY GRADING BEGINS, AND FOR

OPEN TO THROUGH TRAFFIC AND EMERGENCY VEHICLES PRIOR TO FINAL

12. SHOP WELDS MUST BE PERFORMED BY A LICENSED FABRICATOR'S SHOP.

14. FIRE SPRINKLER SHOP DRAWINGS & CALCULATIONS SHALL BE SUBMITTED

TO BUILDING DEPT. & APPROVED BY FIRE DEPT. PRIOR TO INSTALLATION.

13. OSHA PERMITS REQUIRED FOR VERTICAL CUTS 5' OR OVER.

rrmdesign.com | (805) 543-1794
3765 SOUTH HIGUERA STREET, SUITE 102
SAN LUIS OBISPO, CA 93401

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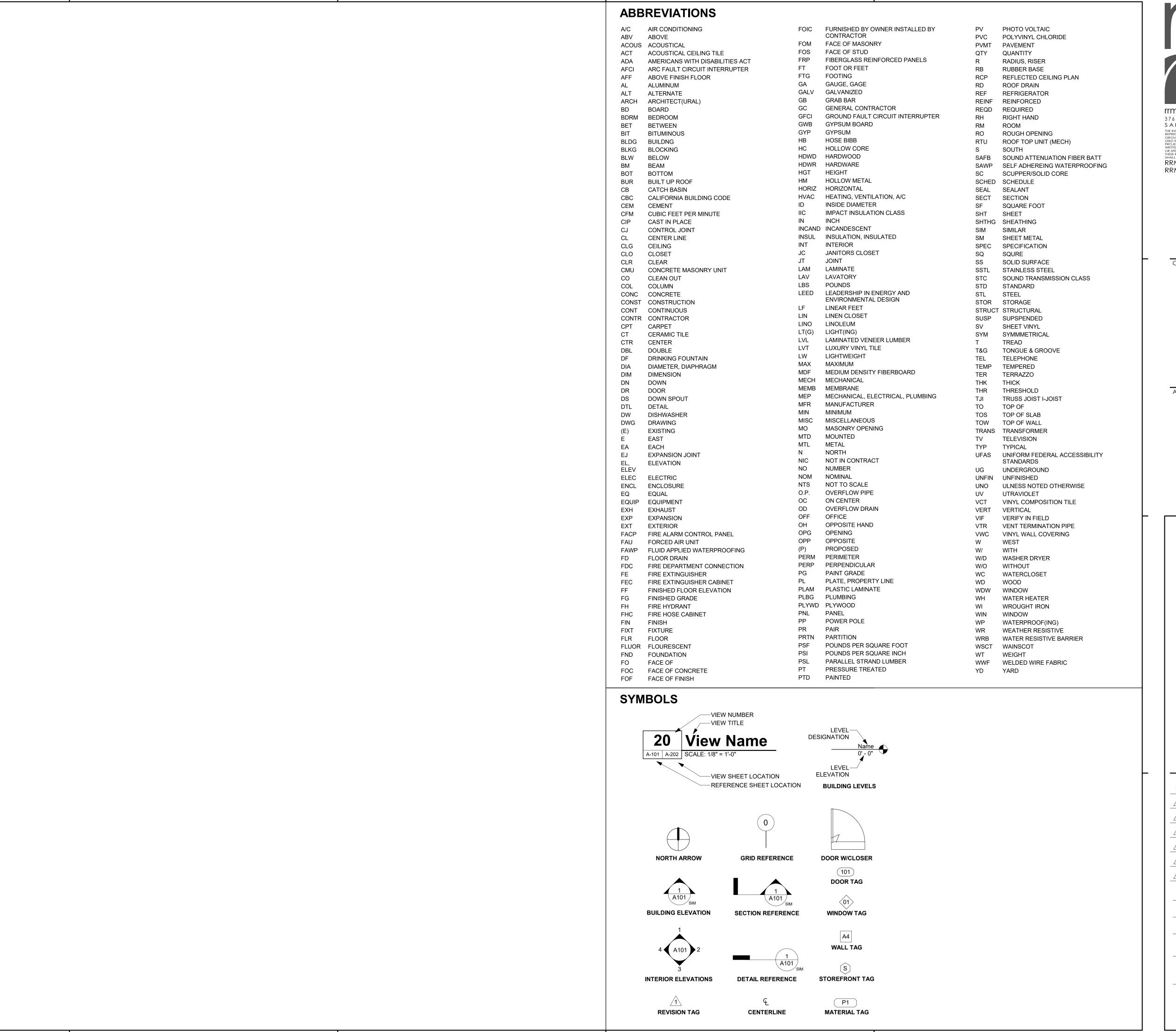
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# **CHAPTER 1 - ADMINISTRATION**

#### **SECTION 101 GENERAL**

101.1 TITLE.

THESE REGULATIONS SHALL BE KNOWN AS THE CALIFORNIA GREEN BUILDING STANDARDS CODE AND MAY BE CITED AS SUCH AND WILL BE REFERRED TO HEREIN AS "THIS CODE." IT IS INTENDED THAT IT SHALL ALSO BE KNOWN AS THE CALGREEN CODE. THE CALIFORNIA GREEN BUILDING STANDARDS CODE IS PART 11 OF THIRTEEN PARTS OF THE OFFICIAL COMPILATION AND PUBLICATION OF THE ADOPTION, AMENDMENT AND REPEAL OF BUILDING REGULATIONS TO THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, ALSO REFERRED TO AS THE CALIFORNIA BUILDING STANDARDS CODE.

THE PURPOSE OF THIS CODE IS TO IMPROVE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE BY ENHANCING THE DESIGN AND CONSTRUCTION OF BUILDINGS THROUGH THE USE OF BUILDING CONCEPTS HAVING A REDUCED NEGATIVE IMPACT OR POSITIVE ENVIRONMENTAL IMPACT AND ENCOURAGING SUSTAINABLE CONSTRUCTION PRACTICES IN THE FOLLOWING CATEGORIES:

 PLANNING AND DESIGN. 2. ENERGY EFFICIENCY.

3. WATER EFFICIENCY AND CONSERVATION.

4. MATERIAL CONSERVATION AND RESOURCE EFFICIENCY.

ENVIRONMENTAL QUALITY.

101.3 SCOPE.

THE PROVISIONS OF THIS CODE SHALL APPLY TO THE PLANNING, DESIGN, OPERATION, CONSTRUCTION, USE AND OCCUPANCY OF EVERY NEWLY CONSTRUCTED BUILDING OR STRUCTURE, UNLESS OTHERWISE INDICATED IN THIS CODE, THROUGHOUT THE STATE OF CALIFORNIA.

IT IS NOT THE INTENT THAT THIS CODE SUBSTITUTE OR BE IDENTIFIED AS MEETING THE CERTIFICATION REQUIREMENTS OF ANY GREEN BUILDING

## **SECTION 102 CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION**

CONSTRUCTION DOCUMENTS AND OTHER DATA SHALL BE SUBMITTED IN ONE OR MORE SETS WITH EACH APPLICATION FOR A PERMIT. WHERE SPECIAL CONDITIONS EXIST. THE ENFORCING AGENCY IS AUTHORIZED TO REQUIRE ADDITIONAL CONSTRUCTION DOCUMENTS TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL AND MAY BE SUBMITTED SEPARATELY.

**EXCEPTION:** THE ENFORCING AGENCY IS AUTHORIZED TO WAIVE THE SUBMISSION OF CONSTRUCTION DOCUMENTS AND OTHER DATA NOT REQUIRED TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL.

102.2 INFORMATION ON CONSTRUCTION DOCUMENTS.

CONSTRUCTION DOCUMENTS SHALL BE OF SUFFICIENT CLARITY TO INDICATE THE LOCATION, NATURE AND SCOPE OF THE PROPOSED GREEN BUILDING FEATURE AND SHOW THAT IT WILL CONFORM TO THE PROVISIONS OF THIS CODE, THE CALIFORNIA BUILDING STANDARDS CODE AND OTHER RELEVANT LAWS, ORDINANCES, RULES AND REGULATIONS AS DETERMINED. BY THE ENFORCING AGENCY.

102.3 VERIFICATION.

DOCUMENTATION OF CONFORMANCE FOR APPLICABLE GREEN BUILDING MEASURES SHALL BE PROVIDED TO THE ENFORCING AGENCY. ALTERNATE METHODS OF DOCUMENTATION SHALL BE ACCEPTABLE WHEN THE ENFORCING AGENCY FINDS THAT THE PROPOSED ALTERNATE DOCUMENTATION IS SATISFACTORY TO DEMONSTRATE SUBSTANTIAL CONFORMANCE WITH THE INTENT OF THE PROPOSED GREEN BUILDING

# **CHAPTER 3 - GREEN BUILDING**

#### **SECTION 301 GENERAL**

BUILDINGS SHALL BE DESIGNED TO INCLUDE THE GREEN BUILDING MEASURES SPECIFIED AS MANDATORY IN THE APPLICATION CHECKLISTS CONTAINED IN THIS CODE. VOLUNTARY GREEN BUILDING MEASURES ARE ALSO INCLUDED IN THE APPLICATION CHECKLISTS AND MAY BE INCLUDED IN THE DESIGN AND CONSTRUCTION OF STRUCTURES COVERED BY THIS CODE, BUT ARE NOT REQUIRED UNLESS ADOPTED BY A CITY, COUNTY, OR CITY AND COUNTY AS SPECIFIED IN SECTION 101.7.

301.1.1 ADDITIONS AND ALTERATIONS. [HCD] THE MANDATORY PROVISIONS OF CHAPTER 4 SHALL BE APPLIED TO ADDITIONS OR ALTERATIONS OF EXISTING RESIDENTIAL BUILDINGS WHERE THE ADDITION OR ALTERATION INCREASES THE BUILDING'S CONDITIONED AREA, VOLUME, OR SIZE. THE REQUIREMENTS SHALL APPLY ONLY TO AND/OR WITHIN THE SPECIFIC AREA OF THE ADDITION OR ALTERATION.

**NOTE:**ON AND AFTER JANUARY 1, 2014, RESIDENTIAL BUILDINGS UNDERGOING PERMITTED ALTERATIONS, ADDITIONS OR IMPROVEMENTS SHALL REPLACE NONCOMPLIANT PLUMBING FIXTURES WITH WATER-CONSERVING PLUMBING FIXTURES. PLUMBING FIXTURE REPLACEMENT IS REQUIRED PRIOR TO ISSUANCE OF A CERTIFICATE OF FINAL COMPLETION, CERTIFICATE OF OCCUPANCY OR FINAL PERMIT APPROVAL BY THE LOCAL BUILDING DEPARTMENT. SEE CIVIL CODE SECTION 1101.1, ET SEQ., FOR THE DEFINITION OF A NONCOMPLIANT PLUMBING FIXTURE, TYPES OF RESIDENTIAL BUILDINGS AFFECTED AND OTHER IMPORTANT ENACTMENT DATES.

301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS [HCD].

THE PROVISIONS OF INDIVIDUAL SECTIONS OF CALGREEN MAY APPLY TO EITHER LOW-RISE RESIDENTIAL BUILDINGS, HIGH-RISE RESIDENTIAL BUILDINGS, OR BOTH. INDIVIDUAL SECTIONS WILL BE DESIGNATED BY BANNERS TO INDICATE WHERE THE SECTION APPLIES SPECIFICALLY TO LOW-RISE ONLY (LR) OR HIGH-RISE ONLY (HR). WHEN THE SECTION APPLIES TO BOTH LOW-RISE AND HIGH-RISE BUILDINGS, NO BANNER WILL BE USED.

### **SECTION 302 MIXED OCCUPANCY BUILDINGS**

IN MIXED OCCUPANCY BUILDINGS, EACH PORTION OF A BUILDING SHALL COMPLY WITH THE SPECIFIC GREEN BUILDING MEASURES APPLICABLE TO EACH SPECIFIC OCCUPANCY.

# **CHAPTER 4 - RESIDENTIAL** MANDATORY MEASURES

#### **DIVISION 4.1 PLANNING AND DESIGN** 4.106 SITE DEVELOPMENT

4.106.1 GENERAL.

PRESERVATION AND USE OF AVAILABLE NATURAL RESOURCES SHALL BE ACCOMPLISHED THROUGH EVALUATION AND CAREFUL PLANNING TO MINIMIZE NEGATIVE EFFECTS ON THE SITE AND ADJACENT AREAS. PRESERVATION OF SLOPES, MANAGEMENT OF STORM WATER DRAINAGE AND EROSION CONTROLS SHALL COMPLY WITH THIS SECTION.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL AND ARE NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT WHICH IN TOTAL DISTURBS ONE ACRE OR MORE, SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION. IN ORDER TO MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION, ONE OR MORE OF THE FOLLOWING MEASURES SHALL BE IMPLEMENTED TO PREVENT FLOODING OF ADJACENT PROPERTY PREVENT EROSION AND RETAIN SOIL RUNOFF ON THE SITE.

 RETENTION BASINS OF SUFFICIENT SIZE SHALL BE UTILIZED TO RETAIN STORM WATER ON THE SITE.

2. WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, COLLECTION POINT, GUTTER OR SIMILAR DISPOSAL METHOD, WATER SHALL BE FILTERED BY USE OF A BARRIER SYSTEM. WATTLE OR OTHER METHOD APPROVED BY THE ENFORCING AGENCY.

3. COMPLIANCE WITH A LAWFULLY ENACTED STORM WATER MANAGEMENT ORDINANCE.

4.106.3 GRADING AND PAVING

CONSTRUCTION PLANS SHALL INDICATE HOW THE SITE GRADING OR DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS. EXAMPLES OF METHODS TO MANAGE SURFACE WATER INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

SWALES WATER COLLECTION AND DISPOSAL SYSTEMS

FRENCH DRAINS

4. WATER RETENTION GARDENS

5. OTHER WATER MEASURES WHICH KEEP SURFACE WATER AWAY FROM BUILDINGS AND AID IN GROUNDWATER RECHARGE.

**EXCEPTIONS:** ADDITIONS AND ALTERATIONS NOT ALTERING THE

4.106.4 ELECTRIC VEHICLE (EV) CHARGING FOR NEW CONSTRUCTION NEW CONSTRUCTION SHALL COMPLY WITH SECTION 4.106.4.1, 4.106.4.2, OR 4.106.4.3. TO FACILITATE FUTURE INSTALLATION AND USE OF EV CHARGERS. ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) SHALL BE INSTALLED IN

ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, ARTICLE 625.

**EXCEPTIONS:** ON A CASE-BY-CASE BASIS, WHERE THE LOCAL ENFORCING AGENCY HAS DETERMINED EV CHARGING AND INFRASTRUCTURE ARE NOT FEASIBLE BASED UPON ONE OR MORE OF

THE FOLLOWING CONDITIONS:

1. WHERE THERE IS NO COMMERCIAL POWER SUPPLY. 2. WHERE THERE IS EVIDENCE SUBSTANTIATING THAT MEETING THE REQUIREMENTS WILL ALTER THE LOCAL UTILITY INFRANSTRUCTURE DESIGN REQUIREMENTS ON THE UTILITY SIDE OF THE METER SO AS TO INCREASE THE UTILITY SIDE COST TO THE HOMEOWNER OR THE DEVELOPER BY MORE THAN \$400.00 PER DWELLING UNIT.

4.106.4.1 NEW ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES WITH ATTACHED PRIVATE GARAGES

FOR EACH DWELLING UNIT, INSTALL A LISTED RACEWAY TO ACCOMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1 (NOMINAL 1-INCH INSIDE DIAMTER). THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL AND SHALL TERMINATE INTO A LISTED CABINET, BOX OR OTHER ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF AN EV CHARGER. RACEWAYS ARE REQUIRED TO BE CONTINUOUS AT ENCLOSED, INACCESSIBLE OR CONCEALED AREAS AND SPACES. THE SERVICE PANEL AND/OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTION DEVICE.

4.106.4.1.1 IDENTIFICATION

THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING AS "EV CAPABLE". THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE".

4.106.4.2 NEW MULTIFAMILY DWELLINGS.

WHERE 17 OR MORE MULTIFAMILY DWELLING UNITS ARE CONSTRUCTED ON A BUILDING SITE, 3 PERCENT OF THE TOTAL NUMBER OF PARKING SPACES PROVIDED FOR ALL TYPES OF PARKING FACILITIES, BUT IN NO CASE LESS THAN ONE, SHALL BE ELECTRIC VEHICLE CHARGING STATIONS (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

4.106.4.2.1 ELECTRIC VEHICLE CHARGING SPACE (EV SPACE) **LOCATIONS.** CONSTRUCTION DOCUMENTS SHALL INDICATE THE LOCATION OF PROPOSED EV SPACES. AT LEAST ONE EV SPACE SHALL BE LOCATED IN COMMON USE AREAS AND AVAILABLE FOR USE BY ALL

WHEN EV CHARGERS ARE INSTALLED, EV SPACES REQUIRED BY SECTION 4.106.2.2, ITEM 3, SHALL COMPLY WITH AT LEAST ONE OF THE **FOLLOWING OPTIONS:** 

1. THE EV SPACE SHALL BE LOCATED ADJACENT TO AN ACCESSIBLE PARKING SPACE MEETING THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE, CHAPTER 11A, TO ALLOW USE OF THE EV CHARGER FROM THE ACCESSIBLE PARKING SPACE.

2. THE EV SPACE SHALL BE LOCATED ON AN ACCESSIBLE ROUTE, AS DEFINED IN THE CALIFORNIA BUILDING CODE, CHAPTER 2, TO THE

4.106.4.2.2 ELECTRIC VEHICLE CHARGING SPACE (EV SPACE) **DIMENSIONS.** THE EV SPACES SHALL BE DESIGNED TO COMPLY WITH

1. THE MINIMUM LENGTH OF EACH EV SPACE SHALL BE 18 FEET. 2. THE MINIMUM WIDTH OF EACH EV SPACE SHALL BE 9 FEET. 3. ONE IN EVERY 25 EV SPACES, BUT NOT LESS THAN ONE, 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

A. SURFACE SLOPE FOR THIS EV SPACE AND THE AISLE SHALL NOT EXCEED 1 UNIT VERTICAL IN 48 UNITS HORIZONTAL (2.083 PERCENT SLOPE) IN ANY DIRECTION.

4.106.4.2.3 SINGLE EV SPACE REQUIRED.

INSTALL A LISTED RACEWAY CAPABLE OF ACCOMMODATING A 208/240-VOLT DEDICATED BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1 (NOMINAL 1-INCH INSIDE DIAMETER). THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL AND SHALL TERMINATE INTO A LISTED CABINET, BOX OR ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE EV SPACES. CONSTRUCTION DOCUMENTS SHALL IDENTIFY THE RACEWAY TERMINATION POINT. THE SERVICE PANEL AND/OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE.

4.106.4.2.4 MULTIPLE EV SPACES REQUIRED. CONSTRUCTION DOCUMENTS SHALL INDICATE THE RACEWAY TERMINATION POINT AND PROPOSED LOCATION OF FUTURE EV SPACES AND EV CHARGERS. CONSTRUCTION DOCUMENTS SHALL ALSO PROVIDE INFORMATION ON AMPERAGE OF FUTURE EVSE, RACEWAY METHOD(S), WIRING SCHEMATICS AND ELECTRICAL LOAD CALCULATIONS TO VERIFY THAT THE ELECTRICAL PANEL SERVICE CAPACITY AND ELECTRICAL SYSTEM, INCLUDING ANY ON-SITE DISTRIBUTION TRANSFORMER(S). HAVE SUFFICIENT CAPACITY TO SIMULTANEOUSLY CHARGE ALL EVS AT ALL REQUIRED EV SPACES AT THE FULL RATED AMPERAGE OF THE EVSE. PLAN DESIGN SHALL BE BASED UPON A 40-AMPERE MINIMUM BRANCH CIRCUIT. RACEWAYS AND RELATED COMPONENTS THAT ARE PLANNED TO BE INSTALLED UNDERGROUND, ENCLOSED, INACCESSIBLE

4.106.4.2.5 IDENTIFICATION. THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING PURPOSES AS "EV CAPABLE" IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE.

OR IN CONCEALED AREAS AND SPACES SHALL BE INSTALLED AT THE

TIME OF ORIGINAL CONSTRUCTION.

1. THE CALIFORNIA DEPARTMENT OF TRANSPORTATION ADOPTS AND PUBLISHES THE "CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD)" TO PROVIDE UNIFORM STANDARDS AND SPECIFICATIONS FOR ALL OFFICIAL TRAFFIC CONTROL DEVICES IN CALIFORNIA. ZERO EMISSION VEHICLE SIGNS AND PAVEMENT MARKINGS CAN BE FOUND IN THE NEW POLICIES & DIRECTIVES NUMBER 13-01. WEBSITE:

HTTP://WWW.DOT.CA.GOV/TRAFFICOPS/POLICY/13-01.PDF 2. SEE VEHICLE CODE SECTION 22511 FOR EV CHARGING SPACE SIGNAGE IN OFF-STREET PARKING FACILITIES AND FOR USE OF EV

3. THE GOVERNOR'S OFFICE OF PLANNING AND RESEARCH (OPR) PUBLISHED A "ZERO-EMISSION VEHICLE COMMUNITY READINESS GUIDEBOOK" WHICH PROVIDES HELPFUL INFORMATION FOR LOCAL GOVERNMENTS. RESIDENTS AND BUSINESSES. WEBSITE: HTTP://OPR.CA.GOV/DOCS/ZEV\_GUIDEBOOK.PDF.

4.106.4.3 NEW HOTELS AND MOTELS

ALL NEWLY CONSTRUCTED HOTELS AND MOTELS SHALL PROVIDE EV SPACES CAPABLE OF SUPPORTING FUTURE INSTALLATION OF EVSE. THE CONSTRUCTION DOCUMENTS SHALL IDENTITY THE LOCATION OF THE EV

1. CONSTRUCTION DOCUMENTS ARE INTENDED TO DEMONSTRATE THE PROJECT'S CAPABILITY AND CAPACITY OR FACILITATING FUTURE EV 2. THERE IS NO REQUIREMENT FOR EV SPACES TO BE CONSTRUCTED OR

AVAILABLE UNTIL EV CHARGERS ARE INSTALLED FOR USE. 4.106.4.3.1 NUMBER OF REQUIRED EV SPACES

THE NUMBER OF REQUIRED EV SPACES SHALL BE BASED ON THE TOTAL NUMBER OF PARKING SPACES PROVIDED FOR ALL TYPES OF PARKING

FACILITIES IN ACCORDANCE WITH TABLE 4.106.4.3.1.

CALCULATIONS FOR THE REQUIRED NUMBER OF EV SPACES SHALL BE ROUNDED UP TO THE NEAREST WHOLE NUMBER.

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV SPACES
0-9	0
10-25	1
26-50	2
51-75	4
75-100	5
101-150	7
151-200	10
201 AND OVER	6% OF TOTAL

4.106.4.3.2 ELECTRIC VEHICLE CHARGING SPACE (EV SPACE) **DIMENSIONS** THE EV SPACES SHALL BE DESIGNED TO COMPLY WITH

1. THE MINIMUM LENGTH OF EACH EV SPACE SHALL BE 18 FEET. 2. THE MINIMUM WIDTH OF EACH EV SPACE SHALL BE 9 FEET.

4.106.4.3.3 SINGLE EV SPACE REQUIRED WHEN A SINGLE EV SPACE IS REQUIRED, THE EV SPACE SHALL BE

4.106.4.3.4 MULTIPLE EV SPACES REQUIRED WHEN MULTIPLE EV SPACES ARE REQUIRED, THE EV SPACES SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 4.106.4.2.4

**4.106.4.3.5 IDENTIFICATION.** THE SERVICE PANELS OR SUB-PANELS SHALL BE IDENTIFIED IN ACCORDANCE WITH SECTION 4.106.4.2.5.

DESIGNED IN ACCORDANCE WITH SECTION 4.106.4.2.3.

4.106.4.3.6 ACCESSIBLE EV SPACES.

IN ADDITION TO THE REQUIREMENTS IN SECTION 4.106.4.3, EV SPACES FOR HOTELS/MOTELS AND ALL EVSE, WHEN INSTALLED, SHALL COMPLY WITH THE ACCESSIBILITY PROVISIONS FOR THE EV CHARGING STATIONS IN THE CALIFORNIA BUILDING CODE, CHAPTER 11B.

1. THE CALIFORNIA DEPARTMENT OF TRANSPORTATION ADOPTS AND PUBLISHES THE "CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVISES (CALIFORNIA MUTCD)" TO PROVIDE UNIFORM STANDARDS AND SPECIFICATIONS FOR ALL OFFICIAL TRAFFIC CONTROL DEVISES IN CALIFORNIA. ZERO EMISSION VEHICLE SIGNS AND PAVEMENT MARKINGS CAN BE FOUND IN THE NEW POLICIES & DIRECTIVES NUMBER 13.01. WEBSITE: HTTP://WWW. DOT. CA .GOV/TRAFFICOPS/POLICY/HTML.

2. SEE VEHICLE CODE SECTION 22511 FOR EV CHARGING SPACE SIGNAGE IN OFF-STREET PARKING FACILITIES AND FOR USE OF EV CHARGING SPACES.

3. THE GOVERNOR'S OFFICE OF PLANNING AND RESEARCH (OPR) PUBLISHED A "ZERO-EMISSION VEHICLE COMMUNITY READINESS GUIDEBOOK" WHICH PROVIDES HELPFUL INFORMATION FOR LOCAL GOVERNMENTS, RESIDENTS AND BUSINESSES. WEBSITE: HTTPS://OPR.CA.GOV/DOCS/ZEV GUIDEBOOK.PDF.

4. THE GOVERNOR'S LNTERAGENCY WORKING GROUP ON ZERO-

EMISSION VEHICLES. 2016, "2016 ZEV ACTION PLAN, AN UPDATED ROADMAP TOWARD 1.5 MILLION ZERO-EMISSION VEHIDES ON CALIFORNIA ROADWAYS BY 2025." HTTPS://WWW.GOV.CA.GOV/DOCS/2016\_ZEV\_ACTION\_PLAN.PDF.

#### **DIVISION 4.2 ENERGY EFFICIENCY**

4.201 GENERAL

4.201.1 SCOPE. FOR THE PURPOSES OF MANDATORY ENERGY EFFICIENCY STANDARDS IN THIS CODE, THE CALIFORNIA ENERGY COMMISSION WILL CONTINUE TO ADOPT MANDATORY STANDARDS.

# **DIVISION 4.3 WATER EFFICIENCY AND** CONSERVATION

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING:

4.303.1.1 WATER CLOSETS

THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK TYPE TOILET. NOTE: THE EFFECTIVE FLUSH VOLUME OF DUAL FLUSH TOILETS IS DEFINED AS THE COMPOSITE. AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH.

4.303.1.2 URINALS

THE EFFECTIVE FLUSH VOLUME OF WALL-MOUNTED URINALS SHALL NOT EXCEED 0.125 GALLONS PER FLUSH. THE EFFECTIVE FLUSH VOLUME OF ALL OTHER URINALS SHALL NOT EXCEED 0.5 GALLONS PER

**4.303.1.3 SHOWERHEADS** 

4.303.1.3.1 SINGLE SHOWERHEAD SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 2.0 GALLONS PER MINUTE AT 80M PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA

WATERSENSE SPECIFICATION FOR SHOWERHEADS.

4.303.1.3.2 MULTIPLE SHOWERHEADS SERVING ONE SHOWER WHEN A SHOWER IS SERVED BY MORE THAN ONE SHOWERHEAD. THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER

SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 2.0 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME.

4.303.1.4 FAUCETS 4.303.1.4.1 RESIDENTIAL LAVATORY FAUCETS THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GALLONS PER MINUTE AT 60 PSI. THE

MINIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL

NOTE: A HAND HELD SHOWER SHALL BE CONSIDERED A

NOT BE LESS THAN 0.8 GALLONS PER MINUTE AT 20 PSI. 4.303.1.4.2 LAVATORY FAUCETS IN COMMON AND PUBLIC USE AREAS THE MAXIMUM FLOW RATE OF LAVATORY FAUCETS INSTALLED IN COMMON AND PUBLIC USE AREAS (OUTSIDE OF DWELLINGS OR SLEEPING UNITS) IN RESIDENTIAL BUILDINGS SHALL NOT EXCEED 0.5 GALLONS PER MINUTE AT 60 PSI.

4.303.1.4.3 METERING FAUCETS METERING FAUCETS WHEN INSTALLED IN RESIDENTIAL BUILDINGS SHALL NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE.

4.303.1.4.4 KITCHEN FAUCETS

THE MAXIMUM FLOW RATE OF KITCHEN FAUCETS SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE. BUT NOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE

**NOTE:** WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.

4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS

PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, AND SHALL MEET THE APPLICABLE STANDARDS REFERENCED IN TABLE 1701.1 OF THE CALIFORNIA PLUMBING

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

TABLE - MAXIMUM FIXTURE WATER USE							
FIXTURE TYPE	FLOW RATE						
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI						
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI						
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI						
KITCHEN FAUCETS	1.8 GPM @ 60 PSI						
METERING FAUCETS	0.25 GAL/CYCLE						
WATER CLOSET	1.28 GAL/FLUSH						
URINALS	0.125 GAL/FLUSH						

#### 4.304 OUTDOOR WATER USE

NOTES:

4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS AFTER DECMEBER 1, 2015, NEW RESIDENTIAL DEVELOPMENTS WITH AN AGGREGATE LANDSCAPE AREA EQUAL TO OR GREATER THAN 500 SQUARE

FEET SHALL COMPLY WITH ONE OF THE FOLLOWING OPTIONS: 1. A LOCAL WATER EFFICIENT LANDSCAPE ORDINANCE OR THE CURRENT CALIFORNIA DEPARTMENT OF WATER RESOURCES' MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) WHICHEVER IS MORE STRINGENT; OR

2. PROJECTS WITH AGGREGATE LANDSCAPE AREAS LESS THAN 2,500 SQUARE FEET MAY COMPLY WITH THE MWELO'S APPENDIX D PRESCRIPTIVE COMPLIANCE OPTION.

1. THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) AND SUPPORTING DOCUMENTS ARE AVAILABLE AT: HTTP://WWW.WATER.CA.GOV/WATERUSEEFFICIENCY/LANDSCAPEOR

2. A WATER BUDGETY CALCULATOR IS AVAILABLE AT: HTTP://WWW.WATER.CA.GOV/WATERUSEEFFICIENCY/LANDSCAPEOR

# **DIVISION 4.4 MATERIAL CONSERVATION** AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING

ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OTHER OPENINGS IN SOLE/BOTTOM PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY LCOSING SUCH OPENINGS WITH CEMENT MORTAR. CONCRETE MASONRY OR A SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT

RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE 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.

1. EXCAVATED SOIL AND LAND-CLEARING DEBRIS.

2. ALTERNATE WASTE REDUCTION METHODS DEVELOPED BY WORKING WITH LOCAL AGENCIES IF DIVERSION OR RECYCLE FACILITIES CAPABLE OF COMPLIANCE WITH THIS ITEM DO NOT EXIST OR ARE NOT LOCATED REASONABLY CLOSE TO THE JOBSITE. 3. THE ENFORCING AGENCY MAY MAKE ACCEPTIONS TO THE REQUIREMENTS OF THIS SECTION WHEN ISOLATED JOBSITES ARE LOCATED IN AREAS BEYOND THE HAUL BOUNDARIES OF THE DIVERSION FACILITY.

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN

SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN IN COMFORMANCE WITH ITEMS 1 THROUGH 5. THE CONSTRUCTION WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE AVAILABLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY. 1. IDENTIFY THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS

TO BE DIVERTED FROM DISPOSAL BY RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE. 2. SPECIFY IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED

(SINGLE STREAM). 3. IDENTIFY DIVERSION FACILITIES WHERE THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE TAKEN.

4. IDENTIFY CONSTRUCTION METHODS EMPLOYED TO REDUCE THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE GENERATED. 5. SPECIFY THAT THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED SHALL BE CALCULATED BY WEIGHT OR

4.408.3 WASTE MANAGEMENT COMPANY.

UTILIZE A WASTE MANAGEMENT COMPANY, APPROVED BY THE ENFORCING AGENCY, WHICH CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL COMPLIES WITH SECTION 4.408.1.

NOTE: THE OWNER OR CONTRACTOR MAY MAKE THE DETERMINATION IF THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE DIVERTED BY A WASTE MANAGEMENT COMPANY.

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. PROJECTS THAT GENERATE A TOTAL COMBINED WEIGHT OF

VOLUME, BUT NOT BY BOTH.

WHICH DO NOT EXCEED 3.4 POUNDS PER SQUARE FOOT OF THE BUILDING AREA SHALL MEET THE MINIMUM 65 PERCENT CONSTRUCTION WASTE REDUCTION REQUIREMENT IN SECTION 4.408.1. 4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. PROJECTS THAT GENERATE A TOTAL COMBINED WEIGHT OF

CONSTRUCTION AND DEMOLITION WASTE DISPOSED OF IN LANDFILLS.

WHICH DO NOT EXCEED 2 POUNDS PER SQUARE FOOT OF THE BUILDING

CONSTRUCTION AND DEMOLITION WASTE DISPOSED OF IN LANDFILLS.

AREA, SHALL MEET THE MINIMUM 65-PERCENT CONSTRUCTION WASTE **REDUCTION REQUIREMENT IN SECTION 4.408.1.** 

4.408.5 DOCUMENTATION DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH SECTION 4.408.2, ITEMS 1 THOUGH 5,

1. SAMPLE FORMS FOUND IN "A GUIDE TO THE CALIFORNIA GREEN BUILDING STANDARDS CODE (RESIDENTIAL)" LOCATED AT WWW.HCD.CA.GOV/CALGREEN.HTML MAY BE USED TO ASSIST IN

PROCESSORS CAN BE LOCATED AT THE CALIFORNIA DEPARTMENT

OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE).

d. LANDSCAPE IRRIGATION SYSTEMS.

e. WATER REUSE SYSTEMS.

AROUND THE BUILDING, ETC.

THE ENFORCING AGENCY OR THIS CODE.

DOCUMENTING COMPLIANCE WITH THIS SECTION

. MIXED CONSTRUCTION AND DEMOLITION DEBRIS (C&D)

4.410 BUILDING MAINTENANCE AND OPERATION

SECTION 4.408.3 OR SECTION 4.408.4

4.410.1 OPERATION AND MAINTENANCE MANUAL AT THE TIME OF FINAL INSPECTION, A MANUAL, COMPACT DISC, WEB-BASED REFERENCE OR OTHER MEDIA ACCEPTABLE TO THE ENFORCING AGENCY WHICH INCLUDES ALL OF THE FOLLOWING SHALL BE PLACED IN THE

1. DIRECTIONS TO THE OWNER OR OCCUPANT THAT THE MANUAL SHALL REMAIN WITH THE BUILDING THROUGHOUT THE LIFE CYCLE OF THE STRUCTURE. 2. OPERATION AND MAINTENANCE INSTRUCTIONS FOR THE

FOLLOWING: a. EQUIPMENT AND APPLIANCES, INCLUDING WATER-SAVING DEVICES AND SYSTEMS, HVAC SYSTEMS, PHOTOVOLTAIC SYSTEMS, ELECTRIC VEHICLE CHARGERS, WATER-HEATING SYSTEMS AND OTHER MAJOR APPLIANCES AND EQUIPMENT.

b. ROOF AND YARD DRAINAGE, INCLUDING GUTTERS AND DOWNSPOUTS. c. SPACE CONDITIONING SYSTEMS, INCLUDING CONDENSERS AND AIR FILTERS.

3. INFORMATION FROM LOCAL UTILITY, WATER AND WASTE RECOVERY PROVIDERS ON METHODS TO FURTHER REDUCE RESOURCE CONSUMPTION. INCLUDING RECYCLE PROGRAMS AND LOCATIONS. 4. PUBLIC TRANSPORTATION AND/OR CARPOOL OPTIONS AVAILABLE IN

EDUCATIONAL MATERIAL ON THE POSITIVE IMPACTS OF AN INTERIOR RELATIVE HUMIDITY BETWEEN 30-60 PERCENT AND WHAT METHODS AN OCCUPANT MAY USE TO MAINTAIN THE RELATIVE HUMIDITY LEVEL IN THAT RANGE. 6. INFORMATION ABOUT WATER-CONSERVING LANDSCAPE AND

IRRIGATION DESIGN AND CONTROLLERS WHICH CONSERVE WATER.

INSTRUCTIONS FOR MAINTAINING GUTTERS AND DOWNSPOUTS AND

THE IMPORTANCE OF DIVERTING WATER AT LEAST 5 FEET AWAY FROM THE FOUNDATION. 8. INFORMATION ON REQUIRED ROUTINE MAINTENANCE MEASURES, INCLUDING, BUT NOT LIMITED TO, CAULKING, PAINTING, GRADING

9. INFORMATION ABOUT STATE SOLAR ENERGY AND INCENTIVE PROGRAMS AVAILABLE. 10. A COPY OF ALL SPECIAL INSPECTION VERIFICATIONS REQUIRED BY SAN LUIS OBISPO, CA 93401 RRM DESIGN GROUP COPYRIGHT 2022 RRM IS A CALIFORNIA CORPORATION

CONSULTANT

AGENCY

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NO.	REVISION	DATE
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CHECKED BY DRAWN BY 6/30/2022

2340-01-CU21

**PROJECT MANAGER** 

**PROJECT NUMBER** 

# 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

# **RESIDENTIAL MANDATORY MEASURES (SHEET 2)**

4.410.2 RECYCLING BY OCCUPANTS.

WHERE 5 OR MORE MULTIFAMILY DWELLING UNITS ARE CONSTRUCTED ON A BUILDING SITE, PROVIDE READILY ACCESSIBLE AREA(S) THAT SERVES ALL BUILDINGS ON THE SITE AND IS IDENTIFIED FOR THE DEPOSITING, STORAGE AND COLLECTION OF NON-HAZARDOUS MATERIALS FOR RECYCLING, INCLUDING (AT A MINIMUM) PAPER, CORRUGATED CARDBOARD, GLASS. PLASTICS, ORGANIC WASTE, AND METALS, OR MEEL 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 ENVIROMENTAL QUALITY**

#### 4.501 GENERAL

4.501.1 SCOPE THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF REDUCING THE QUANTITY OF AIR CONTAMINANTS THAT ARE ODOROUS, IRRITATING AND/OR HARMFUL TO THE COMFORT AND WELL-BEING OF A BUILDING'S INSTALLERS, OCCUPANTS AND NEIGHBORS.

#### 4.503 FIREPLACES

4.503.1 GENERAL

ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE, ANY INSTALLED WOODSTOVE OR PELLET STOVE SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE. AND SHALL HAVE A PERMANENT LABEL INDICATING THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS. WOODSTOVES, PELLET STOVES AND FIREPLACES SHALL ALSO COMPLY WITH APPLICABLE LOCAL ORDINANCES.

#### 4.504 POLLUTANT CONTROL

4.504.1 COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL **EQUIPMENT DURING CONSTRUCTION** 

AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEETMETAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST AND DEBRIS, WHICH MAY ENTER THE SYSTEM.

#### 4.504.2 FINISH MATERIAL POLLUTANT CONTROL

FINISH MATERIALS SHALL COMPLY WITH THIS SECTION.

4.504.2.1 ADHESIVES, SEALANTS AND CAULKS

ADHESIVES, 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 ALSO SHALL 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 BELOW. 2. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN 1 POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS. OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.

#### 4.504.2.2 PAINTS AND COATINGS

ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS IN TABLE 1 OF THE ARB ARCHITECTURAL SUGGESTED CONTROL MEASURE, AS SHOWN IN TABLE 4.504.3, UNLESS MORE STRINGENT LOCAL LIMITS APPLY. THE VOC CONTENT LIMIT FOR COATINGS THAT DO NOT MEET THE DEFINITIONS FOR THE SPECIALTY COATINGS CATEGORIES LISTED IN TABLE 4.504.3 SHALL BE DETERMINED BY CLASSIFYING THE COATING AS A FLAT, NONFLAT OR NONFLAT-HIGH GLOSS COATING, BASED ON ITS GLOSS, AS DEFINED IN SUBSECTIONS 4.21, 4.36, AND 4.37 OF THE 2007 CALIFORNIA AIR RESOURCES BOARD, SUGGESTED CONTROL MEASURE, AND THE CORRESPONDING FLAT, NONFLAT OR NONFLAT-HIGH GLOSS VOC LIMIT IN TABLE 4.504.3 SHALL

#### 4.504.2.3 AEROSOL PAINTS AND COATINGS

PRODUCT LIMITS OF REGULATION 8, RULE 49.

AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(A)(2) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES, IN SECTIONS 94522(E)(1) AND (F)(1) OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94520; AND IN AREAS UNDER THE JURISDICTION OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADDITIONALLY COMPLY WITH THE PERCENT VOC BY WEIGHT OF

#### 4.504.2.4 VERIFICATION

VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY. DOCUMENTATION MAY INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. MANUFACTURER'S PRODUCT SPECIFICATION. 2. FIELD VERIFICATION OF ON-SITE PRODUCT CONTAINERS.

#### 4.504.3 CARPET SYSTEMS

ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF ONE OF THE FOLLOWING: CARPET AND RUG INSTITUTE'S GREEN LABEL PLUS PROGRAM. 2. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD

FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350.) 3. NSF/ANSI 140 AT THE GOLD LEVEL.

4. SCIENTIFIC CERTIFICATIONS SYSTEMS INDOOR ADVANTAGE™ GOLD.

#### 4.504.3.1 CARPET CUSHION

ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE'S GREEN LABEL PROGRAM. UNDEFINED

#### 4.504.3.2 CARPET ADHESIVE

ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF TABLE

4.504.4 RESILIENT FLOORING SYSTEMS

WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH ONE OR

1. PRODUCTS COMPLIANT WITH THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND **EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM** INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350), CERTIFIED AS A CHPS LOW-EMITTING MATERIAL IN THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS) HIGH

PERFORMANCE PRODUCTS DATABASE. 2. PRODUCTS CERTIFIED UNDER UL GREENGUARD GOLD (FORMERLY

THE GREENGUARD CHILDREN & SCHOOLS PROGRAM). 3. CERTIFICATION UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM.

4. MEET THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF **VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES** USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350).

#### 4.504.5 COMPOSITE WOOD PRODUCTS

HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD (17 CCR 93120 ET SEQ.), BY OR BEFORE THE DATES SPECIFIED IN THOSE SECTIONS, AS SHOWN IN TABLE 4.504.5.

VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED

INCLUDE AT LEAST ONE OF THE FOLLOWING: PRODUCT CERTIFICATIONS AND SPECIFICATIONS. 2. CHAIN OF CUSTODY CERTIFICATIONS.

3. PRODUCT LABELED AND INVOICED AS MEETING THE COMPOSITE WOOD PRODUCTS REGULATION (SEE CCR, TITLE 17, SECTION

AS REQUESTED BY THE ENFORCING AGENCY, DOCUMENTATION SHALL

4. EXTERIOR GRADE PRODUCTS MARKED AS MEETING THE PS-1 OR PS-2 STANDARDS OF THE ENGINEERED WOOD ASSOCIATION. THE AUSTRALIAN AS/NZS 2269, EUROPEAN 636 3S, AND CANADIAN CSA 0121, CSA 0151, CSA 0153 AND CSA 0325

5. OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY.

#### TABLE 4.504.1 - ADHESIVE VOC LIMIT

ADQUITECTUDAL ADDI ICATIONO	
ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOORING ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT AND ASPHALT TILE ADHESIVES	50
DRYWALL AND PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50
SPECIALTY APPLICATIONS	CURRENT VOC LIMIT
PVC WELDING	510
CDVC MELDING	490
CPVC WELDING	730
ABD WELDING	325
ABD WELDING	144
ABD WELDING	325
ABD WELDING PLASTIC CEMENT WELDING	325 250
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC	325 250 550
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE	325 250 550 80
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE	325 250 550 80 250
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE STRUCTURAL WOOD MEMBER ADHESIVE	325 250 550 80 250 140
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE STRUCTURAL WOOD MEMBER ADHESIVE TOP AND TRIM ADHESIVES	325 250 550 80 250 140 250
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE STRUCTURAL WOOD MEMBER ADHESIVE TOP AND TRIM ADHESIVES SUBSTRATE SPECIFIC APPLICATIONS	325 250 550 80 250 140 250 CURRENT VOC LIMIT
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE STRUCTURAL WOOD MEMBER ADHESIVE TOP AND TRIM ADHESIVES SUBSTRATE SPECIFIC APPLICATIONS METAL TO METAL	325 250 550 80 250 140 250 CURRENT VOC LIMIT 30
ABD WELDING PLASTIC CEMENT WELDING ADHESIVE PRIMER FOR PLASTIC CONTACT ADHESIVE SPECIAL PURPOSE CONTACT ADHESIVE STRUCTURAL WOOD MEMBER ADHESIVE TOP AND TRIM ADHESIVES SUBSTRATE SPECIFIC APPLICATIONS METAL TO METAL PLASTIC FOAMS	325 250 550 80 250 140 250 CURRENT VOC LIMIT 30 50

- 1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL
- 2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

#### TABLE 4.504.1 - SEALANT VOC LIMIT

MARINE DECK

OTHER

(LESS WATER AND LESS EXEMPT COMPOUNDS IN GRAMS PER LITER

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

760

# TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS<sup>2, 3</sup>

**CURRENT VOC LIMIT** 

**COATING CATEGORY** 

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

- 1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER AND
- INCLUDING EXEMPT COMPOUNDS. THE SPECIFIED LIMITS REMAIN IN EFFECT ENLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE
- 3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEBUARY 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES

#### TABLE 4.504.5 - FORMALDEHYDE LIMITS<sup>1</sup>

PRODUCT	<b>CURRENT LIMIT</b>
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLEBOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD <sup>2</sup>	0.13

- 1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD. AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E1333, FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120
- THROUGH 93120.12. 2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCH (8MM).

# **DIVISION 4.5 ENVIORNMENTAL QUALITY** CONTINUED

#### 4.505 INTERIOR MOISTURE CONTROL

THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF REDUCING THE QUANTITY OF AIR CONTAMINANTS THAT ARE ODOROUS, IRRITATING AND/OR HARMFUL TO THE COMFORT AND WELL-BEING OF A BUILDING'S INSTALLERS, OCCUPANTS AND NEIGHBORS.

#### 4.505.2 CONCRETE SLAB FOUNDATIONS

CONCRETE SLAB FOUNDATIONS REQUIRED TO HAVE A VAPOR RETARDER BY THE CALIFORNIA BUILDING CODE CHAPTER 19 OR CONCRETE SLAB-ON-GROUND FLOORS REQUIRED TO HAVE A VAPOR RETARDER BY THE CALIFORNIA RESIDENTIAL CODE, CHAPTER 5, SHALL ALSO COMPLY WITH

4.505.2.1 CAPILLARY BREAK A CAPILLARY BREAK SHALL BE INSTALLED IN COMPLIANCE WITH AT LEAST ONE OF THE FOLLOWING:

1. A 4-INCH-THICK (101.6 MM) BASE OF 1/2 INCH (12.7 MM) 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

2. OTHER EQUIVALENT METHODS APPROVED BY THE ENFORCING

3. A SLAB DESIGN SPECIFIED BY A LICENSED DESIGN PROFESSIONAL.

4.505.3 MOISTURE CONTENT OF A BUILDING

BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NOT BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19-PERCENT MOISTURE CONTENT. MOISTURE CONTENT SHALL BE VERIFIED IN COMPLIANCE WITH THE

FOLLOWING: 1. MOISTURE CONTENT SHALL BE DETERMINED WITH EITHER A PROBE TYPE OR CONTACT-TYPE MOISTURE METER. EQUIVALENT MOISTURE VERIFICATION METHODS MAY BE APPROVED BY THE ENFORCING AGENCY AND SHALL SATISFY REQUIREMENTS FOUND IN SECTION 101.8 OF THIS CODE.

. MOISTURE READINGS SHALL BE TAKEN AT A POINT 2 FEET (610 MM) TO 4 FEET (1219 MM) FROM THE GRADE STAMPED END OF EACH PIECE TO BE VERIFIED.

3. AT LEAST THREE RANDOM MOISTURE READINGS SHALL BE PERFORMED ON WALL AND FLOOR FRAMING WITH DOCUMENTATION ACCEPTABLE TO THE ENFORCING AGENCY PROVIDED AT THE TIME OF APPROVAL TO ENCLOSE THE WALL AND FLOOR FRAMING.

INSULATION PRODUCTS WHICH ARE VISIBLY WET OR HAVE A HIGH MOISTURE CONTENT SHALL BE REPLACED OR ALLOWED TO DRY PRIOR TO ENCLOSURE IN WALL OR FLOOR CAVITIES. WET-APPLIED INSULATION PRODUCTS SHALL FOLLOW THE MANUFACTURERS' DRYING RECOMMENDATIONS PRIOR TO ENCLOSURE.

#### 4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 BATHROOM EXHAUST FANS

EACH BATHROOM SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING:

1. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.

2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY a. HUMIDITY CONTROLS SHALL BE CAPABLE OF ADJUSTMENT

BETWEEN A RELATIVE HUMIDITY RANGE OF ≤ 50 PERCENT TO A MAXIMUM OF 80 PERCENT. A HUMIDITY CONTROL MAY UTILIZE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT. b. A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE

EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL (I.E.,

1. FOR THE PURPOSES OF THIS SECTION, A BATHROOM IS A ROOM WHICH CONTAINS A BATHTUB, SHOWER, OR TUB/ SHOWER

2. LIGHTING INTEGRAL TO BATHROOM EXHAUST FANS SHALL COMPLY WITH THE CALIFORNIA ENERGY CODE.

#### 4.507 ENVIROMENTAL COMFORT

#### 4.507.1 RESERVED

4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN

HEATING AND AIR-CONDITIONING SYSTEMS SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHODS: 1. THE HEAT LOSS AND HEAT GAIN IS ESTABLISHED ACCORDING TO ANSI/ACCA 2 MANUAL J—2011 (RESIDENTIAL LOAD CALCULATION), ASHRAE HANDBOOKS OR OTHÈR EQUIVALENT DESIGN SOFTWARE

2. DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1 MANUAL D—2014 (RESIDENTIAL DUCT SYSTEMS), ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS. 3. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S—2014 (RESIDENTIAL EQUIPMENT SELECTION) OR OTHER EQUIVALENT DESIGN SOFTWARE OR

**EXCEPTION:** USE OF ALTERNATE DESIGN TEMPERATURES NECESSARY TO ENSURE THE SYSTEMS FUNCTION ARE ACCEPTABLE.

# **CHAPTER 7 - INSTALLER &** SPECIAL INSPECTOR **QUALIFICATIONS**

# **702 QUALIFICATIONS**

**702.1 INSTALLER TRAINING** 

HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM. UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS WHEN UNDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF A PERSON TRAINED AND CERTIFIED TO INSTALL HVAC SYSTEMS OR CONTRACTOR LICENSED TO INSTALL HVAC SYSTEMS. EXAMPLES OF ACCEPTABLE HVAC TRAINING AND CERTIFICATION PROGRAMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- 1. STATE CERTIFIED APPRENTICESHIP PROGRAMS. 2. PUBLIC UTILITY TRAINING PROGRAMS.
- 3. TRAINING PROGRAMS SPONSORED BY TRADE, LABOR OR STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATIONS.
- 4. PROGRAMS SPONSORED BY MANUFACTURING ORGANIZATIONS. 5. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

#### 702.2 SPECIAL INSPECTION [HCD]

WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION TO OTHER CERTIFICATIONS OR QUALIFICATIONS ACCEPTABLE TO THE ENFORCING AGENCY, THE FOLLOWING CERTIFICATIONS OR EDUCATION MAY BE CONSIDERED BY THE ENFORCING AGENCY WHEN EVALUATING THE QUALIFICATIONS OF A SPECIAL INSPECTOR:

- 1. CERTIFICATION BY A NATIONAL OR REGIONAL GREEN BUILDING
- PROGRAM OR STANDARD PUBLISHER. 2. CERTIFICATION BY A STATEWIDE ENERGY CONSULTING OR
- VERIFICATION ORGANIZATION, SUCH AS HERS RATERS, BUILDING PERFORMANCE CONTRACTORS, AND HOME ENERGY AUDITORS.
- 3. SUCCESSFUL COMPLETION OF A THIRD PARTY APPRENTICE TRAINING PROGRAM IN THE APPROPRIATE TRADE.
- 4. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

INSPECTING FOR COMPLIANCE WITH THIS CODE.

1. SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE

INSPECTING FOR COMPLIANCE WITH THIS CODE. 2. HERS RATERS ARE SPECIAL INSPECTORS CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION (CEC) TO RATE HOMES IN CALIFORNIA ACCORDING TO THE HOME ENERGY RATING SYSTEM

[BSC] WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION, THE SPECIAL INSPECTOR SHALL HAVE A CERTIFICATION FROM A RECOGNIZED STATE NATIONAL OR INTERNATIONAL ASSOCIATION, AS DETERMINED BY THE LOCAL AGENCY. THE AREA OF CERTIFICATION SHALL BE CLOSELY RELATED TO THE PRIMARY JOB FUNCTION, AS DETERMINED BY THE LOCAL AGENCY.

#### SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE

**703 VERIFICATIONS** 

703.1 DOCUMENTATION. DOCUMENTATION USED TO SHOW COMPLIANCE WITH THIS CODE SHALL INCLUDE BUT IS NOT LIMITED TO, CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS. BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY WHICH DEMONSTRATE SUBSTANTIAL CONFORMANCE. WHEN SPECIFIC DOCUMENTATION OR SPECIAL INSPECTION IS NECESSARY TO VERIFY COMPLIANCE, THAT METHOD OF COMPLIANCE WILL BE SPECIFIED IN THE APPROPRIATE SECTION OR IDENTIFIED APPLICABLE CHECKLIST.

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NO. REVISION

**PROJECT MANAGER DRAWN BY** CHECKED BY

6/30/2022

PROJECT NUMBER 2340-01-CU21



# TECHNICAL BULLETIN

#### ALL O'HAGIN'S ATTIC VENTILATION PRODUCTS ARE IN FULL COMPLIANCE WITH THE 2019 CBC WILDLAND-URBAN INTERFACE (WUI) CHAPTER 7A

This Technical Bulletin is set forth to advise Architects, Builders, Contractors, and all state/local officials that all O'Hagin's Attic Ventilation Products comply with the 2019 California Building Code, Chapter 7A Materials and Construction Methods for Exterior Wildfire Exposure, Section – 706A Vents when fitted with 1/8-inch wire mesh.

#### BACKGROUND:

Effective January 1, 2017, all new buildings located in any Fire Hazard Severity (State), Very-High Fire Hazard Severity Zone (Local), or Wildland-Urban Interface Fire Area shall comply with all sections of 2019 CBC, Chapter 7A, which states, in pertinent part, as follows:

"706A2. Requirements. Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of the roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet the following requirements:

- 1. Vents shall be listed to ASTM E2886 and comply with all of the following:
- 1.1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
- There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
- 1.3 The maximum temperature of the unexposed side of the vent shall not exceed
- 662°F (350°C).

  2. Vents Shall comply with all of the following:
- The dimensions of the openings therein shall be a minimum of 1/16-inch (1.6 mm) and shall not exceed 1/8-inch (3.2 mm).
- 2.2. The materials used shall be noncombustible.

Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible

(2019 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 1 of 2, Section 706A.2, p.299)

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With regard to attic ventilation products that utilize wire mesh in either 1/8-inch or 1/16-inch dimensions, the ICC-ES, Acceptance Criteria for Attic Vents, AC132, effective March 1, 2010, states, in pertinent part, as follows:

#### "3.0 TEST AND PERFORMANCE REQUIREMENTS

3.1 Ventilation openings in the attic shall be protected by mesh, by a vent incorporating an opening cover other than mesh, or by a fibrous-mesh-type vent as defined in Section 1.4.1, 1.4.2 or 1.4.3. The attic vent shall be corrosion-resistant and shall prevent the entry of vermin into the

3.2 Net Free Ventilation Area (NFVA): NFVA shall be determined in accordance with Section 4.1. Openings shall be covered with mesh, except as noted in Sections 3.2.1 and 3.2.2.

3.2.1 2009 IBC and 2009 IRC: For vents incorporating a corrosion-resistant metal mesh with mesh openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum in one dimension, the ventilation area reported in the evaluation report shall be the NFVA determined in accordance with Section 4.1, reduced by 10 percent to address the effects of

3.2.2 2006 IBC and 2006 IRC: For vents incorporating a corrosion-resistant metal mesh with mesh openings less than 1/4 inch (6.4 mm) but no less than 1/8 inch (3.2 mm) in one dimension, the ventilation area reported in the evaluation report shall be the NFVA determined in accordance with Section 4.1, reduced by 10 percent to address the effects of clogging."

(Acceptance Criteria For Attic Vents, AC132, effective March 1, 2010, ICC-ES)

#### COMPLIANCE ISSUES:

Generally, the California Building Code serves as a minimum requirement for best building practices. As such, please contact your local building authority to see what requirements there are for that specific jurisdiction. For example, some may allow O'Hagin's attic vents with 1/8-inch wire mesh. For attic vents using 1/8-inch wire mesh, the NFVA rating of that vent, per AC132, above, is reduced by 10 percent. However, some jurisdictions may have other requirements including the use of O'Hagin's FIRE & ICE® attic ventilation products. In any event, as explained more fully below, O'Hagin's attic ventilation products can help meet the requirements of most jurisdictions.

O'HAGIN'S VENTILATION PRODUCTS ARE IN FULL COMPLIANCE WITH THE 2019 CBC, CHAPTER 7A:

- All O'Hagin's FIRE & ICE<sup>®</sup> attic ventilation products were accepted for use by the Office of the State Fire Marshal (OSFM) for plan and construction review projects under OSFM jurisdiction under the OSFM's prior program. (CBC Ch7A Compliance Policy #09-06, Effective 07-05-09).
- Many local jurisdictions have approved for use all O'Hagin's FIRE & ICE® attic ventilation products.
   All O'Hagin's FIRE & ICE® attic ventilation products may be protected by corrosion-resistant 23-27
- gauge galvanized or stainless steel non-combustible wire mesh with 1/4-inch (6 mm) openings.
   For O'Hagin's FIRE & ICE\* attic ventilation products with ¼-inch wire mesh, the Net Free Ventilation Area (NFVA) of those products, as calculated by an independent third-party, are, as follows:

#### O'Hagin's FIRE & ICE Attic Vents for Clay and Concrete Tile;

All Model Flat (Low-Profile) NFVA: 98.75 sq. in. per vent All Model "M" (Medium-Profile) NFVA: 86.25 sq. in. per vent All Model "S" (High-Profile) NFVA: 97.50 sq. in. per vent

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#### O'Hagin's FIRE & ICE® Tapered Low-Profile Vents for Slate. Shake and Composition Roofs:

Tapered Low-Profile 72" NFVA: 72 sq. in. per vent

- All O'Hagin's FIRE & ICE<sup>®</sup> attic ventilation products are available with corrosion-resistant, non-combustible 1/8-inch (3.2 mm) mesh upon request.
- For those O'Hagin's attic ventilation products that use 1/8-inch wire mesh, the Net Free Ventilation Area (NFVA) of those products, as calculated by an independent third-party, is reduced by 10 percent. As such, the NFVA of those products is, as follows:

#### O'Hagin's Attic Vents for Clay and Concrete Tile:

All Model Flat (Low-Profile) with 1/8-inch mesh NFVA: 88.875 sq. in. per vent All Model "M" (Medium-Profile) with 1/8-inch mesh NFVA: 77.625 sq. in. per vent All Model "S" (High-Profile) with 1/8-inch mesh NFVA: 87.75 sq. in. per vent

O'Hagin Mfg.'s Tapered Low-Profile Vents for Slate Shake and Composition Roofs:

Tapered Low-Profile 72" with 1/8-inch mesh NFVA: 64.80 sq. in. per vent

- All O'Hagin's FIRE & ICE® and O'Hagin's standard attic ventilation products carry a Class 'A' fire rating in accordance with the test standard ANSI/UL 790, "Tests for Fire Resistance of Roof covering Materials," (ASTM E-108 and NFPA 256).
- All O'Hagin's FIRE & ICE® and O'Hagin's standard attic vents for clay and concrete tile feature our
  patented two-piece design that utilizes two or more separate sections of the non-combustible wire mesh
  (or, flame and ember-resistant material in O'Hagin's FIRE & ICE® attic ventilation products), which
  provides additional resistance regarding the intrusion of flame and embers into the attic area of the
  structure.

#### TESTING STANDARDS INFORMATION:

Currently, there is no test for resistance of ember and flame intrusion for ridge, or off-ridge, attic vents that is recognized by the American Society for Testing and Materials (ASTM) or the California Department of Forestry and Fire Protection (Cal Fire). However, there is a proposed test standard for such vents currently under consideration, at the sub-committee level, with ASTM.

#### IMPLEMENTATION:

Check: <a href="http://www.fire.ca.gov/fire prevention/fire prevention wildland zones.php">http://www.fire.ca.gov/fire prevention/fire prevention wildland zones.php</a> or, call O'Hagin's Architectural Services Team at (877) 324-0444 to determine whether, or not, your specific project is within an effected zone or region.

#### OTHER FACTORS:

There remain many factors in addition to the specification of O'Hagin's attic ventilation products that should be considered when designing to minimize risk due to wildfire danger, including, but not limited to, the following: the use of appropriate construction materials for exterior walls, non-combustible valley flashings/gutters/downspouts, tempered windows (window walls and skylights), debris-resistant gutters, Class A roof coverings, non-combustible exterior doors, no under-eave or soffit venting, fire-resistant landscaping and appropriate vegetation setbacks. Always check local ordinance and building practice.

Effective: January 1, 2011 Rev. October, 2017 Rev. January 1, 2020

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3765 SOUTH HIGUERA STREET, SUITE 102
SAN LUIS OBISPO, CA 93401
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MONO COUNTY
WILDLAND URBAN INTERFACT

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2340-01-CU21

CF1R-PRF-01E **Calculation Date/Time:** 2022-08-04T09:40:50-07:00 (Page 1 of 10) **Input File Name:** Mono County ADU (Plan 2).ribd19x

GENER	GENERAL INFORMATION								
01	Project Name	Mono County ADU (Plan 2)	lono County ADU (Plan 2)						
02	Run Title	Title 24 Analysis	le 24 Analysis						
03	Project Location	_							
04	City	Mono County	05	Standards Version	2019				
06	Zip code		07	Software Version	EnergyPro 8.3				
08	Climate Zone	16	09	Front Orientation (deg/ Cardinal)	AllOrientations				
10	Building Type	Single family	11	Number of Dwelling Units	1				
12	Project Scope	NewConstruction	13	Number of Bedrooms	1				
14	Addition Cond. Floor Area (f <mark>t<sup>2</sup>)</mark>	0	15	Number of Stories	1				
16	Existing Cond. Floor Area <mark>(ft<sup>2</sup>)</mark>	n/a	17	Fenestration Average U-factor	0.3				
18	Total Cond. Floor Area (ft <sup>2</sup> )	615	19	Glazing Percentage (%)	15.43%				
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a				
22	Is Natural Gas A <mark>va</mark> ilable?	No	K						

COMPLIANCE RESULTS

01 Building Complies with Computer Performance 02 This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. O3 This building incorporates one or more Special Features shown below

Registration Number: 222-P010154825A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time: 2022-08-05 09:49:15 Report Version: 2019.2.000 Schema Version: rev 20200901

HERS Provider: CalCERTS inc. Report Generated: 2022-08-04 09:41:09

CF1R-PRF-01E CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Date/Time: 2022-08-04T09:40:50-07:00 (Page 4 of 10) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2).ribd19x

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

REQUIRED SPECIAL FEATURES The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Indoor air quality, balanced fan IAQ Ventilation System: as low as 0.575 W/CFM
- IAQ Ventilation System Heat Recovery: minimum 80 SRE and 80 ASRE IAQ Ventilation System: supply outside air inlet, filter, and H/ERV cores accessible per RACM Reference Manual
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3) Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional

- Building-level Verifications: Indoor air quality ventilation Kitchen range hood
- cooling System Verifications: Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7) ating System Verifications:
- Verified heat pump rated heating capacity Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8) **HVAC Distribution System Verifications:** -- None --
- Domestic Hot Water System Verifications: -- None --

Registration Number: 222-P010154825A-000-000-0000000-0000

Registration Date/Time: 2022-08-05 09:49:15 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000

Schema Version: rev 20200901

HERS Provider: Report Generated: 2022-08-04 09:41:09

CF1R-PRF-01E CERTIFICATE OF COMPLIANCE Calculation Date/Time: 2022-08-04T09:40:50-07:00 (Page 7 of 10) Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2).ribd19x

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Attic RoofLiving Area	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingl Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

			~
BUILDING ENVELOPE - HERS VERIFICATION	A Calcul	N 1 3, 111C.	
01	H 02 R S P	R O V 103D F R	04
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEM	IS					
01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a

222-P010154825A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

2022-08-05 09:49:15 Report Version: 2019.2.000 Schema Version: rev 20200901

CalCERTS inc. Report Generated: 2022-08-04 09:41:09

CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-08-04T09:40:50-07:00 Input File Name: Mono County ADU (Plan 2).ribd19x CF1R-PRF-01E

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ENERGY DESIGN RATING				
	Energy De	sign Ratings		
	Efficiency¹ (EDR)	Total² (EDR)	Efficiency¹ (EDR)	Total² (EDR)
Standard Design	65.7	43.5		
Proposed Designs				
North Facing	63.1	40.9	2.6	2.6
East Facing	62.5	40.2	3.2	3.3
South Facing	62.3	40.1	3.4	3.4
West Facing	63.2	40.9	2.5	2.6
	ресшт. 3	COMPLIES		•

Efficiency EDR includes improvements to the building envelope and more efficient equipment <sup>2</sup> Total EDR includes efficiency and deman<mark>d respo</mark>nse measures such as photovoltaic (PV) systems and batteries Total EDR includes efficiency and deman<mark>d response measures seem as process.</mark>

Building complies when efficiency and total compliance margins are greater than or equal to zero

Proposed PV Capacity Scaling: North (1.64 kWdc) East (1.64 kWdc) South (1.64 kWdc) West (1.64 kWdc)

Registration Number: Registration Date/Time: HERS Provider: 222-P010154825A-000-000-0000000-0000 2022-08-05 09:49:15 CalCERTS inc. Report Version: 2019.2.000 Report Generated: 2022-08-04 09:41:09 CA Building Energy Efficiency Standards - 2019 Residential Compliance Schema Version: rev 20200901

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E (Page 5 of 10) Project Name: Mono County ADU (Plan 2) Calculation Date/Time: 2022-08-04T09:40:50-07:00 Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2).ribd19x

01	- 1	02		03			04		05		06	07
Project Name		Conditioned Floo	r Area (ft <sup>2</sup> )	Number of Dw Units	elling	Number of Bedrooms		Nu	Number of Zones		mber of Ventilation Cooling Systems	Number of Water Heating Systems
Mono County ADU (Pla	n 2)	615		1			1		1		0	1
ONE INFORMATION												
01		02		03		04	04		05		06	07
Zone Name		Zone Type	Zone Type HVAC System Name Zone Floor Area (ft <sup>2</sup> ) Avg. Ceiling Height Water Heating System 1		ater Heating System 1 Water Heating Syste							
Living Area		Conditioned	ŀ	HVAC System1		615			8		DHW Sys 1	N/A
PAQUE SURFACES			-									
01		02		03		04	05		06		07	08
Name		Zone	Cons	truction	Azi	imuth	Orientat	ion	Gross Area (ft <sup>2</sup>	)	Window and Door Area (ft2)	Tilt (deg)
Front Wall	Liv	ving Are <mark>a</mark>	R-2	1 Wall		0	Front	71	224	•	68.6	90
Left Wall	Liv	ving Area	R-2	1 Wall	R S	90	Left	$\vee$ I	200		33.3	90
Rear Wall	Liv	ving Area	R-2	1 Wall	:	180	Back		224		9	90
Right Wall	Liv	ving Area	R-2	1 Wall	:	270	Right		200		4	90
Roof	Liv	ving Area	R-38 F	Roof Attic		n/a	n/a		615		n/a	n/a
TIC							<u>-</u>		<u> </u>			
01		02		03		04	05		06		07	08

Name	Construction	Туре	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Living Area	Attic RoofLiving Area	Ventilated	8	0.1	0.85	No	No
			·				

Registration Number: 222-P010154825A-000-000-0000000-0000 Registration Date/Time: 2022-08-05 09:49:15 Report Generated: 2022-08-04 09:41:09 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000 Schema Version: rev 20200901

Calculation Descrip	tion: Title 24 A	Analysis			Input File Name: Mono County ADU (Plan 2).ribd19x									
WATER HEATERS														
01	02	0	3	04	05	06	07	08	09	10	11	12		
Name	Heating Element Type	Tank	Туре	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Ratin		Tank Location or Ambient Condition		
DHW Heater 1	Heat Pump	n/	'a	1	50	NEEA Rated	<= 12 kW	n/a	n/a	n/a	Rheem\XE50T10H2 2U0 (50 gal)	Conditioned		
WATER HEATING - HE	RS VERIFICATIO	N	A											
01	02			03		04		05	06	5	07	08		

Calculation Date/Time: 2022-08-04T09:40:50-07:00

01	02	03		04		05	06		07			08
Name	Pipe Insulatio	n Parallel F	Piping	Compact Distributi	on i	Distribution Type	Recirculation (	Control	Central DHV Distribution	-		Drain Wate Recovery
DHW Sys 1 - 1/1	Not Required	l Not Req	uired	Not Required	N	lone	Not Requir	ed	Not Require	d	Not	Required
SPACE CONDITIONING	SYSTEMS				<del>-R1</del>	5	Inc	_				
01		02	03	04	05	06	07	08	09	1	.0	11
Name	Sy	stem Type	Heating Un Name	it Cooling Unit Name	Fan Name	Distribution Name	Required Thermostar Type	Status	Verified Existing Condition	Equip	iting oment unt	Cooling Equipmer Count
HVAC System1	Heat pun	np heating cooling	Heat Pump System 1	Heat Pump System 1	n/a	n/a	Setback	New	NA	1	1	1
01	02	03	04	05	06	07	08	09	10	0		11
HVAC - HEAT PUMPS												
Name	System Type	Number of Units		Heating		Coo	oling Zona		onally Compressor		r HERS Verification	
	-,5:5::: 1,66	1	HSPE/COR	Can 47	Can 17	SFFR	FFR/CFFR	Controll	led Ty	ne l		

222-P010154825A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

VCHP-ductless

Heat Pump System 1

CERTIFICATE OF COMPLIANCE

Project Name: Mono County ADU (Plan 2)

Registration Date/Time: 2022-08-05 09:49:15 Report Version: 2019.2.000 Schema Version: rev 20200901

8000

12000

CalCERTS inc. Report Generated: 2022-08-04 09:41:09

Not Zonal

Heat Pump System

HERS Provider:

CF1R-PRF-01E

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CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-08-04T09:40:50-07:00 Input File Name: Mono County ADU (Plan 2).ribd19x

CF1R-PRF-01E (Page 3 of 10)

	ENERGY	USE SUMMARY		
Energy Use (kTDV/ft <sup>2</sup> -yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvemen
Space Heating	99.28	92.16	7.12	7.2
Space Cooling	3.17	1.05	2.12	66.9
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.97	28.36	1.61	5.4
Self Utilization Credit	n/a	0	0	n/a
North Facing Compliance Total	142.74	131.61	11.13	7.8
Space Heating	99.28	88.14	11.14	11.2
Space Cooling	3.17	2.04	1.13	35.6
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.97	28.28	1.69	5.6
Self Utilization Credit	n/a	0	0	n/a
East Facing Compliance Total	142.74	128.5	14.24	10
Space Heating	99.28	87.57	11.71	11.8
Space Cooling	3.17	P R O 1.78   D F	1.39	43.8
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.97	28.32	1.65	5.5
Self Utilization Credit	n/a	0	0	n/a
South Facing Compliance Total	142.74	127.71	15.03	10.5
Space Heating	99.28	91.54	7.74	7.8
Space Cooling	3.17	2.04	1.13	35.6
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.97	28.34	1.63	5.4
Self Utilization Credit	n/a	0	0	n/a
West Facing Compliance Total	142.74	131.96		7.6

	:22-P010154825A-000-000 ciency Standards - 2019	-0000000-0000 PResidential Compliance	Repo	stration Dat ort Version: ma Version	20 2019.2.0		Special Features	Addition # of Units 1  Status  Existing  Existing	Date   2/4/2022   # of Units   1     # of Units   1     Status   Existing   O.30   Status				
CERTIFICATE OF COM	PLIANCE						ne N/A ne N/A	Existing Existing Existing			CF1R-PRF-01E		
roject Name: Mono	County ADU (Plan 2)		Calculation Date/Time:				e: ne N/A	Existing Altered			(Page 6 of 10)		
Calculation Description	,					<b>ne:</b> Mor	- 101	Altered					
			,		_								
ENESTRATION / GLAZI			<del></del>							г			
01	02	03	04	05	06	07			2	13	14		
Name	Туре	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Min. Eff Thermo	ostat Status	GC	SHGC Sourc e	Exterior Shading		
B.3	Window	Front Wall	Front	0			14.0 SEER Setback	Existing	23	NFRC	Bug Screen		
B.5	Window	Front Wall	Front	0			Duc	t	23	NFRC	Bug Screen		
С	Window	Front Wall	Front	0				alue Status	23	NFRC	Bug Screen		
C 2	Window	Front Wall	Front	0			6.0	Allered	23	NFRC	Bug Screen		
C 3	Window	Front Wall	Front	0			<u> </u>		23	NFRC	Bug Screen		
C.1	Window	Front Wall	Front	0			stribution	Status	23	NFRC	Bug Screen		
Door C	Window	Left Wall	Left	90					23	NFRC	Bug Screen		
B.1	Window	Rear Wall	Back	180			ID: 22-020416	Page 14 of 21	23	NFRC	Bug Screen		
B.6	Window	Right Wall	Right	270			4		23	NFRC	Bug Screen		
DPAQUE DOORS		31 6	alle	:K		),	tiic.						
0	)1	L 0:	FRS	PR	0	/ 0	DER		04	4			
Na	Building			Area	(ft <sup>2</sup> )		U-fa	ctor					
A1 Front Wa			Wall			2	0		0.	2			
SLAB FLOORS													
01	02	03	04		05		06	07			08		
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)	Edge	Insul. R	-value	Edge Insul. R-value	Carpeted Fra	action		Heated		

Name 7 (62) Basinata (61) Edge Insul. R-value Edge Insul. R-value	
Name Zone Area (ft <sup>2</sup> ) Perimeter (ft) Luge Insul: N-value and Depth and Depth Carpeted Fraction	Heated
Slab         Living Area         615         106         none         0         80%	No

Registration Number: 222-P010154825A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

CERTIFICATE OF COMPLIANCE

Project Name: Mono County ADU (Plan 2)

Registration Date/Time: 2022-08-05 09:49:15 Report Version: 2019.2.000 Schema Version: rev 20200901

Calculation Date/Time: 2022-08-04T09:40:50-07:00

HERS Provider: Report Generated: 2022-08-04 09:41:09

CF1R-PRF-01E

Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2).ribd19x HVAC HEAT PUMPS - HERS VERIFICATION 01 02 Verified Refrigerant Verified Heating Verified Heating Verified EER Verified SEER Verified HSPF Verified Airflow Airflow Target Cap 47 Cap 17 Charge Heat Pump System 1-hers-htpump

ARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION										
01		02	03	04	05	06	07	08	09	10
Name	Lo	ertified w-Static P System	Airflow t Habitabl Rooms	e in Conditioned	I Wall Mount	Air Filter Sizing & Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump Systen	m 1 Not	required	Required	d Required	Required	Not required	Not required	Not required	Not required	Not required
								,		1

				_		
IAQ (INDOOR AIR QUALITY) FANS			CEDT			
01	02	03	04	05	06	07
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE	HERS Verification
SFam IAQVentRpt 1-1	40	0.575	Balanced	80	80	Yes

Registration Number: 222-P010154825A-000-000-000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance Registration Date/Time: 2022-08-05 09:49:15 Report Version: 2019.2.000

Schema Version: rev 20200901

HERS Provider: CalCERTS inc. Report Generated: 2022-08-04 09:41:09

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Calculation Description: Title 24 Analysis	Input File Name: Mono County ADU (Plan 2).ribd19x
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Timothy Carstairs	Timothy Carstairs
Company:	Signature Date:
Carstairs Energy Inc.	2022-08-05 09:22:46
Address:	CEA/ HERS Certification Identification (If applicable):
2238 Bayview Heights Drive, Suite E	r160610042
City/State/Zip:	Phone:
Los Osos, CA 93402	805-904-9048
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
,	Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. e are consistent with the information provided on other applicable compliance documents, worksheets,
Responsible Designer Name: Randy Russom	Responsible Designer Signature: RAM
Company: RRM Design Group	Date Signed: 2022-08-05 09:49:15
Address: 3765 S. Higuera Street, Suite 102	License: C24410
City/State/Zip: San Luis Obispo, CA 94301	Phone: 805-543-1794

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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Registration Number: 222-P010154825A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance Registration Date/Time: 2022-08-05 09:49:15 Report Version: 2019.2.000 Schema Version: rev 20200901

HERS Provider: CalCERTS inc. Report Generated: 2022-08-04 09:41:09

	2019 Low-Rise Residential Mandatory Measures Summary
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 have a 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, and 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, 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.
150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
ucts and Fans	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 1/4 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.*
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.
150.0(m)3:	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.
150.0(m)8:	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.
150.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed 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.
150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in 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 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.*

ROOM LOAD	SUMMARY									
Project Name								Date		
Mono County ADU System Name	J (Plan 2)							Flore	8/4/20 Area	022
HVAC System								Floor	615	5
ROOM LOAD SUM	MARY								070	
			ROO	M COOLING	3 PEAK	COIL	COOLING	PEAK	COIL H	TG. PEAK
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
Living Area	1st Floor ADU	1	265	4,514	-63	265	4,514	-63	423	13,322
		-								
						l				
				PAGE TOT	ΔI	265	4,514	-63	423	13,322
				TOTA		265	4,514	-63	423	13,322
* Total includes ventilation	on load for zonal systems.				•	•	1		•	

RESI	DENTIAL I	<u> IEAS</u>	URES S	UMM.	<u>ARY</u>						RMS-1
Project Na	<sub>ame</sub> County ADU (F	Dan 2)		Buile	ding Type		le Famil i Family	ly ☐ Addition ☐ Existing		/Alteration	Date 8/4/2022
Project A		iaii 2)		Cali	fornia Ene		,	Total Cond. Flo		Addition	# of Units
	County					ate Zone		615		n/a	1
INSUL	.ATION					Area	·				·
Const	ruction Typ	е		Cav	/ity	$(ft^2)$	S	oecial Fea	tures		Status
Wall	Wood Framed			R 21		733					New
Door	Opaque Door			R-5		20					New
Roof	Wood Framed A	ttic		R 38		615					New
Slab	Unheated Slab-o	n-Grade		- no in	sulation	615	Perim =	= 106′			New
	STRATION		Total Area:			Percentag				ge U-Factor:	0.30
	tation Area			HGC	Overl		Sidefi		ior Sha	ades	Status
Front (N)		48.6	0.300	0.23	none		none	N/A			New
Left (E)		33.3	0.300	0.23	none		none	N/A			New
Rear (S)		9.0	0.300	0.23	none		none	N/A			New
Right (W)		4.0	0.300	0.23	none		none	N/A			New
HVAC	SYSTEMS										
	Heating		Min. Eff	Co	oling		Min	. Eff	Ther	mostat	Status
1	Split Heat Pump		8.20 HSPF	Spi	lit Heat Pu	тр	14.0	SEER	Setback		New
	DISTRIBUT	ION							D	uct	
HVAC		Hea	ting	Co	oling	Duct	Loca	ition	R	-Value	Status
	ion					n/a				/a	
Locati			s / with Fan	Duc	tiess	II/a			111	u	New
Locati HVAC Sys			s / with Fan	Duc	tiess	IVa			10		New
Locati HVAC Sys	R HEATING						Distril	oution	10		
Locati HVAC Sys	stem			ons	Min.	Eff [	<b>Distril</b> Standard	oution	10	u	Status New
HVAC Sys  WATE Qty.	R HEATING		Gall		Min.	Eff [			10		Status
HVAC Sys	R HEATING	Ductles:	Gall		Min.	Eff [		d	051011		Status

#### 2019 Low-Rise Residential Mandatory Measures Summary

Requirements f	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 5.03 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, flow rate, piping, filters, and valves.
Lighting Measu	
§ 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.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or 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
3 100.0(11)12.	
§ 150.0(k)1E:	output frequency no less than 20 kHz.  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
.,,	output frequency no less than 20 kHz.  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.  Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods)
§ 150.0(k)1F:	output frequency no less than 20 kHz.  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.  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)1F: § 150.0(k)1G:	output frequency no less than 20 kHz.  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.  Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods)
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H:	output frequency no less than 20 kHz.  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.  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).*  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*  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.  Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I:	output frequency no less than 20 kHz.  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.  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).  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.  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.  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
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I: § 150.0(k)2A:	output frequency no less than 20 kHz.  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.  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).  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.  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.  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.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.  Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)11: § 150.0(k)2A: § 150.0(k)2B:	output frequency no less than 20 kHz.  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.  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).  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.  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.  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.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)11: § 150.0(k)2A: § 150.0(k)2B: § 150.0(k)2C:	output frequency no less than 20 kHz.  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.  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).  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.  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.  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.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.  Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually
§ 150.0(k)1E: § 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)2A: § 150.0(k)2A: § 150.0(k)2C: § 150.0(k)2C: § 150.0(k)2C: § 150.0(k)2D:	output frequency no less than 20 kHz.  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.  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).*  Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*  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.  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.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.  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 turned ON and OFF.*



used. Review the	esidential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance a respective section for more information. *Exceptions may apply.
(01/2020) Building Envelop	pe 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 Tat 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped."
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caull gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household and Services (BHGS).
§ 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 roofing 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 CF
§ 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 Consume
\$ 450 O(a).	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceen Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attact in the permanently attact.
§ 150.0(a):	insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed direct contact with a continuous roof or ceiling which is sealed to limit infiltration and extiltration as specified in § 110.7, including but not
§ 150.0(b):	to placing insulation either above or below the roof deck or on top of a drywall ceiling.*  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 framing wall or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonr
	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 alon
§ 150.0(f):	facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical dam UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	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 vapo
	retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).  Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all installed in all parties in the conditioned space side of all installed in all parties in the conditioned space side of all installed in all parties in the conditioned space side of all installed installed in the conditioned space side of all installed installed in the conditioned space side of all installed install
§ 150.0(g)2:	insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.  Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must ha
§ 150.0(q):	maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*  prative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 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 i and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.
	ing, Water Heating, and Plumbing System Measures: Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated.
§ 110.0-§ 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.*  Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters.
§ 110.2(b):	must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in whic cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature
	compression heating is higher than the cut-off temperature for supplementary heating.  Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMICS) must be a controlled by a central energy management control system (EMICS) must be a controlled by a central energy management control system (EMICS) must be a controlled by a central energy management control system.
§ 110.2(c):	setback thermostat.  Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculati
§ 110.3(c)4:	meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recircula
\$ 110.3(a)6:	§ 110.3(c)4. Family Addition Alone  Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour amily Existing+ Addition/Alteration
§ 110.3(c)6:	bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when Fone Total Cond. Floor Area Addition  Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furne 33,906 11
§ 110.5:	appliances without an electrical supply voltage connection with pilot lights that consume less than
§ 150.0(h)1:	Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential C
	Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
	2019 Low-Rise Residential Mandatory Measure
\$ 150.0(k)2G:	2019 Low-Rise Residential Mandatory Measure  16.3 % New/Atered Average U-Factor.  Interior Switches and Controls. An energy management control system (EMCS) may be used to the provides functionality of the specified control according to § 110.9; meets the installation Certifica in the control according to § 110.9; meets the installation Certifica.
	2019 Low-Rise Residential Mandatory Measure  16.3 % NewMAtered Average U-Factor: Interior Switches and Controls. An energy management control system (EMCS) may be used to idefins Exterior Shades
	2019 Low-Rise Residential Mandatory Measure    16.3 %   New/Atered Average U-Factor.
§ 150.0(k)2H:	2019 Low-Rise Residential Mandatory Measure    16.3 %   New/Matered Average U-Factor.
§ 150.0(k)2H: § 150.0(k)2I:	2019 Low-Rise Residential Mandatory Measure    16.3 %     New/Atered Average U-Factor.
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J:	2019 Low-Rise Residential Mandatory Measure    16 3 %   New/Atered Average U-Factor.
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2K:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used to the specified control according to § 110.9; meets the Installation Certifica (Interior Switches and Controls. A multiscene programmable controller may be used to comply vine (Interior Switches and Controls. A multiscene programmable controller may be used to comply vine (Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at learing (Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at learing (Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at learing (Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at learing (Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming control interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling (Residential Outdoor Lighting, For single-family residential buildings, outdoor lighting permanen).
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2K:	2019 Low-Rise Residential Mandatory Measure    16.3 %   Newi/Atered Average U-Factor.
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2J: § 150.0(k)2K: § 150.0(k)3A:	2019 Low-Rise Residential Mandatory Measure    163 %   New/Atered Average U-Factor.
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2J: § 150.0(k)2K: § 150.0(k)3A:	Interior Switches and Controls. An energy management control system (EMCS) may be used to provides functionality of the specified control according to § 110.9; meets the Installation Certifical meets of § 130.0(e); and meets all other requirements in § 150.0(k)2.  Interior Switches and Controls. A multiscene programmable controller may be used to comply vine meets to functionality of a dimmer according to § 110.9, and complies with all other applicabler meets functionality of a dimmer according to § 110.9, and complies with all other applicabler meets functionality of a dimmer according to § 110.9, and complies with all other applicabler meets functionality of a dimmer according to § 110.9, and complies with all other applicabler meets functionality. If ene meets functionality is meets functionality of a dimmer according to § 110.9, and complies with all other applicabler meets functionality. If ene meets functionality is meets functionality. If ene meets functionality is meets functionality of the meets functionality. If ene meets functionality is meets functionality of the meets functionality of the meets functionality. If ene meets functionality is meets functionality of the meets functionality of the meets functionality. If ene meets functionality is meets functionality of the meets functionality of the meets functionality. If ene meets functionality is meets functionality of the meets functionality of the meets functionality. If ene meets functionality is measured functionalit
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2A: § 150.0(k)3A: § 150.0(k)3B:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used to provides functionality of the specified control according to § 110.9; meets the Installation Certification of the Specified Control according to § 110.9; meets the Installation Certification of the Specified Control according to § 110.9; meets the Installation Certification of the Specified Control according to § 110.9; meets the Installation Certification of the Specified Control of
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2A: § 150.0(k)3A: § 150.0(k)3B: § 150.0(k)3C:	Interior Switches and Controls. An energy management control system (EMCS) may be used to provide functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at league NAA be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If provides and Controls. Luminaires that are or contain light sources that meet Reference dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls. Under cabinet lighting must be controlled separately from ceilin.  Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanentuildings on the same lot, must meet the requirement in Item § 150.0(k)(3Ai (ON and OFF switch)), § 150.0(k) 3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k  Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, balconies, and porches; and residential parking lots and carports with less than eight vehicles per with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  Min. Eff Therm
\$ 150.0(k)2H: \$ 150.0(k)2I: \$ 150.0(k)2J: \$ 150.0(k)2A: \$ 150.0(k)3A: \$ 150.0(k)3B: \$ 150.0(k)3C: \$ 150.0(k)4:	Interior Switches and Controls. An energy management control system (EMCS) may be used to the provides functionality of the specified control according to § 110.9; meets the Installation Certifica for the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.  Interior Switches and Controls. A multiscene programmable controller may be used to comply vire for the functionality of a dimmer according to § 110.9; and complies with all other applicable for formal functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality. If an functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality. If an functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality. If an functionality of a dimmer according to § 110.9, and complies with all other applicable for functionality. If an functionality of functionality of functionality. If an functionality of functionality of functionality of functionality. If an functionality of functionality of functionality of functionality of functionality of functionality. If an functionality of functionality of functionality of functionality of functionality of functionality. If an functionality of functionality of functionality of functionality. If an functionality of functionality of functionality of functionality. If an functionality of functionality of functionality. If an functionality of functionality of functionality of functionality. If an functionality of functionality of functionality of functionality. If an functionality of functionality of functionality. If an functio
§ 150.0(k)2H: § 150.0(k)2I: § 150.0(k)2J: § 150.0(k)2X: § 150.0(k)3A: § 150.0(k)3B: § 150.0(k)3C: § 150.0(k)4:	Interior Switches and Controls. An energy management control system (EMCS) may be used to the specified control according to § 110.9; meets the Installation Certifica from the System (EMCS) may be used to the specified control according to § 110.9; meets the Installation Certifica from the System (EMCS) may be used to comply view of the specified control according to § 110.9; meets the Installation Certifica from the System (EMCS) may be used to comply view of the System of
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§ 150.0(k)2H:  § 150.0(k)2I:  § 150.0(k)2J:  § 150.0(k)2A:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)5:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used to define Staterior Shades provides functionality of the specified control according to § 110.9; meets the Installation Certification M/A  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.  Interior Switches and Controls. A multiscene programmable controller may be used to comply vine M/A  Interior Switches and Controls. In bathrooms, garages, laundry rooms, and tuility rooms, at leaving M/A  Interior Switches and Controls. In bathrooms, garages, laundry rooms, and tuility rooms, at leaving M/A  Interior Switches and Controls. In bathrooms, garages, laundry rooms, and tuility rooms, at leaving M/A  Interior Switches and Controls. Linating the manual control required under Section 150.0.  Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming control interior Switches and Controls. Under cabinet lighting must be controlled separately from ceilin.  Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanent buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch).  § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k  Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, had osere providential buildings with four or more dwelling units, had osere providential buildings, outdoor lighting to regulated by 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, had osere providential buildings, outdoor lighting for regulated by the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  Interior Common Areas of
\$ 150.0(k)2H: \$ 150.0(k)2I: \$ 150.0(k)2J: \$ 150.0(k)2J: \$ 150.0(k)3A: \$ 150.0(k)3A: \$ 150.0(k)3C: \$ 150.0(k)3C: \$ 150.0(k)6A:	Interior Switches and Controls. An energy management control system (EMCS) may be used to provides functionality of the specified control according to § 110.9; meets the Installation Certificance (and interior Switches and Controls. A multiscene programmable controller may be used to comply the provides the functionality of the specified control according to § 110.9; meets the Installation Certificance (and interior Switches and Controls. A multiscene programmable controller may be used to comply the provides the functionality of a dimmer according to § 110.9, and complies with all other applicablere (and interior Switches and Controls. In bathrooms, garages, laundry rooms, and tullity rooms, at learner (and interior Switches and Controls.) In the provides the functionality of a dimmer according to § 110.9, and complies with all other applicablere (and interior Switches and Controls.) Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming contruler or switches and Controls. Under cabinet lighting must be controlled separately from ceilin (and the provided provided and either a motion sensor or automatic time switch control) or § 150.0(k) Residential Outdoor Lighting. For Iova-rise residential buildings with four or more dwelling units, balconies, and porches; and residential parking lots and carports with less than eight vehicles per with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  Residential Outdoor Lighting. For Iova-rise residential buildings with four or more dwelling units, balconies, and porches; and residential parking lots and carports with less than eight vehicles per with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  Residential Outdoor Lighting. For Iova-rise residential buildings with four or more dwelling units, set or carports with a total of eight or more vehicles per site and any outd
§ 150.0(k)2H:  § 150.0(k)2I:  § 150.0(k)2J:  § 150.0(k)2A:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)6A:	Interior Switches and Controls. An energy management control system (EMCS) may be used to Exterior Shades provides functionality of the specified control according to § 110.9; meets the Installation Certifica Provides functionality of the specified control according to § 110.9; meets the Installation Certifica Provides functionality of the specified control according to § 110.9; meets the Installation Certifica Provides functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at lear Provides the provides the functionality of the Provides the provides the functionality. If Provide Provides the provides the functionality of the Provides of the provides the provide
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§ 150.0(k)2H:  § 150.0(k)2I:  § 150.0(k)2J:  § 150.0(k)2A:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6A:	Interior Switches and Controls. An energy management control system (EMCS) may be used   Interior Switches and Controls. An energy management control system (EMCS) may be used   Interior Switches and Controls. An energy management control system (EMCS) may be used   Interior Switches and Controls. A multiscene programmable of \$150.0(k)2.
§ 150.0(k)2H:  § 150.0(k)2I:  § 150.0(k)2J:  § 150.0(k)2A:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6A:  § 150.0(k)6B:  Solar Ready Built  § 110.10(a)1:	The provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of the specified control according to § 110.9; meets the Installation Certifical Provides functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the functionality of a dimmer according to § 110.9, and complies with all other applicable Provides the controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If Provides the controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If Provides and Controls. Luminaires that are or contain light sources that meet Reference dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controlled provides and Controls. Under cabinet lighting must be controlled separately from ceillin Residential Outdoor Lighting. For low-rise residential buildings, outdoor lighting permanent buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (DN and OFF switch) § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k) Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, balconies, and porches, and residential parking lots and carports with less than eight vehicles per 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, balconies, and porches, and residential granges in Section
§ 150.0(k)2H:  § 150.0(k)2I:  § 150.0(k)2J:  § 150.0(k)2A:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6A:  § 150.0(k)6B:  Solar Ready Built  § 110.10(a)1:	Interior Switches and Controls. An energy management control system (EMCS) may be used to define   MA
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§ 150.0(k)2H:  § 150.0(k)2J:  § 150.0(k)2J:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6B:  Solar Ready Build  § 110.10(a)1:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used to provides functionality of the specified control according to § 1109, meets the installation Certifical    MA  MCS requirements of § 100 (6)e), and meets all other requirements in § 150 (1)(12).  Interior Switches and Controls. A multiscene programmable controller may be used to comply the provides the functionality of a mide according to § 1109, and comples with all other applicable™  NA  Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at lear™  NA  be controlled by an occupant sensor or a vacancy sensor providing automaticol ffunctionality. If zero NA  Interior Switches and Controls. Luminaries that are or contain light sources that meet Reference dimming, and that are not controlled by occupant yor vacancy sensors, must have dimming control.  Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceilin.  Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanen buildings on the same lot, must meet the requirement in item § 150.0(X)3Ai (Not and OFF switch)  \$150.0(X)3Ai (photocell and either a motion sensor or automatic time switch control) or § 150.0(I).  Residential Outdoor Lighting. For isingle-family residential buildings with four or more dwelling units, balconies, and prothes; and residential parking lost and carports with four or more dwelling units, balconies, and prothes; and residential parking lost and carports with four or more dwelling units, and seze or campots with a total of eight or more vehicles per site and any outdoor lighting not regulated by the applicable requirements in Sections 110.9, 1300, 1302, 1304, 1407 and 141.0  Internally illuminated address signs. Internally illuminated address signs must comply with § 1 propover as determined according to § 130.0(c).  Residential Garages for Eight or More Vehicles. Lighting for residential parkin
\$ 150.0(k)2H: \$ 150.0(k)2J: \$ 150.0(k)2J: \$ 150.0(k)2A: \$ 150.0(k)3A: \$ 150.0(k)3B: \$ 150.0(k)3C: \$ 150.0(k)6A: \$ 150.0(k)6B: \$ 150.0(k)6B: \$ 110.10(a)1: \$ 110.10(a)2:	Interior Switches and Controls. An energy management control system (EMCS) may be used by the specified control according to § 110.9; meets the installation Certifica   MA
§ 150.0(k)2H:  § 150.0(k)2J:  § 150.0(k)2J:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6A:  § 150.0(k)6B:  Solar Ready Built  § 110.10(a)2:  § 110.10(b)1:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used tydefins  Exterior Shades  provides functionality of the specified control according to \$ 11.03 rms the Installation Control.  EMCS requirements o \$ 13.00(e); and meets all other requirements in \$ 15.00(k).2.  EMCS requirements o \$ 13.00(e); and meets all other requirements in \$ 15.00(k).2.  Interior Switches and Controls. A multiscene programmable controller may be used to comply vire  provides the functionality of a dimmer according to \$ 110.9, and complies with all other applicabler.  MA  Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at learner  MA  Interior Switches and Controls. Luminaires that are or control in give automatic-off functionality, if eve  initially configured to manual-on operation using the manual control required under Section 150.0  Interior Switches and Controls. Luminaires that are or control in give automatic-off functionality, if eve  interior Switches and Controls. Under cabinet lighting must be controlled separately from ceilin  Residential Outdoor Lighting. For single-family residential buildings, and benefit of switch in the same lot, must meet the requirement in lime in \$15.00(k)34.0 (N and OFF switch)  \$ 15.00(3)34ii (photocell and either a motion sensor or automatic time switch control) or \$ 15.00 (k).  Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, belaconies, and porches, and residential paring joils and carports with less than eight vehicles per with the applicable requirements in Sections 110.9, 13.00, 13.02, 13.04, 14.07, and 14.10.  Min. Eff  Thermostat  Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, belaconies, and porches, and residential paring liminated address signs. Internally illuminated address signs. Internally illuminated address signs must comply with \$ 14.00.  Min. Eff  Thermostat  Resi
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\$ 150.0(k)2G:  \$ 150.0(k)2H:  \$ 150.0(k)2H:  \$ 150.0(k)2J:  \$ 150.0(k)3A:  \$ 150.0(k)3A:  \$ 150.0(k)3A:  \$ 150.0(k)3B:  \$ 150.0(k)3C:  \$ 150.0(k)6A:  \$ 150.0(k)6A:  \$ 150.0(k)6B:  \$ 110.10(a)2:  \$ 110.10(b)1:  \$ 110.10(b)3A:  \$ 110.10(b)3B:	Therior Switches and Controls. An energy management control system (EMCS) may be used the definited of the provides functionality of the specified control according to § 110.9; meets the installation certification.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k).2.  EMCS requirements of § 130.0(e); and meets all other requirements in the representation of the provision of the provisio
§ 150.0(k)2H:  § 150.0(k)2J:  § 150.0(k)2J:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3B:  § 150.0(k)6B:  § 150.0(k)6B:  Solar Ready Built  § 110.10(a)1:  § 110.10(b)1:  § 110.10(b)2:  § 110.10(b)3A:	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used item of the provides functionality of the specified control according to § 110.9; meets the installation Certification.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(e).2. field may be used to compty. "MA provides the functionality of a dimmer according to § 110.9, and complies with all other applicable*" MA interior Switches and Controls. A brathorous, garages, laundry rooms, and utility rooms, at learn with the controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If zee ministry configured to manual-on operation using the manual control required under Section 150.0  Interior Switches and Controls. Luminaires that are or controlled by occupancy or veancy sensors, must have dimming controlled that are not controlled by occupancy or veancy sensors, must have dimming controlled in the provided provided by occupancy or veancy sensors, must have dimming controlled in the provided by occupancy or veancy sensors, must have dimming controlled by an occupant sensor or a vacancy sensors must have dimming controlled.  Residential Outdoor Lighting, For isolate facility of the provided provided in the provided provi
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§ 150.0(k)2H:  § 150.0(k)2J:  § 150.0(k)2J:  § 150.0(k)3A:  § 150.0(k)3B:  § 150.0(k)3C:  § 150.0(k)4:  § 150.0(k)6A:  § 150.0(k)6A:  § 150.0(k)6B:  Solar Ready Built  § 110.10(a)2:  § 110.10(b)1:  § 110.10(b)3A:  § 110.10(b)3B:  § 110.10(b)4:	Interior Switches and Controls. An energy management control system (EMCS) may be used interior Switches and Controls. An energy management control system (EMCS) may be used interior Switches and Controls. An energy management control system (EMCS) may be used interior Switches and Controls. A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller may be used to comply. **Max A multiscene programmable controller and policies and controller. **Max A multiscene programmable controller and policies and controller. **Max A multiscene programmable controller and policies and controller. **Max A multiscene programmable controller and policies. **Max A multiscene programmable controller and
\$ 150.0(k)2H: \$ 150.0(k)2J: \$ 150.0(k)2J: \$ 150.0(k)2A: \$ 150.0(k)3A: \$ 150.0(k)3B: \$ 150.0(k)3B: \$ 150.0(k)4: \$ 150.0(k)5: \$ 150.0(k)6A: \$ 150.0(k)6B: \$ 110.10(a)1: \$ 110.10(b)1: \$ 110.10(b)2: \$ 110.10(b)3B: \$ 110.10(b)3B: \$ 110.10(b)4: \$ 110.10(c): \$ 110.10(d):	2019 Low-Rise Residential Mandatory Measure  Interior Switches and Controls. An energy management control system (EMCS) may be used to the control of the specified control according to § 1103, meets the Installation Certification.  EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)?  Interior Switches and Controls. A multiscene programmatic control may be used to comply visc.  MAX provides functionally professional to the control of the provides of the control of the profession of the control of the provides of the control
\$ 150.0(k)2H: \$ 150.0(k)2J: \$ 150.0(k)2J: \$ 150.0(k)2A: \$ 150.0(k)3A: \$ 150.0(k)3B: \$ 150.0(k)3C: \$ 150.0(k)4: \$ 150.0(k)5: \$ 150.0(k)6A: \$ 150.0(k)6A: \$ 110.10(a)2: \$ 110.10(b)1: \$ 110.10(b)3A: \$ 110.10(b)3B: \$ 110.10(b)4:	Interior Switches and Controls. An energy management control system (EMCS) may be used by provides functionality of the specified control according to § 110.9, meets the Installation Certifical Part (MCS) may be used by provides functionality of the specified control according to § 110.9, meets the Installation Certifical Part (MCS) may be used to comply view that the Interior Switches and Controls. A multisener programmable controller may be used to comply view MA provides the functionality of a dimmer according to § 110.9, and complies with all other applicable** MA interior Switches and Controls. In betheroons, garages, laundry rooms, and utility rooms, at leave MA interior Switches and Controls. Unimitaries provided to manual-on penalton using the manual control required under Section 150.0 Interior Switches and Controls. Unimitaries that are not controlled by occupancy or viewaries yearness, manual control required under Section 150.0 Interior Switches and Controls. Under cabine lighting must be controlled by spentage to the provided by occupancy or viewaries yearness, manual control required from Evidence and the provided provided by the provided provided by occupancy or viewaries yearness, manual control required from celling.  Interior Switches and Controls. Under cabine lighting must be controlled spentage from celling to the provided by the provided provided by occupancy or viewaries yearness, manual control squired from celling to the provided by th



2

Plan

County

CF1R-PRF-01E Calculation Date/Time: 2022-08-04T09:42:58-07:00 (Page 1 of 10) Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

GENER	AL INFORMATION				
01	Project Name	Mono County ADU (Plan 2)			
02	Run Title	Title 24 Analysis			
03	Project Location	_			
04	City	Mono County	05	Standards Version	2019
06	Zip code		07	Software Version	EnergyPro 8.3
08	Climate Zone	16	09	Front Orientation (deg/ Cardinal)	AllOrientations
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	NewConstruction	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (f <mark>t²</mark> )	0	15	Number of Stories	1
16	Existing Cond. Floor Area <mark>(ft<sup>2</sup>)</mark>	n/a	17	Fenestration Average U-factor	0.3
18	Total Con <mark>d. Floor</mark> Area (ft <sup>2</sup> )	615	19	Glazing Percentage (%)	15.43%
20	ADU Bed <mark>room</mark> Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas A <mark>va</mark> ilable?	No	K	15 Inc	

COMPLIANCE RESULTS

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

Registration Number: 222-P010154826A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time: 2022-08-05 09:49:33 Report Version: 2019.2.000 Schema Version: rev 20200901

HERS Provider: CalCERTS inc.

Report Generated: 2022-08-04 09:43:20

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E Project Name: Mono County ADU (Plan 2) Calculation Date/Time: 2022-08-04T09:42:58-07:00 (Page 4 of 10) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

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

REQUIRED SPECIAL FEATURES The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Indoor air quality, balanced fan IAQ Ventilation System: as low as 0.575 W/CFM
- IAQ Ventilation System Heat Recovery: minimum 80 SRE and 80 ASRE IAQ Ventilation System: supply outside air inlet, filter, and H/ERV cores accessible per RACM Reference Manual
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3) Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional

Building-level Verifications: Indoor air quality ventilation

Kitchen range hood cooling System Verifications: Verified Refrigerant Charge

Airflow in habitable rooms (SC3.1.4.1.7) ating System Verifications:

- Verified heat pump rated heating capacity Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8) HVAC Distribution System Verifications:
- -- None --Domestic Hot Water System Verifications:

-- None --

Registration Number: 222-P010154826A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

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HERS Provider:

CalCERTS inc. Report Generated: 2022-08-04 09:43:20

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E Project Name: Mono County ADU (Plan 2) Calculation Date/Time: 2022-08-04T09:42:58-07:00 (Page 7 of 10) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

OPAQUE SURFACE CONSTR	RUCTIONS						
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Attic RoofLiving Area	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION	A Calci		
01	H 02 R S P	B O V 103 F B	04
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEM	IS					
01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a

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CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis

CF1R-PRF-01E Calculation Date/Time: 2022-08-04T09:42:58-07:00 (Page 2 of 10) Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

HERS Provider:

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CalCERTS inc.

ENERGY DESIGN RATING				
	Energy De	sign Ratings		
	Efficiency <sup>1</sup> (EDR)	Total <sup>2</sup> (EDR)	Efficiency¹ (EDR)	Total² (EDR)
Standard Design	64.9	41.7		
Proposed Designs				
North Facing	60.9	37.7	4	4
East Facing	60.4	37.3	4.5	4.4
South Facing	60.2	37	4.7	4.7
West Facing	61.1	37.9	3.8	3.8
	RESULT: 3:	COMPLIES		

Efficiency EDR includes improvements to the building envelope and more efficient equipment <sup>2</sup> Total EDR includes efficiency and deman<mark>d respo</mark>nse measures such as photovoltaic (PV) systems and batteries <sup>2</sup> Total EDK includes efficiency and demand response measures state to the property of the property and demand response measures as a second of the property of the property

Proposed PV Capacity Scaling: North (1.71 kWdc) East (1.71 kWdc) South (1.71 kWdc) West (1.71 kWdc)

Registration Number: Registration Date/Time: 222-P010154826A-000-000-0000000-0000 2022-08-05 09:49:33 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E (Page 5 of 10) Calculation Date/Time: 2022-08-04T09:42:58-07:00 Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

Schema Version: rev 20200901

01	02		03		04		05	06	07
Project Name	Conditioned Flo	or Area (ft <sup>2</sup> )	Number of Dw Units	elling Numbe	er of Bedrooms	N	umber of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Mono County ADU (P	lan 2) 615	,	1		1		1	0	1
ONE INFORMATION									
01	02		03	0	4		05	06	07
Zone Name	Zone Type	HVA	C System Name	Zone Floo	· Area (ft²)	Avg	. Ceiling Height	Water Heating System 1	Water Heating System 2
Living Area	Conditioned	H	IVAC System1	6	15		8	DHW Sys 1	N/A
DPAQUE SURFACES									
01	02		03	04	05		06	07	08
Name	Zone	Cons	truction	Azimuth	Orienta	tion	Gross Area (ft <sup>2</sup>	Window and Door	Tilt (deg)
Front Wall	Living Are <mark>a</mark>	R-2	1 Wall	0	Fron	r)	224	68.6	90
Left Wall	Living Area	R-2	1 Wall	3 S 90 P	Left	$\vee$ 1	200	33.3	90
Rear Wall	Living Area	R-2	1 Wall	180	Back	(	224	9	90
Right Wall	Living Area	R-2	1 Wall	270	Righ	t	200	4	90
Roof	Living Area	R-38 F	Roof Attic	n/a	n/a		615	n/a	n/a
Raised Floor	Living Area	R-19 Floo	r Crawlspace	n/a	n/a		615	n/a	n/a
ATTIC									
01	02		03	04	05		06	07	08
Name	Construction	1	уре	Roof Rise (x in 1	2) Roof Refle	ctance	Roof Emittanc	e Radiant Barrier	Cool Roof
Attic Living Area	Attic RoofLiving Area		tilated	8	0.1		0.85	No	No

Registration Number: 222-P010154826A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

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CF1R-PRF-01E CERTIFICATE OF COMPLIANCE (Page 8 of 10) Calculation Date/Time: 2022-08-04T09:42:58-07:00 Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

												, (		,		
WATER HEATERS																
01	02		03	04	05	06	o	)7	08	09	10		11			12
Name	Heating Element Type	Tanl	« Туре	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency		Rating Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Ra or Flow R		NEEA Heat Brand or N		1	Location or ent Condition
DHW Heater 1	Heat Pump	r	n/a	1	50	NEEA Rated	<= 1	2 kW	n/a	n/a	n/a	Rheem\XE501 2U0 (50 ga			Co	onditioned
WATER HEATING - HER	S VEDIEICATIO	NI.														
01	O:		A	03		04			05	0	6		07			08
Name	Pipe Ins			el Pipin	g	Compact Distril	bution	Compa	t Distribution	_	Central DHW Shower Dr.		CONTROL		r Drain Water t Recovery	
DHW Sys 1 - 1/1	Not Re	quired	Not R	equired	1	Not Require	ed		None	Not Re	Not Required		lot Require	d	Not	Required
								DΠ	TC.	La						
SPACE CONDITIONING	SYSTEMS			_	_(			$\Box$								
01		02			03	04	P	05	06	_07	R	08	09	1	.0	11
Name		System	Туре		ating Ui Name	nit Cooling Ur Name	nit F	an Name	Distributi Name	I Thermo	stat St	atus	Verified Existing Condition	Equip	iting oment unt	Cooling Equipment Count
HVAC System1	Неа	it pump he	ating cooling		at Pum ystem 1			n/a	n/a	Setba	ck N	ew	NA	:	1	1
01	02		03		04	05		06	07	08		09	10	o		11
HVAC - HEAT PUMPS																
Name	System T	ype Nu	ımber of Un	its H	SPF/CO	Heating P Cap 47		Cap 17	Co SEER	ooling EER/CEER		nally rolled	Compr		HERS	Verification
Heat Pump System 1	VCHP-duc	tless	1	<del> </del>	8.2	12000		8000	14	11.7	1	Zonal	Sing			Pump System

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CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Description: Title 24 Analysis

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	ENERGY U	ISE SUMMARY		
Energy Use (kTDV/ft <sup>2</sup> -yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	86.97	76.9	10.07	11.6
Space Cooling	10.85	5.22	5.63	51.9
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.58	28.15	1.43	4.8
Self Utilization Credit	n/a	0	0	n/a
North Facing Compliance Total	137.72	120.31	17.41	12.6
Space Heating	86.97	73.05	13.92	16
Space Cooling	10.85	6.96	3.89	35.9
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.58	28.06	1.52	5.1
Self Utilization Credit	n/a	0	0	n/a
East Facing Compliance Total	137.72	118.11	19.61	14.2
Space Heating	86.97	72.35	14.62	16.8
Space Cooling	10.85	P R O 6.7   D F	4.15	38.2
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.58	28.1	1.48	5
Self Utilization Credit	n/a	0	0	n/a
South Facing Compliance Total	137.72	117.19	20.53	14.9
Space Heating	86.97	76.22	10.75	12.4
Space Cooling	10.85	6.84	4.01	37
IAQ Ventilation	10.32	10.04	0.28	2.7
Water Heating	29.58	28.12	1.46	4.9
Self Utilization Credit	n/a	0	0	n/a
West Facing Compliance Total	137.72	121.22	16.5	12

CA Building Energy Efficient  CERTIFICATE OF COMPLI  Project Name: Mono Cor  Calculation Description:	<b>ANCE</b> unty ADU (Plan 2)		Report	Version: 2a Version: 2a Version: Calcula	202 2019.2.0 rev 202	00901 ate/Tin	Special Features  16.3 % NewMatered Avera  idefins Exterior Share  rie N/A  n <sub>ric</sub> N/A	/Alteration	issisting visiting vi			CalCERTS inc 09:43:20 CF1R-PRF-01E (Page 6 of 10)	:
FENESTRATION / GLAZING 01	02	03	04	05	06	07	10/1			12	13	14	
Name	Туре	Surface		zimuth		Height (ft)				IGC	SHGC Sourc	Exterior Shading	
B.3	Window	Front Wall	Front	0					0	.23	NFRC	Bug Screen	
B.5	Window	Front Wall	Front	0			Min. Eff Ther  14.0 SEER Setback	mostat S	tatus 0	.23	NFRC	Bug Screen	1
С	Window	Front Wall	Front	0						.23	NFRC	Bug Screen	]
C 2	Window	Front Wall	Front	0				uct -Value S	tatus 0	.23	NFRC	Bug Screen	
C 3	Window	Front Wall	Front	0					Italius Itered 0	.23	NFRC	Bug Screen	
C.1	Window	Front Wall	Front	0					0	.23	NFRC	Bug Screen	
Door C	Window	Left Wall	Left	90			stribution	s	tatus 0	.23	NFRC	Bug Screen	]
B.1	Window	Rear Wall	Back	180					0	.23	NFRC	Bug Screen	]
B.6	Window	Right Wall	Right	270					0	.23	NFRC	Bug Screen	J
OPAQUE DOORS 01		02	RSP	R		//	ID: 22-020416	P	age 14 of 21	0	4		]
Name		Side of Bu	ilding			Area	a (ft <sup>2</sup> )			U-fa	ctor		
A1		Front V	Vall			2	20			0	.2		]
OPAQUE SURFACE CONSTR	UCTIONS								,				1
01	02	03	04		05	5	06	07			08		1
Construction Name	Surface Type	Construction Type	Framing		Total C R-va		Interior / Exterior Continuous R-value	U-factor		Asser	mbly Lay	ers	
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.	C.	R-2	21	None / None	0.069	Cavit	y / Fr	ame: R-2	m Board 21 / 2x6 at Stucco	

Registration Date/Time: 2022-08-05 09:49:33 HERS Provider: Registration Number: 222-P010154826A-000-000-0000000-0000 CalCERTS inc. Report Generated: 2022-08-04 09:43:20 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000 Schema Version: rev 20200901

CERTIFICATE OF COMPLIANCE Project Name: Mono County ADU (Plan 2) Calculation Date/Time: 2022-08-04T09:42:58-07:00 (Page 9 of 10) Calculation Description: Title 24 Analysis Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x

HVAC HEAT PUMPS - H	HERS VERIFIC	ATION										HERS Testing
01	02		03	04	05	06		07	08		09	
Name	Verified Air	rflow Airflo	w Target	Verified EER	Verified SEER	Verified Refrige Charge	erant Verifi	ed HSPF	Verified He Cap 47	~	Verified Heating Cap 17	Serving San Luis Obispo and Santa Barbara Co
Heat Pump System 1-hers-htpump	Not Requi	ired	0	Not Required	Not Required	Yes		No	Yes		Yes	
VARIABLE CAPACITY HI	IEAT PUMP C	OMPLIANCE OPT	ION - HERS VERIF	ICATION					-			
01		02	03	04	05	06	07	08		09	10	
Name		Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Drop Rating	Low Leakage Ducts in Conditioned Space	Minim Airflow RA3.3 SC3.3.3	per non-	ertified continuous Fan	Indoor Fan not Running Continuously	
Heat Pump Syste	tem 1	Not required	Required	Required	Required	Not required	Not required	Not req	uired No	required	Not required	
									,			1
IAQ (INDOOR AIR QUA	ALITY) FANS			2			nc					
01		02	d	3	04	1 D, 1	05	•	06		07	

IAQ Recovery IAQ Recovery IAQ Watts/CFM IAQ Fan Type IAQ CFM **HERS Verification** Dwelling Unit Effectiveness - SRE Effectiveness - ASRE SFam IAQVentRpt 1-1 0.575 Balanced

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Schema Version: rev 20200901

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Mono County Raised Found

**HERS Testing** 

CERTIFICATE OF COMPLIANCE		CF1R-PRF-01E
Project Name: Mono County ADU (Plan 2)	Calculation Date/Time: 2022-08-04T09:42:58-07:00 (P	Page 10 of 10)
Calculation Description: Title 24 Analysis	Input File Name: Mono County ADU (Plan 2) (raised foundation).ribd19x	
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		

Calculation Description: Title 24 Analysis	input File Name: Mono County ADO (Plan 2) (raised foundation).ribd19x					
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT						
1. I certify that this Certificate of Compliance documentation is accurate and complete.						
Documentation Author Name:	Documentation Author Signature:					
Timothy Carstairs	Timothy Carstairs					
Company:	Signature Date:					
Carstairs Energy Inc.	2022-08-05 09:23:26					
Address:	CEA/ HERS Certification Identification (If applicable):					
2238 Bayview Heights Drive, Suite E	r160610042					
City/State/Zip:	Phone:					
Los Osos, CA 93402	805-904-9048					
RESPONSIBLE PERSON'S DECLARATION STATEMENT						
	Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The are consistent with the information provided on other applicable compliance documents, worksheets,					
Responsible Designer Name: Randy Russom	Responsible Designer Signature: RAP					
Company: RRM Design Group	Date Signed: 2022-08-05 09:49:33					
Address: 3765 S. Higuera Street, Suite 102	License: C24410					
City/State/Zip: San Luis Obispo, CA 94301	Phone: 805-543-1794					

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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CalCERTS inc. Report Generated: 2022-08-04 09:43:20

Cloara

THE COMMITTEE OF	2019 Low-Rise Residential Mandatory Measures Summary
50.0(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
50.0(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.
50.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a 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.
50.0(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.*
50.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and 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 childed 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.
50.0(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 Ill 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.
50.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
50.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
cts and Fans	Measures:
10.8(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.
50.0(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 1/4 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.*
50.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, controls, 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.
50.0(m)3:	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.
50.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
50.0(m)8:	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.
50.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed 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.
50.0(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.
50.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
50.0(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.*
50.0(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.*
	unit ian ometey = 0.02 watto per or ini. I reid verification testing is required in accordance with reference residential Appellatz RAS.S.

ROOM LOAD	SUMMARY									
Project Name								Date		
Mono County ADL System Name	J (Plan 2)							Flore	8/4/20	)22
HVAC System								Floor	Area 615	5
ROOM LOAD SUM	MARY								070	
			BOO	M COOLING	3 PFAK	COII	COOLING	PFAK	COII H	TG. PEAK
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
Living Area	1st Floor ADU	1	272	4,636	-63	272	4,636	-63	327	10,308
			-							
			-							
				PAGE TOT	AL	272	4,636	-63	327	10,308
				TOTA		272	4,636	-63	327	10,308
* Total includes ventilation	on load for zonal systems.				•					

Project Nan			SURES S	<u> </u>	11 1					RMS-1
		U (Plan 2)		Buildi	ng Type	☑ Single F □ Multi Fa		☐ Addition Alone ☐ Existing+ Addition	n/Alteration	Date 8/4/2022
Project Add		<del>- ()</del>		Califo	rnia Ener	gy Climate Zo	ne Tot	al Cond. Floor Area	Addition	# of Units
Mono	County			CA	\ Clima	te Zone 1	6	615	n/a	1
INSULA	ATION					Area				
Constr	uction	Type		Cavi	ty	(ft <sup>2</sup> )	Spec	cial Features		Status
Wall	Wood Fran	ned		R 21		733				New
Door	Opaque Do	oor		R-5		20				New
Roof	Wood Fran	ned Attic		R 38		615				New
Floor	Wood Fran	ned w/Crawl S	pace	R 19		615				New
FENES	TRATIC	N	Total Area:	95	Glazing F	Percentage:	15.4 %	New/Altered Avera	age U-Factor:	0.30
Orienta	ation A	Area(ft <sup>2</sup> )			Overh		defins			Status
Front (N)		48.6	0.300	0.23	none	non		N/A		New
Left (E)		33.3	0.300	0.23	none	non	е	N/A		New
Rear (S)		9.0	0.300	0.23	none	non	е	N/A		New
Right (W)		4.0	0.300	0.23	none	non	е	N/A		New
	SYSTEM Heating	лs	Min. Eff	· Coo	oling		Vin. E	ff The	rmostat	Status
Qty. I			Min. Eff		oling Heat Pun		<b>Min. E</b>			Status New
<b>Qty. F</b>	Heating Split Heat Pu	imp						FR Setback		
Qty. H	Heating Split Heat Pu	BUTION		Split			14.0 SEE	R Setback		
<b>Qty. F</b>	Heating Split Heat Pu  DISTRIE on	BUTION He	8.20 HSPF	Split	Heat Pun	пр	14.0 SEE	R Setback	Duct	New
Qty. F  1 S  HVAC I Locatio	Heating Split Heat Pu DISTRIE On	BUTION He	8.20 HSPF	Split	Heat Pun	Duct L	14.0 SEE	R Setback	Duct R-Value	New Status
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HVAC I Location HVAC System WATER Qty. T	Heating Split Heat Pu DISTRIE On em	BUTION He	8.20 HSPF  ating ss / with Fan	Split  Coc  Ductle	Heat Pun	Duct L	ocatic	ER Setback  EDN F	Duct R-Value	Status New
HVAC I Location HVAC System WATER Qty. T	Heating Split Heat Pu DISTRIE On em R HEATI	BUTION He	8.20 HSPF  ating ss / with Fan  Gal	Split  Coc  Ductle	Heat Pun  bling  ess	Duct L	ocatic	ER Setback  EDN F	Duct R-Value	Status New Status

#### 2019 Low-Rise Residential Mandatory Measures Summary

Requirements	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 a 0.3 CFM at 50 I (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 provid 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 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 compliant
§ 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	rstems 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 efficient 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 th 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, fl rate, piping, filters, and valves."
Lighting Measu	
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requiremen of § 110.9.
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire of other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, 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.
§ 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)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> 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)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 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.
§ 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.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
9 130.0(K)ZL.	compry with § 150.0(k).

§ 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

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. Building Envelope Measures: 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.\* Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a). Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, I 1/10.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.

Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS). Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g). Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing 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 CF1R. Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affair. Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.\* Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value 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 framing of have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.\* 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 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). 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 retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d). Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.

Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a § 150.0(q): maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58. Fireplaces, Decorative Gas Appliances, and Gas Log Measures: § 110.5(e) Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox. Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in are and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.\* 150 0(e)3: Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control Space Conditioning, Water Heating, and Plumbing System Measures:

Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated till 10.0-§ 110.3: HVAC equipment, water neaters, snowemeat appliances must be certified by the manufacturer to the California Energy Commission.

HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A thro 110.2(a): Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with sup Controls for Heat Pumps with Supplementary Electric Resistance neaters. India pumps and solution with the vector of the methor o setback thermostat.\*

Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation I meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation Special Features Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 I bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces\_ appliances without an electrical supply voltage connection with pilot lights that consume less than 150\_ Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance wi—
Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Com—
Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2. idefins Exterior Shades Status 2019 Low-Rise Residential Mandatory Measures 👨 Interior Switches and Controls. An energy management control system (EMCS) may be used to co provides functionality of the specified control according to § 110.9; meets the Installation Certificate re— EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2. § 150.0(k)2G: Interior Switches and Controls. A multiscene programmable controller may be used to comply with provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requinterior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least or be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an orinitially configured to manual-on operation using the manual control required under Section 150.0(k)2 § 150.0(k)2I: Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Jo dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls. Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-in: Min. Eff Thermostat Status Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently n § 150.0(k)3A: buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3A.

Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, out § 150.0(k)3B: balconies, and porches; and residential parking lots and carports with less than eight vehicles per site\_ocation 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 R-Value Status § 150.0(k)3C:

or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 1 the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0. Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8 stribution power as determined according to § 130.0(c). Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight c applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, anc—Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily r common area in a single building equals 20 percent or less of the floor area, permanently installed lig— building must be comply with Table 150.0-A and be controlled by an occupant sensor.

Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily re § 150.0(k)6A: common area in a single building equals more than 20 percent of the floor area, permanently installec 150.0(k)6B: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and i. Conjuly with the apphraisate requirements in Sections 17.03, 1900, 1901, 1902 and 1913, and 1914 are apphraisate requirements in Sections 17.03, 1902, 19 Solar Ready Buildings:

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).

Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the 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 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.\* Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north. Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof 110.10(b)3A: mounted equipment.

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 idiatance, 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.

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.

Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a § 110.10(c): pathways 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.

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.

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 breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

110.10(e)1:





Mono Raise

**HERS Testing** 

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**SITE PLAN** (TO BE PROVIDED BY APPLICANT) SCALE:

SITE PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS 2. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION. 3. CONTRACTOR TO REVIEW PLANS TO AVOID CONFLICTS WITH UTILITIES. I.E. METER LOCATIONS, ELECTRIC TRANSFORMER, BACKFLOW PREVENTERS, SEWER LINES AND ELECTRIC CONDUIT (POLE LIGHTING AT DRIVEWAY), ETC.

4. CONTRACTOR TO VERIFY ALL CONDITIONS AND UTILITY LOCATIONS AND IS RESPONSIBLE FOR LOCATING UTILITIES NOT SHOWN ON THE DRAWINGS. 5. CONTRACTOR TO AVOID DISTURBING OR DAMAGING EXISTING UTILITIES.

6. CALL BEFORE YOU DIG OR CAUSE ANY GROUND DISTURBANCES. 7. LIMIT CONSTRUCTION AREA TO THAT INDICATED ON THE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGE TO AREAS OUTSIDE OF

DESIGNATED CONSTRUCTION AREA. 8. COORDINATE ELECTRICAL REQUIREMENTS WITH PG&E.

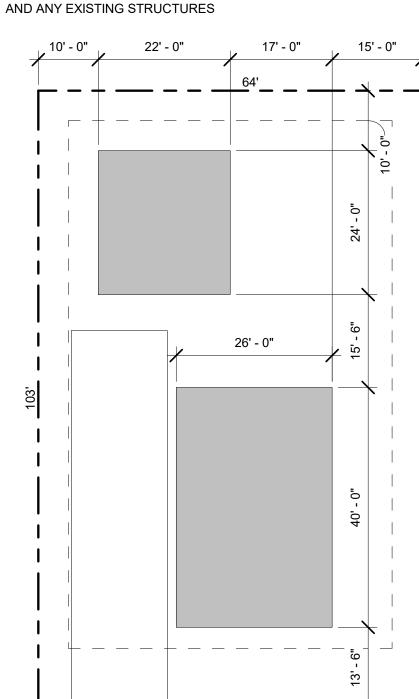
LANDINGS SHALL NOT EXCEED 1/4" PER FOOT (2% SLOPE).

9. FOR PROJECT INFORMATION DATA, SEE TITLE SHEET 10. ENCROACHMENT PERMIT IS REQ. FOR ANY WORK DONE WITHIN THE RIGHT

11. PER CRC R311.3 FLOORS OR LANDINGS AT EXTERIOR DOORS SHALL BE AT LEAST AS WIDE AS DOOR SERVED AND SHALL PROVIDE A LENGTH IN THE DIRECTION OF TRAVEL EQUAL TO 36 INCHES MINIMUM. SLOPE OF EXTERIOR

# SITE PLAN CHECKLIST

DRAWING SCALE SITE PLAN SHOULD BE DRAWN TO A MEASURABLE SCALE. SHOW OUTLINE OF PROPERTY USING DASHED LINE IN LEGEND LABEL YARDS LABEL FRONT, REAR, SIDE YARDS, AS WELL AS DRIVEWAYS, PATHWAYS AND ANY OTHER HARDSCAPE. SETBACKS DIMENSION THE DISTANCE BETWEEN BUILDINGS AND PROPOERTY LINES, AS WELL AS BUILIDNGS TO OTHER STRUCTURES. (SETBACKS TO PROPERTY LINE OR OTHER STRUCTURES SHALL BE 4' MINIMUM) **EASEMENTS** (IF APPLICABLE) REFER TO LEGEND. MAY INCLUDE UTILITY R.O.W. LOCATION OF EXISTING UTILITIES UTILITIES, POLES, SWERE DRAINS, ELECTRICAL, GAS METERS AND LINES AND ANY PHOTOVOLTATIC. LABEL STREETS & SIDEWALKS LABEL ADU AND ADDRESS LOCATION ADU WILL HAVE SAME ADDRESS AS THE PRIMARY RESIDENCE, AND THE LETTER SHALL BE VISIBLE FROM THE STREET. FOOTPRINT OF EXISTING BUILDING THIS INCLUDES ALL STRUCUTRES/PORCHES/GAZEBOS FOOTPRINT OF PROPOSED ADU REFER TO LEGEND FOR FOOTPRINT AT 10'=1" SCALE DIMENSION BUILDING SEPARATION DIMENSION THE DISTANCE BETWEEN THE PROPOSED ADU



STREET

**EXAMPLE SITE PLAN** 

# SITE PLAN LEGEND

A1-201 AS-102 SCALE: 1/16" = 1'-0"

(SHALL BE 48" MIN. CBC 11B-403.5) CONCRETE PAVING



LANDSCAPE AREA, REFER TO LANDSCAPE

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SITE 2 ARCHITECTURAL S

NO.	REVISION	DATE
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CHECKED BY DRAWN BY 6/30/2022 PROJECT NUMBER

2340-01-CU21 AS-102

28' - 2 3/4" 2' - 1 3/8" 14' - 10 5/8" 11' - 2 3/4"

3 PLAN 2 - HIGH DESERT

A1-201 | AS-102 | SCALE: 1/16" = 1'-0"

PLAN 2 - RURAL MOUNTAIN

# KITCHENIDINING BATH LIVING ST. CL COVERED PORCH

PLAN 2 - GROUND FLOOR FINISH PLAN

PLAN 2 - GROUND FLOOR PLAN

A1-201A2-101 1/4" = 1'-0"

A1-201A2-101 1/4" = 1'-0"

# FINISH PLAN GENERAL NOTES

- 1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
- REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
   REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
- 4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES AND INTERIOR FINISH DETAILS.
- 5. ALL HARD SURFACE FLOORING SHALL BE SLIP RESISTANT AND MEET THE **ANSI A326.3** STANDARD FOR MEASURING THE DYNAMIC COEFFICIENT OF FRICTION (DCOF).
- ALL FLOORING MATERIALS SHALL COMPLY WITH 2019 CBC SEC. 804.1.
   ALL WALL AND CEILING FINISHES SHALL COMPLY WITH 2019 CBC TABLE 803.13 FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.

# FINISH SCHEDULE

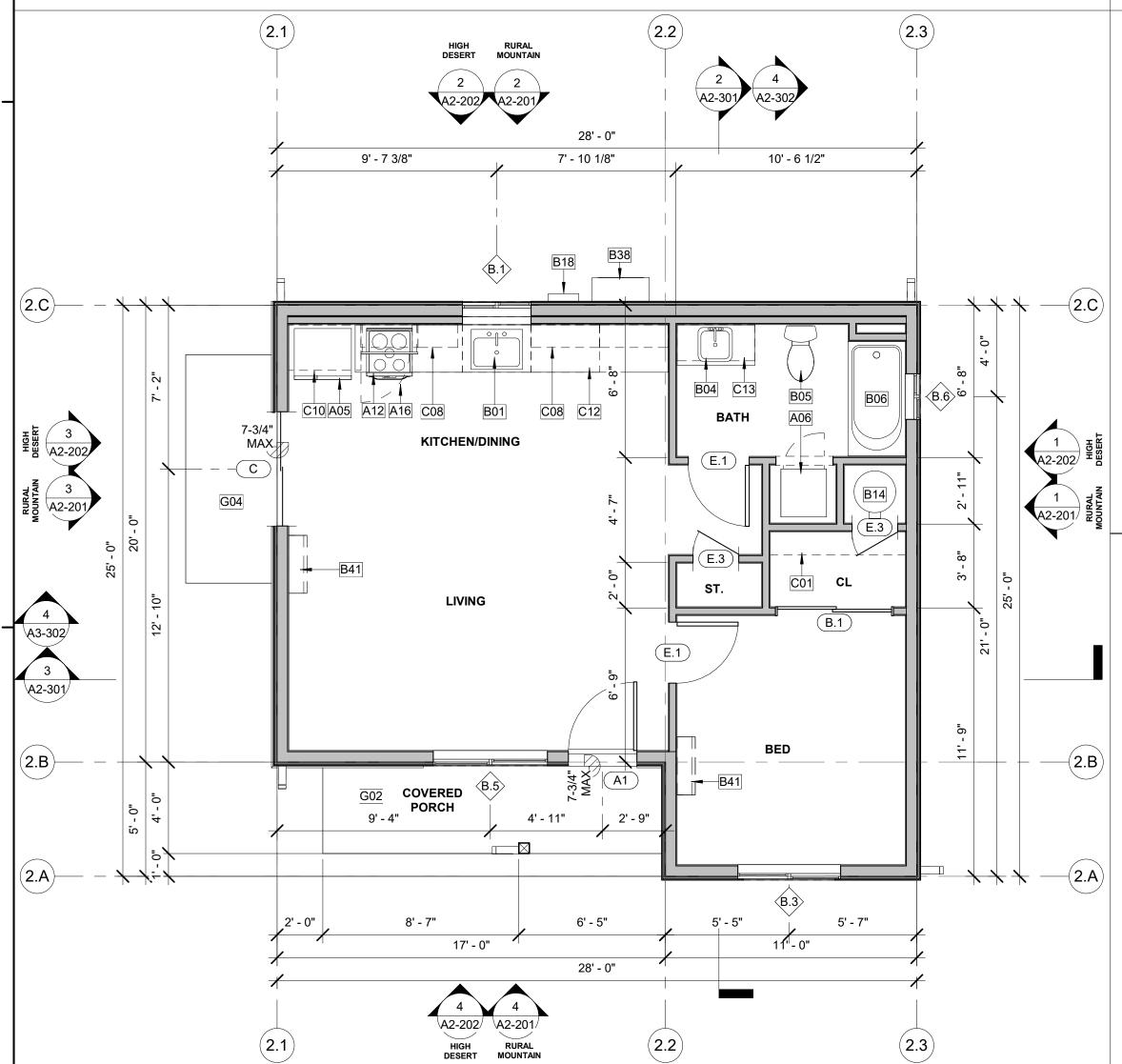
	FI	NISH SCHE	DULE PLAN 2	2	
NUMBER	NAME	FLOOR	CEILING	BASE	NOTES
109	BEDROOM	CPT	GWB		
110	LIVING	LVT	GWB		
111	KITCHEN	LVT	GWB		
112	BATH	СТ	GWB		
113	W.I.C.	CPT	GWB		

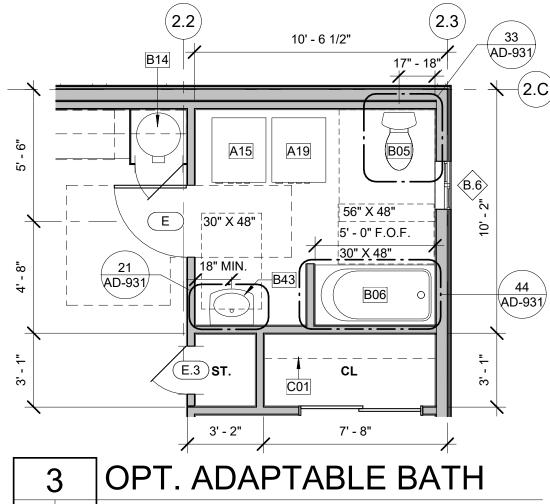
# **FINISH LEGEND**

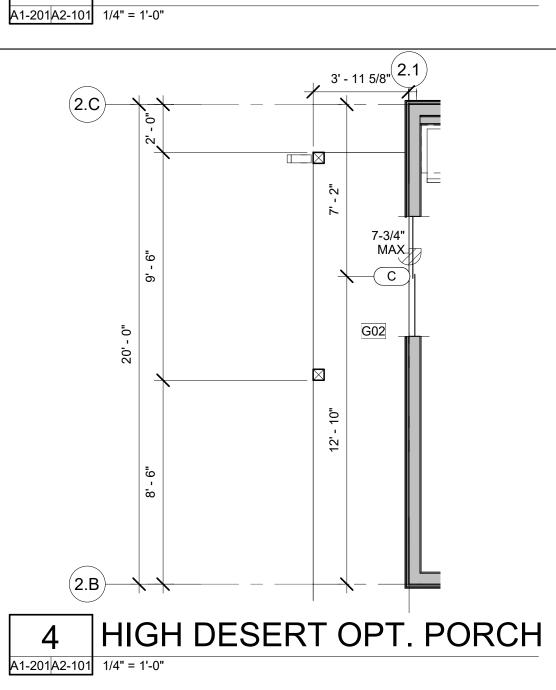












# **KEYNOTES**

- A05 REFRIGERATOR LOCATION PER OWNER. PROVIDE ROUGH PLUMBING FOR
- ICE MAKER (RECESS IN WALL).

  A06 STACKED WASHER/DRYER MACHINE LOCATION. PROVIDE WASTE AND WATER IN RECESSED WALL BOX. PROVIDE DRYER VENT. VENT TO OUTSIDE AIR
- A12 24" WIDE FREE STANDING ELECTRIC RANGE OVEN. PROVIDE VENT HOOD.
- VENT TO EXTERIOR, STAINLESS STEEL.

  A15 FRONT LOADING WASHER. PROVIDE WASTE AND WATER IN RECESSED
- WALL BOX.
- A16 MICROWAVE OVER RANGE.
- 19 FRONT LOADING DRYER W/ RECESSED DRYER VENT BOX. PROVIDE DRYER VENT. VENT TO OUTSIDE AIR.
- B01 30" SINGLE COMPARTMENT UNDER-MOUNT KITCHEN SINK W/ GARBAGE DISPOSAL. REFER TO WATER EFFICIENCY REQUIREMENTS ON CALGREEN CODE NOTES SHEET.
- LAVATORY SINK. REFER TO WATER EFFICIENCY REQUIREMENTS ON CALGREEN CODE NOTES SHEETS.
- WATER CLOSET. REFER TO WATER EFFICIENCY REQUIREMENTS ON CALGREEN CODE NOTES SHEETS.
- 30" x 60" x 72" TUB AND SHOWER COMBINATION. MODEL BY BUILDER.
- PROVIDE SHOWER ROD.
  50 GALLON TANK TYPE ELECTRIC WATER HEATER. REFER TO TITLE 24
- FOR ADDITIONAL INFORMATION.
- 8 EXTERIOR RATED ELECTRIC SUB PANEL 80 AMP 120/240 VOLT. CONTRACTOR TO VERIFY MAIN PANEL.
- WALL-MOUNTED MULTI-ZONE HEAT PUMP CONDENSING UNIT. REFER TO PLANS FOR LOCATION OF INDOOR FAN FAN COIL UNITS. REFER TO TITLE
- PLANS FOR LOCATION OF INDOOR FAN FAN COIL UNITS. REFER TO TITLE 24 FOR ADDITIONAL INFORMATION.

  1 FAN COIL. REFER TO PLANS FOR LOCATION OF OUTDOOR CONDENSING
- UNIT. REFER TO PLANS FOR LOCATION OF OUTDOOR CONDENSING UNIT. REFER TO TITLE 24 FOR ADDITIONAL INFORMATION. PROVIDE OUTLET.
- B43 ACCESSIBLE WALL MOUNTED LAVATORY SINK. MAX HEIGHT 34". REFER TO WATER EFFICIENCY REQUIREMENTS ON CALGREEN CODE NOTES SHEETS.
- C01 SINGLE WOOD SHELF AND POLE.
- 8 12" DEEP UPPER CABINET
- C10 24" DEEP UPPER CABINET.
- 34 1/2" HIGH BASE CABINET AND COUNTERTOP.30" HIGH BASE CABINET AND COUNTERTOP.

TO DETAILS 41, 51, 52, 54 SHEET AD-902.

- AT [SLAB ON GRADE] CONCRETE FLATWORK. 1/4"/FT SLOPE AWAY FROM BUILDING. AT [RAISED FOUNDATION] 2X COMPOSITE IGNITION RESISTANT DECKING, TREX OR EQUAL, OVER 4X6 PT WOOD JOISTS @ 16" O.C. REFER
- G04 48" x 120" CONCRETE STOOP. SLOPE 1/4" PER FT AWAY FROM BUILDING.

# WINDOW GENERAL NOTES

- 1. REFER TO GENERAL NOTES ON SHEET G-101 FOR ADDITIONAL
- . REFER TO FLOOR PLANS FOR WINDOW LOCATIONS.
- 3. CONTRACTOR TO VERIFY EXACT ROUGH OPENING SIZES PRIOR TO
- FABRICATION OF ROUGH OPENINGS.

  4. INSTALL PER MANUFACTURERS WRITTEN INSTRUCTIONS.
- 5. REFER TO ENERGY COMPLIANCE REPORTS FOR U-FACTOR, SHGC AND
- ADDITIONAL WINDOW REQUIREMENTS.

  6. ALL GLAZING IS DOUBLE PANE WITH A MINIMUM OF ONE TEMPERED PANE
- UNLESS OTHERWISE NOTED.

  7. EGRESS WINDOWS SHALL HAVE A CLEAR OPENING WITH A MAX. SILL HEIGHT
- OF 44" AFF, MIN NET CLEAR OPENING FOR EMERGENCY ESCAPE SHALL BE 5.7 S.F. EXCEPTION: MIN 5 S.F. AT GROUND FLOOR, MINIMUM NET CLEAR OPENING DIMENSIONS: HEIGHT: 24", WIDTH: 20".

# **WINDOW REMARKS**

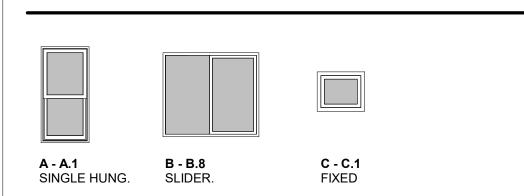
- REQUIRED EGRESS WINDOW. REFER TO GENERAL NOTE #7 FOR ADDITIONAL
- 2. HAZARDOUS LOCATION. WINDOW INCLUDES BOTH PANES TEMPERED
- 3. HIGH WINDOW. REFER TO ELEVATIONS FOR LOCATION.

# **WINDOW SCHEDULE**

				SIZE	HEAD	
NO.	TYPE	COUNT	WIDTH	HEIGHT	HEIGHT	REMARK
			•		·	
PLAN 2	B.1	1	3' - 0"	3' - 0"	6' - 8"	
PLAN 2	B.3	1	4' - 6"	4' - 0"	6' - 8"	1
PLAN 2	B.5	1	5' - 0"	4' - 0"	6' - 8"	2
PLAN 2	B.6	1	2' - 0"	2' - 0"	6' - 8"	2

		SCHE	EDULE-WINDOW	PLAN 2 HIGH D	ESERT	
			SI	ZE	HEAD	
NO.	TYPE	COUNT	WIDTH	HEIGHT	HEIGHT	REMARKS
PLAN 2	B.1	1	3' - 0"	3' - 0"	6' - 8"	
PLAN 2	B.3	1	4' - 6"	4' - 0"	6' - 8"	1
PLAN 2	B.5	1	5' - 0"	4' - 0"	6' - 8"	2
PLAN 2	B.6	1	2' - 0"	2' - 0"	6' - 8"	2
PLAN 2	С	3	1' - 8"	1' - 4"	12' - 1"	3
PLAN 2	C.1	1	3' - 0"	1' - 4"	12' - 1"	3

# **WINDOW LEGEND**



# **FLOOR PLAN GENERAL NOTES**

- 1. REFER TO GENERAL NOTES SHEET G-101 AND G-102 FOR ADDITIONAL REQUIREMENTS
- REQUIREMENTS.
  2. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
- REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
   REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER
- ALL FURNITURE AND EQUIPMENT IS BY OWNER AND IS SHOWN FOR COORDINATION PURPOSES ONLY.
- 7. DIMENSIONS ARE TO FACE OF FRAMING UNLESS SPECIFICALLY NOTED OTHERWISE
- 8. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
- 9. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED 2019 CBC HEIGHT LIMITATIONS
- 10. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS11. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO
- ROUGH DOOR OPENING

  12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE
- ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
- 13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

# **LEGEND**



**EXTERIOR** - 5 1/2" WOOD STUD W/ PLYWOOD SHEATHING AND EXTERIOR FINISH (REFER TO ELEVATIONS), ONE LAYER 5/8" TYPE X GYPSUM WALL BOARD INTERIOR.



INTERIOR - 3 1/2" WOOD STUD W/ONE LAYER 5/8" TYPE X GYPSUM WALL BOARD EACH SIDE.

# **DOOR GENERAL NOTES**

- REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS REFER TO PLANS FOR LOCATION OF DOORS.
- 3. VERIFY ROUGH OPENING SIZE WITH DOOR MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.
- 4. CONTRACTOR TO VERIFY ACTUAL DOOR SIZE TO FIT FINISH OPENING PRIOR TO FABRICATION OF DOOR AND FINISH OPENING.
- INSTALL PER MANUFACTURERS WRITTEN INSTRUCTIONS.
   EXTERIOR DOORS SHALL EITHER HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20-MINUTES OR SHALL BE CONSTRUCTED OF SOLID CORE WOOD
- THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS:

  A. STILES AND RAILS SHALL NOT BE LESS THAN 1-3/8" THICK.

  B. PANELS SHALL NOT BE LESS THAN 1-1/4" THICK, EXCEPT FOR THE
- EXTERIOR PERIMETR OF THE PANEL SHALL BE PERMITTED TO TAPER
  TO A TONGUE OF NOT LESS THAN 3/8" THICK.

  REFER TO DOOR TYPES LEGEND FOR GLAZING.
- 8. REFER TO T24 REPORT FOR GLAZING ENERGY REQUIREMENTS.9. GLAZING IN DOORS SHALL BE TEMPERED PER SECTION R308.4.1.

# **DOOR REMARKS**

- FIRE RATED DOOR. REFER TO GENERAL DOOR NOTE #5
- GLAZING PER DOOR TYPES. TEMPERED.
   PROVIDE 100 SQ INCHES OF VENTING IN DOOR OR BY OTHER APPROVED
- OPTIONAL DOOR.
   OPTIONAL GLAZING IN DOOR. TEMPERED (BOTH PANES).

#### 5. OPTIONAL GLAZING IN DOOR. TEMPERED (BOTH PANES

**DOOR SCHEDULE** 

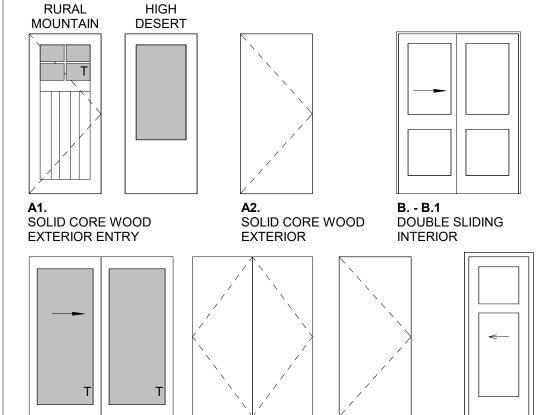
		SCHI	EDULE-DOOR PL	AN 2
		DC	OOR	
NO.	TYPE	WIDTH	HEIGHT	REMARKS
PLAN 2	A1	3' - 0"	6' - 8"	
PLAN 2	B.1	5' - 0"	6' - 8"	
PLAN 2	С	5' - 0"	6' - 8"	
PLAN 2	E.1	2' - 8"	6' - 8"	
PLAN 2	E.3	2' - 0"	6' - 8"	

PLAN 2	⊏.ა	2 - 0	0 - 0	
		SCHED	ULE-DOOR PLAN	I 2 ADA
		DO	OR	
NO.	TYPE	WIDTH	HEIGHT	REMARKS
PLAN 2	A1	3' - 0"	6' - 8"	
PLAN 2	B.1	5' - 0"	6' - 8"	
PLAN 2	С	5' - 0"	6' - 8"	
PLAN 2	E	3' - 0"	6' - 8"	
PLAN 2	F 3	2' - 0"	6' - 8"	

# **DOOR LEGEND**

SLIDING GLASS

EXTERIOR.



E - E.3

WOOD INTERIOR

HOLLOW CORE
WOOD POCKET

SOLID CORE WOOD HOLLOW CORE

**EXTERIOR** 



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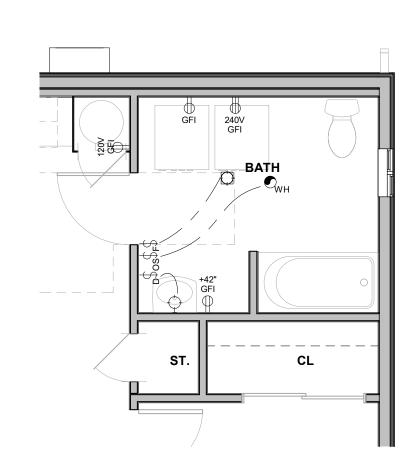
MONO COUNTY

OOR PLANS / FINISH PLANS &

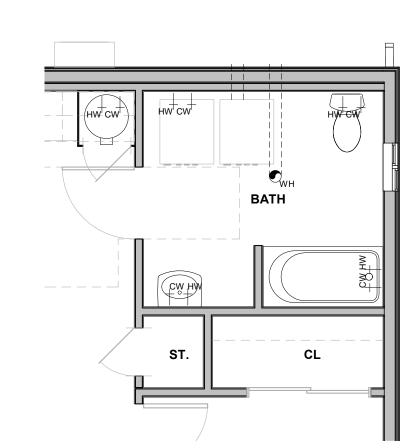
OOR WINDOW SCHEDULES

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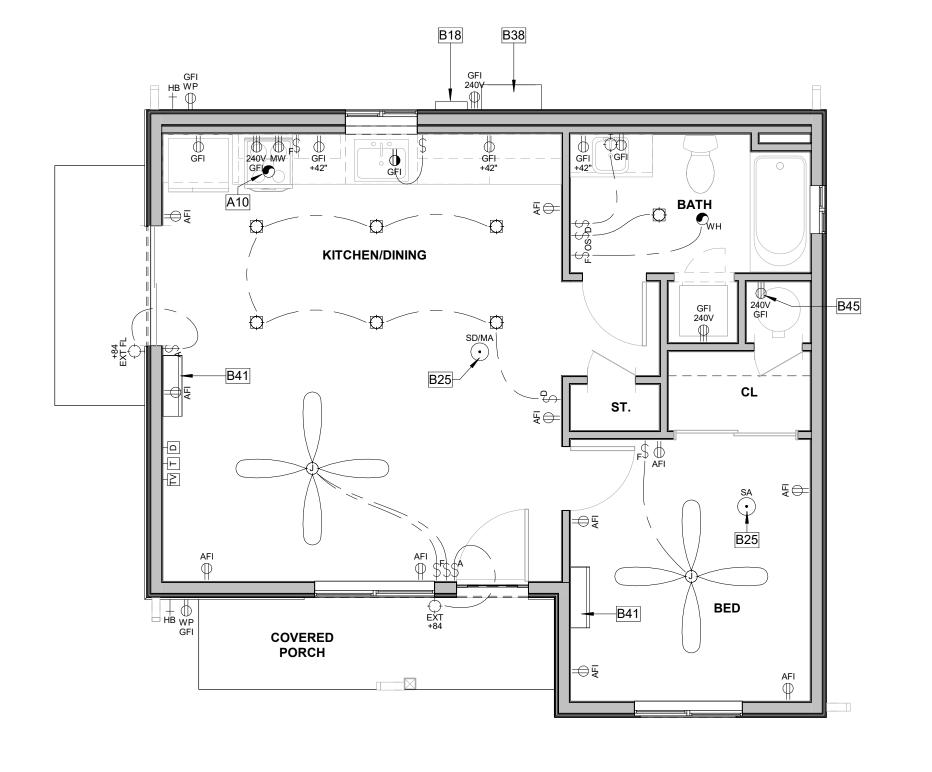
A2-101



# OPT. ADAPTABLE BATH - ELECTRICAL

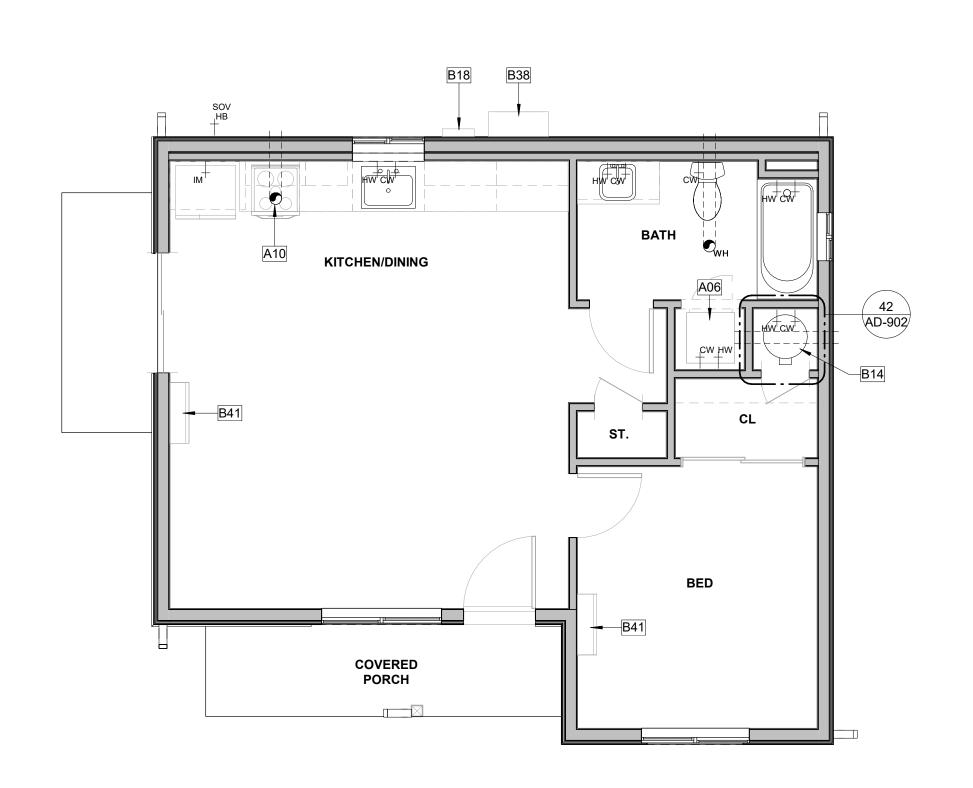


OPT. ADAPTABLE BATH - MECHANICAL



# **GROUND FLOOR PLAN - ELECTRICAL**

A1-201 A2-111 SCALE: 1/4" = 1'-0"



**GROUND FLOOR PLAN - MECHANICAL** 

# **GENERAL ELECTRICAL NOTES**

1. REFER TO ELECTRICAL NOTES ON SHEET G-101.

# **KEYNOTES**

TO VERIFY MAIN PANEL.

CRC R314.3.3 ITEM 4.

- A06 STACKED WASHER/DRYER MACHINE LOCATION. PROVIDE WASTE AND WATER IN RECESSED WALL BOX. PROVIDE DRYER VENT. VENT TO OUTSIDE AIR.
- A10 (50) CFM MIN. INTERMITTENT VENTILATION HOOD. B14 50 GALLON TANK TYPE ELECTRIC WATER HEATER. REFER TO TITLE 24 FOR
- ADDITIONAL INFORMATION. B18 EXTERIOR RATED ELECTRIC SUB PANEL 80 AMP 120/240 VOLT. CONTRACTOR
- B25 SMOKE ALARM OR SMOKE DETECTOR SHALL BE INSTALLED A MINIMUM OF 20 FEET HORIZONTAL DISTANCE FROM A PERMANENTLY INSTALLED COOKING APPLIANCE AND 3 FEET AWAY FROM PATH OF CEILING FAN BLADES. EXCEPTION: IONIZATION SMOKE ALARMS WITH AN ALARM SILENCING SWITCH OR PHOTOELECTRIC SMOKE ALARMS SHALL BE PERMITTED TO BE INSTALLED 10 FEET OR GREATER FROM A PERMANENTLY INSTALLED COOKING APPLIANCE. PHOTOELECTRIC SMOKE ALARMS SHALL BE PERMITTED TO BE INSTALLED GREATER THAN 6 FEET FROM PERMENANTLY INSTALLED COOKING APPLIANCE WHERE KITCHEN AND ADJACENT SAPCES HAVE NO CLEAR INTERIOR PARTITIONS AND THE 10 FOOT DISTANCE WOULD PROHIBIT PLACEMENT OF A SMOKE ALARM OR SMOKE DETECTOR REQUIRED BY OTHER SECTIONS OF THE CODE. SMOKE ALARMS SHALL BE LISTED FOR USE IN
- B38 WALL-MOUNTED MULTI-ZONE HEAT PUMP CONDENSING UNIT. REFER TO PLANS FOR LOCATION OF INDOOR FAN FAN COIL UNITS. REFER TO TITLE 24 FOR ADDITIONAL INFORMATION.

CLOSE PROXIMITY TO A PERMANENTLY INSTALLED COOKING APPLIANCE. PER

- B41 FAN COIL. REFER TO PLANS FOR LOCATION OF OUTDOOR CONDENSING UNIT.
- REFER TO TITLE 24 FOR ADDITIONAL INFORMATION. PROVIDE OUTLET. B45 OUTLET SERVING WATER HEATER SHALL BE ACCESSIBLE TO THE WATER HEATER WITH NO OBSTRUCTION, LOCATE OUTLET AT 72" A.F.F.

# **VENTILATION SUMMARIES**

PER ASHRAE Standard 62.2, Table 7.1 (Prescriptive Duct Sizing Requirements) (Table 7.1 Assumes no elbows. Deduct 15-feet of allowable duct length for each turn, elbow or fitting. Fan rating cfm @ 0.25 in w.g., and rated at less than one sone.)

LOCAL VENTILATION RATE SUMMARY - BATHROOM(S) Bathroom Minimum Fan Flow (cfm) = 50 cfm Per Table 7.1, Duct Size = 4" Diameter; Flex Duct Maximum Allowable Duct Length (ft) =70'

LOCAL VENTILATION RATE SUMMARY - KITCHEN Kitchen Minimum Fan Flow (cfm) = 100 cfm Per Table 7.1, Duct Size= 5" Diameter; Smooth Duct Maximum Allowable Duct Length (ft) = 85 Feet

LOCAL VENTILATION RATE SUMMARY - WHOLE BUILDING Per ASHRAE Standard 62.2 Equation 4.1(a)

> Qcfm = .01(floor area) + 7.5 (# of bedrooms + 1) 1-BEDROOM Qcfm = .01(615) + 7.5(1 + 1)Qcfm = 21.15

DUCT SIZE PER ASHRAE TABLE 7.1 REFER TO LEGEND FOR WHOLE HOUSE FAN (WH)

CONTINOUS FAN FLOW (CFM) = 50 CFM Per Table 7.1, Duct Size= 4" Diameter; Smooth duct Maximum Allowable Duct Length (ft) = 35'

Per Table 7.1, Duct Size= 4" Diameter; FLEX DUCT Maximum Allowable Duct Length (ft) = 70'

• SMOKE

TELEPHONE

LOCATION

**TELEVISION** 

JUNCTION BOX

LOCATION

③ ELECTRICAL

(PRE WIRE FOR

CEILING

FAN ONLY)

TV CABLE

# **LEGEND**

- ELECTRICAL SWITCH SWITCH-THREE
- \$⁴ ELECTRICAL SWITCH-FOUR WAY
- ços ELECTRICAI SWITCH-VACANCY SENSOR
- SWITCH-DIMMER
- SWITCH-FAN TIME SWITCH
- EXHAUST FAN EXHAUST FAN/LIGHT
- COMBINATION → PENDANT LIGHT
- EFFICACY LIGHT WALL MOUNTED LIGHT CEILING FAN OPTIONAL
- WALL MOUNTED HIGH-EFFICACY LIGHT RECESSED DOWNLIGHT
- RECESSED HIGH- EFFICACY DOWNLIGHT
- RECESSED DOWNLIGHT-
- VAPOR PROOF
  - ELECTRICAL WIRING

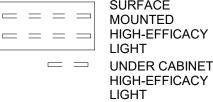
- DUPLEX OUTLET ARC-FAULT SD DETECTOR/ALARM CIRCUIT
- INTERRUPTER • COMBINATION SD/MA SMOKE/CARBON **DUPLEX OUTLET** MONOXIDE 240 VOLTS
- CHIME DOOR BELL CHIME **DUPLEX OUTLET GROUND FAULT** PB DOOR BELL INTERRUPTER BUTTON/GARAGE 120 VOLTS DOOR OPENER
  - DUPLEX OUTLET GROUND FAULT INTERRUPTER GFI DUPLEX OUTLET

WATERPROOF

- **GROUND FAULT** INTERRUPTER **DUPLEX OUTLET GFCI-HALF HOT**
- **DUPLEX OUTLET** MICROWAVE DW DUPLEX OUTLET

DISH WASHER

- COLD WATER STUB OUT HW HOT WATER STUB WITH SHUT OF
- LHB WATER HOSE BIBB SOV WATER HOSE BIBB VALVE ICE MACHINE STUB OUT GAS STUB OUT
- SURFACE MOUNTED



 ☐ ☐ UNDER CABINET HIGH-EFFICACY



FAN COIL, PROVIDE DEDICATED 120V OUTLET

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PRO	IECT NUMBER		

2340-01-CU21

A2-111

A1-201 A2-111 SCALE: 1/4" = 1'-0"

A1-201 A2-111 SCALE: 1/4" = 1'-0"

A1-201 A2-111 SCALE: 1/4" = 1'-0"

# (2.1) (2.2) (2.3)28' - 0" 17' - 0" 11' - 0" RAKE PLAN 2 ATTIC 2 - 91 SF PLAN 2 RIDGE ATTIC 1 -8" / 1'-0" (2.B) -(2.B) [O' H08 6' - 5 1/2" 10' - 6 1/2" 11' - 0" ROOF PLAN 2 - RURAL MOUNTAIN

# **ROOF VENTING CALCULATIONS**

**UPPER VENTS**: O'HAGIN TAPERED LOW PROFILE STANDARD LINE 72.0 SQ.IN OF AIR MOVEMENT PER VENT = 72. SQ.IN. / 144 = 0.5 SF

LOWER VENTS: O'HAGIN TAPERED LOW PROFILE STANDARD LINE 72.0 SQ.IN OF AIR MOVEMENT PER VENT = 72. SQ.IN. / 144 = 0.5 SF

"UPPER VENTS PROVIDED" = (TOTAL ATTIC AREA/300) \* (0.5) / (0.5 SF)

"LOWER VENTS PROVIDED" = (TOTAL ATTIC AREA/300) \* (0.5) / (0.5 SF)

REQUIRED ATTIC UPPER VENTING LOWER VENTING VENTING (NFA) REQUIRED (NFA) REQUIRED (NFA) ATTIC 1 - 550 SF 1.83 SF 0.92 SF 0.92 SF 0.30 SF 0.15 SF 0.15 SF

VENT TYPE	COUNT	VENT LENGTH	NET FREE AREA PER VENT	PROVIDED NET FREE AREA
ATTIC 1 - PLAN 2 OWER				
O'HAGIN SHINGLE ROOF VENT LOWER)	2	2' - 8"	0.50 SF	1.00 SF
JPPER				
O'HAGIN SHINGLE ROOF VENT UPPER)	2	2' - 8"	0.50 SF	1.00 SF
ATTIC 2 - PLAN 2 OWER	,			2.00 SF
O'HAGIN SHINGLE ROOF VENT LOWER)	1	2' - 8"	0.50 SF	0.50 SF
JPPER				
D'HAGIN SHINGLE ROOF VENT	1	2' - 8"	0.50 SF	0.50 SF

# **KEYNOTES**

30" X 30" MIN. ATTIC ACCESS. PROVIDED SWITCH AND OUTLET AT ATTIC FOR FAU. PERMANENTLY ATTACH R-38 OR GREATER INSULATION TO ATTIC ACCESS DOOR USING ADHESIVE OR MECHANICAL FASTENERS CEnC 150.0 (a)1. PROVIDE GASKETED ATTIC ACCESS TO PREVENT AIR LEAKAGE CEnC 150.0 (a)1.

# **ROOF PLAN GENERAL NOTES**

- REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS 2. REFER TO STRUCTURAL PLANS FOR ROOF FRAMING INFORMATION
- INCLUDING MEMBER SIZES AND CONNECTION HARDWARE. REFER TO MECHANICAL PLANS FOR ROOF MOUNTED EQUIPMENT
- LOCATIONS AND TYPES.
- 4. REFER TO ELECTRICAL PLANS FOR POWER DISTRIBUTION TO ROOF MOUNTED EQUIPMENT.
- REFER TO PLUMBING PLANS ROOF VENT PENETRATIONS.
- REFER TO SITE/GRADING PLAN FOR DOWNSPOUT DISCHARGE OR CONTINUATION.
- PROVIDE A MINIMUM OF 1 INCH OF AIRSPACE BETWEEN THE INSULATION AND ROOF SHEATHING. 8. WHERE THE ROOF PROFILE ALLOWS A SPACE BETWEEN THE ROOF COVERING AND DECKING, THE SPACES SHALL BE CONSTRUCTED TO

PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRESTOPPED WITH

MINERAL-SURFACED NONPERFORATED CAP SHEET OVER THE COMBUSTIBLE DECKING. 9. ALL ROOFING MATERIALS TO BE INSTALLED PER MANUFACTURER'S

APPROVED MATERIALS OR HAVE ONE LAYER OF MINIMUM 72 POUND

- SPECIFICATIONS. 10. OVERHANG DIMENSIONS ARE FROM FACE OF EXTERIOR WALL FRAMING TO
- 11. ROOF COVERINGS AND UNDERLAYMENT SHALL BE APPLIED IN ACCORDANCE
- WITH (2019 CBC 1507.1), AND MANUFACTURER'S INSTALLATION INSTRUCTIONS 12. WHERE PROVIDED, VENTILATION OPENINGS SHALL BE IN ACCORDANCE WITH (2019 CBC SECTION 1202). EXTERIOR OPENINGS INTO THE ATTIC SPACE SHALL BE COVERED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, PERFORATED VINYL OR SIMILAR MATERIAL. THE
- OPENINGS SHALL BE A MINIMUM OF 1/16" AND SHALL NOT EXCEED 1/4" PER (2019 CBC 1202.2.2.) 13. ROOF VENTS SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATIONS
- 14. FURNISHED DIMENSIONS FOR VENTS ARE GUIDES ONLY. INSTALL PER MANUFACTURERS SPECIFICATIONS AND ADJUST TO ACCOMMODATE TRUSS LOCATIONS, PLUMBING VENTS, AND SOLAR COLLECTORS.

# **LEGEND**

HEIGHT OF TOP OF ROOFING SURFACE

O'HAGIN ATTIC VENT, PAINT TO MATCH ROOF COLOR. (REFER TO EXTERIOR ELEVATIONS FOR COLORS AND MATERIALS.)

ROOF SLOPE (REFER TO PLANS FOR ACTUAL SLOPE)

GUTTER, CONNECT TO DOWNSPOUT -DOWNSPOUT, TO ROOF OR SPLASHBLOCK BELOW U.N.O.

SOLAR ZONE. REFER TO SOLAR READY NOTES ON

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# RCP GENERAL NOTES

WALL BELOW

- 1. REFER TO GENERAL NOTES SHEET G-101 AND G-102 FOR ADDITIONAL REQUIREMENTS.
- REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
- REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION. 4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
- HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED
- CEILING PLAN, UNO. 6. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO
- PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS

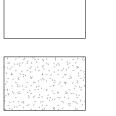
# **LEGEND**



HEIGHT OF CEILING SURFACE (REFER TO PLANS FOR ACTUAL HEIGHT)

2" / 12"

CEILING SLOPE (REFER TO PLANS FOR ACTUAL SLOPE)



EXTERIOR 7/8" 3-COAT CEMENT PLASTER CEILING.
1HR FIRE-RESISTANCE PER CBC TABLE 721.1(1) ITEM 1-4.1

INTERIOR CEILING FINISH. REFER TO FINISH SCHEDULE.

EXTERIOR FIBER CEMENT BOARD CEILING. HARIE SOFFIT PANELS - BEADED PORCH PANEL OR EQ. PROJECT MANAGER DRAWN BY CHECKED BY 6/30/2022 PROJECT NUMBER 2340-01-CU21

A2-121

NO. REVISION

RUR,

KITCHEN/DINING COVERED PORCH 8'

2 GROUND FLOOR RCP 2 - RURAL MOUNTAIN

A1-201 A2-121 1/4" = 1'-0"

# (2.2) (2.1)28' - 0" 17' - 0" 11' - 0" -RAKE-000 000 ATTIC ATTIC 3 -2" / 1'**-**0"- $^{ imes}$ UNVENTED ROOF ASSEMBLY PER CRC 806.5 (2.B) \ (2.B) ATTIC 2 ROOF PLAN 2 - HIGH DESERT

# **ROOF VENTING CALCULATIONS**

**UPPER VENTS:** 14" X 12" VULCAN *GABLE VENT* 

58.0 SQ.IN OF AIR MOVEMENT PER VENT = 58 SQ.IN. / 144 = 0.40 SF

LOWER VENTS: (3) 3" ROUND MESH FACE FIRE VULCAN VENTS IN EAVE BLOCKING 12 SQ. IN. / 144 = 0.08 SF

"UPPER VENTS PROVIDED" = (TOTAL ATTIC AREA/300) \* (0.5) / (0.40 SF)

"LOWER VENTS PROVIDED" = (TOTAL ATTIC AREA/300) \* (0.5) / (0.08 SF)

ATTIC	AREA	REQUIRED ATTIC VENTING (NFA)	UPPER VENTING REQUIRED (NFA)	LOWER VENTING REQUIRED (NFA)
ATTIC 1 - PLAN 2	138 SF	0.46 SF	0.23 SF	0.23 SF
ATTIC 2 - PLAN 2	150 SF	0.50 SF	0.25 SF	0.25 SF
ATTIC 3 - PLAN 2	38 SF	0.13 SF	0.06 SF	0.06 SF

NET FREE PROVIDED

VENT TYPE	COUNT	VENT LENGTH	AREA PER VENT	NET FREE AREA
ATTIC 1 - PLAN 2 LOWER				
(3) 3" HOLES (LOWER)	3	2' - 0"	0.08 SF	0.24 SF
UPPER				
14x12 VULCAN GABLE VENT (UPPER)	1	1' - 0"	0.40 SF	0.40 SF
				0.64 SF
ATTIC 2 - PLAN 2 LOWER				
(3) 3" HOLES (LOWER)	7	2' - 0"	0.08 SF	0.56 SF
				0.56 SF
ATTIC 3 - PLAN 2				
LOWER				
(3) 3" HOLES (LOWER)	2	2' - 0"	0.08 SF	0.16 SF
				0.16 SF

# **KEYNOTES**

30" X 30" MIN. ATTIC ACCESS. PROVIDED SWITCH AND OUTLET AT ATTIC FOR FAU. PERMANENTLY ATTACH R-38 OR GREATER INSULATION TO ATTIC ACCESS DOOR USING ADHESIVE OR MECHANICAL FASTENERS CEnC 150.0 (a)1. PROVIDE GASKETED ATTIC ACCESS TO PREVENT AIR LEAKAGE CEnC 150.0 (a)1.

# **ROOF PLAN GENERAL NOTES**

- REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS REFER TO STRUCTURAL PLANS FOR ROOF FRAMING INFORMATION
- INCLUDING MEMBER SIZES AND CONNECTION HARDWARE.
- REFER TO MECHANICAL PLANS FOR ROOF MOUNTED EQUIPMENT LOCATIONS AND TYPES.
- 4. REFER TO ELECTRICAL PLANS FOR POWER DISTRIBUTION TO ROOF
- MOUNTED EQUIPMENT.
- REFER TO PLUMBING PLANS ROOF VENT PENETRATIONS. REFER TO SITE/GRADING PLAN FOR DOWNSPOUT DISCHARGE OR
- CONTINUATION. PROVIDE A MINIMUM OF 1 INCH OF AIRSPACE BETWEEN THE INSULATION
- AND ROOF SHEATHING. 8. WHERE THE ROOF PROFILE ALLOWS A SPACE BETWEEN THE ROOF COVERING AND DECKING, THE SPACES SHALL BE CONSTRUCTED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRESTOPPED WITH APPROVED MATERIALS OR HAVE ONE LAYER OF MINIMUM 72 POUND
- COMBUSTIBLE DECKING. 9. ALL ROOFING MATERIALS TO BE INSTALLED PER MANUFACTURER'S

MINERAL-SURFACED NONPERFORATED CAP SHEET OVER THE

- SPECIFICATIONS. 10. OVERHANG DIMENSIONS ARE FROM FACE OF EXTERIOR WALL FRAMING TO
- 11. ROOF COVERINGS AND UNDERLAYMENT SHALL BE APPLIED IN ACCORDANCE WITH (2019 CBC 1507.1), AND MANUFACTURER'S INSTALLATION
- INSTRUCTIONS 12. WHERE PROVIDED, VENTILATION OPENINGS SHALL BE IN ACCORDANCE WITH (2019 CBC SECTION 1202). EXTERIOR OPENINGS INTO THE ATTIC SPACE SHALL BE COVERED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, PERFORATED VINYL OR SIMILAR MATERIAL. THE OPENINGS SHALL BE A MINIMUM OF 1/16" AND SHALL NOT EXCEED 1/4" PER
- (2019 CBC 1202.2.2.) 13. ROOF VENTS SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATIONS
- 14. FURNISHED DIMENSIONS FOR VENTS ARE GUIDES ONLY. INSTALL PER MANUFACTURERS SPECIFICATIONS AND ADJUST TO ACCOMMODATE TRUSS LOCATIONS, PLUMBING VENTS, AND SOLAR COLLECTORS.

# **LEGEND**

HEIGHT OF TOP OF ROOFING SURFACE

ROOF SLOPE (REFER TO PLANS FOR ACTUAL SLOPE)

O'HAGIN ATTIC VENT, PAINT TO MATCH ROOF COLOR. (REFER TO EXTERIOR ELEVATIONS FOR COLORS AND MATERIALS.)

GUTTER, CONNECT TO DOWNSPOUT

SOLAR ZONE. REFER TO SOLAR READY NOTES ON

-DOWNSPOUT, TO ROOF OR SPLASHBLOCK BELOW U.N.O.

# **RCP GENERAL NOTES**

WALL BELOW

- 1. REFER TO GENERAL NOTES SHEET G-101 AND G-102 FOR ADDITIONAL REQUIREMENTS.
- REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
- REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
- HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED CEILING PLAN, UNO.
- 6. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS

# **LEGEND**



2" / 12"

CEILING SLOPE (REFER TO PLANS FOR ACTUAL SLOPE)



EXTERIOR 7/8" 3-COAT CEMENT PLASTER CEILING. 1HR FIRE-RESISTANCE PER CBC TABLE 721.1(1) ITEM 1-4.1

HARIE SOFFIT PANELS - BEADED PORCH PANEL OR EQ.

NO. REVISION PROJECT MANAGER DRAWN BY CHECKED BY

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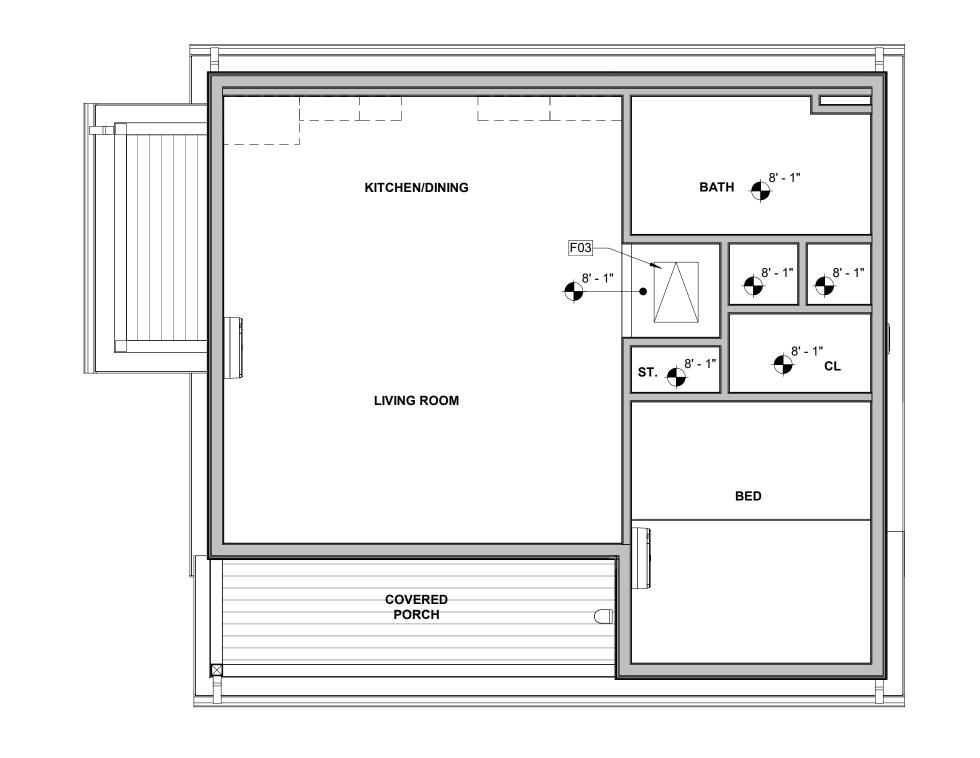
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6/30/2022 PROJECT NUMBER

2340-01-CU21



2 GROUND FLOOR RCP 2 - HIGH DESERT

# W.U.I. REQUIREMENT NOTES

- ROOF COVERING SHALL COMPLY WITH 2019 CRC R337.5.2.UNDERLAYMENT SHALL BE ONE LAYER OF OF MINUMIM 72 POUND MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909 INSTALLED
- OVER THE COMBUSTIBLE DECKING. 2. ROOF VALLEYS SHALL COMPLY WITH 2019 CRC R337.5.3. VALLEY FLASHING SHALL BE NOT LESS THAN 26 GAGE GALVANIZED SHEET CORROSIVE RESISTANT METAL INSTALLED OVER NOT LESS THAN ONE LAYER OF MINUMIM 72 POUND MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909, AT LEAST 36 INCHES WIDE RUNNING THE
- FULL LENGTH OF THE VALLEY. ROOF GUTTERS SHALL COMPLY WITH 2019 CRC R337.5.4. ROOF GUTTERS SHALL BE PROVIDE WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER
- 4. VENTILATION OPENINGS SHALL COMPLY WITH 2019 CRC R337.6 -VENTILATION OPENINGS FOR ENCLOSED ATTICS, ENCLOSED EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND UNDERFLOOR VENTILATION OPENINGS SHALL BE FULLY COVERED WITH METAL WIRE MESH, VENTS, OTHER MATEIALS, OR OTHER DEVICES. REFER
- TO SECTIONS R337.6.1 THROUGH R337.6.3 FOR ADDITIONAL INFORMATION. EXTERIOR COVERINGS SHALL COMPLY WITH 2019 CRC R337.7 EXTERIOR WALL COVERINGS OR WALL ASSEMBLIES SHALL COMPLY WITH ONE OF THE FOLLOWING REQUIREMENTS: BE OF NONCOMBUSTIBLE MATERIAL, IGNITION-RESISTANT MATERIAL, HEAVY TIMBER EXTERIOR WALL ASSEMBLY, LOG WALL CONSTRUCTION ASSEMBLY, OR WALL ASSEMBLIES THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE TEST SET FORTH IN SFM STANDARD 12-7A-1. REFER TO SECTIONS R337.7.1 THROUGH R337.7. 9 FOR ADDITIONAL INFORMATION.

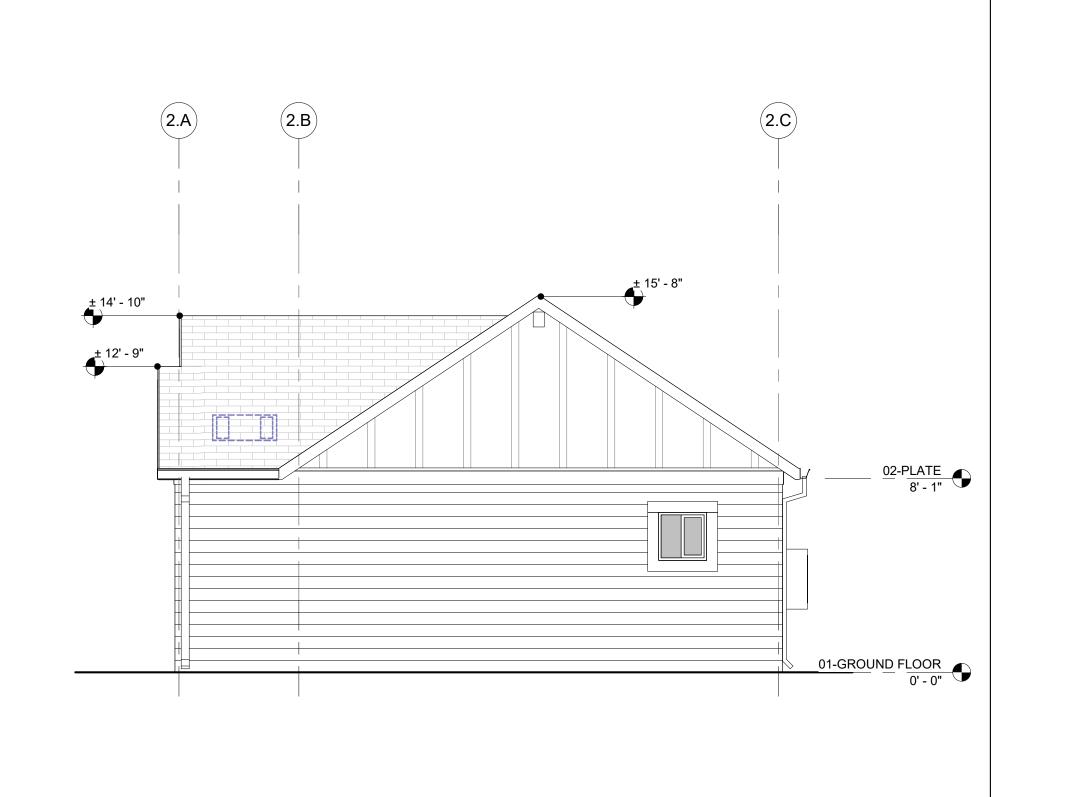
10' - 0"

HEIGHT OF CEILING SURFACE (REFER TO PLANS FOR ACTUAL HEIGHT)

INTERIOR CEILING FINISH. REFER TO FINISH SCHEDULE.



EXTERIOR FIBER CEMENT BOARD CEILING.



# (2.3) (2.2) - 02-PLATE 8' - 1" 01-GROUND FLOOR 0' - 0"

# **ELEVATION GENERAL NOTES**

- 1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS. 2. FRAMING ELEVATIONS, INCLUDING FLOOR PLATES AND FLOOR LEVEL ELEVATIONS ARE MEASURED FROM BUILDING FINISH FLOOR, U.N.O.
- 3. SEE DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. 4. REFER TO ROOF PLAN FOR ROOF PITCH AND OVERHANGS. FASCIA PER
- 5. SEE ROOF PLAN FOR APPROXIMATE DOWNSPOUT LOCATIONS, U.N.O.
- 6. REFER TO DOOR AND WINDOW SCHEDULES AND TYPES FOR DOOR AND WINDOW INFORMATION.
- 7. SEE ELECTRICAL DRAWINGS FOR EXTERIOR LIGHTING 8. SEE MECHANICAL DRAWINGS FOR GRILLES AND LOUVERS. PAINT TO MATCH
- ADJACENT FINISH. 9. CONTRACTOR TO VERIFY COLOR SCHEME WITH OWNER BEFORE PERFORMING THE WORK.

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# **KEYNOTES**

WALL-MOUNTED MULTI-ZONE HEAT PUMP CONDENSING UNIT.

2019 CRC R337 FIBER CEMENT HOROZONTAL SIDING, IN COMPLIANCE WITH 2019

CORRUGATED METAL FINISH. ASPHAULT COMPOSITE ROOF SHINGLES. CLASS A FIRE RATING

EXTERIOR RATED ELECTRIC SUB PANEL 80 AMP 120/240 VOLT. CONTRACTOR TO VERIFY MAIN PANEL.

REFER TO PLANS FOR LOCATION OF INDOOR FAN FAN COIL UNITS. REFER TO TITLE 24 FOR ADDITIONAL INFORMATION. FIBER CEMENT BOARD AND BATTEN SIDING, IN COMPLIANCE WITH

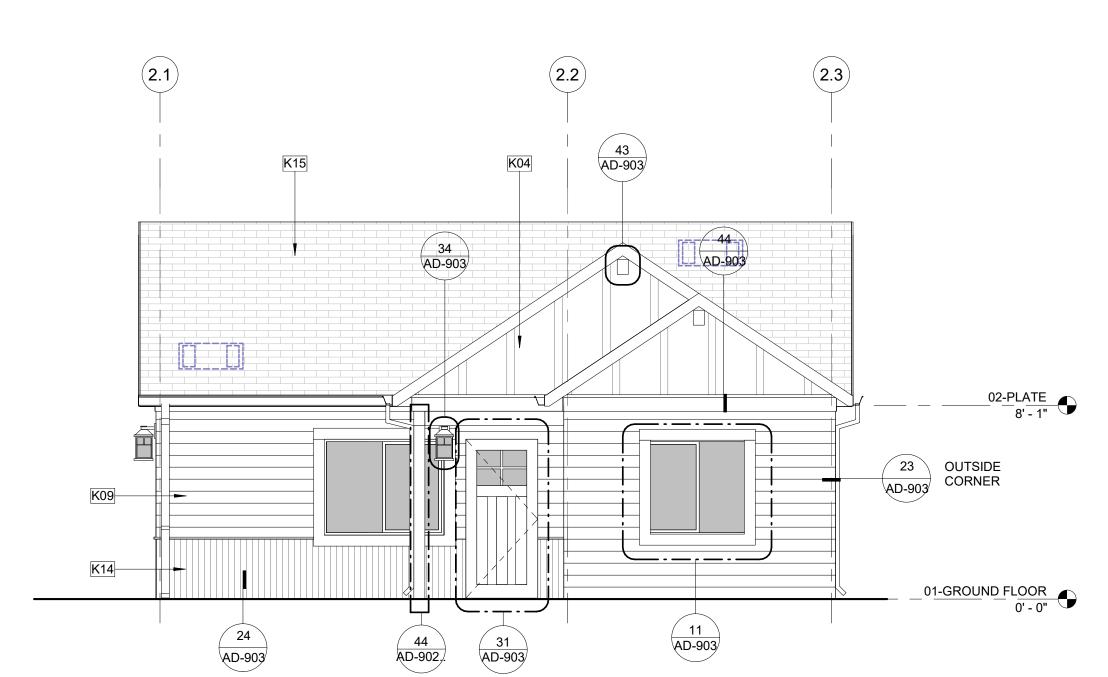
CRC R337

22 INSIDE CORNER 01-GROUND FLOOR

3 PLAN 2 - RURAL MOUNTAIN - LEFT A2-101 A2-201 SCALE: 1/4" = 1'-0"

1 PLAN 2 - RURAL MOUNTAIN - RIGHT

A2-101 A2-201 SCALE: 1/4" = 1'-0"



4 PLAN 2 - RURAL MOUNTAIN - FRONT

2 PLAN 2 - RURAL MOUNTAIN - REAR

A2-101 A2-201 SCALE: 1/4" = 1'-0"



NO. REVISION DATE

PROJECT MANAGER DRAWN BY CHECKED BY 6/30/2022

PROJECT NUMBER 2340-01-CU21

A2-201

**LEGEND** 

NOTE: COLOR TO MATCH PRIMARY RESIDENCE COLOR SCHEME.

**STYLE - HIGH DESERT** 

CORRUGATED METAL -VERTICAL

HORIZONTAL SIDING

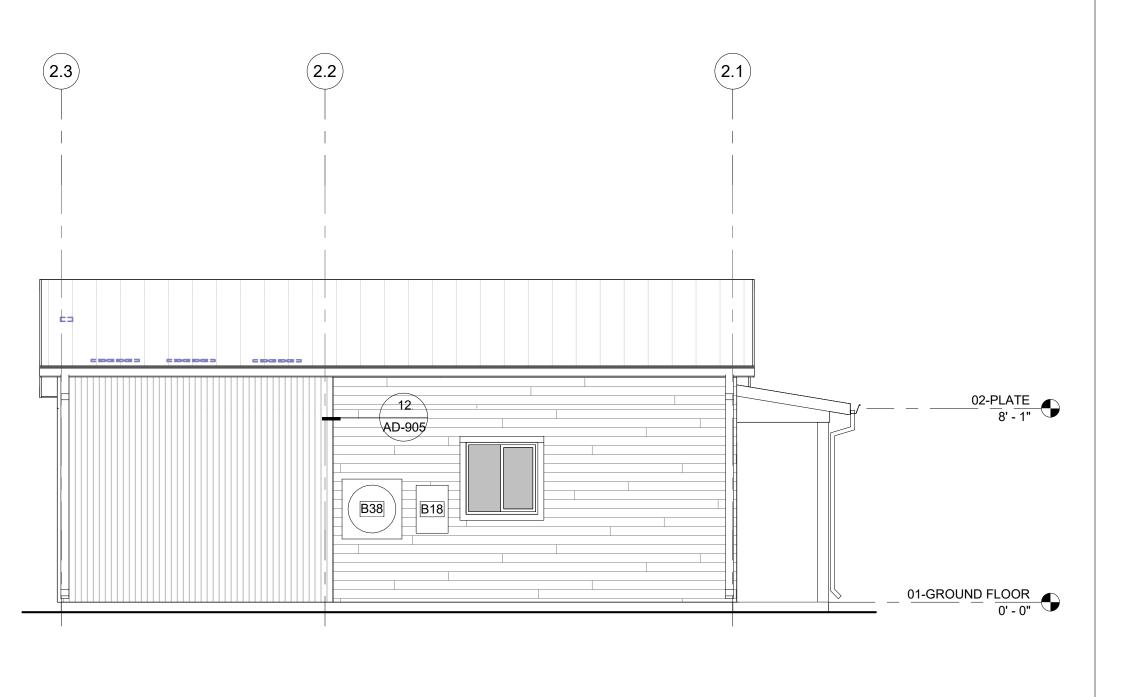
**STYLE - RURAL MOUNTAIN** 

FIBER CEMENT HORIZONTAL SIDING (COLOR AND WIDTH TO MATCH PRIMARY RESIDENCE)

BOARD AND BATTEN SIDING (COLOR TO MATCH PRIMARY RESIDENCE)

CORRUGATED METAL -VERTICAL

# 02-PLATE 8' - 1" 01-GROUND FLOOR PLAN 2 - HIGH DESERT - RIGHT A2-101 A2-202 SCALE: 1/4" = 1'-0"



# **ELEVATION GENERAL NOTES**

- 1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS. 2. FRAMING ELEVATIONS, INCLUDING FLOOR PLATES AND FLOOR LEVEL ELEVATIONS ARE MEASURED FROM BUILDING FINISH FLOOR, U.N.O.
- 3. SEE DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. 4. REFER TO ROOF PLAN FOR ROOF PITCH AND OVERHANGS. FASCIA PER
- 5. SEE ROOF PLAN FOR APPROXIMATE DOWNSPOUT LOCATIONS, U.N.O.
- 6. REFER TO DOOR AND WINDOW SCHEDULES AND TYPES FOR DOOR AND WINDOW INFORMATION.
- 7. SEE ELECTRICAL DRAWINGS FOR EXTERIOR LIGHTING 8. SEE MECHANICAL DRAWINGS FOR GRILLES AND LOUVERS. PAINT TO MATCH
- ADJACENT FINISH. 9. CONTRACTOR TO VERIFY COLOR SCHEME WITH OWNER BEFORE PERFORMING THE WORK.

S A N L U I S O B I S P O, C A 9 3 4 0 1

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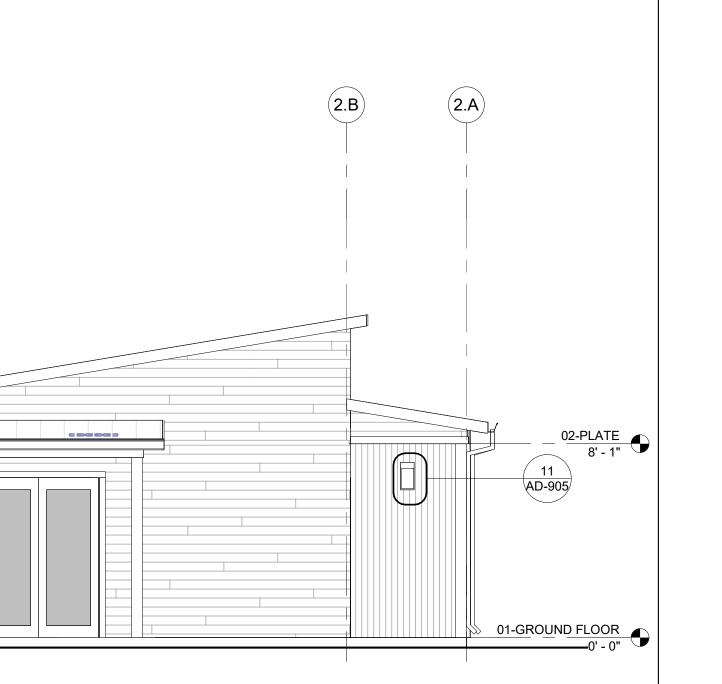
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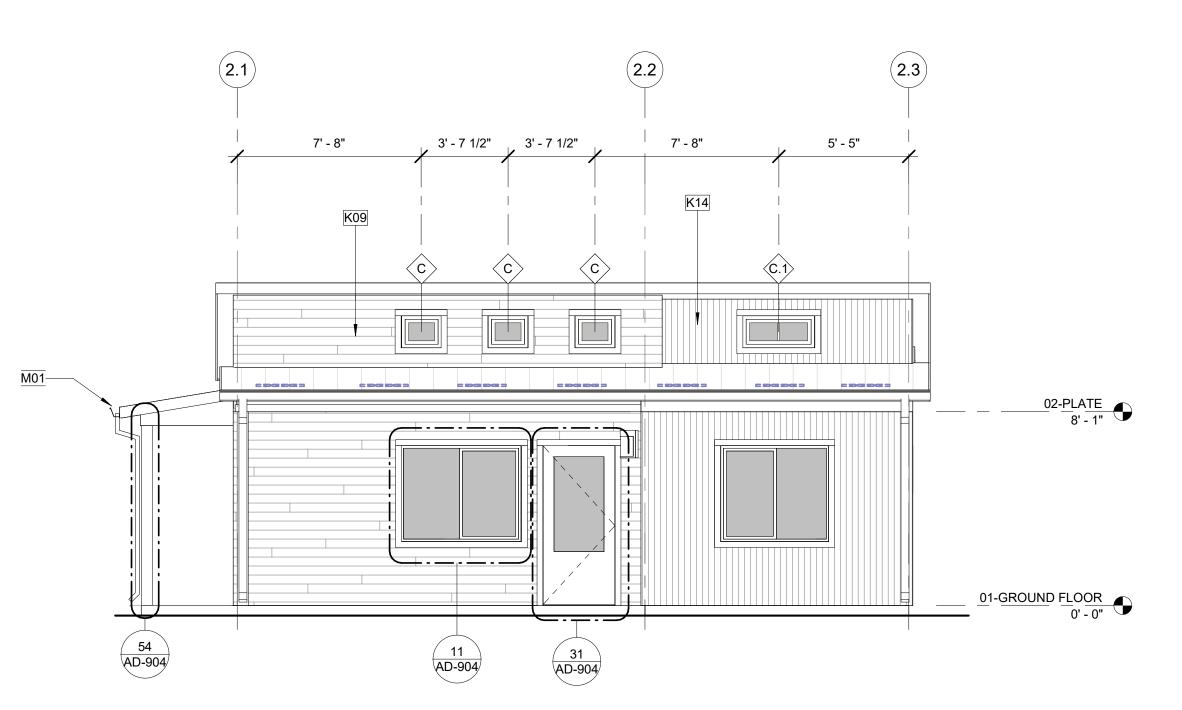
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DO

# 2 PLAN 2 - HIGH DESERT- REAR





# **KEYNOTES**

EXTERIOR RATED ELECTRIC SUB PANEL 80 AMP 120/240 VOLT. CONTRACTOR TO VERIFY MAIN PANEL.

WALL-MOUNTED MULTI-ZONE HEAT PUMP CONDENSING UNIT. REFER TO PLANS FOR LOCATION OF INDOOR FAN FAN COIL UNITS.

REFER TO TITLE 24 FOR ADDITIONAL INFORMATION. FIBER CEMENT HOROZONTAL SIDING, IN COMPLIANCE WITH 2019 CRC R337

CORRUGATED METAL FINISH. GUTTER. CONNECT TO DOWNSPOUT. PROVIDE MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS IN GUTTER PER

# **LEGEND**

NOTE: COLOR TO MATCH PRIMARY RESIDENCE COLOR SCHEME.

# **STYLE - RURAL MOUNTAIN**

FIBER CEMENT HORIZONTAL SIDING (COLOR AND WIDTH TO MATCH PRIMARY RESIDENCE)

**BOARD AND BATTEN** 

PRIMARY RESIDENCE)

SIDING (COLOR TO MATCH

STYLE - HIGH DESERT

HORIZONTAL SIDING

VERTICAL

CORRUGATED METAL -

CORRUGATED METAL -

PROJECT MANAGER DRAWN BY CHECKED BY

NO. REVISION

6/30/2022

PLAN 2 - HIGH DESERT - LEFT A2-101 A2-202 SCALE: 1/4" = 1'-0"

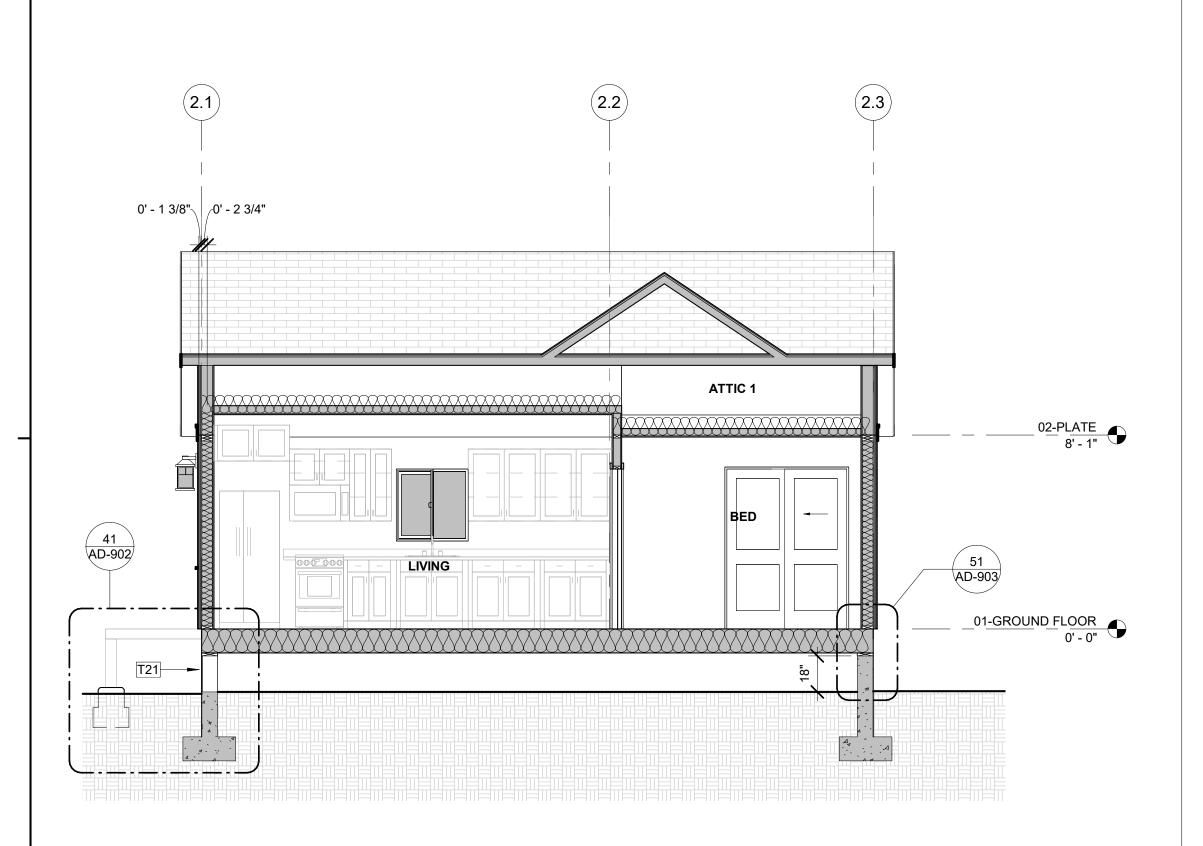
4 PLAN 2 - HIGH DESERT - FRONT A2-101 A2-202 SCALE: 1/4" = 1'-0"

22

AD-904

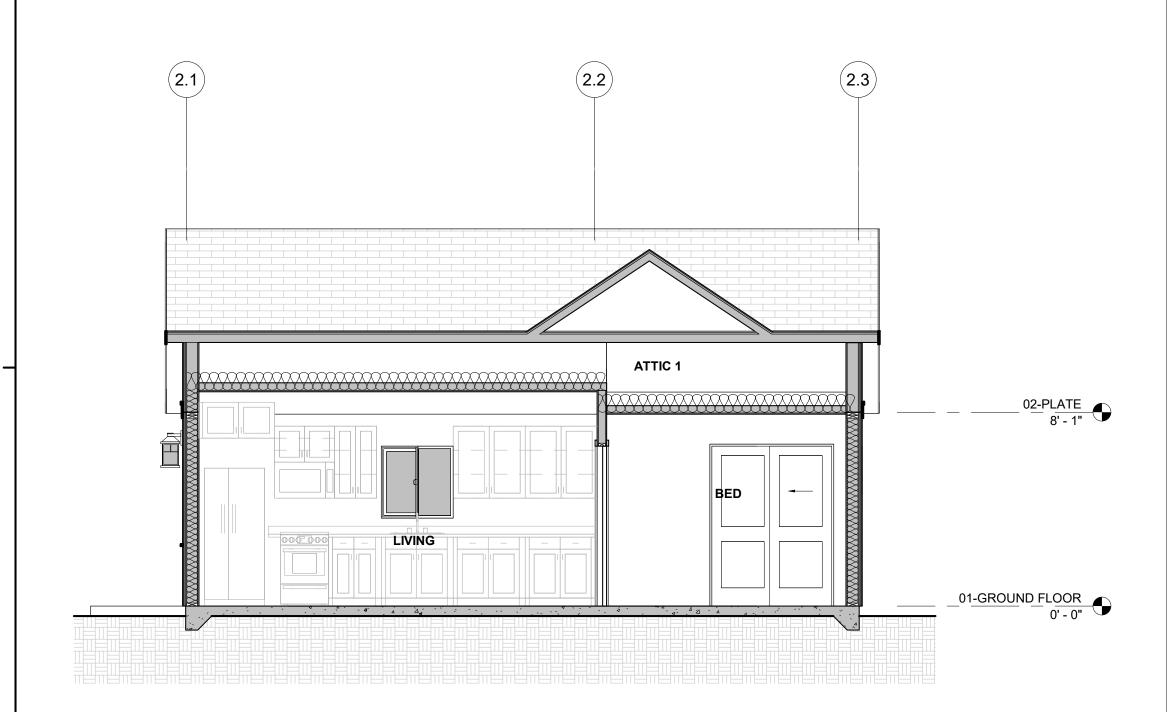
PROJECT NUMBER 2340-01-CU21

A2-202



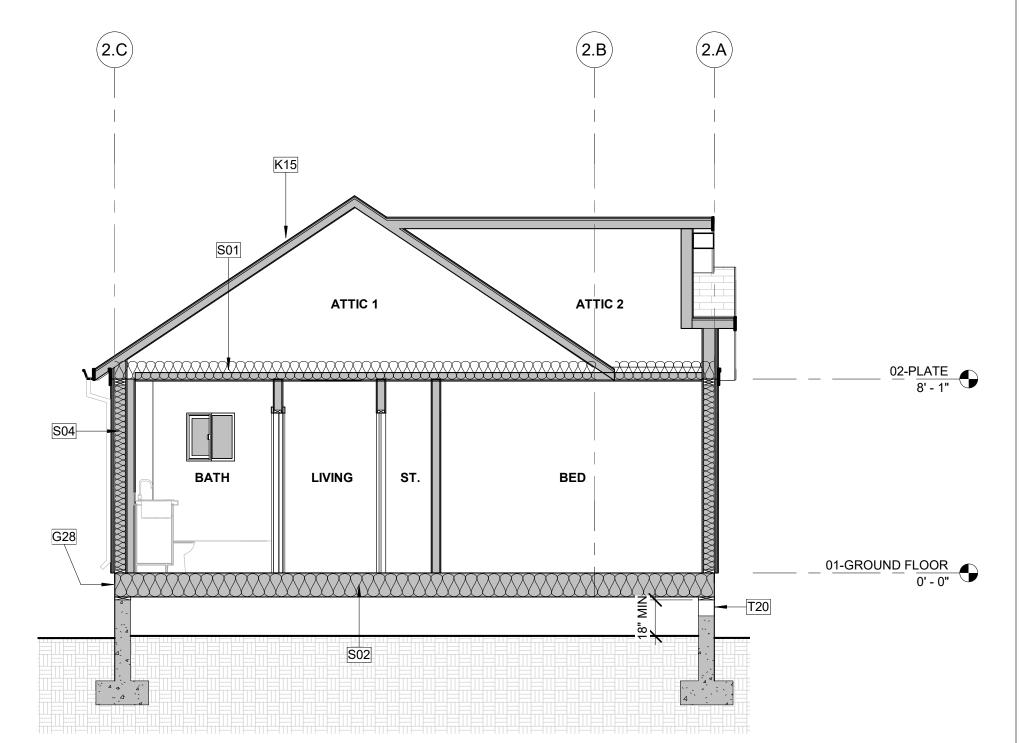
# 3 PLAN 2 - RM - SECTION 1 - RAISED FOUNDATION

A2-101 A2-301 SCALE: 1/4" = 1'-0"



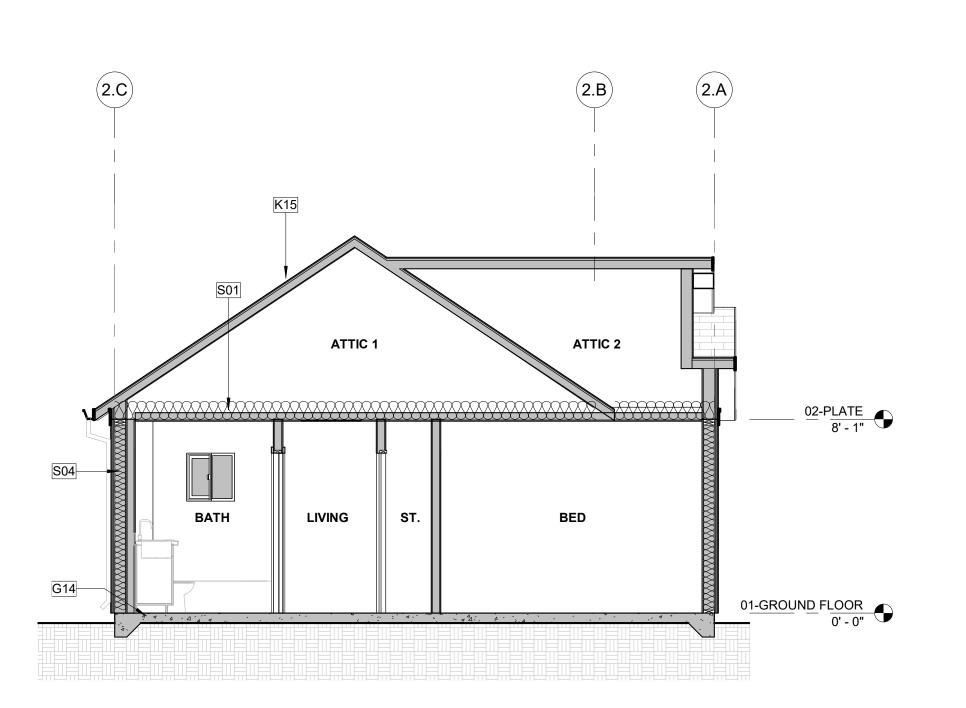
1 PLAN 2 - RM - SECTION 1 - SLAB-ON-GRADE

| A2-301 | SCALE: 1/4" = 1'-0"



# 4 PLAN 2 - RM - SECTION 2 - RAISED FOUNDATION

A2-301 SCALE: 1/4" = 1'-0"



2 PLAN 2 - RM - SECTION 2 - SLAB-ON-GRADE

# **SECTIONS GENERAL NOTES**

- 1. THE PURPOSE OF THESE DRAWINGS IS TO SHOW CONSTRUCTION MATERIALSS/ASSEMBLIES. FOR SPECIFIC SIZES AND DETAILS REFER TO ARCHITECTURAL PLANS, ELEVATIONS, DETAILS, AND STRUCTURAL PLANS. \*KEYNOTES ONLY APPLY IF REFERENCED ON PLANS.
- WALL ASSEMBLIES TO BE PER FLOOR PLAN.
   DOORS AND WINDOWS TO BE PER APPLICABLE SCHEDULE. REFER TO
- FLOOR PLANS FOR IDENTIFICATION.
  4. INSULATION: REFER TO TITLE 24 REPORT AND "INSULATION" NOTES ON
- SHEET FOR ADDITIONAL RATINGS, REQUIREMENTS, AND INFORMATION.
  5. FIREBLOCKING TO BE LOACATED AT THE FOLLOWING LOCATIONS PER 2019 CRC SECTION R302.11:
  - FIREBLOCKING SHALL BE PROVIDED IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS:
     VERTICALLY AT CEILING AND FLOOR LEVELS
  - HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET.
     AT INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS SOFFITS, DROP CEILINGS AND COVE
  - CEILINGS.

    3. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS
  - SHALL COMPLY WITH **SECTION R302.7**.

    4. AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILINGS AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E136 REQUIREMENTS.
  - 5. FOR THE FIREBLOCKING OF CHIMNEYS AND FIREPLACES, SEE SECTION R1003.19.
    6. FIREBLOCKING OF CORNICES OF A TWO-FAMILY DWELLING IS
- REQUIRED AT THE LINE OF DWELLING-UNIT SEPARATION.

  A. **SECTION R302.11.1** FIREBLOCKING MATERIALS SHALL CONSIST OF FOLLOWING MATERIALS:
- 1. TWO-INCH NOMINAL LUMBER
  2. TWO THICKNESSES OF ONE-INCH NOMINAL LUMBER WITH BROKEN
- LAP JOINTS
  3. THE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANELS WITH
- JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANELS
  4. THE THICKNESS OF 0.75-INCH PARTICLE BOARD WITH JOINTS
- BACKED BY 0.75-INCH PARTICLE BOARD
  5. ONE-HALF-INCH GYPSUM BOARD
- 6. ONE-FOURTH-INCH CEMENT-BASED MILLBOARD
  7. BATTS OR BLANKETS OF MINERAL WOOL, MINERAL FIBER OR OTHER APPROVED MATERIAL INSTALLED IN SUCH A MANNER AS TO BE
- SECURELY RETAINED IN PLACE

  8. CELLULOSE INSULATION INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263, FOR THE SPECIFIC APPLICATION.
- 4. PER **2019 CRC SECION R317** SLEEPERS AND SILLS ON A CONCRETE OR MASONRY SLAB THAT IS IN DIRECT CONTACT WITH GROUND, UNLESS SEPARATED BY AN IMPERVIOUS MOISTURE BARRIER SHALL BE NATURALLY BURABLE OR PRESERVATIVE-TREATED WOOD.

# 77 design

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# **KEYNOTES**

G28

4" CONCRETE SLAB ON GRADE, REFER TO STUCTURAL PLANS RAISED FLOOR FOUNDATION. REFER TO STRUCTURAL.

ASPHAULT COMPOSITE ROOF SHINGLES. CLASS A FIRE RATING CEILING INSULATION. REFER TO TITLE 24 (R-38 MIN.).

HORIZONTAL FLOOR INSULATION. REFER TO TITLE 24 (R-19 MIN.).

2X6 WALL INSULATION. REFER TO TITLE 24 (R-21 MIN.)

FOUNDATION VENTS @ STEM WALL TO BE LOCATED AS APPROPRIATE ON SITE PER CONTRACTOR. REFER TO FOUNDATION CALCS ON BUILDING SECTIONS FOR NUMBER OF VENTS REQUIRED. REFER TO G-101 FOR ADDITIONAL VENTILATION REQUIREMENTS.

CRAWL SPACE ACCESS PANEL. MINIMUM 18" X 24" PER CBC 1208.1. LOCATION DETERMINED ON SITE PER CONTRACTOR.

# **FOUNDATION VENTING CALCS**

NOTE:
PER 2019 CBC 1202.4, THE SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING EXCEPT SPACES OCCUPIED BY BASEMENTS OR CELLARS SHALL BE PROVIDED WITH VENTILATION. REFER TO UNDER-FLOOR VENTING NOTES ON SHEET G-101 FOR ADDITIONAL INFORMATION.

UNDER-FLOOR CALCULATION FORMULA

NFA OF AIR MOVEMENT PER VENT = 62 SQ.IN./144 IN./FT = 0.430 SF

"VENTS PROVIDED" = (451/150) / 0.430 SF

VENT PRODUCT INFO

VENT MANUFACTURER: VULCAN VENTS
PRODUCT: 8" X 14" FLANGE FRONT OR APPROVED EQUAL
WWW.VULCANVENTS.COM

UNDER-FLOOF AREA (SF)	R FOUN	QUIRED IDATION IG @ 1/150		IDATION REQUIRED	FOUNDATION VENTS PROPOSED
615 SF	4.1		10		
VENT	ING-PORCH	- CALCULAT	ION - PLAN	12 - RURAL N	MOUNTAIN
VENT	BALCONY	REQUIRED	BALCONY	VENT LEN	GTH VENT LENGH
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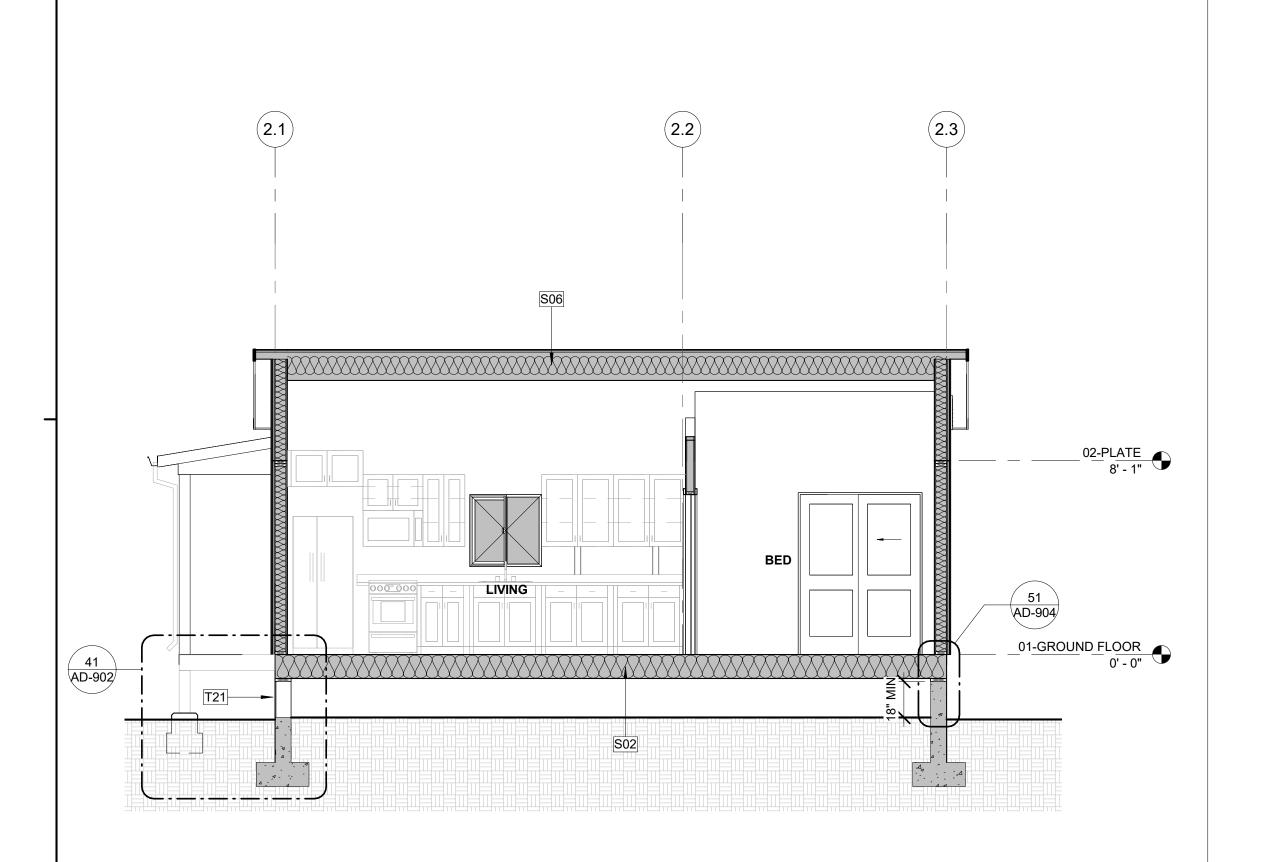
MONO COUNTY ADU
PROTOTYPES
MONO COUNTY

BUILDING SECTIONS - RURAI
MOUNTAIN

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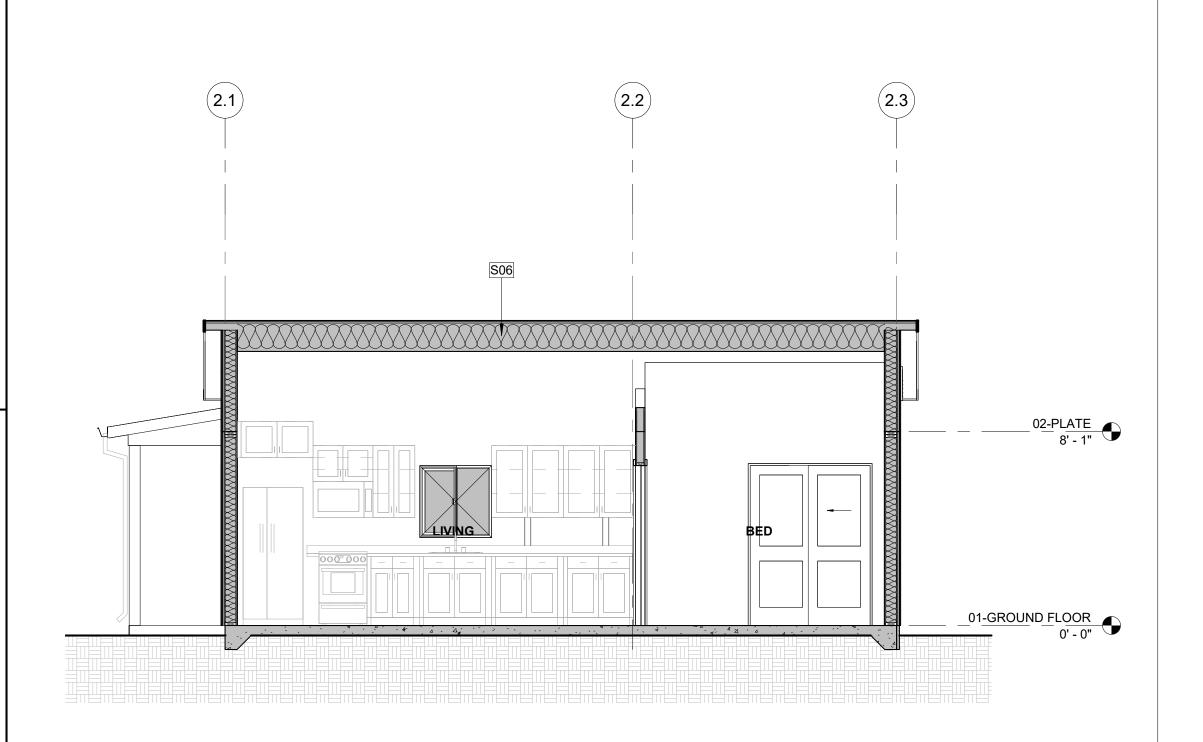
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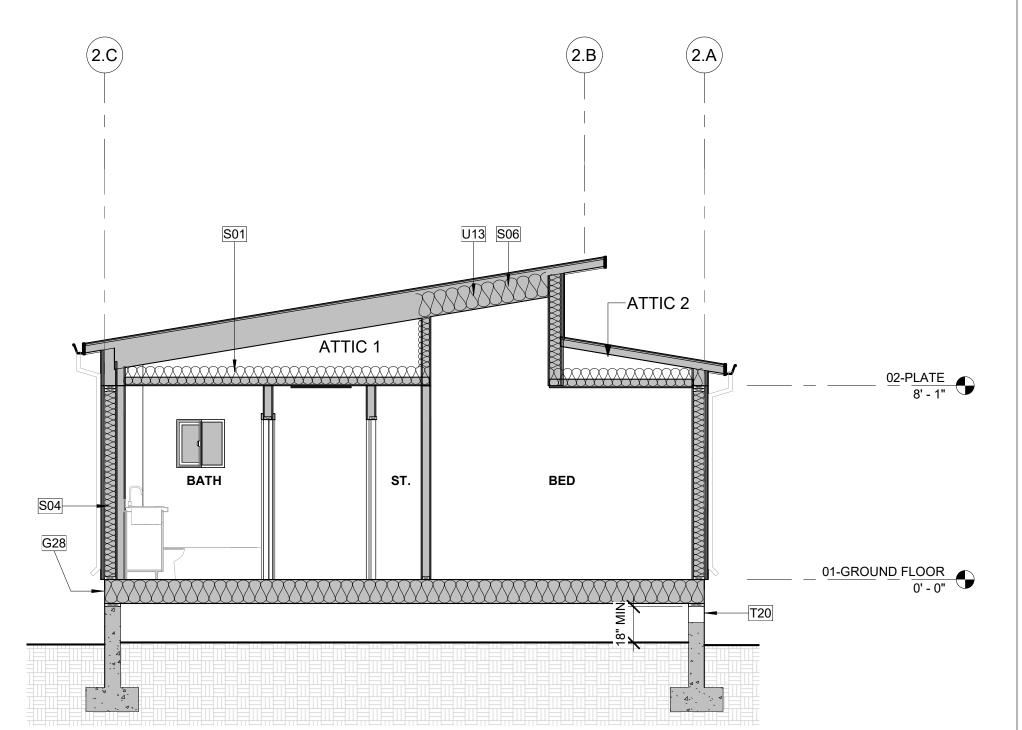
A2-302 SCALE: 1/4" = 1'-0"

A2-302 SCALE: 1/4" = 1'-0"

3 PLAN 2 - HD - SECTION 1 - RAISED FOUNDATION



1 PLAN 2 - HD - SECTION 1 - SLAB-ON-GRADE



4 PLAN 2 - HD - SECTION 2 - RAISED FOUNDATION A2-101 A2-302 SCALE: 1/4" = 1'-0"

> -ATTIC 2 02-PLATE 8' - 1"

2 PLAN 2 - HD - SECTION 2 - SLAB-ON-GRADE

# **SECTIONS GENERAL NOTES**

- 1. THE PURPOSE OF THESE DRAWINGS IS TO SHOW CONSTRUCTION MATERIALSS/ASSEMBLIES. FOR SPECIFIC SIZES AND DETAILS REFER TO ARCHITECTURAL PLANS, ELEVATIONS, DETAILS, AND STRUCTURAL PLANS. \*KEYNOTES ONLY APPLY IF REFERENCED ON PLANS.
- 2. WALL ASSEMBLIES TO BE PER FLOOR PLAN. 3. DOORS AND WINDOWS TO BE PER APPLICABLE SCHEDULE. REFER TO
- FLOOR PLANS FOR IDENTIFICATION. 4. INSULATION: REFER TO TITLE 24 REPORT AND "INSULATION" NOTES ON
- SHEET FOR ADDITIONAL RATINGS, REQUIREMENTS, AND INFORMATION. 5. FIREBLOCKING TO BE LOACATED AT THE FOLLOWING LOCATIONS PER 2019 CRC SECTION R302.11:
  - 1. FIREBLOCKING SHALL BE PROVIDED IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS:

1. VERTICALLY AT CEILING AND FLOOR LEVELS

- 2. HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET. 2. AT INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS SOFFITS, DROP CEILINGS AND COVE
- 3. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS
- SHALL COMPLY WITH **SECTION R302.7**. 4. AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILINGS AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE
- REQUIRED TO MEET THE ASTM E136 REQUIREMENTS. 5. FOR THE FIREBLOCKING OF CHIMNEYS AND FIREPLACES, SEE
- **SECTION R1003.19**. 6. FIREBLOCKING OF CORNICES OF A TWO-FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLING-UNIT SEPARATION.
- SECTION R302.11.1 FIREBLOCKING MATERIALS SHALL CONSIST OF FOLLOWING MATERIALS: 1. TWO-INCH NOMINAL LUMBER
- 2. TWO THICKNESSES OF ONE-INCH NOMINAL LUMBER WITH BROKEN
- 3. THE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANELS WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANELS
- 4. THE THICKNESS OF 0.75-INCH PARTICLE BOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLE BOARD
- 5. ONE-HALF-INCH GYPSUM BOARD
- 6. ONE-FOURTH-INCH CEMENT-BASED MILLBOARD 7. BATTS OR BLANKETS OF MINERAL WOOL, MINERAL FIBER OR OTHER APPROVED MATERIAL INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE
- 8. CELLULOSE INSULATION INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263, FOR THE SPECIFIC APPLICATION.
- 4. PER 2019 CRC SECION R317 SLEEPERS AND SILLS ON A CONCRETE OR MASONRY SLAB THAT IS IN DIRECT CONTACT WITH GROUND, UNLESS SEPARATED BY AN IMPERVIOUS MOISTURE BARRIER SHALL BE NATURALLY BURABLE OR PRESERVATIVE-TREATED WOOD.



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# **KEYNOTES**

4" CONCRETE SLAB ON GRADE, REFER TO STUCTURAL PLANS G28 RAISED FLOOR FOUNDATION. REFER TO STRUCTURAL. CEILING INSULATION. REFER TO TITLE 24 (R-38 MIN.). HORIZONTAL FLOOR INSULATION. REFER TO TITLE 24 (R-19 MIN.). 2X6 WALL INSULATION. REFER TO TITLE 24 (R-21 MIN.) ROOF INSULATION. UNVENTED ROOF PER CRC 806.5. REFER TO 41/AD-904 FOR DETAIL. FOUNDATION VENTS @ STEM WALL TO BE LOCATED AS APPROPRIATE ON SITE PER CONTRACTOR. REFER TO FOUNDATION CALCS ON BUILDING SECTIONS FOR NUMBER OF VENTS REQUIRED. REFER TO G-101 FOR ADDITIONAL VENTILATION REQUIREMENTS. CRAWL SPACE ACCESS PANEL. MINIMUM 18" X 24" PER CBC 1208.1

LOCATION DETERMINED ON SITE PER CONTRACTOR. ROOF RAFTERS. REFER TO STRUCTURAL.

# **FOUNDATION VENTING CALCS**

PER 2019 CBC 1202.4, THE SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING EXCEPT SPACES OCCUPIED BY BASEMENTS OR CELLARS SHALL BE PROVIDED WITH VENTILATION. REFER TO UNDER-FLOOR VENTING NOTES ON SHEET G-101 FOR ADDITIONAL INFORMATION.

UNDER-FLOOR CALCULATION FORMULA NFA OF AIR MOVEMENT PER VENT = 62 SQ.IN./144 IN./FT = 0.430 SF "VENTS PROVIDED" = (451/150) / 0.430 SF

VENT PRODUCT INFO

VENT MANUFACTURER: VULCAN VENTS PRODUCT: 8" X 14" FLANGE FRONT OR APPROVED EQUAL WWW.VULCANVENTS.COM

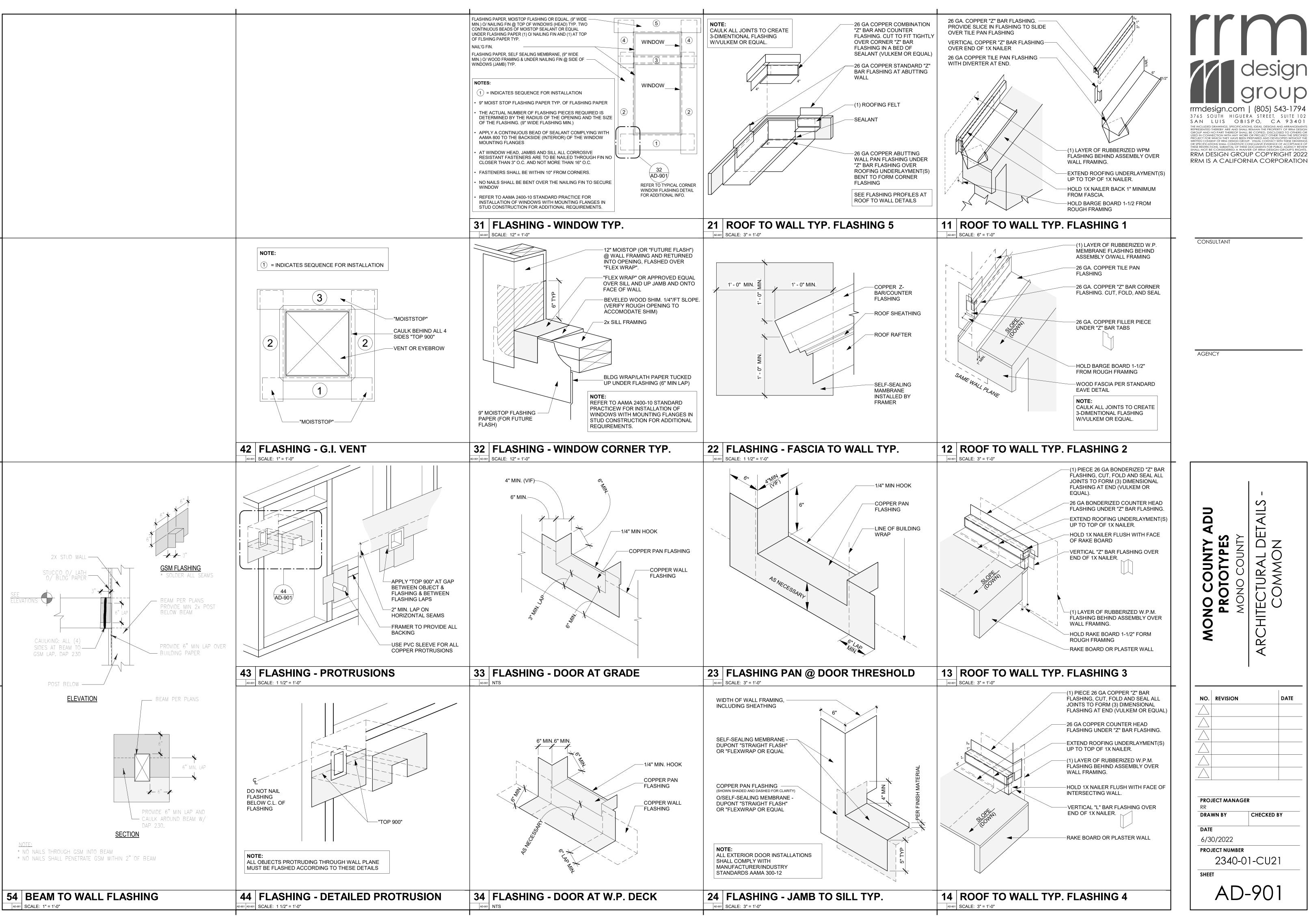
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VENTING-FOUNDATION - CALCULATION - PLAN 2

SECTIONS DESERT BUILDING

NO. REVISION **PROJECT MANAGER** DRAWN BY CHECKED BY 6/30/2022 **PROJECT NUMBER** 2340-01-CU21

A2-302



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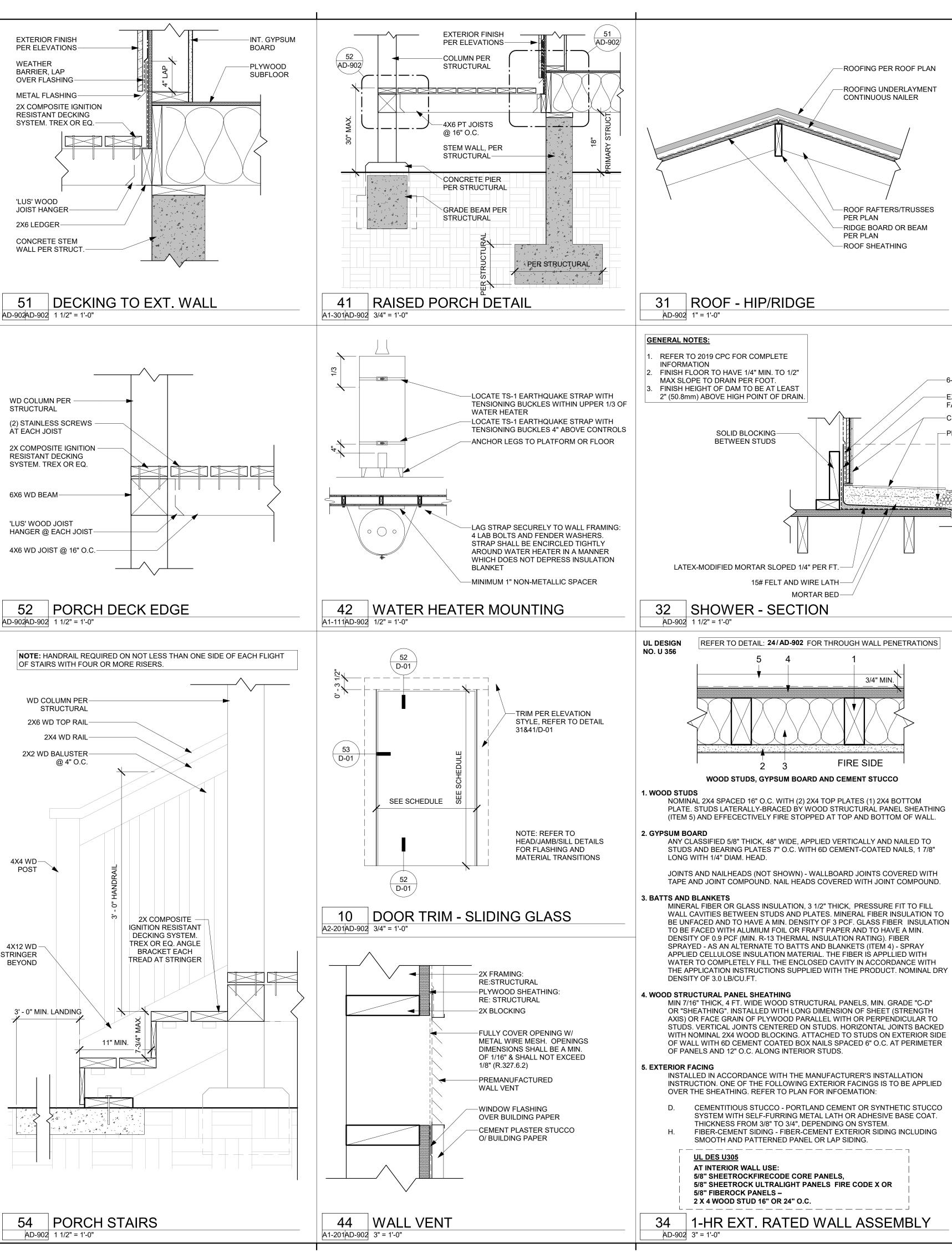
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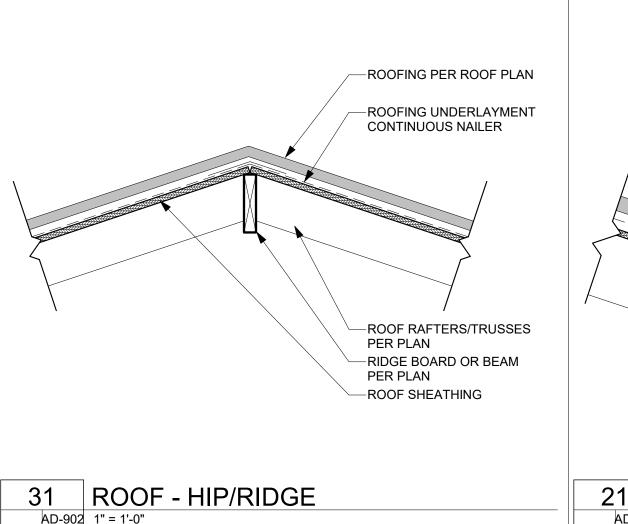
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2340-01-CU21

AD-901





SOLID BLOCKING-

BETWEEN STUDS

15# FELT AND WIRE LATH-

MORTAR BED-

REFER TO DETAIL: 24/AD-902 FOR THROUGH WALL PENETRATIONS

WOOD STUDS, GYPSUM BOARD AND CEMENT STUCCO

CEMENTITIOUS STUCCO - PORTLAND CEMENT OR SYNTHETIC STUCCO

SYSTEM WITH SELF-FURRING METAL LATH OR ADHESIVE BASE COAT.

FIBER-CEMENT SIDING - FIBER-CEMENT EXTERIOR SIDING INCLUDING

THICKNESS FROM 3/8" TO 3/4", DEPENDING ON SYSTEM

5/8" SHEETROCK ULTRALIGHT PANELS FIRE CODE X OR

SMOOTH AND PATTERNED PANEL OR LAP SIDING.

5/8" SHEETROCKFIRECODE CORE PANELS,

<u>UL DES U305</u>

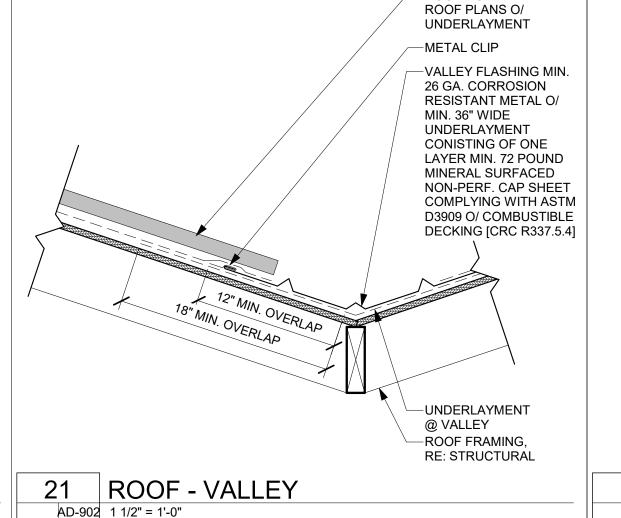
AT INTERIOR WALL USE:

5/8" FIBEROCK PANELS -

2 X 4 WOOD STUD 16" OR 24" O.C.

3/4" MIN.

FIRE SIDE



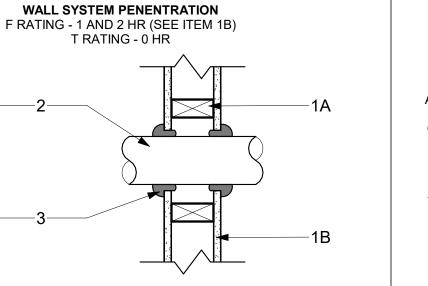
**ROOFING PER** 

SIDING PER ELEVATION PLYWOOD SHEATHING (WHERE OCCURS) WATER RESISTIVE BARRIER PER-CRC 703.7.3, LAP OVER FLASHING 1 1/4" FIBER CEMENT TRIM-1 1/4" FIBER CEMENT TRIM INTERIOR DRYWALL FINISH 20 GA. G.I. FLASHING DRIP EDGE-TYP. CAULKING: SEE-INSTALLATION SLIDING DOOR AND FRAME SET IN A CONTINUOUS BEAD OF SEALANT. HEAD

11 DOOR-SLIDING GLASS AD-902 3" = 1'-0"

SIDING PER ELEVATION PLYWOOD SHEATHING (WHERE OCCURS) WATER RESISTIVE BARRIER PER CRC 703.7.3 TYP. CAULKING--CEMENT BACKERBOARD 1 1/4" FIBER CEMENT TRIM-TYP. CAULKING: SEE-INSTALLATION SLIDING DOOR AND FRAME SET IN A CONTINUOUS BEAD OF SEALANT **JAMB** 

12 DOOR-SLIDING GLASS



THE 1 OR 2 HR. FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING **CONSTRUCTION FEATURES:** 

—40-MIL CPE SHOWER PAN MEMBRANE

−2 PIECE CLAMPING DRAIN

WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 IN. BY 4 IN. LUMBER SPACED 16 IN. O.C. STEEL STUDS TO BE MIN. 3 1/2 IN. WIDE AND SPACED MAX. 24 IN. O.C.

B. GYPSUM BOARD (BEARING THE UL CLASSIFICATION MARKING)-THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX. DIAM. OF OPENING IS 5 IN.

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

2. THROUGH-PENETRANTS

-6-MIL POLY OR 15# FELT (LAP OVER MEMBRANE)

-CERAMIC TILE OVER LATEX-MODIFIED THINSET

WIRE MESH-

REINFORCEMENT

FASTEN AT TOP ONLY

XHEZ.W-L-1166

-EXTEND MEMBRANE UP WALLS TO 3" ABOVE CURB

-PEA GRAVEL OR CRUSHED TILE AROUND WEEP HOLES

ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE PIPE, CONDUIT OR TUBING AND PERIPHERY OF THE OPENING SHALL BE MIN. OF 0 IN. (POINT CONTACT) TO A MAX. 1/8 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

NOM. 4 IN. DIAM. (OR SMALLER) TYPE M (OR HEAVIER) COPPER TUBING.

NOM. 4 IN. DIAM. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

C. STEEL PIPE-NOM. 4 IN. DIAM. (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE.

D. CONDUIT-NOM. 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC

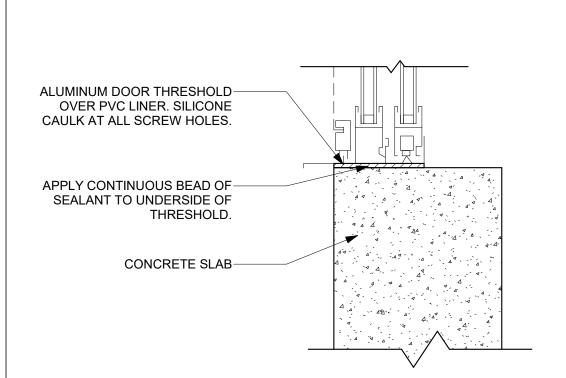
E. IRON PIPE-NOM. 4 IN. DIAM. (OR SMALLER) CAST OR DUCTILE IRON PIPE.

3. FILL, VOID OR CAVITY MATERIALS (BEARING THE UL CLASSIFICATION MARKING) CAULK OR PUTTY-MIN. 1/2 IN. DIAMETER BEAD CAULK OR PUTTY APPLIED CONTINUOUSLY AROUND THE PENETRANT ON THE WALL SURFACES ON BOTH SIDES OF THE WALL.

3M COMPANY - CP 25WB+ CAULK OR MPS-2+ PUTTY

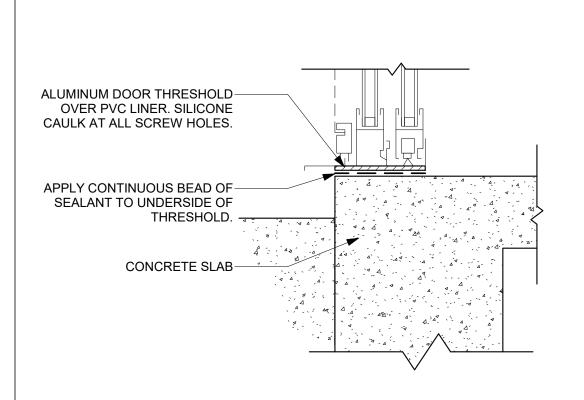
TUBING OR RIGID STEEL CONDUIT

THROUGH PENETRATION @ WALL1



SILL

13 DOOR-SLIDING GLASS AD-902 3" = 1'-0"



THRESHOLD

14 DOOR-SLIDING GLASS - THRESHOLD

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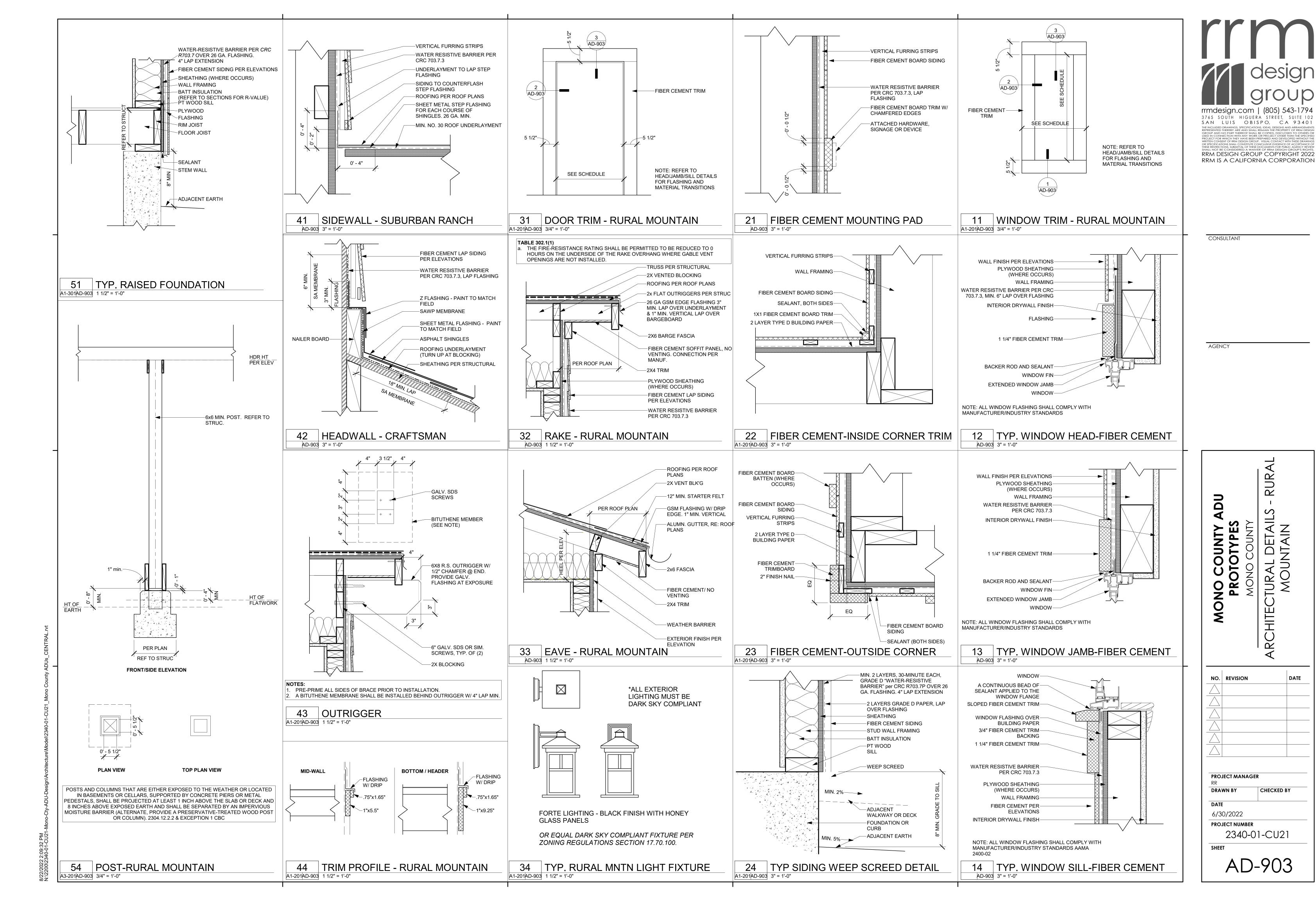
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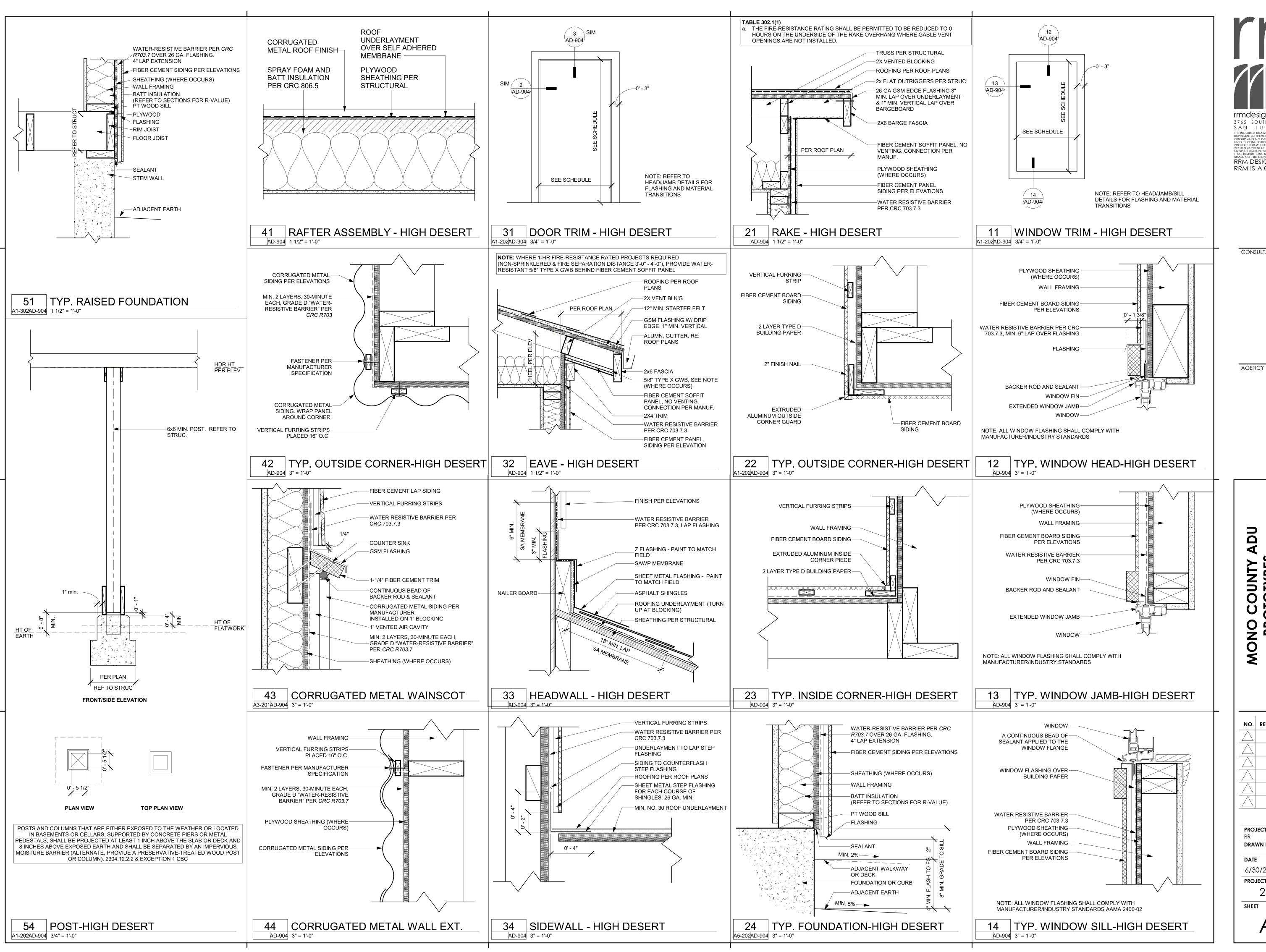
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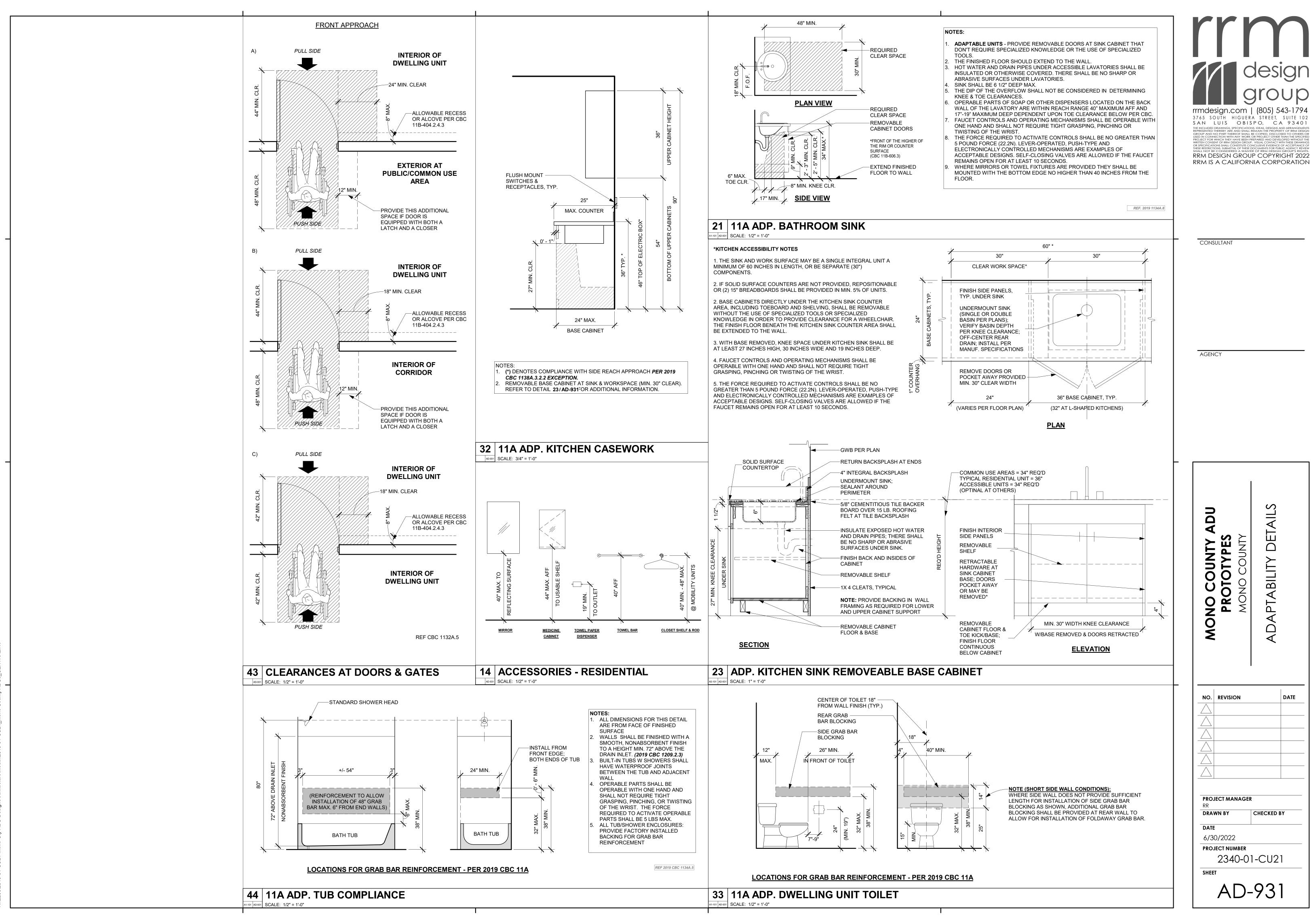
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DATE NO. REVISION **PROJECT MANAGER DRAWN BY** CHECKED BY DATE 6/30/2022 PROJECT NUMBER 2340-01-CU21

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	*ALL EXTERIOR LIGHTING MUST BE DARK SKY COMPLIANT	rrm
		rrmdesign.com   (805) 543-17 3765 SOUTH HIGUERA STREET, SUITE SAN LUIS OBISPO, CA 933-
	LINGMAN LIGHTING - WALL MOUNT DIMMABLE BLACK LED WALL SCONCE (ULEW-30001-8W-T3-W30-01-120/277V)  OR EQUAL DARK SKY COMPLIANT FIXTURE PER ZONING REGULATIONS SECTION 17.70.100.	rrmdesign.com   (805) 543-17, 3765 SOUTH HIGUERA STREET, SUITE SAN LUIS OBISPO, CA 93.4 THE INCLUDED DRAWINGS, SPECIFICATIONS, IDEAS, DESIGNS AND ARRANG REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF RRM GROUP AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTH USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPOJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITH WRITTEN CONSENT OF RRM DESIGN GROUP. VISUAL CONTACT WITH THESE DIO OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPT. THESE RESTRICTIONS, SUBMITTAL OF THESE DOCUMENTS FOR PUBLIC AGENCY. SHALL NOT BE CONSIDERED A WAIVER OF RRM DESIGN GROUP'S RRM IS A CALIFORNIA CORPORAT
	11 LIGHT FIXTURE - HIGH DESERT A1-202AD-905 1 1/2" = 1'-0"	
	VERTICAL FURRING STRIP CORRUGATED METAL SIDING  1-1/4" X 4" FIBER CEMENT TRIM SEALANT EACH SIDE	AGENCY
	WALL - CORRUGATED TO FIBER  12 CEMENT TRANSITION  A1-202AD-905 3" = 1'-0"	
		MONO COUNTY MONO COUNTY ARCHITECTURAL DETAILS - HIGH DESERT
		PROJECT MANAGER RR DRAWN BY CHECKED BY  DATE 6/30/2022  PROJECT NUMBER 2340-01-CU21  SHEET  AD-905

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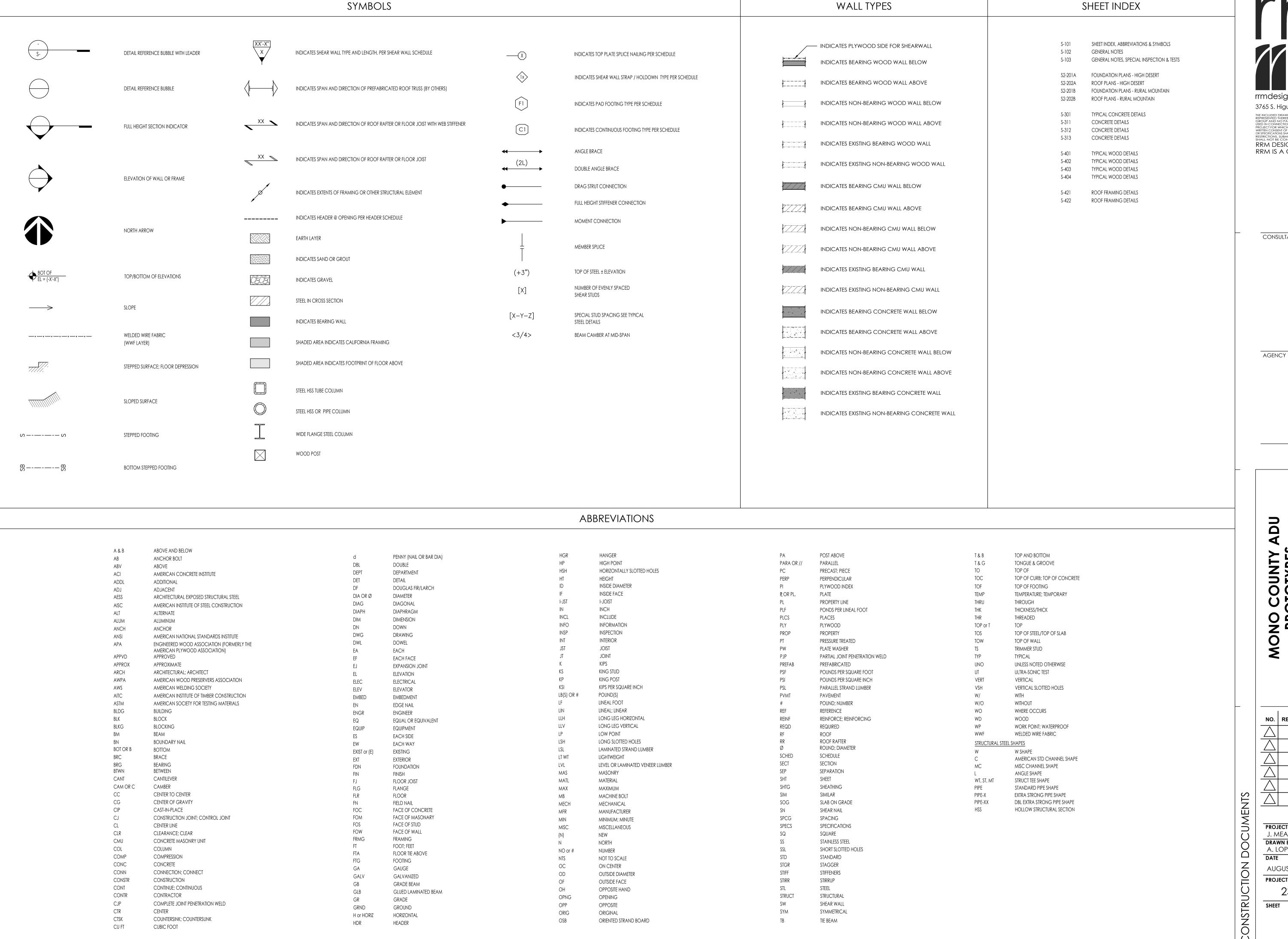
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6/30/2022

PROJECT NUMBER 2340-01-CU21

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NO. REVISION DATE

PROJECT MANAGER J. MEADOWS DRAWN BY CHECKED BY A. LOPEZ M. DOREMUS

AUGUST 18, 2022 PROJECT NUMBER

2340-01-CU21

#### WOOD (GENERAL)

#### PRESERVATIVE TREATMENT:

- A. WOOD MEMBERS SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH AITC 109-07, STANDARD FOR PRESERVATIVE TREATMENT, BASED ON THE SERVICE CONDITION PER THE USE CATEGORIES (UC#) SPECIFIED IN
- a. UC1 INTERIOR CONSTRUCTION, ABOVE GROUND, DRY NO PRESERVATIVE TREATMENT REQUIRED b. UC2 - INTERIOR CONSTRUCTION, ABOVE GROUND, WET - PRESERVATIVE TREATMENT REQUIRED IF THE
- HUMIDITY OR MOISTURE CONDENSATION IS 20% OR GREATER. c. UC3 - EXTERIOR CONSTRUCTION ABOVE GROUND - PRESERVATIVE TREATMENT REQUIRED.
- FOR ALL TREATED WOOD MEMBERS, ALL CUTS, HOLES AND INJURIES SUCH AS ABRASIONS OR HOLES FROM REMOVAL OF NAILS AND SPIKES WHICH MAY PENETRATE THE TREATED ZONE SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA M4-06. THE FOLLOWING FIELD TREATMENTS SHALL BE USED:
- a. BORED HOLES: HOLES FOR CONNECTORS OR BOLTS MAY BE TREATED BY PUMPING COAL TAR ROOFING CEMENT MEETING ASTM D5643 INTO HOLES USING A GREASE GUN OR SIMILAR DEVICE b. EXTERIOR: COPPER NAPHTHENATE
- c. Interior: Inorganic Boron Preservatives Limited to use in Applications not in Contact With GROUND AND CONTINUOUSLY PROTECTED FROM LIQUID WATER

#### SAWN LUMBER

FRAMING LUMBER SHALL MEET THE FOLLOWING MINIMUM STANDARDS EXCEPT WHERE OTHERWISE NOTED.

	SAWN LUMBER	PROPER	ΓIES		
USE	SIZE	SPECIES	GRADE	REFERENCE	
	2 X 4	D.F.	STANDARD OR BETTER PRESSURE TREATED		
MUDSILLS	2 X 6 AND LARGER	D.F.	NO. 2 OR BETTER PRESSURE TREATED	2019 CBC 2303.1.9	
	2 X	REDWOOD	FOUNDATION GRADE		
	<u>HORIZONTAL</u> FRA	MING LUMBE	R		
ROOF JOISTS AND RAFTERS	2 x	D.F.	NO. 2		
FLOOR JOISTS	2 X	D.F.	NO. 2	]	
HEADERS AND BEAMS	4 X	D.F.	NO. 2	WCLIB & WWPA	
AND OTHER HORIZONIAN	4 X 4 AND SMALLER	D.F.	NO. 2		
ANY OTHER HORIZONTAL	6 X 6 AND LARGER	D.F.	NO. 1	]	
	<u>VERTICAL</u> FRAM	NING LUMBER		'	
TOP PLATES	2 X	D.F.	NO. 2		
STUDS	2 X 4 & 3 X 4	D.F.	STUD	WCLIB &	
310D3	2 X 6 & 2 X 8	D.F.	NO. 2	WCLID &	
POSTS	4 X 4 & 4 X 6 POSTS	D.F.	NO. 2		
	6 X 6 & LARGER POSTS	D.F.	NO. 1		
	ALL OTHER FRAI	MING LUMBER	?		
ALL OTHER FRAMING LUMBER, UNO	ALL SIZES	D.F.	STANDARD & BETTER	WCLIB & WWPA	
			1		

- 2. FLOOR JOISTS SHALL BE GRADE STAMPED "S-DRY" WHICH INDICATES A MOISTURE CONTENT NOT EXCEEDING
- 3. ALL SOLE PLATES AND TOP PLATES SHALL BE GRADE STAMPED "KD" WHICH INDICATES KILN DRIED WITH A MOISTURE CONTENT NOT EXCEEDING 15 PERCENT.
- 4. STUD WALLS SHOWN ON PLANS ARE NONBEARING PARTITIONS WALLS, BEARING WALLS OR SHEAR WALLS BELOW THE FRAMING LEVEL, UNLESS NOTED OTHERWISE. STUDS SHALL BE SIZE AND SPACING AS NOTED IN THE Drawings, see plans and architectural drawings. Unless otherwise noted.
- MINIMUM FRAMING NAILING SHALL CONFORM TO CBC TABLE 2304.10.1. ALL NAILS SHALL BE COMMON WIRE NAILS. PREDRILL NAIL HOLES TO 70% OF NAIL SHANK DIAMETER WHERE NAILING TENDS TO SPILT WOOD.
- 6. UNLESS OTHERWISE NOTED, ALL WOOD SILL PLATES UNDER BEARING, EXTERIOR, OR SHEAR WALLS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE BOLTED TO THE CONCRETE OR MASONRY WITH 5/8" Ø X 12" BOLTS W/ 0.229" X 3" X 3" PLATE WASHER (GALV) AT 4'-O" O.C. BEGINNING AT 9" O.C. MAXIMUM FROM EACH END OF THE PLATES. THE BOLTS SHALL EXTEND A MINIMUM OF 7" INTO THE CONCRETE OR MASONRY. (POWDER DRIVEN PINS AT 1/3 OF THE BOLT SPACING OR 24" O.C. MAXIMUM MAY BE SUBSTITUTED FOR THE ANCHOR BOLTS AT INTERIOR NON-SHEAR WALLS ONLY).
- ALL LUMBER IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED LUMBER WITH AWPA TREATMENT C2 USING EITHER ALKALINE QUAT (ACQ TYPE B AND D), COPPER AZOLE (CBA-A, CA-B), OR SODIUM BORATES (SBX). ANCHOR BOLTS, FASTENERS, AND METAL FRAMING CONNECTORS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT-DIPPED GALVANIZED TO A RATING OF G-185 PER ASTM A653.
- 8. PROVIDE 2 STUDS UNDER ALL 4 X 10 AND LARGER BEAMS OR HEADERS AT SPANS 6 FEET OR LONGER, UNLESS OTHERWISE NOTED. WHERE POSTS OR MULTIPLE STUDS UNDER BEAMS OR HEADERS ARE CALLED FOR ON DRAWINGS THOSE POSTS OR MULTIPLE STUDS SHALL BE CARRIED TO THE FOUNDATION/PODIUM LEVEL.
- 9. PROVIDE THE FOLLOWING BLOCKING AS A MINIMUM, UNLESS SHOWN OTHERWISE: 2" X FULL DEPTH SOLID BLOCKING BETWEEN JOISTS OVER SUPPORT. 2" X FULL DEPTH SOLID BLOCKING BETWEEN JOISTS OVER AND BELOW PARTITION WALLS.
- 10. DOUBLE JOISTS UNDER PARTITIONS RUNNING PARALLEL TO JOISTS, UNLESS SUPPORTED BY A WALL BELOW OR SHOWN OTHERWISE. NAIL DOUBLED JOISTS WITH 16D AT 12" O.C., STAGGERED.
- 11. BRIDGING SHALL BE 2 X SOLID BLOCKS, INSTALLED AS FOLLOWS: ROOF JOISTS MORE THAN 10" DEPTH, 8'-O" O.C. MAXIMUM, NOT MORE THAN 8'-0' FROM SUPPORT. FLOOR JOISTS MORE THAN 10" DEPTH, 8'-O" O.C. MAXIMUM, NOT MORE THAN 8'-0' FROM SUPPORT.
- 12. JOIST HANGERS AND OTHER METAL FRAMING ACCESSORIES ARE REFERRED TO ON PLANS BY PARTICULAR TYPE AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, STOCKTON, CALIFORNIA. ACCESSORIES OF OTHER MANUFACTURE WITH EQUIVALENT LOAD CARRYING CHARACTERISTICS MAY BE USED.
- 13. FIRE STOPPING, BACKING FOR INTERIOR FINISHES, NONBEARING WALLS, AND OTHER NON-STRUCTURAL FRAMING ARE NOT NECESSARILY SHOWN ON STRUCTURAL DRAWINGS.

# HARDWARE AND CONNECTORS

USE ALL SPECIFIED FASTENERS AS SPECIFIED ON PLANS, IF NOT INDICATED ON PLANS PROVIDE FASTENERS PER MFR'S APPROVED ICC-ESR REPORT OR PRODUCT LITERATURE

- DO NOT OVER TIGHTEN NUTS ON TIE-DOWN ANCHOR RODS OR BOLTS. TIGHTEN ANCHOR ROD NUTS ONE-THIRD TO ONE HALF TURN BEYOND FINGER TIGHT
- 2. INSTALL ALL HOLDOWNS TIGHT TO END STUDS/POST, DO NOT USE FILLER BLOCKS. FOR MISALIGNED ANCHOR BOLTS, EXTEND THE ANCHOR ROD AT A 1:6 (HORIZ/VERT) USING A COUPLER WITH EQUIVALENT ANCHOR ROD AND INSTALL THE HOLDOWN HIGHER ON END STUD / POST
- FOR HOLDOWNS THAT BOLT TO END POSTS, INSTALL THE HEAD OF THE BOLT TO THE BRACKET SIDE, AND ON THE SIDE OPPOSITE THE BRACKET, INSTALL A WASHER BETWEEN THE NUT AND THE STUD / POSTS

- TIE DOWN AND COLLECTOR STRAPS SHALL BE INSTALLED STRAIGHT AND TRUE. DO NOT FOLD, BEND, KINK OR
  - OTHERWISE ALTER CONNECTOR STRAPS INSTALL TIE DOWN STRAPS DIRECT TO POST IN LIEU OF OVER SHEATHING. STRAPS MAY BE INSTALLED ON THE UNSHEATHED SIDE OF THE END STUDS / POSTS

#### REINFORCING STEEL

- REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-14, ASTM A706, GRADE 60 UNO. ASTM A615 GR 60 STEEL MAY BE SUBSTITUTED FOR ASTM A706 GR60 STEEL PER ACI 318-14 SECTION 20.2.2.5 PROVIDED THE FOLLOWING CONDITIONS ARE MET:
- A. THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI.
- B. THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL YIELD STRENGTH IS NOT LESS THAN
- C. WHERE REINFORCEMENT COMPLYING WITH ASTM A615 IS TO BE WELDED, CHEMICAL TESTS SHALL BE PERFORMED TO DETERMINE WELDABILITY IN ACCORDANCE WITH SECTION 26.6.4 OF ACI 318-14.
- 2. BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- 3. WELDED WIRE REINFORCEMENT (WWR), PLAIN OR DEFORMED, SHALL CONFORM TO ASTM A185. WELDED DEFORMED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064. ALL WWR FOR STAIR PANS AND ALL WWR FOR CONCRETE FILL ON METAL DECK TO BE PLAIN WWR. PROVIDE LAPS PER ACI 318-14 SECTION 25.5.3 OR 25.5.4 MINIMUM. WWR SHALL BE SUPPORTED ON APPROVED CHAIRS.
- REINFORCING BAR LAP SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS. STAGGER ALL SPLICES UNLESS NOTED OTHERWISE ON PLANS.
  - A. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN CONCRETE SHALL BE PER ACI 318-14 SECTION 25.5.2 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
  - B. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN MASONRY SHALL BE PER ACI 530-13 SECTION 8.1.6.7.1 OR 9.3.3.4 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
- 5. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE. ALL REINFORCING CONFORMING TO DIFFERING ASTM SPECIFICATIONS AND/OR OF DIFFERING GRADES SHALL BE CLEARLY MARKED TO DIFFERENTIATE THEM FROM OTHER REINFORCING STEEL IF CONCURRENTLY PRESENT ON SITE.
- 6. WHERE WELDING OF REINFORCING IS APPROVED BY THE STRUCTURAL ENGINEER, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E80XX OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE- REINFORCING STEEL", AWS-D1.4-15. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706.
- REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BEFORE THE CONCRETE IS PLACED AND SHALL BE SECURED AGAINST DISPLACEMENT DURING CONSTRUCTION WITHIN PERMITTED TOLERANCES. ADEQUATE SUPPORTS ARE ALSO NECESSARY TO KEEP THE REINFORCING STEEL AT THE PROPER DISTANCE FROM THE FORMS. USE WIRE BAR SUPPORTS, PRECAST CONCRETE SUPPORTS, SPACERS, BOLSTERS, REINFORCEMENT OR OTHER MEANS OF SUPPORT PER THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
- 9. COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL BY THE SEOR PRIOR TO FABRICATION IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE CODES. THESE DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE. THE REINFORCING PLACEMENT DRAWINGS SHALL INCLUDE ALL PRIMARY REINFOREMENT, LAP SPLICES, TIES, DOWELS, HEADED U-DOWELS, EMBED PLATES, ANCHOR BOLTS, ETC. AREAS OF CONGESTION SHALL BE DETAILED SUFFICIENTLY TO DEMONSTRATE THAT PLACEMENT OF REBAR MEETS SPACING REQUIREMENTS OF ACI 318-14.
- WHEN REQ'D, INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL. INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OR REINFORCING STEEL.

#### 11. CONCRETE PROTECTION FOR REINFORCEMENT

	FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR FORCEMENT IN CAST-IN-PLACE CONCRETE (NON-PRESTRESSED):	MINIMUM COVER, IN.
Α.	CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
В.	CONCRETE EXPOSED TO EARTH OR WEATHER: NO.6 THROUGH NO. 18 BAR NO.5 BAR, W31 OR D31 WIRE & SMALLER	2 1½"
C.	CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS: NO.14 AND NO.18 BARS NO.11 BAR & SMALLER BEAMS, COLUMNS: PRIMARY REINFORCEMENT TIES, STIRRUPS, SPIRALS	1 ½" ¾" 1 ½"

- 12. MECHANICAL BAR SPLICE CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-14 SECTION 25.5.7 USE OF MECHANICAL CONNECTIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. SPLICES MUST BE TESTED AS INDICATED IN THE CONCRETE REINFORCEMENT SPECIFICATION. ACCEPTABLE PRODUCTS
  - LENTON STANDARD COUPLERS (IAPMO-ES 0129) LENTON FORM SAVERS, TYPE SA (IAPMO-ES 0129)
  - LENTON WELDABLE HALF COUPLERS (IAPMO-ES 0129) LENTON LOCK COUPLERS PER (IAPMO-ES 0129)
  - NOTE THAT REBAR ATTACHED TO PLATE USING LENTON WELDABLE HALF COUPLERS SHALL BE ASTM A706 PER IAPMO-ES 0129.
  - ALL MECHANICAL BAR SPLICE CONNECTIONS IN SPECIAL STRUCTURAL WALLS, SPECIAL MOMENT FRAMES AND CONCRETE DIAPHRAGMS SHALL BE TYPE 2 CONFORMING TO THE REQUIREMENTS OF ACI 318-14 SECTION 18.2.7 & 18.12.7.4

#### CONCRETE

- ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-14.
- 2. CONCRETE MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

MATERIAL	ASTM STANDARD
PORTLAND CEMENT (TYPE II) <sup>A</sup>	C150
CONCRETE AGGREGATES (HARDROCK)	C33
WATER <sup>B</sup>	C1602
COAL FLY ASH OR POZOLLAN (CLASS F)	C618
NATURAL OR MANUFACTURED SAND	C33
SLAG	C989

- A. FOR SOILS WITH HIGH CONCENTRATIONS OF SULFATES (EXPOSURES S2 OR S3 PER ACI 318-14 TABLE 19.3.2.1) PORTLAND CEMENT SHALL BE TYPE V. VERIFY WITH PROJECT GEOTECHNICAL REPORT.
- B. WATER SHOULD ONLY BE ADDED AT THE BATCH PLANT. IN NO CASE SHALL THE DESIGN WATER/ CEMENT RATIO BE EXCEEDED.
- 3. CONCRETE MIXES SHALL BE PROPORTIONED BASED ON SECTION 26.4.3 OF ACI 318-14, WHICH REFERENCES ACI 301-10 ARTICLE 4.2.3. MIX DESIGNS SHALL INCLUDE DOCUMENTATION OF MIX AVERAGE COMPRESSIVE STRENGTH THROUGH FIELD TEST DATA OR TRAIL MIXTURES IN ACCORDANCE WITH ACI 301-10 ARTICLE 4.2.3.4. SCHEDULE OF STRUCTURAL CONCRETE STRENGTHS AND LOCATIONS (UNO):

LOCATION IN STRUCTURE	MINIMUM STRENGTH (PSI)*	DENSITY (PCF)	MAX SLUMP (IN±1)	MAX WATER/CEMENT RATIO	SLAG/ FLY ASH <sup>A</sup> (MAX)
CONCRETE FOUNDATIONS, GRADE BEAMS, TIE BEAMS	2,500	150	4	0.5	0.15
CONCRETE BASEMENT WALLS/STEM WALLS	2,500	150	4	0.5	0.15
CONCRETE SLAB ON GRADE	2,500	150	4	0.45	0.15
STAIRS ON GRADE, CURBS AND OTHER NON- STRUCTURAL CONCRETE	2,500	150	4	0.5	0.15
SITE WALLS	2,500	150	4	0.5	0.15

- A. AS MEASURED BY CEMENTITIOUS WEIGHT
- \* IF FOOTINGS ARE EXPOSED TO FROST CYCLES, INCREASE STRENGTH TO 4,500 PSI.
- 4. READY MIXED CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 OF C685.
- 5. DEPOSITING AND CONVEYING OF CONCRETE SHALL CONFORM TO SECTION 26.5 OF ACI 318-14 AND PROJECT SPECIFICATIONS.
- 6. ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED AND ROUGHENED TO 1/4" AMPLITUDE.
- 7. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED WITHOUT SEOR APPROVAL. NOTIFY THE SEOR IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS. SEE THE DRAWINGS FOR ADDITIONAL RESTRICTIONS ON THE PLACEMENT OF OPENINGS IN SLABS AND WALLS.
- 9. PIPES EMBEDDED IN CONCRETE:
- A. CONCRETE a. PIPES LARGER THAN 1-1/2" DIAMETER SHALL NOTE BE EMBEDDED IN STRUCTURAL CONCRETE
  - EXCEPT WHERE SPECIFICALLY APPROVED BY SEOR. b. PIPES SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS.
  - c. DO NOT STACK CONDUITS, SPACE EMBEDDED PIPES AND CONDUITS AT A MINIMUM OF 3 DIAMETERS CLEAR FROM OTHER EMBEDDED PIPES/CONDUITS AND REBAR.

# FOUNDATION

- GEOTECHNICAL INFORMATION AND FOUNDATION DESIGN IS BASED ON THE FOLLOWING: A. DESIGN LATERAL SOIL LOADS ARE IN ACCORDANCE WITH 2019 CBC TABLE 1610.1
  - ALLOWABLE FOUNDATION BEARING AND LATERAL PRESSURES ARE IN ACCORDANCE WITH 2019 CBC TABLE 1806.2

#### 2. SPREAD OR CONTINUOUS FOOTINGS:

		ALLOWABLE LATERAL RESISTANCE B		
ELEMENT	ALLOWABLE BEARING CAPACITY (PSF) <sup>A</sup>	PASSIVE RESISTANCE (PSF/FT BELOW GRADE) <sup>E</sup>	COHESION (PSF)	
CONTINUOUS FOOTINGS	1,500	100	120	

- A. THE ALLOWABLE CAPACITY MAY BE INCREASED BY ONE-THIRD WHEN CONSIDERING LOADS OF SHORT DURATION SUCH AS WIND OR SEISMIC FORCES.
- B. THE ALLOWABLE LATERAL RESISTANCE CAN BE TAKEN AS THE SUM OF THE FRICTIONAL RESISTANCE AND PASSIVE RESISTANCE.
- C. THE UPPER 0 FOOT OF SOIL NOT PROTECTED BY PAVEMENT SHALL BE NEGLECTED WHEN
- CALCULATING PASSIVE RESISTANCE.
- D. COMPACTED FILL SHOULD BE PREPARED AS FOLLOWS: A MIN OF 12" OF COMPACTED FILL SHALL BE PROVIDED, COMPACTED TO A MIN OF 90 PERCENT MODIFIED PROCTOR IN ACCORDANCE WITH ASTM D 1557 (2019 CBC 1804.6)
- E. MAY BE DOUBLED FOR ISOLATED POLES PER 2019 CBC 1806.3.4
- 4. WHERE NOT SHOWN ON THE DRAWINGS, CONTRACTOR TO PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
- 5. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND/OR SEEPAGE.
- 6. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR GROUT HAS ATTAINED FULL DESIGN STRENGTH, CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.
- 7. EXCAVATIONS SHALL BE CUT SQUARE AND SMOOTH, WITH LEVEL BOTTOMS.
- 8. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS.
- 9. ALL ABANDONED FOOTINGS, UTILITIES, ETC. SHALL BE REMOVED. NEW FOOTINGS MUST EXTEND INTO UNDISTURBED SOILS.

#### DESIGN INFORMATION

#### ROOF LIVE LOADS (2019 CBC SECTION 1603.1.2)

ROOF LIVE LOADS				
OCCUPANCY OR USE	UNIFORM (PSF)	CONC. (LBS)	REFERENCE	
ROOF ORDINARY FLAT, PITCHED AND CURVED ROOFS (THAT ARE NOT OCCUPIABLE)	20	_	2019 CBC TABLE 1607.1	

SNOW DESIGN DATA				
PARAMETER VALUE REFERENCE				
GROUND SNOW LOAD	Pg = PROVIDED BY ONWER BASED ON PROJECT LOCATION	ASCE 7-16 7.2		

#### WIND DESIGN DATA (2019 CBC SECTION 1603.1.4) :

2. ROOF SNOW LOADS (2019 CBC SECTION 1603.1.3):

#### WIND DESIGN DATA PARAMETER VALUE REFERENCE ULTIMATE DESIGN WIND SPEED (3-SEC GUST) $_{\rm T}$ = 115 MPH 2019 CBC FIG. 1609.3 NOMINAL DESIGN WIND SPEED (3-SEC GUST) $_{SD} = 90 \text{ MPH}$ 2019 CBC 1609.3.1 EXPOSURE CATEGORY 2019 CBC 1609.4.3 GCpi = $\pm 0.18$ INTERNAL PRESSURE COEFFICIENT: ASCE 7-16 TABLE 26.13-1

CO	MPONENIS & (	CLADDING WIN	D PRESSURES (PSF	-)
LOCATIO	) N	COMP	ONENT TRIBUTARY ARE	A (SQ FT)
LOCATIC	Л	10	100	500
	ZONE 1	-48.4	-23.9	-23.9
	ZONE 2e	-48.4	-23.9	-23.9
ROOF	ZONE 2n	-53.3	-33.7	-28.8
ROOF	ZONE 2r	-48.4	-23.9	-23.9
	ZONE 3e	-65.5	-41.0	-28.8
	ZONE 3r	-53.3	-33.7	-28.8
	ZONE 1	-67.9	-43.5	-43.3
	ZONE 2e	-67.9	-43.5	-43.3
OVERHANG	ZONE 2n	-72.8	-53.3	-48.4
OVERHANG	ZONE 2r	-67.9	-43.5	-43.5
	ZONE 3e	-85.0	-60.6	-48.4
	ZONE 3r	-72.8	-53.3	-48.4
\A/ A	ZONE 4	-31.3	-27.1	-23.9
WALL	ZONE 5	-38.6	-30.0	-23.9

#### 4. EARTHQUAKE DESIGN DATA (2019 CBC SECTION 1603.1.5):

SPECTRAL RESPONSE COEFFICIENTS:

#### SITE AND OCCUPANCY PARAMETERS PARAMETER REFERENCE 2019 CBC TABLE 1604.5 RISK CATEGORY SEISMIC IMPORTANCE FACTOR ASCE 7-16 TABLE 1.5-2 $S_S = 2.00$ 1 = 0.65SITE CLASS 2019 CBC 1613.2.2

 $S_{DS} = 1.60$ 

 $S_{D1} = 0.737$ 

2019 CBC 1613.2.4

BUIL	DING PARAMETERS	
PARAMETER	VALUE	REFERENCE
SEISMIC DESIGN CATEGORY	SDC = D	2019 CBC 1613.2.5
BASIC SEISMIC FORCE RESISTING SYSTEM	LIGHT FRAME (WOOD) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE	ASCE 7-16 TABLE
RESPONSE MODIFICATION FACTOR	$R = 6\frac{1}{2}$	12.2-1
SYSTEM OVERSTRENGTH FACTOR	Ωο = 3	
DEFLECTION AMPLIFICATION FACTOR	Cd = 4	
DESIGN BASE SHEAR	V = 11.7	ASCE 7-16 12.8.1
SEISMIC RESPONSE COEFFICIENTS	Cs = 0.246	ASCE 7-16 12.8.1.1
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE PROCEDURE	ASCE 7-16 12.8

#### 5. DEAD LOAD DESIGN DATA

DEAD LOADS					
LOCATION	MAX UNIFORM (PSF)	CONC. (LBS)	REFERENCE		
ROOF (ASPHALT SHINGLES) *INCLUDES 4 PSF ALLOWANCE FOR SOLAR PANELS	26*				
WALL (SIDING)	11	_			

#### EXISTING UNDERGROUND UTILITIES

- 1. THE ARCHITECT AND ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS. DRAWINGS, IF ANY, IS APPROXIMATE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THE SITE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHOULD ANY SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.
- 3. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT. A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133. B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600.

#### GENERAL

- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES AND STANDARDS:
- A. 2019 CALIFORNIA BUILDING CODE, PART 2, VOLUME 2 OF 2, AND TITLE 24 C.C.R. 2019 EDITION AND
- LATEST REVISIONS (INCLUDING SUPPLEMENTS AND ERRATA) HEREIN REFERRED TO AS "THE CODE". B. ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK,
- C. CODES & STANDARDS REFERENCED IN THE CODE OR LISTED IN THESE NOTES AND SPECIFICATIONS.

INCLUDING THE STATE OF CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL/OSHA).

- ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- 4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. IN NO INSTANCE SHALL DIMENSIONS BE SCALED FROM THE DRAWINGS.
- 5. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
- A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED
- B. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS UNLESS NOTED AND/OR DETAILED ON THE STRUCTURAL DRAWINGS
- C. SIZE AND LOCATION OF ALL CONCRETE CURBS, EQUIPMENT PADS, PITS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGE IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC
- D. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS EXCEPT AS SHOWN
- E. FLOOR AND ROOF FINISHES
- F. MISCELLANEOUS DRAINAGE AND WATERPROOFING
- G. ALL FIREPROOFING REQUIREMENTS INCLUDING FIREPROOFING OF STRUCTURAL STEEL
- H. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS
- 6. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
- A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
- B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
- C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
- D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS.
- 8. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT ETC. THE CONTRACTOR IS RESPONSIBLE FOR PROVISION OF TEMPORARY SHORING AND OTHER CONSTRUCTION AIDS, INCLUDING ALL ENGINEERING OF SUCH SYSTEMS, FOR TEMPORARY SUPPORT OF NEW AND/OR EXISTING STRUCTURAL ELEMENTS AS REQUIRED FOR ERECTION AND OTHER CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION (UNO). OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS OR CONCERN CONSTRUCTION MEANS AND METHODS OR CONSTRUCTION
- BACKFILL SHALL NOT BE PLACED BEHIND EXTERIOR AND INTERIOR RETAINING WALLS UNTIL THE CONCRETE / CMU HAS ACHIEVED FULL DESIGN STRENGTH. FOR BRACED WALLS SUPPORTED BY STRUCTURAL DIAPHRAGMS BACKFILL SHALL NOT BE PLACED BEHIND THE WALL UNTIL THE DIAPHRAGM HAS BEEN INSTALLED, AND FOR CONCRETE DIAPHRAGMS, HAS ACHIEVED FULL DESIGN STRENGTH.
- 10. THE CONTRACT STRUCTURAL DRAWINGS SHOW THE BUILDING IN ITS FINAL INTENDED POSITION. CONTRACTOR SHALL MAKE PROVISIONS IN THE LAYOUT OF THE BUILDING TO TAKE INTO ACCOUNTS SHRINKAGE, CREEP,
- 11. OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, WALLS, UNLESS SPECIALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.
- 12. ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE THE VERSION REFERENCED IN CHAPTER 35 OF THE CODE
- 13. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER SHALL BE NOTIFIED
- 14. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED ROOF OR FLOOR. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. THE CONTRACTOR TO DESIGN AND PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
- 15. CONTRACTOR SHALL COORDINATE SHORING WITH DRAWINGS OF RECORD TO INSURE PROVISIONS FOR POCKETS, BLOCKOUTS, OFFSETS, STEPPED FOOTINGS AND ANY OTHER ITEMS AFFECTED BY THE SHORING
- 16. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT. A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133.

OR AS REFERENCED IN THE APPLICABLE DESIGN STANDARD.

B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600. 17. EDGE OF SLAB DIMENSIONS TO BE COORDINATED AND VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO

# DIMENSIONS

FABRICATION.

SHORTENING, ETC..

1. DIMENSIONS SHALL BE DEFINED TO INCLUDE BOTH HORIZONTAL DIMENSIONS AND VERTICAL DIMENSIONS

- (ELEVATIONS). WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
- 3. SEE ARCHITECTURAL DRAWINGS FOR DIMENSION NOT NOTED ON STRUCTURAL DRAWINGS.

4. SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.

- 5. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND/OR ROOF ELEVATIONS.
- 6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES.

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NO. REVISION DATE ENTS

PROJECT MANAGER J. MEADOWS DRAWN BY CHECKED BY A. LOPEZ M. DOREMUS

AUGUST 18, 2022 PROJECT NUMBER 2340-01-CU21

#### SHOP FABRICATION

- 1. SHOP FABRICATION REQUIRES SPECIAL INSPECTION IN ACCORDANCE WITH CODE SECTION 1704.2.5. EXCEPTION: SHOP SPECIAL INSPECTIONS ARE NOT REQUIRED WHEN WORK IS DONE ON THE PREMISES OF FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK IN ACCORDANCE WITH CODE SECTION 1704.2.5.1. THE FOLLOWING ACCREDITATIONS MEET THE REQUIREMENTS OF THIS EXCEPTION: A. WOOD BUILDING
  - a. WOOD STRUCTURAL PANELS (SHEATHING) SHALL BE IDENTIFIED BY THE APA TRADEMARK.
  - b. TRUSS MANUFACTURER SHALL BE FABRICATED IN A SHOP WITH CURRENT FABRICATOR COMPLIANCE CERTIFICATES PER CBC SECTION 1704.2.5.1.

#### REQUIRED VERIFICATION AND INSPECTIONS

CONCRETE CON CODE TABLE	_	_	ON	
SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	REFERENCED STANDARD	CBC REFERENCE
1. INSPECT REINFORCMENT AND VERIFY PLACEMENT.	_	Χ	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING:  a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706  b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM <sup>5</sup> / <sub>6</sub> " AND c. INSPECT ALL OTHER WELDS	X	X X	AWS D1.4 ACI 318: 26.6.4	_
3. INSPECT ANCHORS CAST IN CONCRETE		Χ	ACI 318: 17.8.2	
4. INSPECT ANCHORS POST-IONSTALLED IN HARDENED CONCRETE MEMBERS (b)  (a) ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS  (b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	Х	X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED MIX DESIGN	_	Χ	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	Х		ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		Χ	ACI 318: 26.5.3- 26.5.5	1908.9
12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	_	Χ	ACI 318: 26.11.1.2 (b)	_
SPECIAL INSPECTIONS LISTED FOR CONCRETE ALSO APPL	Y TO G	ROUTII	NG OPERATIONS.	

INDICATES INSPECTION REQ'D FOR ALL CONCRETE WORK

INDICATES INSPECTION REQ'D FOR 3,000 PSI AND GREATER CONCRETE WORK ONLY

WOOD  CODE CHAPTER 17 AND REFERENCED 2018 NDS AND AWO	יומחס	MC 201	15
CODE CHAPTER 11 AND REPERENCED 2010 NDS AND AWG	1	V3-201	10
SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	CBC REFERENCE
1. HIGH LOAD DIAPHRAGM WOOD STRUCTURAL PANELS - VERIFY THE FOLLOWING: - GRADE - THICKNESS - NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES - NAIL OR STAPLE DIAMETER AND LENGTH - NUMBER OF FASTENER LINES - SPACING BETWEEN FASTENERS IN EACH LINE - SPACING BETWEEN FASTENERS AT EDGE MARGINS	_	X	1705.5.1 2306.2
3. WOOD LATERAL FORCE-RESISTING SYSTEM WITH FASTENER SPACING OF THE SHEATHING LESS THAN OR EQUAL TO 4" OC.  - WOOD SHEAR WALLS  - WOOD DIPHRAGMS  - DRAG STRUTS  - SHEAR PANELS  - HOLD-DOWNS	_	Х	1705.12.2
4. WOOD LATERAL FORCE-RESISTING SYSTEM WITH FASTENER SPACING OF THE SHEATHING GREATER THAN 4" OC (NOT REQUIRED)  - WOOD SHEAR WALLS  - WOOD DIAPHRAGMS  - DRAG STRUTS  - SHEAR PANELS  - HOLD-DOWNS			1705.12.2

SOILS		
CODE TABLE 1705.6		
SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		Х
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		Х
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		χ
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	Х	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		Х

#### STRUCTURAL COMPOSITE LUMBER

- STRUCTURAL COMPOSITE LUMBER SHALL HAVE STRUCTURAL CAPACITIES AND DESIGN PROVISIONS ESTABLISHED AND MONITORED IN ACCORDANCE WITH ASTM D5456 PER CODE SECTION 2303.1.10
- 2. STRUCTURAL COMPOSITE LUMBER SHALL BE IDENTIFIED WITH THE MANUFACTURER'S NAME AND/OR LOGO, THE NAME AND OR LOGO OF THE INSPECTION AGENCY (PFS CORP , INTERTEK, OR APA-EWS) AND THE EVALUATION REPORT NUMBER, THE PLANT NUMBER, PRODUCT DESIGNATION OR TYPE, PRODUCTION DATE, AND GRADE.
- INSTALLATION, FABRICATION, IDENTIFICATION AND CONNECTION DETAILS SHALL BE IN ACCORDANCE WITH THE APPLICABLE ICC REPORT.
- 4. LAMINATED VENEER LUMBER (LVL)
- A. LAMINATED VENEER LUMBER SHALL BE ONE OF THE FOLLWING:
- a. MICROLLAM LAMINATED VENEER LUMBER GRADE 2.0E-2750F<sub>b</sub> WS, MANUFACTURED BY WEYERHAEUSER IN ACCORDANCE WITH ICC-ESR 1387.
- b. REDLAM LAMINATED VENEER LUMBER GRADE 2.0E DF/LP/WH, MANUFACTURED BY REDBUILT IN ACCORDANCE WITH ICC-ESR 2993.
- B. IDENTIFICATION: IN ADDITION TO THE IDENTIFICATION LISTED FOR STRUCTURAL COMPOSITE LUMBER ABOVE, LVL SHALL BE IDENTIFIED WITH THE SPECIES OR SPECIES GROUP.
- 5. PARALLEL STRAND LUMBER (PSL)
- A. PARALLEL STRAND LUMBER SHALL BE PARALLAM PARALLEL STRAND LUMBER GRADE 2.0E DF, MANUFACTURED BY WEYERHAEUSER IN ACCORDANCE WITH ICC-ESR 1387.
- 6. LAMINATED STRAND LUMBER (LSL)
- A. LAMINATED STRAND LUMBER SHALL BE TIMBERSTRAND LAMINATED STRAND LUMBER GRADE 1.55E, MANUFACTURED BY WEYERHAEUSER IN ACCORDANCE WITH ICC-ESR 1387.
- 7. PRODUCTS FROM OTHER MANUFACTURER'S MAY BE USED WITH EQUAL OR GREATER CAPACITIES. REQUESTS FOR PRODUCT SUBSTITUTION SHALL FOLLOW THE REQUIREMENTS LISTED IN THE SUBMITTALS SECTION.

#### PRE-FABRICATED WOOD TRUSS NOTES

1. THE DESIGN OF METAL PLATE CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE FOLLOWING A. CODES AND STANDARDS:

b. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-16)

- a. THE GOVERNING CODE LISTED IN THE PROJECT GENERAL NOTES
- c. NATIONAL DESIGN STANDARD FOR WOOD CONSTRUCTION AND SUPPLEMENT (ANSI/AWC NDS-2018)
- d. SPECIAL DESIGN PROVISIONS FOR WIND & SEISMIC (AWC SDPWS-2015)
- e. THE NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS
- CONSTRUCTION (ANSI/TPI 1-2014)

#### B. DESIGN CRITERIA:

a. Trusses shall be designed for the following minimum vertical loads and other LOADS INDICATED ON THE CONSTRUCTION DOCUMENTS (ATTIC MECHANICAL UNITS, ETC.)

ROOF TRUSS LOADING: TOP-CHORD DEAD LOAD: 17.2 PSF (15.8 PSF SUPERIMPOSED) BOT CHORD DEAD LOAD: 6.5 PSF (5.4 PSF SUPERIMPOSED) ROOF - LIVE LOAD: 20 PSF

#### TOP CHORD - SNOW LOAD: PER PLAN AND SPECIFIC LOCATION OWNER/CONTRACTOR TO PROVIDE TO TRUSS MANUF.

L/240

L/360

LIVE LOAD ONLY

b. ( ) INDICATES HORIZONTAL SEISMIC/WIND LOAD ON COLLECTOR TRUSSES. THE TRUSS DESIGNER SHALL DESIGN FOR THE TRUSSES FOR THE INDICATED HORIZONTAL LOAD ACTING IN BOTH THE TOP AND BOTTOM TRUSS CHORDS AND FOR THE TRANSFER OF THE FORCE TO THE CHORDS THROUGH THE WEB.

#### CONTRACTOR REQUIREMENTS:

- A. THE CONTRACTOR SHALL MEET ALL THE REQUIREMENTS LISTED IN SECTION 2.3.4 OF ANSI/TPI 1-2014 INCLUDING THE FOLLOWING:
  - a. MEANS AND METHODS: THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, PROGRAMS AND SAFETY IN CONNECTION WITH THE RECEIPT, STORAGE, HANDLING, INSTALLATION, RESTRAINING, AND BRACING OF THE TRUSSES.

REFER TO THE GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING &

- BRACING OF METAL PLATE CONNECTED WOOD TRUSSES (BCSI-B1) b. TRUSS INSTALLATION SHALL COMPLY WITH INSTALLATION TOLERANCES SHOWN IN BCSI-B1
- c. TEMPORARY INSTALLATION RESTRAINT/BRACING FOR THE TRUSS SYSTEM AND THE PERMANENT TRUSS SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH BCSI-B2.
- d. CONSTRUCTION LOADING ON TRUSSES SHALL BE DONE IN ACCORDANCE WITH BCSI-B4.
- e. TRUSS DAMAGE, JOBSITE MODIFICATIONS & INSTALLATION ERRORS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE EOR AND THE TRUSS DESIGNER, REFERENCE BCSI-B5.
- f. SUBMIT THE DRAWINGS FROM THE TRUSS DESIGNER/MANUFACTURER TO THE BUILDING DEPARTMENT PRIOR TO FABRICATION FOR APPROVAL. A COPY OF THIS SUBMITTAL SHALL BE PROVIDED TO THE COUNTY BUILDING DEPARTMENT OF RECORD FOR REVIEW OF GENERAL CONFORMANCE TO THE DESIGN INTENT. THE CONTRACTOR SHALL INCORPORATE THE TIME REQUIRED FOR THE SUBMITTAL TO BE REVIEWED, STAMPED AND APPROVED BY ALL PARTIES AND

SHALL HAVE THE APPROVED TRUSS PLANS ON THE JOB SITE PRIOR TO FOUNDATION INSPECTION.

#### 3. TRUSS DESIGNER REQUIREMENTS:

- A. THE TRUSS DESIGNER SHALL MEET ALL THE REQUIREMENTS LISTED IN SECTION 2.3.5 OF ANSI/TPI 1-2014 INCLUDING THE FOLLOWING:
- a. Truss designer shall supervise the preparation of the truss design drawings which SHALL CONTAIN THE INFORMATION LISTED IN SECTION 2.3.5.5 OF ANSI/TPI 1-2014. THIS INCLUDES ALL TRUSS TO TRUSS CONNECTIONS, AND DETAILS FOR THE "CALIFORNIA FILL" AREAS.
- b. TRUSS DESIGNER SHALL COMPLY WITH THE REFERENCED CODE AND DESIGN CRITERIA ABOVE.
- c. Truss designer shall show all hangers, bracing and restraints as well as method OF RESTRAINT/BRACING ON THE TRUSS PLANS TO MEET ANY SEISMIC AND WIND REQUIREMENTS OF THE CODE.
- d. SUBMIT TRUSS DESIGN DRAWINGS INCLUDING ALL RELEVANT DETAILS FOR THE FABRICATION OF THE TRUSSES AND PREPARE CALCULATIONS. ALL PLANS, DETAILS AND CALCULATIONS FOR THE TRUSSES SHALL BE STAMPED AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER (CIVIL OR STRUCTURAL), LICENSED TO PRACTICE IN THE STATE OF CALIFORNIA.

#### WOOD STRUCTURAL PANELS (SHEATHING)

1. WOOD STRUCTURAL PANELS SHALL MEET THE FOLLOWING MINIMUM STANDARDS EXCEPT WHERE OTHERWISE NOTED:

		WOO	D STRUCTUF	RAL PANEL PRO	OPERTIES		
USE	PLY	BOND CLASSIFICATION <sup>C</sup>	SHEATHING GRADE	PERFORMANCE RATING	SPAN RATING	RATING <sup>B</sup>	REFERENCE <sup>A</sup>
ROOF	5	EXPOSURE 1	refer to ty	PICAL DIAPHRAGM	SCHEDULE	APA	2019 CBC 2303.1.5
FLOOR	5	EXPOSURE 1				APA	(DOC PS 1-09 OR PS 2-10)
WALL D	5	EXPOSURE 1	REFER TO TY	PICAL SHEAR WALL	SCHEDULE	APA	1

- A. WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN ACCORDANCE WITH THE FOLLOWING VOLUNTARY STANDARDS BY THE ENGINEERED WOOD ASSOCIATION (APA):
- a. VOLUNTARY PRODUCT STANDARD, STRUCTURAL PLYWOOD, PS 1-09
- b. VOLUNTARY PRODUCT STANDARD, PERFORMANCE STANDARD FOR WOOD-BASED STRUCTURAL-USE PANELS, PS 2-10
- B. WOOD STRUCTURAL PANELS SHALL BE IDENTIFIED BY THE APA TRADEMARK INDICATING CONFORMANCE TO THE APPLICABLE VOLUNTARY STANDARD
- C. WHERE PANELS ARE EXPOSED TO REPEATED WETTING AND REDRYING, LONG-TERM EXPOSURE TO WEATHER, OR CONDTIONS OF SIMILAR SEVERITY, "EXTERIOR" APA RATED PLYWOOD SHEATHING SHALL BE USED. C-D "EXPOSURE 1" APA RATED PLYWOOD SHEATHING (CDX) SHALL NOT BE USED FOR CONDITIONS INVOLVING LONG-TERM EXPOSURE TO WEATHER.
- a. EXCEPTION: WOOD STRUCTURAL PANEL ROOF SHEATHING EXPOSED TO THE OUTDOORS ON THE UNDERSIDE IS PERMITTED TO BE "EXPOSURE 1" TYPE.
- b. WOOD STRUCTURAL PANELS TO BE USED AS SIDING SHALL COMPLY WITH ANSI/APA PRP-210.
- D. ORIENTED STRAND BOARD (OSB) WITH EQUIVALENT CLASSIFICATION AND RATINGS MAY BE USED IN LIEU OF PLYWOOD FOR WOOD STRUCTURAL PANEL WALL SHEATHING.
- 2. TRANSPORTATION, STORAGE, AND HANDLING:

A. TRANSPORTATION

a. IN TRANSPORTING PANELS ON OPEN TRUCK BEDS, COVER THE BUNDLES WITH A TARP.

#### B. STORAGE

- a. ALWAYS STORE THE PANELS UNDER COVER WHENEVER POSSIBLE
- b. WHEN STORING PANELS OUTSIDE STACK THEM ON A LEVEL SURFACE ON TOP OF STRINGERS OR OTHER BLOCKING, THREE STRINGERS MINIMUM.
- c. NEVER LEAVE PANELS IN CONTACT WITH THE GROUND
- d. COVER THE STACK WITH A PLASTIC TARP, ENSURING THAT THE BUNDLE IS WELL VENTILATED TO PREVENT MILDEW.
- e. IF MOISTURE ABSORPTION IS EXPECTED, CUT THE STEEL BAND TO PREVENT DAMAGE
- f. KEEP SANDED OR OTHER APPEARANCE GRADE PANELS AWAY FROM HIGH TRAFFIC AREAS

#### C. HANDLING

- a. ALWAYS PROTECT ENDS AND EDGES, ESPECIALLY TONGUE AND GROOVE PRODUCTS, FROM PHYSICAL DAMAGE.
- b. ACCLIMATIZE THE PANELS FOR 24 HOURS MINIMUM BEFORE INSTALLATION BY STANDING THE PANELS ON EDGE WITH A GAP BETWEEN EACH TO ALLOW FOR AIR CIRCULATION OR PER MANUFACTURER'S RECOMMENDATIONS.

#### 3. PLYWOOD ORIENTATION

- A. ROOF AND FLOOR SHEATHING SHALL BE LAID WITH THE GRAIN OF THE OUTER PILES PERPENDICULAR TO THE FRAMING MEMBERS, SHALL BE CONTINUOUS OVER 2 JOIST BAYS MINIMUM AND END JOINTS SHALL BE JOINED OVER FRAMING AND STAGGERED. LEAVE A 1/8" GAP BETWEEN PANELS TO ALLOW FOR PANEL EXPANSION UNLESS RECOMMENDED OTHERWISE BY THE PANEL MANUF. REFER TO SPECIFIC DETAILS IN THE DRAWINGS FOR FURTHER PARAMETERS.
- B. PLYWOOD OR OSB WALL SHEATHING MAY BE APPLIED VERTICALLY OR HORIZONTALLY. ALL END JOINTS BE JOINED OVER FRAMING AND STAGGERED.

#### 4. BLOCKING:

- A. ROOF: ALL ROOF SHEATHING SHALL BE BLOCKED UNLESS SPECIFICALLY ALLOWED ON PLANS. WHERE PERMITTED TO BE UNBLOCKED, ALL UNBLOCKED EDGES SHALL BE TONGUE AND GROOVE.
- B. ALL FLOOR SHEATHING SHALL BE BLOCKED UNLESS SPECIFICALLY ALLOWED ON PLANS. WHERE PERMITTED TO BE UNBLOCKED, ALL UNBLOCKED EDGES SHALL BE TONGUE AND GROOVE.
- C. WALLS: ALL SHEAR WALLS SHALL BE FULLY BLOCKED AT PLYWOOD EDGES.

#### FASTENERS

- A. USE SHEATHING NAILS SAME GAUGE AS COMMON WIRE NAILS WITH LENGTHS AT LEAST EQUAL TO SHEATHING THICKNESS PLUS REQUIRED PENETRATION PER AWS SDPWS TABLE 4.2A OR 4.3A (AS
- B. EQUIVALENT PNEUMATIC DRIVE NAILS OR STAPLES MAY BE USED IF FASTENER MANUFACTURER HAS RECEIVED ICC OR IAPMO APPROVAL FOR THE INTENDED US. FASTENERS TO BE SUBSTITUTED SHALL BE EQUIVALENT IN LATERAL AND WITHDRAWAL STRENGTH TO THE SIZE OF COMMON NAIL SPECIFIED.
- C. USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOB SITE DEMONSTRATION FOR EACH PROJECT AND THE APPROVAL BY THE PROJECT ARCHITECT OR STRUCTURAL ENGINEER. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. MACHINE NAILING WILL NOT BE APPROVED IN 5/16" PLYWOOD OR OSB SHEATHING. IF NAIL HEADS PENETRATE THE OUTER PLY MORE T HAN WOULD BE NORMAL FOR A HAND HAMMER OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY.
- D. TYPICAL NAILING SHALL BE 10D AT 6" O.C. AT ALL SUPPORTED EDGES AND OVER SHEAR WALLS, AND 10D AT 12" O.C. AT ALL INTERMEDIATE SUPPORTS, UNLESS OTHERWISE NOTED, SEE PLANS AND REFER TO SHEAR WALL SCHEDULE.

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ENERAL NOTES

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NO. REVISION DATE

EN PROJECT MANAGER J. MEADOWS

> AUGUST 18, 2022 PROJECT NUMBER

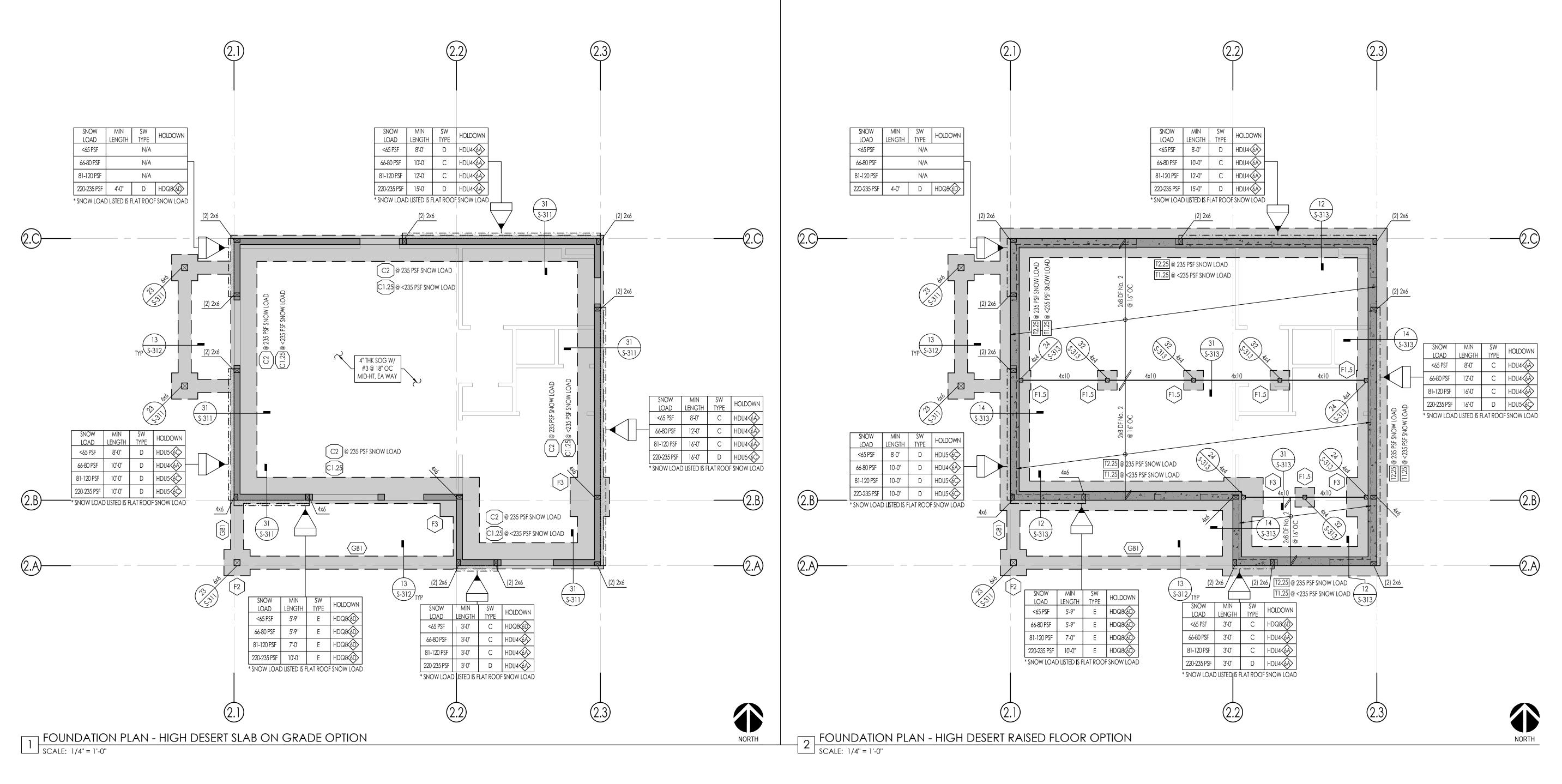
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DRAWN BY

A. LOPEZ

CHECKED BY M. DOREMUS



FOUNDATION PLAN NOTES

1. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS: DESCRIPTION SYMBOLS AND ABBREVIATIONS STRUCTURAL GENERAL NOTES S-102 - S-103 TESTING AND INSPECTION S-103 TYPICAL CONCRETE DETAILS S-301 TYPICAL WOOD DETAILS S-401 - S-404

- 2. SEE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATIONS. REFERENCE FINISHED FLOOR ELEVATION = 0'-0" COORESPONDS TO FINISHED FLOOR ELEVATION.
- 3. ALL DIMENSIONS SHOWN ARE FROM FACE OF CONCRETE/MASONRY, FACE OF SHEATHING, OR
- 4. FOR ANY DIMENSIONAL INFORMATION NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.

CENTERLINE OF COLUMN. ALL COLUMNS ARE CENTERED IN STUD WALLS, UNO.

- 5. SEE ARCHITECTURAL DRAWINGS FOR ANY EMBEDDED ITEMS AND ALL EXTERIOR CONCRETE PAVE
- 6. SEE PLANS AND ARCHITECTURAL DRAWINGS FOR DEPRESSIONS AND/OR SLOPES IN CONCRETE
- 7. SEE ARCHIECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.
- 8. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INTERIOR NON-BEARING PARTITIONS.
- 9. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS AND SLAB PENETRATIONS.
- 10. FOR TYPICAL SLAB-ON-GRADE REQUIREMENTS, INCLUDING SLAB JOINTS, SEE DETAIL 31/S-301.
- 11. ALL POSTS IN 4" WALLS SHALL BE 4x4, UNLESS NOTED OTHERWISE ALL POSTS IN 6" WALLS SHALL BE 6x6, UNLESS NOTED OTHERWISE
- 12. PLATE WASHERS ARE REQUIRED FOR ALL SILL PLATE ANCHOR BOLTS, REFER TO 34/S-402 FOR PLATE WASHER REQUIREMENTS AT SHEAR WALLS.

13. ALL HOLDOWN ANCHOR NUTS SHALL BE TIGHTENED JUST PRIOR TO COVERING.

14. ALL BOLT HOLES IN WOOD MEMBERS, SHALL BE DRILLED A MAXIMUM OF 1/16" OVERSIZED. INSPECTOR TO VERIFY.

15. THE BUILDING PAD SHALL BE PREPARED AS OUTLINED IN DETAIL 53/S-301. THE BUILDING OFFICIAL SHALL REQUIRE PAD CERTIFICATION BY A GEOTECHNICAL ENGINEER AT THEIR DISCRETION.

16. BOTTOM OF FOOTING SHALL BE, UNLESS DEEPER FOUNDATIONS ARE REQUIRED BY THE BUILDING OFFICIAL:

A. 18" BELOW PAD OR ADJACENT GRADE AT PERIMETER, WHICHEVER IS DEEPER, UNO. B. 18" BELOW PAD OR ADJACENT GRADE AT INTERIOR GRADE BEAMS, WHICHEVER IS DEEPER, UNO. NOTE: FOOTING MUST BE DEEPEND LOCALLY PER DETAIL 32/S-301 TO ACCOMMODATE ANCHOR BOLT HOLDOWN EMBED DEPTHS, OR FROST DEPTHS AS INDICATED BY THE

17. DIAPHRAGM TYPE: ALL FLOOR DIAPHRAGMS SHALL BE TYPE D, UNO REFER TO 12/S-403

18. OWNER MAY SELECT EITHER SLAB ON GRADE FOUNDATION OR THE RAISED FLOOR FOUNDATION, TO SUIT THE SPECIFIC SITE.

WHERE RAISED FLOOR FOUNDATION IS SELECTED, OWNER HAS THE OPTION TO USE CRIPPLE STUD WALLS IN LIEU OF THE SPECIFIED CONCRETE STEM WALLS BELOW THE FLOOR FRAMING. CRIPPLE STUDS ARE TO MATCH TYPICAL WALL FRAMING, AND TO BE SHEATHED TO MATCH SHEARWALLS ABOVE. HOLDOWNS SPECIFIED SHALL BE INSTALLED ACROSS THE FLOOR FRAMING PER DETAIL 12/S-405 AND THEN INTO THE CONCRETE STEM WALL PER DETAILS 22/S-311 AND 24/S-311.

- 20. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF UNDERFLOOR ACCESS HOLE.
- 21. REFER TO ARCHITECTURAL DRAWINGS FOR UNDERFLOOR HEIGHT ALLOWANCE.
- 22. ALL SNOW LOADS LISTED ARE THE FLAT ROOF SNOW LOAD. TO FIND THE FLAT ROOF SNOW LOAD, FOLLOW THIS EQUATION: FLAT ROOF SNOW = 0.77 x GROUND SNOW LOAD.
- 23. LOCATION OF CRAWL SPACE ACCESS IS SPECIFIC TO SITE. REFER TO DETAIL 33/S-313 FOR OPENING



SYMBOL LEGEND

INDICATES CONCRETE WALL PER DETAIL 22/S-311	

	HOLDOWN SCHEDULE		
SPECIFIES HOLE STRAP DETAIL	DOWN/ — IX INDICATES HOLDOWN/ STRAP TYPE	DETAIL	
<del>6</del> X	INDICATES SIMPSON SSTB HOLDOWN TO: CONC FOUNDATION: CONC STEM WALL:	12/S-311 22/S-311	
√7X>	INDICATES SIMPSON SB HOLDOWN TO: CONC FOUNDATION: CONC STEM WALL:	14/S-311 24/S-311	

		CONTINUOUS FO	OOTING SCHEDUL	.E	
MARK	WIDTH	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	TRANS REINF	DETAIL
C1.25	1'-3"	SEE NOTE 16	(2) #5 T&B	#3 @ 12" OC, BOT	31/S-311
C2	2'-0"	SEE NOTE 16	(3) #5 T&B	#3 @ 12" OC, BOT	31/S-311

**SCHEDULES** 

			T-FOOTING	SCHEDULE		
TYPE	WIDTH	THICKNESS	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	TRANS REINF	DETAIL
T1.25	1'-3"	1'-0"	SEE NOTE 16	(2) #4 @ TOP (2) #4 @ BOT	#3 @ 24" OC	13/S-312
T2	2'-0"	1'-0"	SEE NOTE 16	(3) #4 @ TOP (3) #4 @ BOT	#3 @ 24" OC	13/\$-312

, , , ,	GB1	)   1'-0'	'   1'-(	D" SEE N	NOTE 16	. ,	1 @ BOT	#3@	24" OC	13/S-312	
31/S-311		<u>′  </u>				(2) #2					
				PA	D FOOTIN	G SCHEE	DULE				
DETAIL	TYPE	WIDTH	LENGTH	THICKNESS	MIN E/ BELOW L PAD G	.OWEST	TOP REIN	F B(	OT REINF	DETAIL	
	\										- [

MIN EMBED

PAD GRADE

TYPE | WIDTH | THICKNESS | BELOW LOWEST |

GRADE BEAM SCHEDULE

LONG REINF

TRANS REINF

DETAIL

NOTE: FOOTING MUST BE DEEPENED LOCALLY PER DETAIL 32/S-301 TO ACCOMMODATE AB HOLDOWN EMBED DEPTHS

1'-6" | SEE NOTE 16 | (3) #5, EW | (3) #5, EW | 11/S-312

F1.5 | 1'-6" | 1'-6" | SEE NOTE 16 | (2) #5, EW | (2) #5, EW | 11/S-312 |

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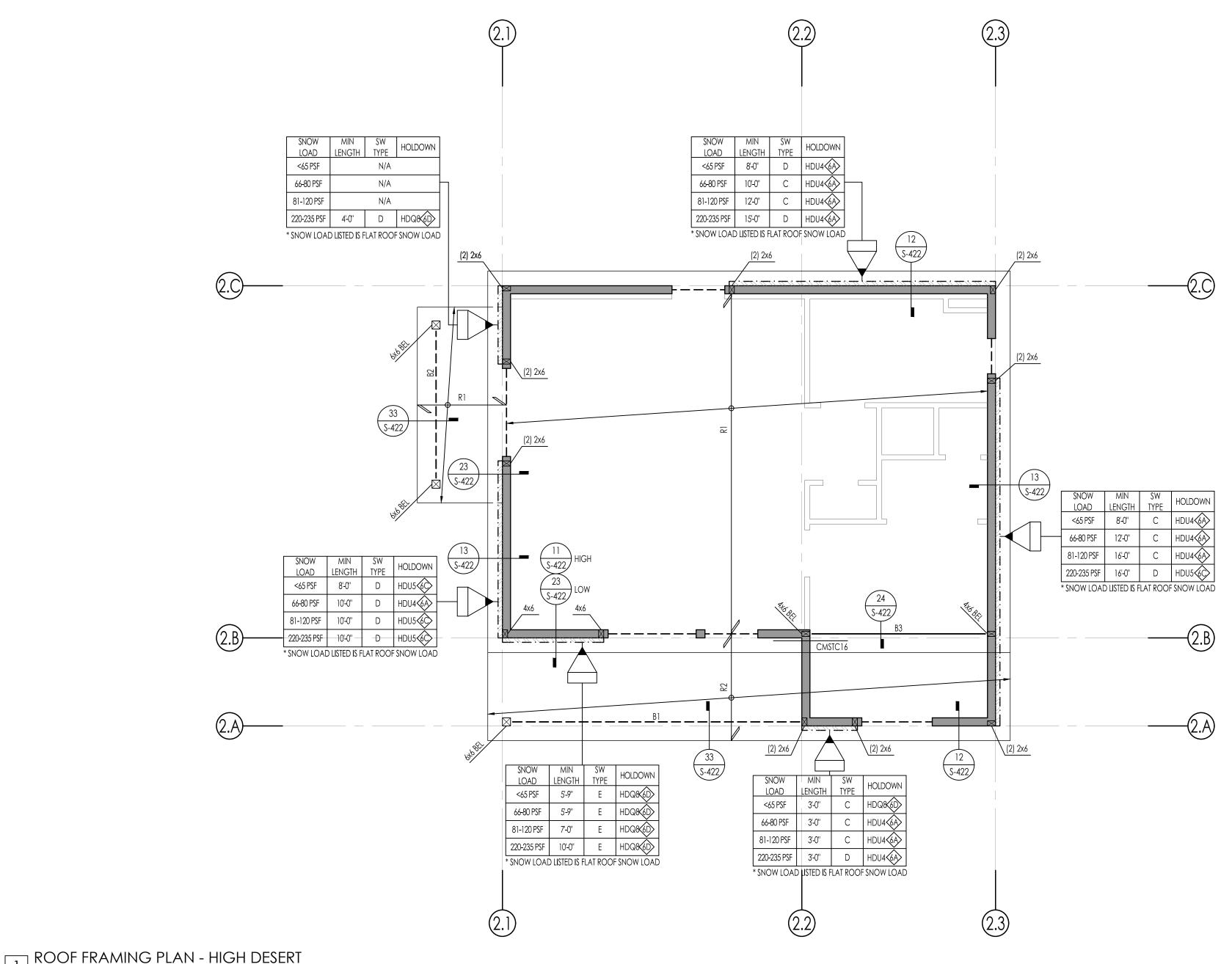
PROJECT MANAGER

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RU

J. MEADOWS DRAWN BY CHECKED BY A. LOPEZ M. DOREMUS

AUGUST 18, 2022 PROJECT NUMBER 2340-01-CU21



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

#### ROOF FRAMING PLAN NOTES

- 1. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING, ALL DIMENSIONS TO BE VERIFIED PRIOR TO CONSTRUCTION: A. GRID DIMENSIONS AND HORIZONTAL CONTROL
- B. ALL DIMENSIONS, ELEVATIONS, FINISH SURFACE, SLOPES, DRAINS, SLAB DEPRESSIONS, ETC C. LOCATION AND EXTENT OF EXTERIOR WALL ASSEMBLIES AND OPENINGS D. ALL NON STRUCTURAL WALLS
- 2. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

۷.	KLI LK TO THE TOLLOWING SHELT	STOR TIFICAL DLIA
	DESCRIPTION	SHEET (S)
	SYMBOLS AND ABBREVIATIONS	S-101
	STRUCTURAL GENERAL NOTES	S-102 - S-103
	TESTING AND INSPECTION	S-103
	TYPICAL CONCRETE DETAILS	S-301
	TYPICAL WOOD DETAILS	S-401 - S-405

- 3. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND TOP OF WALL ELEVATIONS.
- 4. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, DUCTS AND OTHER ROOF PENETRATIONS. FOR ROOF PENETRATIONS NOT SHOWN ON ROOF FRAMING PLAN, SEE DETAIL 23/S-403 FOR TYPICAL OPENINGS, UNO.
- 5. ALL POSTS IN 4" WALLS SHALL BE 4x4, UNLESS NOTED OTHERWISE. ALL POSTS IN 6" WALLS SHALL BE 6x6, UNLESS NOTED OTHERWISE.

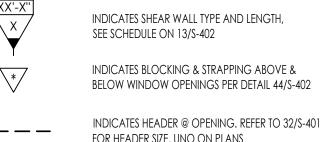
TYPICAL WALL FRAMING SHALL BE: 2x6 @ 16" OC @ ALL EXTERIOR WALLS, UNO 2x6 @ 16" OC @ ALL INTERIOR BEARING WALLS, UNO 2x4 @ 16" @ ALL INTERIOR NON-BEARING WALLS, UNO

- 6. ALL INTERIOR WALLS NOT SHOWN ON THE STRUCTURAL FRAMING PLANS BUT SHOWN ON THE ARCHIECTURAL DRAWINGS SHALL BE CONSTRUCTED PER NON-BEARING PARTION WALL DETAIL 43/S-401, UNO.
- 7. DIAPHRAGM TYPES: < 65 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE A 66-80 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE A 81-120 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE B 220-235 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE C REFER TO 12/-403

# 8. ALL LINES AND/OR MEMBERS INDICATED AS "STRUT" SHALL RECEIVE (2) ROWS OF BOUNDARY

- NAILING (BN), STGR.
- 9. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED OR OTHERWISE ALTERED IN ANY WAY WTHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED DESIGN PROFESSIONAL.
- 10. ALTERATIONS RESULTING IN THE ADDTION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, WATER HEATER) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.
- 11. TRUSSES ARE TO BE DESIGNED FOR THE PROPER SITE SPECIFIC SNOW LOAD. TRUSS DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. FOR OTHER TRUSSES CRITERIA REFER TO SHEET S-103 PRE-FABRICATED WOOD TRUSSES 1.B.a.
- 12. TRUSSES SHALL INCLUDED PROPER ICE DAMN LOADING AT EAVES, SLIDING SNOW AND SNOW DRIFTS PER ASCE 7-16 WHERE APPLICABLE BASED ON THE ROOF CONFIGURATION.
- 13. WHERE THE OWNER WOULD LIKE TO SUBSTITUTE TRUSSES IN PLACE OF SPECIFIED RAFTERS THAT IS STRUCTURALLY ACCEPTABLE. THESE TRUSSES SHALL BE INCLUDED IN THE SUBMITTAL TO THE BUILDING DEPARTMENT.
- 14. AL LUMBER EXPOSED TO THE ELEMENTS SHALL BE SELECT STRUCTURAL GRADE.
- 15. SHEARWALL CONSTRUCTION, HOLDOWNS, RAFTERS AND HEADERS SHALL BE SELECTED FROM THE TABLES BASED ON THE SNOW LOADING FOR THE SPECIFIC SITE.
- 16. SHEARWALL LENGTHS LISTED IN THE TABLES ABOVE ARE CONSIDERED THE MINIMUMS. THE SHEARWALL CAN BE PLACED ANYWHERE ALONG THE BUILDING LINE AS LONG AS IT IS NOT INTERRUPTED BY A DOORWAY OR WINDOW.
- 17. ALL SNOW LOADS LISTED ARE THE FLAT ROOF SNOW LOAD. TO FIND THE FLAT ROOF SNOW LOAD, FOLLOW THIS EQUATION: FLAT ROOF SNOW = 0.77 x GROUND SNOW LOAD.

# SYMBOL LEGEND



FOR HEADER SIZE, UNO ON PLANS INDICATES TOP PLATE SPLICE NAILING PER 33/S-403  $\overline{X}$ NOTE THAT NAILING APPLIES TO ENTIRE LENGTH OF TOP PLATE. PROVIDE TYPE (C) SPLICE, UNO

INDICATES CONT BLK & STRAP PER 24/S-405 @ ROOF, UNO INDICATES STRAP PER 34/S-405, UNO INDICATES DRAG TRUSS CONNECTOR PER 31/S-405, UNO

# SCHEDULES

	HOLDOWN SCHEDULE			R	OOF RAFTER SCHEDULE	
SPECIFIES HOLD	DOWN/ — 1x INDICATES HOLDOWN/	DETAIL	MARK	SNOW LOAD	SIZE	REMAR
STRAP DETAIL	STRAP TYPE			<65 PSF	(2) 2x12 @ 16" OC	
⟨6x⟩	INDICATES SIMPSON SSTB HOLDOWN TO: CONC FOUNDATION:	12/\$-311	D1	66-80 PSF	(2) 2x12 @ 12" OC	
	CONC STEM WALL:	22/S-311	R1	81-120 PSF	(2) 2x14 @ 12" OC	
√7x>	INDICATES SIMPSON SB HOLDOWN TO: CONC FOUNDATION:	14/S-311		220-235 PSF	(2) 1 ¾" x 14" LVL @ 16" OC	
	CONC STEM WALL:	24/S-311	2	<235 PSF	2x6 @ 16" OC	
			R2	235 PSF	2x8 @ 16" OC	

		BEAM SCHEDULE	
MARK	SNOW LOAD	SIZE	REMARKS
	<80 PSF	6x12	
B1	81-120 PSF	6x14	
	121-235 PSF	6x18	
<b>DO</b>	<120 PSF	6x8	
B2	121-235 PSF	6x10	
	<80 PSF	5⅓" x 11 ⅙" 2.2E PSL	
В3	81-120 PSF	5¼" x 14" 2.2E PSL	
	121-235 PSF	5¼" x 16" 2.2E PSL	

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A. LOPEZ

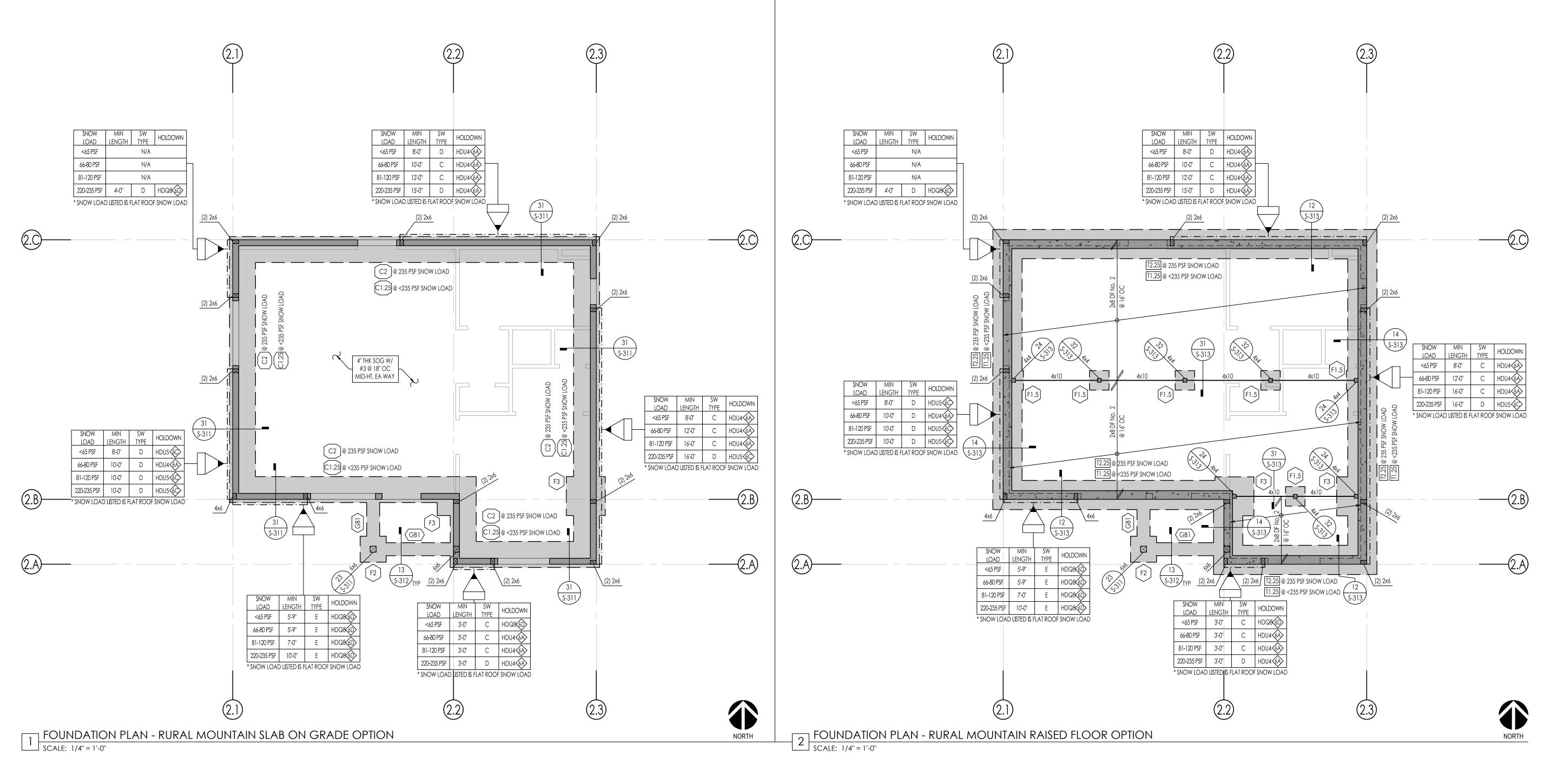
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AUGUST 18, 2022 PROJECT NUMBER

2340-01-CU21

M. DOREMUS



FOUNDATION PLAN NOTES

1. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS: DESCRIPTION SYMBOLS AND ABBREVIATIONS STRUCTURAL GENERAL NOTES S-102 - S-103 TESTING AND INSPECTION S-103 TYPICAL CONCRETE DETAILS S-301 TYPICAL WOOD DETAILS S-401 - S-404

- 2. SEE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATIONS. REFERENCE FINISHED FLOOR ELEVATION = 0'-0" COORESPONDS TO FINISHED FLOOR ELEVATION.
- 3. ALL DIMENSIONS SHOWN ARE FROM FACE OF CONCRETE/MASONRY, FACE OF SHEATHING, OR
- 4. FOR ANY DIMENSIONAL INFORMATION NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.

CENTERLINE OF COLUMN. ALL COLUMNS ARE CENTERED IN STUD WALLS, UNO.

- 5. SEE ARCHITECTURAL DRAWINGS FOR ANY EMBEDDED ITEMS AND ALL EXTERIOR CONCRETE PAVE
- 6. SEE PLANS AND ARCHITECTURAL DRAWINGS FOR DEPRESSIONS AND/OR SLOPES IN CONCRETE
- 7. SEE ARCHIECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.
- 8. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INTERIOR NON-BEARING PARTITIONS.
- 9. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS AND SLAB PENETRATIONS.
- 10. FOR TYPICAL SLAB-ON-GRADE REQUIREMENTS, INCLUDING SLAB JOINTS, SEE DETAIL 31/S-301.
- 11. ALL POSTS IN 4" WALLS SHALL BE 4x4, UNLESS NOTED OTHERWISE ALL POSTS IN 6" WALLS SHALL BE 6x6, UNLESS NOTED OTHERWISE
- 12. PLATE WASHERS ARE REQUIRED FOR ALL SILL PLATE ANCHOR BOLTS. REFER TO 34/S-402 FOR PLATE WASHER REQUIREMENTS AT SHEAR WALLS.

- 13. ALL HOLDOWN ANCHOR NUTS SHALL BE TIGHTENED JUST PRIOR TO COVERING.
- 14. ALL BOLT HOLES IN WOOD MEMBERS, SHALL BE DRILLED A MAXIMUM OF 1/16" OVERSIZED. INSPECTOR TO VERIFY.
- 15. THE BUILDING PAD SHALL BE PREPARED AS OUTLINED IN DETAIL 53/S-301. THE BUILDING OFFICIAL SHALL REQUIRE PAD CERTIFICATION BY A GEOTECHNICAL ENGINEER AT THEIR DISCRETION.
- 16. BOTTOM OF FOOTING SHALL BE, UNLESS DEEPER FOUNDATIONS ARE REQUIRED BY THE BUILDING OFFICIAL:
- A. 18" BELOW PAD OR ADJACENT GRADE AT PERIMETER, WHICHEVER IS DEEPER, UNO. B. 18" BELOW PAD OR ADJACENT GRADE AT INTERIOR GRADE BEAMS, WHICHEVER IS DEEPER, UNO. NOTE: FOOTING MUST BE DEEPEND LOCALLY PER DETAIL 32/S-301 TO ACCOMMODATE ANCHOR BOLT HOLDOWN EMBED DEPTHS, OR FROST DEPTHS AS INDICATED BY THE BUILDING OFFICIAL.
- 17. DIAPHRAGM TYPE: ALL FLOOR DIAPHRAGMS SHALL BE TYPE D, UNO REFER TO 12/S-403
- 18. OWNER MAY SELECT EITHER SLAB ON GRADE FOUNDATION OR THE RAISED FLOOR FOUNDATION, TO SUIT THE SPECIFIC SITE.
- WHERE RAISED FLOOR FOUNDATION IS SELECTED, OWNER HAS THE OPTION TO USE CRIPPLE STUD WALLS IN LIEU OF THE SPECIFIED CONCRETE STEM WALLS BELOW THE FLOOR FRAMING. CRIPPLE STUDS ARE TO MATCH TYPICAL WALL FRAMING, AND TO BE SHEATHED TO MATCH SHEARWALLS ABOVE. HOLDOWNS SPECIFIED SHALL BE INSTALLED ACROSS THE FLOOR FRAMING PER DETAIL 12/S-405 AND THEN INTO THE CONCRETE STEM WALL PER DETAILS 22/S-311 AND 24/S-311.
- 20. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF UNDERFLOOR ACCESS HOLE.
- 21. REFER TO ARCHITECTURAL DRAWINGS FOR UNDERFLOOR HEIGHT ALLOWANCE.
- 22. ALL SNOW LOADS LISTED ARE THE FLAT ROOF SNOW LOAD. TO FIND THE FLAT ROOF SNOW LOAD, FOLLOW THIS EQUATION: FLAT ROOF SNOW = 0.77 x GROUND SNOW LOAD.
- 23. LOCATION OF CRAWL SPACE ACCESS IS SPECIFIC TO SITE. REFER TO DETAIL 33/S-313 FOR OPENING

# SYMBOL LEGEND



INDICATES CONCRETE WALL PER DETAIL 22/S-311

HOLDOWN SCHEDULE				
SPECIFIES HOLE STRAP DETAIL	DOWN/ - 1x INDICATES HOLDOWN/ STRAP TYPE	DETAIL		
<b>⟨</b> 6x⟩	INDICATES SIMPSON SSTB HOLDOWN TO: CONC FOUNDATION: CONC STEM WALL:	12/S-311 22/S-311		
√7x>	INDICATES SIMPSON SB HOLDOWN TO: CONC FOUNDATION: CONC STEM WALL:	14/S-311 24/S-311		

CONTINUOUS FOOTING SCHEDULE						
MARK	WIDTH	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	TRANS REINF	DETAIL	
C1.25	1'-3"	SEE NOTE 16	(2) #5 T&B	#3 @ 12" OC, BOT	31/\$-311	
C2	2'-0"	SEE NOTE 16	(3) #5 T&B	#3 @ 12" OC, BOT	31/S-311	

SCHEDULES

			T-FOOTING	SCHEDULE		
TYPE	WIDTH	THICKNESS	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	TRANS REINF	DETAIL
T1.25	1'-3"	1'-0"	SEE NOTE 16	(2) #4 @ TOP (2) #4 @ BOT	#3 @ 24" OC	13/S-312
T2	2'-0"	1'-0"	SEE NOTE 16	(3) #4 @ TOP (3) #4 @ BOT	#3 @ 24" OC	13/S-312

	PAD FOOTING SCHEDULE						
TYPE	WIDTH	LENGTH	THICKNESS	MIN EMBED BELOW LOWEST PAD GRADE	TOP REINF	BOT REINF	DETAIL
F1.5	1'-6"	1'-6"	1'-6"	SEE NOTE 16	(2) #5, EW	(2) #5, EW	11/S-312
F2	2'-0"	2'-0"	1'-6"	SEE NOTE 16	(3) #5, EW	(3) #5, EW	11/S-312

GRADE BEAM SCHEDULE

LONG REINF

(2) #4 @ TOP

(2) #4 @ BOT

TRANS REINF

#3 @ 24" OC | 13/S-312

DETAIL

MIN EMBED

PAD GRADE

SEE NOTE 16

TYPE | WIDTH | THICKNESS | BELOW LOWEST |

1'-0"

NOTE: FOOTING MUST BE DEEPENED LOCALLY PER DETAIL 32/S-301 TO ACCOMMODATE AB HOLDOWN EMBED DEPTHS

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ATION PLANS MOUNTAIN FOUNDAT RURAL A N N N N

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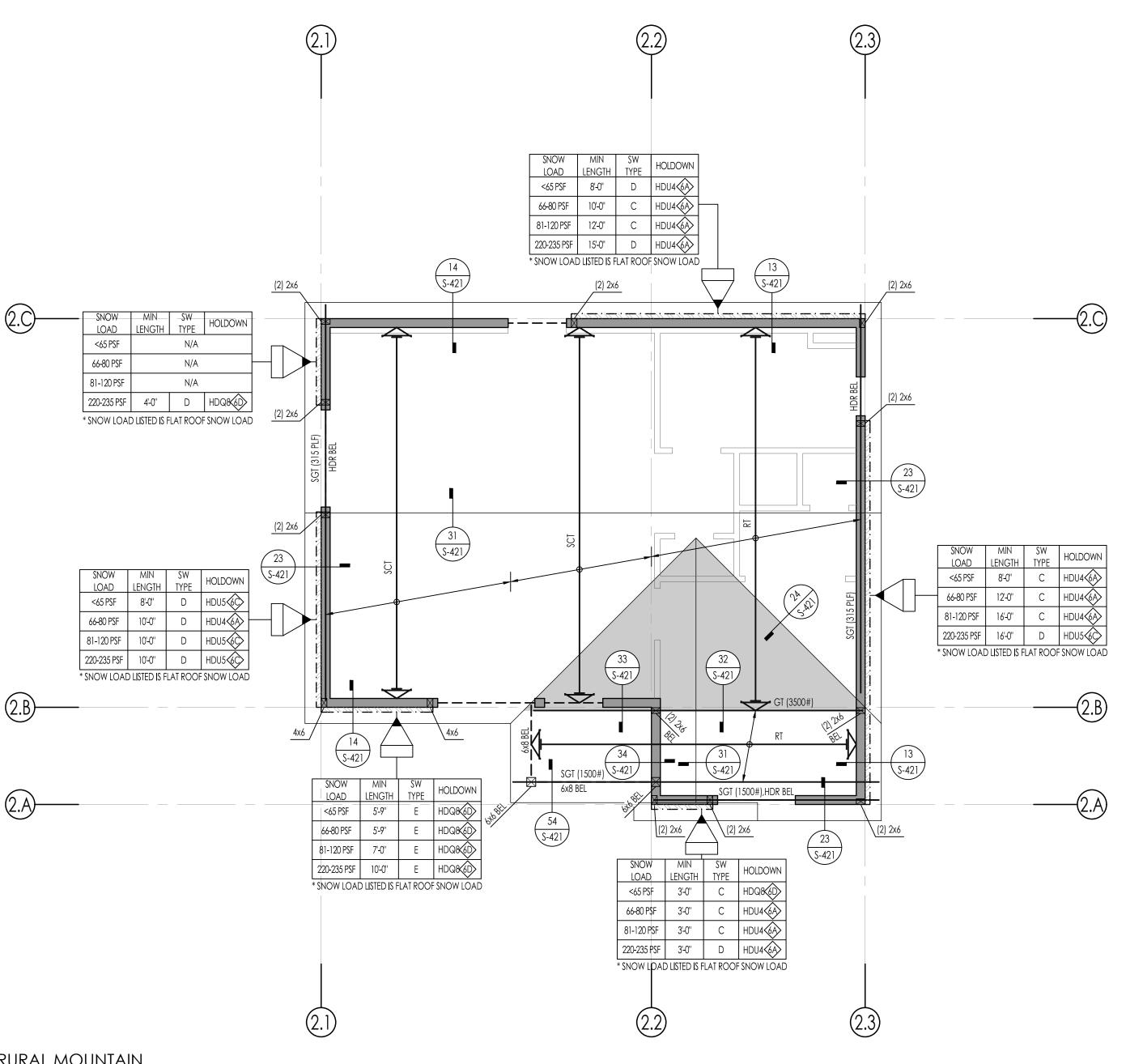
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J. MEADOWS DRAWN BY CHECKED BY A. LOPEZ M. DOREMUS

AUGUST 18, 2022 PROJECT NUMBER 2340-01-CU21



ROOF FRAMING PLAN - RURAL MOUNTAIN SCALE: 1/4" = 1'-0"

#### ROOF FRAMING PLAN NOTES

- 1. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS INCLUDING, BUT NOT 8. ALL LINES AND/OR MEMBERS INDICATED AS "STRUT" SHALL RECEIVE (2) ROWS OF BOUNDARY LIMITED TO THE FOLLOWING, ALL DIMENSIONS TO BE VERIFIED PRIOR TO CONSTRUCTION: A. GRID DIMENSIONS AND HORIZONTAL CONTROL
- B. ALL DIMENSIONS, ELEVATIONS, FINISH SURFACE, SLOPES, DRAINS, SLAB DEPRESSIONS, ETC C. LOCATION AND EXTENT OF EXTERIOR WALL ASSEMBLIES AND OPENINGS
- 2. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

D. ALL NON STRUCTURAL WALLS

CLIER TO THE TOLLOWING SHELTS	TOR THICAL DLIA
DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102 - S-103
TESTING AND INSPECTION	S-103
TYPICAL CONCRETE DETAILS	S-301
TYPICAL WOOD DETAILS	S-401 - S-404

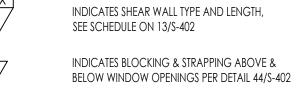
- 3. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND TOP OF WALL ELEVATIONS.
- 4. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, DUCTS AND OTHER ROOF PENETRATIONS. FOR ROOF PENETRATIONS NOT SHOWN ON ROOF FRAMING PLAN, SEE DETAIL 23/S-403 FOR TYPICAL OPENINGS, UNO.
- 5. ALL POSTS IN 4" WALLS SHALL BE 4x4, UNLESS NOTED OTHERWISE. ALL POSTS IN 6" WALLS SHALL BE 6x6, UNLESS NOTED OTHERWISE.

TYPICAL WALL FRAMING SHALL BE: 2x6 @ 16" OC @ ALL EXTERIOR WALLS, UNO 2x6 @ 16" OC @ ALL INTERIOR BEARING WALLS, UNO 2x4 @ 16" @ ALL INTERIOR NON-BEARING WALLS, UNO

- 6. ALL INTERIOR WALLS NOT SHOWN ON THE STRUCTURAL FRAMING PLANS BUT SHOWN ON THE ARCHIECTURAL DRAWINGS SHALL BE CONSTRUCTED PER NON-BEARING PARTION WALL DETAIL 43/S-401, UNO.
- 7. DIAPHRAGM TYPES: < 65 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE A 66-80 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE A 81-120 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE B 220-235 PSF SNOW LOAD, ROOF DIAPHRAGM, TYPE C REFER TO 12/-403

- NAILING (BN), STGR.
- 9. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED OR OTHERWISE ALTERED IN ANY WAY WTHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED
- 10. ALTERATIONS RESULTING IN THE ADDTION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, WATER HEATER) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.
- 11. TRUSSES ARE TO BE DESIGNED FOR THE PROPER SITE SPECIFIC SNOW LOAD. TRUSS DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. FOR OTHER TRUSSES DESIGN CRITERIA RFER TO SHEET S-103 PRE-FABRICATED WOOD TRUSSES 1.B.a.
- 12. TRUSSES SHALL INCLUDED PROPER ICE DAMN LOADING AT EAVES, SLIDING SNOW AND SNOW DRIFTS PER ASCE 7-16 WHERE APPLICABLE BASED ON THE ROOF CONFIGURATION.
- 13. WHERE THE OWNER WOULD LIKE TO SUBSTITUTE TRUSSES IN PLACE OF SPECIFIED RAFTERS THAT IS STRUCTURALLY ACCEPTABLE. THESE TRUSSES SHALL BE INCLUDED IN THE SUBMITTAL TO THE BUILDING DEPARTMENT.
- 14. AL LUMBER EXPOSED TO THE ELEMENTS SHALL BE SELECT STRUCTURAL GRADE.
- 15. SHEARWALL CONSTRUCTION, HOLDOWNS, RAFTERS AND HEADERS SHALL BE SELECTED FROM THE TABLES BASED ON THE SNOW LOADING FOR THE SPECIFIC SITE.
- 16. SHEARWALL LENGTHS LISTED IN THE TABLES ABOVE ARE CONSIDERED THE MINIMUMS. THE SHEARWALL CAN BE PLACED ANYWHERE ALONG THE BUILDING LINE AS LONG AS IT IS NOT INTERRUPTED BY A DOORWAY OR WINDOW.
- 17. ALL SNOW LOADS LISTED ARE THE FLAT ROOF SNOW LOAD. TO FIND THE FLAT ROOF SNOW LOAD, FOLLOW THIS EQUATION: FLAT ROOF SNOW = 0.77 x GROUND SNOW LOAD.

# SYMBOL LEGEND



INDICATES HEADER @ OPENING. REFER TO 32/S-401 FOR HEADER SIZE, UNO ON PLANS INDICATES TOP PLATE SPLICE NAILING PER 33/S-403

 $\overline{X}$ NOTE THAT NAILING APPLIES TO ENTIRE LENGTH OF TOP PLATE. PROVIDE TYPE (C) SPLICE, UNO INDICATES CONT BLK & STRAP PER 24/S-405 @ ROOF, UNO

INDICATES STRAP PER 34/S-405, UNO INDICATES DRAG TRUSS CONNECTOR PER 31/S-405, UNO

# SCHEDULES

HOLDOWN SCHEDULE					
SPECIFIES HOLE STRAP DETAIL	DETAIL				
<b>√</b> 6x	INDICATES SIMPSON SSTB HOLDOWN TO: CONC FOUNDATION: CONC STEM WALL:	12/S-311 22/S-311			
√7x>	INDICATES SIMPSON SB HOLDOWN TO:  CONC FOUNDATION:  CONC STEM WALL:	14/S-311 24/S-311			

#### PREFABRICATED ROOF TRUSS

1. FOR PREFABRICATED ROOF TRUSS NOTES SEE NOTES ON SHEET S-103

	ROOF TRUSS SCHEDU	LE
MARK	DESCRIPTION	REMARKS
RT	ROOF TRUSS (COMMON)	24" OC MAX
SGT	STRUCTURAL GABLE TRUSS	
SCT	SCISSOR TRUSS	
MT	MONO PITCH TRUSS	24" OC MAX
JT	JACK TRUSS	24" OC MAX
VJT	VALLEY JACK TRUSS	24" OC MAX
CJT	CORNER JACK TRUSS	
GT	GIRDER TRUSS	
MGT	MONO PITCH GIRDER TRUSS	
DT (#*)	DRAG TRUSS	
CGT	CALIFORNIA GIRDER TRUSS	
HR	HIP RAFTER / JACK RAFTER	
CHT	CALIFORNIA HIP TRUSS	24" OC MAX
	•	

(#\*) - EQUALS DRAG FORCE IN LBS, DRAG FORCE IS AT A FACTORED LEVEL (0.7E) DRAG FORCES CALCULATED IN ACCORDANCE WITH ASCE 7-16 12.10.1.1. IN STRUCTURES ENTIRELY BRACED BY LIGHT FRAME SHEAR WALLS, OR PORTIONS THEREOF, DRAG MEMBERS SHALL BE DESIGNED TO RESIST FORCES USING THE LOAD COMBINATIONS OF ASCE 7-16 SECTION 12.4.2.3 IN ALL OTHER STRUCTURES DRAGS SHALL INCLUDE THE EFFECT OF OVER STRENGTH PER ASCE 7-16 12.4.3.2

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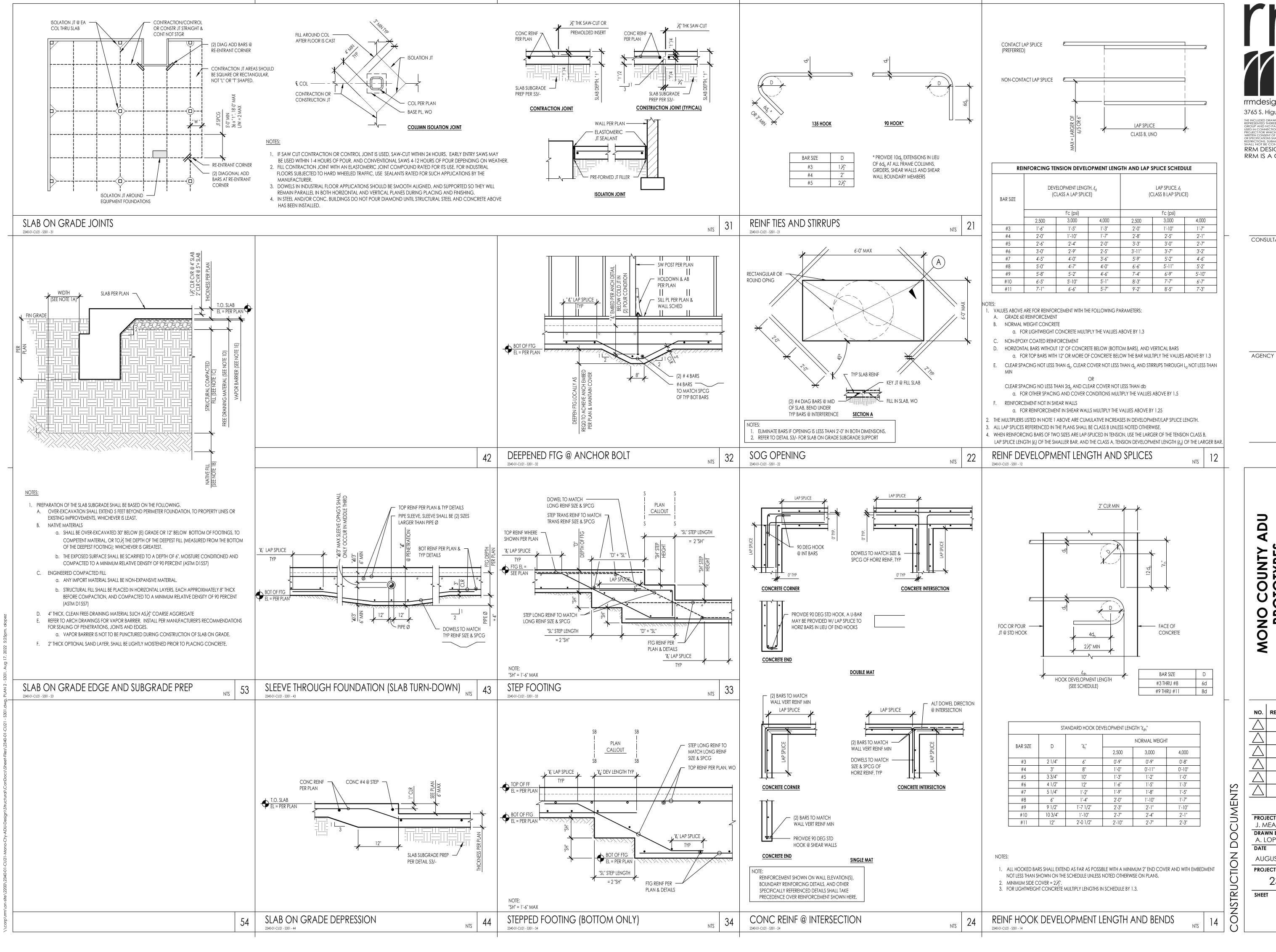
PROJECT MANAGER J. MEADOWS

DRAWN BY CHECKED BY A. LOPEZ M. DOREMUS

AUGUST 18, 2022 PROJECT NUMBER 2340-01-CU21

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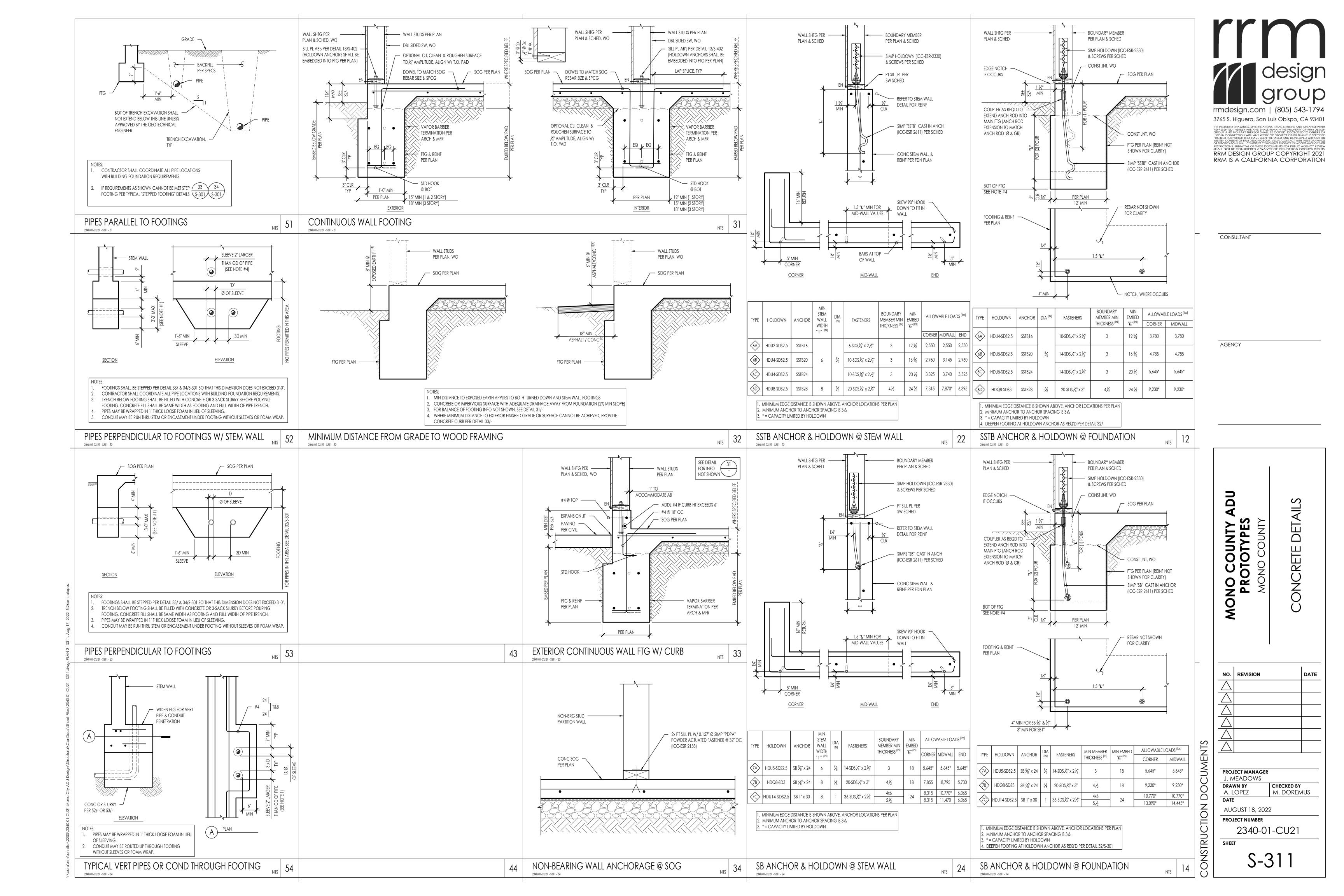
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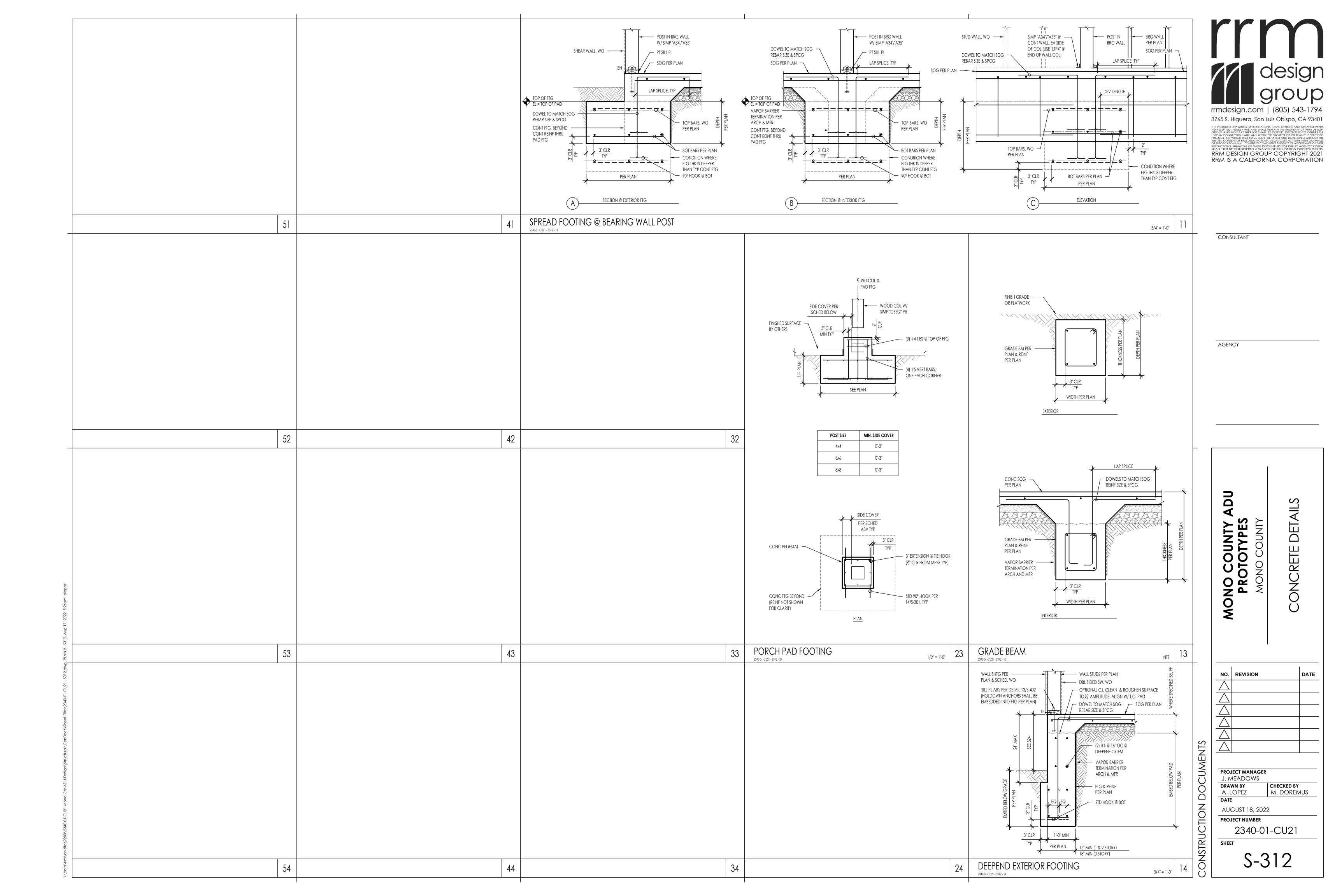
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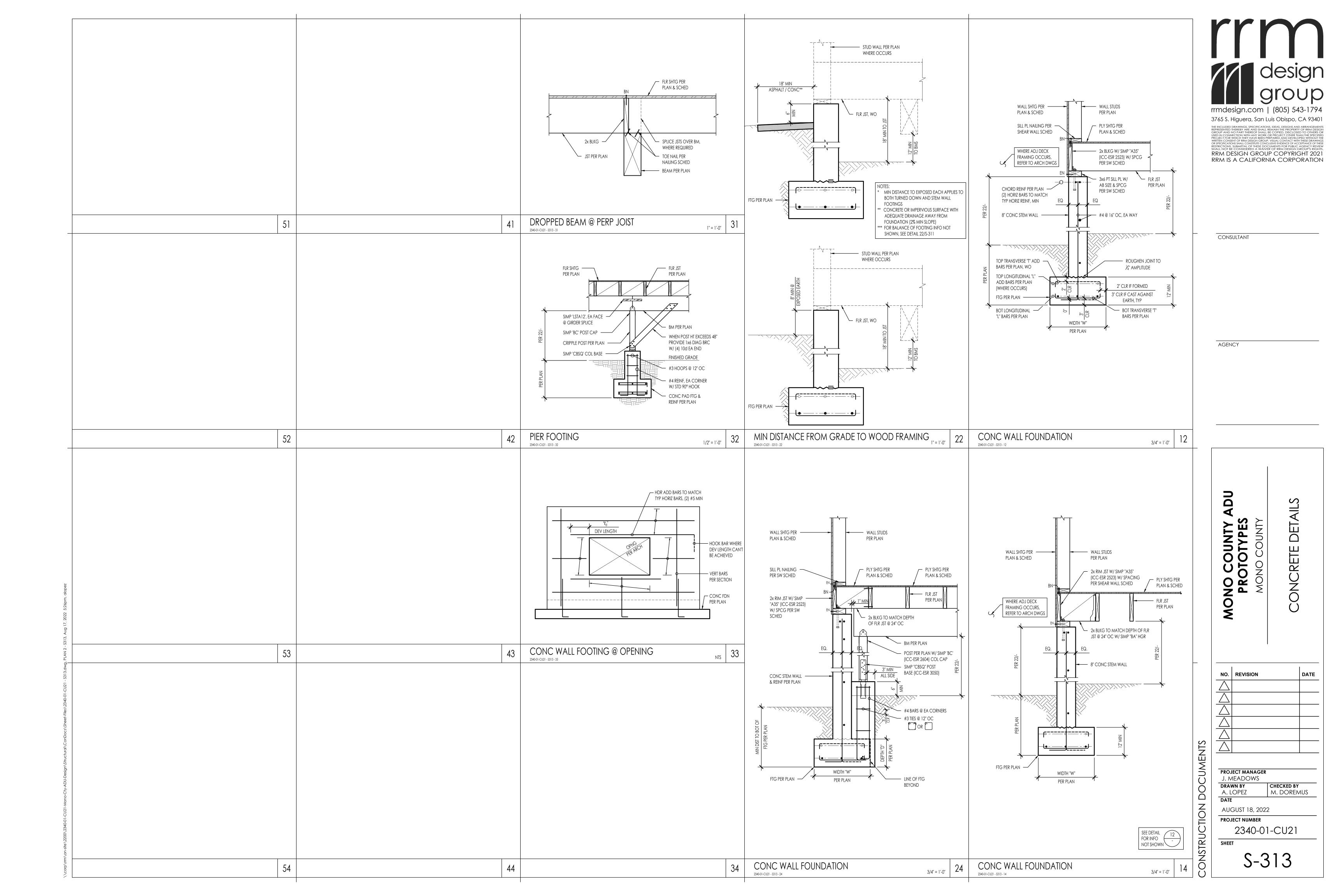
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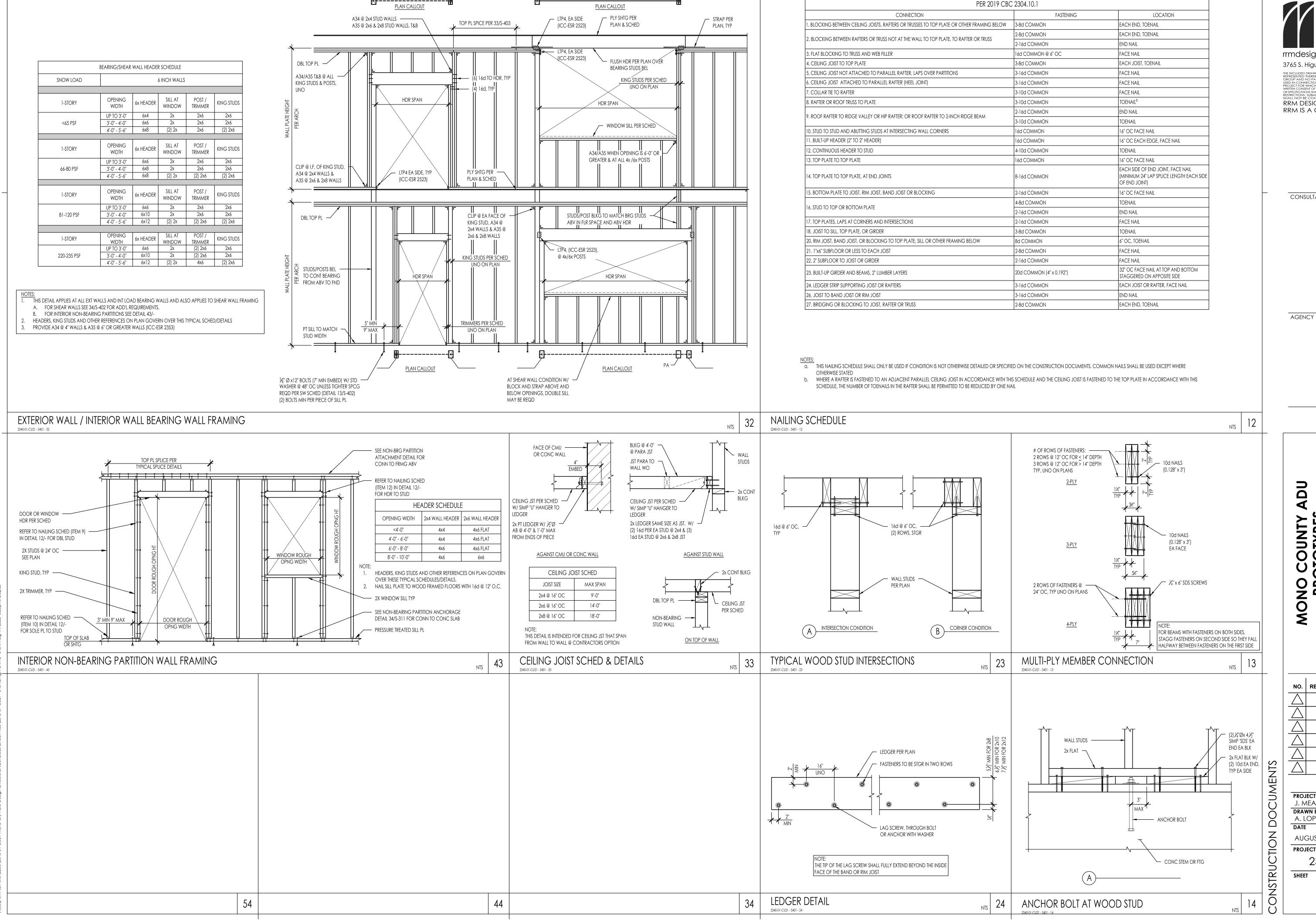
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FASTENING SCHEDULE

N N N N WOW

**DETAILS** 

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S-401

