BUILDING CODE NOTES:

1. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL-BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.) OR TO THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES-WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND/OR ADDITIONAL EXPENSES.
2. AN APPROVED SEISMIC GAS SHUTOFF VALVE WILL BE INSTALLED ON THE FUEL GAS LINE ON THE DOWNSTREAM SIDE OF THE UTILITY METER AND BE RIGIDLY CONNECTED TO THE EXTERIOR OF THE BUILDING OR STRUCTURE CONTAINING THE FUEL GAS PIPING. (PER ORDINANCE 170,158) (SEPARATE PLUMBING PERMIT IS REQUIRED).
3. PLUMBING FIXTURES ARE REQUIRED TO BE CONNECTED TO A SANITARY SEWER OR TO AN APPROVED SEWAGE DISPOSAL SYSTEM (R306.3).
4. KITCHEN SINKS, LAVATORIES, BATHTUBS, SHOWERS, BIDETS, LAUNDRY TUBS AND WASHING MACHINE OUTLETS SHALL BE PROVIDED WITH HOT AND COLD WATER AND CONNECTED TO AN APPROVED WATER SUPPLY (R306.4).
5. BATHTUB AND SHOWER FLOORS, WALLS ABOVE BATHTUBS WITH A SHOWERHEAD, AND SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR (R307.2).
6. PROVIDE ULTRA-LOW FLUSH WATER CLOSETS FOR ALL NEW CONSTRUCTION. EXISTING SHOWER HEADS AND TOILETS MUST BE ADAPTED FOR LOW WATER CONSUMPTION. UNIT SKYLIGHTS SHALL BE LABELED BY A LA CITY APPROVED LABELING AGENCY. SUCH LABEL SHALL STATE THE APPROVED LABELING AGENCY NAME, PRODUCT DESIGNATION AND PERFORMANCE GRADE (RESEARCH REPORT NOT REQUIRED). (R308.6.9)
7. WATER HEATER MUST BE STRAPPED TO WALL. (SEC. 507.3, LAPC)
FOR EXISTING POOL ON SITE, PROVIDE AN ALARM FOR DOORS TO THE DWELLING THAT FORM A PART OF THE POOL ENCLOSURE. THE ALARM SHALL SOUND CONTINUOUSLY FOR A MIN. OF 30 SECONDS WHEN THE DOOR IS OPENED. IT SHALL AUTOMATICALLY RESET AND BE EQUIPPED WITH A MANUAL MEANS TO DEACTIVATE (FOR 15 SECS. MAX.) FOR A SINGLE OPENING. THE DEACTIVATION SWITCH SHALL BE AT LEAST 54" ABOVE THE FLOOR. (6109 OF LABC)
8. FOR EXISTING POOL ON SITE, PROVIDE ANTIENTRAPMENT COVER MEETING THE CURRENT ASTM OR ASME FOR THE SUCTION OUTLETS OF THE SWIMMING POOL, TODDLER POOL AND SPA FOR SINGLE FAMILY DWELLINGS PER ASSEMBLY BILL (AB) NO. 2977. (3162B)
10. AUTOMATIC GARAGE DOOR OPENERS, IF PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. (R309.4)
11. SMOKE DETECTORS SHALL BE PROVIDED FOR ALL DWELLING UNITS INTENDED FOR HUMAN OCCUPANCY. UPON THE OWNER'S APPLICATION FOR A PERMIT FOR ALTERATIONS, REPAIRS, OR ADDITIONS, EXCEEDING ONE THOUSAND DOLLARS ($1,000). (R314.6.2)
12. WHERE A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING ONE THOUSAND DOLLARS ($1,000), EXISTING DWELLINGS OR SLEEPING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES SHALL BE PROVIDED WITH A CARBON MONOXIDE ALARM IN ACCORDANCE WITH SECTION R315.2. CARBON MONOXIDE ALARMS SHALL ONLY BE REQUIRED IN THE SPECIFIC DWELLING UNIT OR SLEEPING UNIT FOR WHICH THE PERMIT WAS OBTAINED. R315.2.2)
13. EVERY SPACE INTENDED FOR HUMAN OCCUPANCY SHALL BE PROVIDED WITH NATURAL LIGHT BY MEANS OF EXTERIOR GLAZED OPENINGS IN ACCORDANCE WITH SECTION R303.1 OR SHALL BE PROVIDED WITH ARTIFICIAL LIGHT THAT IS ADEQUATE TO PROVIDE AN AVERAGE ILLUMINATION OF 6 FOOT-CANDLES OVER THE AREA OF THE ROOM AT A HEIGHT OF 30 INCHES ABOVE THE FLOOR LEVEL. (R303.1)
14. A COPY OF THE EVALUATION REPORT AND/OR CONDITIONS OF LISTING SHALL BE MADE AVAILABLE AT THE JOB SITE

VICINITY MAP

TRANSIT BUS

SHEET INDEX:

AREA SUMMARY:

LOT AREA:

BUILDING CODE FLOOR AREA:
- NEW ADU: 684.6 S.F.

ZONING CODE FLOOR AREA:
- NEW ADU: 684.6 S.F.

SCOOL FEES FLOOR AREA:
- NEW ADU: 740.0 S.F.

FLOOR AREA RATIO:
LOT COVERAGE:
LANDSCAPING:

APPLICABLE CODES:

2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA ELECTRICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA FIRE CODE

PROJECT DESCRIPTION

NEW DETACHED ADU

LOT/PARCEL INFORMATION:

ADDRESS:
- (E) HOUSE ADDRESS
- (N) ADU ADDRESS

APN:
LEGAL DESCRIPTION:
TYPE OF CONSTRUCTION: TYPE VB
ZONE:
LOT:
PARKING INFORMATION:
FIRE SPRINKLERS (ADU):

EXISTING STRUCTURE INFORMATION:
- USE
- FLOOR AREA
- TYPE OF CONSTRUCTION
- FIRE SPRINKLERS (EXISTING)

OWNER INFO	APPLICANT INFO
NAME:	**NAME:** YAKOV DESIGN
ADDRESS:	**ADDRESS:** 8055 W MANCHESTER AVE #510, PLAYA DEL REY, CA 90293
PHONE:	**PHONE:** (323)922-2211
E-MAIL:	**E-MAIL:** INFO@YAKOVDESIGN.COM

SITE PLAN NOTES:

1. ALL PORTIONS OF REQUIRED FRONT YARD NOT USED FOR NECESSARY DRIVEWAYS AND WALKWAYS, INCLUDING DECORATIVE WALKWAYS SHALL BE USED FOR PLANTING AND SHALL NOT BE PAVED.
2. AUTOMATIC IRRIGATION SYSTEM CONTROLLERS TO BE WEATHER- OR SOIL-BASED CONTROLLERS.
3. CONTROLLERS.FOR PROJECTS THAT INCLUDE LANDSCAPE WORK, THE LANDSCAPE CERTIFICATION, FORM GRN12, SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.
4. ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS, OR OTHER OPENINGS IN THE BUILDING'S ENVELOPE AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR METAL PIPING PRONE TO CORROSION SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 313.0 OF THE LOS ANGELES PLUMBING CODE.
5. MATERIALS DELIVERED TO THE CONSTRUCTION SITE SHALL BE PROTECTED FROM RAIN OR OTHER SOURCES OF MOISTURE.
6. CONSTRUCTION WASTE SHALL BE REDUCED BY 50%. CONSTRUCTION WASTE SHALL BE HANDLED BY CITY OF LOS ANGELES CERTIFIED HAULER.
7. AN OPERATION AND MAINTENANCE MANUAL INCLUDING, AT A MINIMUM, THE ITEMS LISTED IN SECTION 4.410.1 SHALL BE COMPLETED AND PLACE IN THE BUILDING AT THE TIME OF FINAL INSPECTION. FORM GRN 6
8. LOT SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS WITH A MINIMUM FALL OF 6" WITHIN THE FIRST 10 FEET
9. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, OR SHEET METAL UNTIL THE FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT.
10. THE VOC CONTENT VERIFICATION CHECKLIST, FORM GRN 2, SHALL BE COMPLETED AND VERIFIED PRIOR TO FINAL INSPECTION APPROVAL. THE MANUFACTURER'S SPECIFICATIONS SHOWING VOC CONTENT FOR ALL APPLICABLE PRODUCTS SHALL BE READILY AVAILABLE AT THE JOB SITE AND BE PROVIDED TO THE FIELD INSPECTOR FOR VERIFICATION. (4.504.2.4, 9.504.2.4)
11. ARCHITECTURAL PAINTS AND COATINGS, ADHESIVES, CAULKS AND SEALANTS SHALL COMPLY WITH THE VOLATILE ORGANIC COMPOUND (VOC) LIMITS.
12. ALL NEW CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF ONE OF THE FOLLOWING:
   A. CARPET AND RUG INSTITUTE'S GREEN LABEL PLUS PROGRAM
   B. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S SPECIFICATION 01350
   C. NSF/ANSI 140 AT THE GOLD LEVEL
   D. SCIENTIFIC CERTIFICATIONS SYSTEMS INDOOR ADVANTAGE™ GOLD
13. ALL NEW CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE GREEN LABEL PROGRAM.
14. 80% OF THE TOTAL AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING:
   A. VOC EMISSION LIMITS DEFINED IN THE CHPS HIGH PERFORMANCE PRODUCTS DATABASE
   B. PRODUCTS COMPLIANT WITH THE CHPS CRITERIA CERTIFIED UNDER THE GREENGUARD CHILDREN & SCHOOLS PROGRAM
   C. CERTIFICATION UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM
   D. MEET THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S SPECIFICATION
15. NEW HARDWOOD PLYWOOD, PARTICLE BOARD, AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED IN THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE FORMALDEHYDE LIMITS LISTED IN TABLE 4.504.5/ TABLE 9.504.5. (4.504.5, 9.504.5)
16. THE FORMALDEHYDE EMISSIONS VERIFICATION CHECKLIST, FORM GRN 3, SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL. THE MANUFACTURER'S SPECIFICATIONS SHOWING FORMALDEHYDE CONTENT FOR ALL APPLICABLE WOOD PRODUCTS SHALL BE READILY AVAILABLE AT THE JOB SITE AND BE PROVIDED TO THE FIELD INSPECTOR FOR VERIFICATION.(4.504.5.1, 9.504.5.1)
17. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. THE BUILDING INSPECTOR SHALL NOT ENCLOSE WALL AND FLOOR FRAMING UNTIL IT IS INSPECTED AND FOUND TO BE SATISFACTORY.
18. THE HEATING AND AIR-CONDITIONING SYSTEMS SHALL BE SIZED AND DESIGNED USING ANSI/ACCA MANUAL J-2004, ANSI/ACCA 29-D-2009 OR ASHRAE HANDBOOKS AND HAVE THEIR EQUIPMENT SELECTED IN ACCORDANCE WITH ANSI/ACCA 36-S MANUAL S-
19. PROVIDE MINIMUM 1" (INSIDE DIAMETER) LISTED RACEWAY INSTALLED FOR EACH UNIT TO ACCOMMODATE A DEDICATED 208 /240 VOLT BRUNCH CIRCUIT. THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR A SUBPANEL AND TERMINATE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE CHARGING SYSTEM INTO A LISTED CABINET, BOX OR ENCLOSURE. SUFFICIENT CONDUCTOR SIZING AND SERVICE CAPACITY TO INSTALL LEVEL 2 EVSE SHALL BE PROVIDED. A LABEL STATING 'EV CAPABLE' SHALL BE POSTED IN CONSPICUOUS PLACE AT THE SERVICE PANEL OR SUBPANEL AND NEXT TO THE RACE WAY TERMINATION POINT.
20. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE SOLAR ELECTRICAL INSTALLATION. THE RESERVED SPACE SHALL BE POSITIONED AT THE OPPOSITE (LOAD) END FROM THE INPUT FEEDER LOCATION OR MAIN CIRCUIT LOCATION AND SHALL BE PERMANENTLY MARKED AS "FOR FUTURE SOLAR ELECTRIC"
21. BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACE IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.
22. PROTECTION OF WOOD AND WOOD BASED PRODUCTS FROM DECAY SHALL BE PROVIDED IN THE LOCATIONS SPECIFIED PER SECTION R317.1 BY THE USE OF NATURALLY DURABLE WOOD OR WOOD THAT IS PRESERVATIVE-TREATED IN ACCORDANCE WITH AWPA U1 FOR THE SPECIES, PRODUCE, PRESERVATIVE AND END USE. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA U1.
23. PROVIDE ANTI-GRAFFITI FINISH WITHIN THE FIRST 9 FEET, MEASURED FROM GRADE, AT EXTERIOR WALLS AND DOORS.
24. APPLICATIONS FOR WHICH NO PERMIT IS ISSUED WITHIN 180 DAYS FOLLOWING THE DATE OF APPLICATION SHALL AUTOMATICALLY EXPIRE. (R105.3.2 CRC)
25. EVERY PERMIT ISSUED SHALL BECOME INVALID UNLESS WORK AUTHORIZED IS COMMENCED WITHIN 180 DAYS OR IF THE WORK AUTHORIZED IS SUSPENDED OR ABANDON FOR A PERIOD OF 180 A SUCCESSFUL INSPECTION MUST BE OBTAINED WITHIN 180 DAYS. A PERMIT MAY BE EXTENDED IF A WRITTEN REQUEST STATING JUSTIFICATION FOR EXTENSION AND AN EXTENSION FEE IS RECEIVED PRIOR TO EXPIRATION OF THE PERMIT AND GRANTED BY THE BUILDING OFFICIAL. NO MORE THAN ONE (1) EXTENSION MAY BE GRANTED. PERMITS WHICH HAVE BECOME INVALID SHALL PAY A REACTIVATION FEE OF APPROXIMATELY 50% OF THE ORIGINAL PERMIT FEE AMOUNT WHEN THE PERMIT HAS BEEN EXPIRED FOR UP TO SIX (6) MONTHS. WHEN A PERMIT HAS BEEN EXPIRED FOR A PERIOD IN EXCESS OF ONE (1) YEAR, THE REACTIVATION FEE SHALL BE APPROXIMATELY 100% OF THE ORIGINAL PERMIT FEE. (R105.5 CRC).
26. EFFECTIVE JAN 1, 2014, SB 407 REQUIRES REPLACEMENT OF ALL NONCOMPLIANT PLUMBING FIXTURES IN PROPERTIES BUILT ON OR BEFORE JAN 1, 1994 WITH WATER-CONSERVING PLUMBING FIXTURES.
27. THE PANEL 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.
28. THE SERVECE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING AS EV CAPBLE. THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENT AND VISIBLY MARKED EV CAPABLE.
29. EARTH IMPORT AND EXPORT ACTIVITIES MAY TAKE PLACE ONLY BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M., MONDAY THROUGH FRIDAY
30. MIN. 1" (INSIDE DIAMETER) LISTED RACEWAY IS INSTALLED FOR EACH UNIT TO ACCOMODATE A DEDICATED 108/240 VOLT BRANCH CIRCUIT. THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR A SUBPANEL AND TERMINATE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE CHARGING SYSTEM INTO A LISTED CABINET, BOX OR ENCLOSURE.
31. THE PANEL OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MIN. DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF BRANCH CIRQUIT OVERCURRENT PROTECTIVE DEVICE
32. 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 PERMANENT AND VISIBLY MARKED EV CAPABLE.

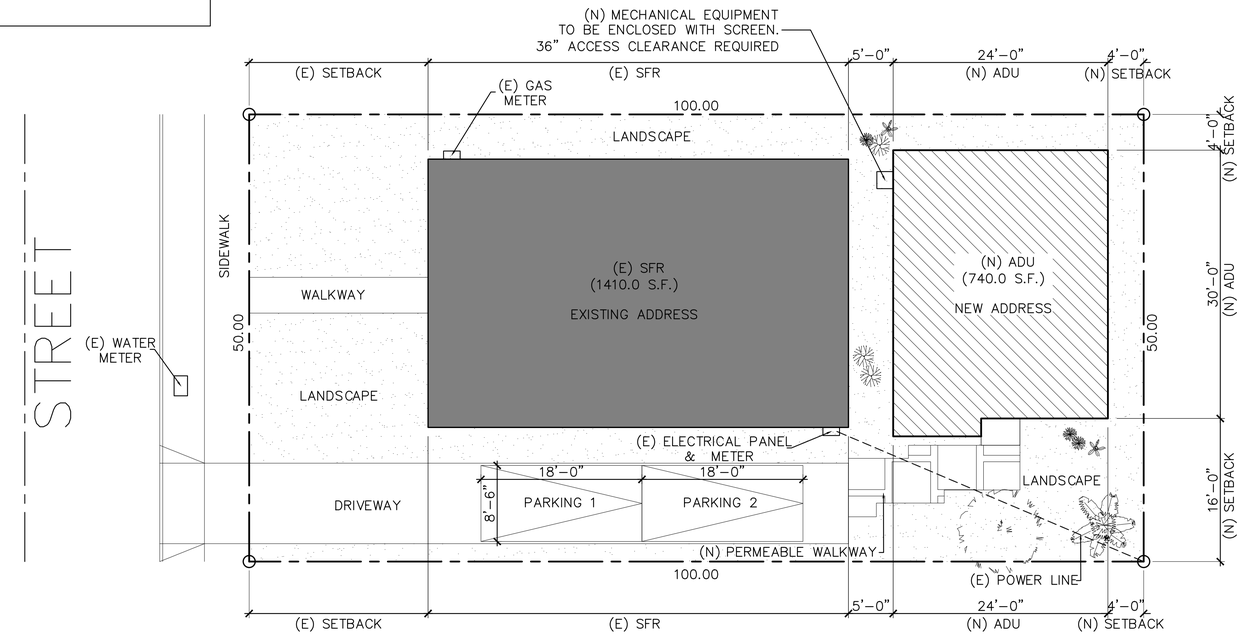
ADU DESIGN VARIATIONS:

OPTION 1 (T)
TRADITIONAL STYLE, GABLE ROOF, SHINGLES, SMOOTH STUCCO, SIDING COMBINATION

OPTION 1 (S)
SPANISH COLONIAL STYLE, GABLE TILE ROOF, STUCCO

OPTION 2 (S)
SPANISH COLONIAL STYLE, FLAT ROOF WITH PARAPET, STUCCO

LAYOUT OF EACH OPTION CAN BE REVERSED/MIRRORED ON THE LOT



SAMPLE SITE PLAN

LEGEND
- NEW WALLS/CONSTRUCTIONS
- EXISTING WALLS/CONSTRUCTIONS
- SLOPE

Yakov Design
Drafting service
(323)922-2211
info@yakovdesign.com

ADDRESS

SAMPLE SITE PLAN

SCALE: 1/8"=1'-0"
DATE: 04.22.2024

0.1

GENERAL NOTES:

The construction shall not restrict a five-foot clear and unobstructed access to any water or power distribution facilities (power poles, pull-boxes, transformers, vaults, pumps, valves, meters, appurtenances, etc,) or to the location of the hook-up. The construction shall not be within ten feet of any power lines-whether or not the lines are located on the property. Failure to comply may cause construction delays and /or additional expenses.

An approved Seismic Gas Shut Off Valve or Excess Flow Shut Off Valve will be installed on the fuel gas line on the down-stream side of the utility meter and be rigidly connected to the exterior of the building or structure containing the fuel gas piping. (Per Ordinance 170,158 and 180,670) Separate plumbing permit is required.

Plumbing fixtures are required to be connected to a sanitary sewer or to an (approved sewage disposal system (R306.3).

Kitchen sinks, lavatories, bathtubs, showers, bidets, laundry tubs and washing machine outlets shall be provided with hot and cold water and connected to an approved water supply (R306.4).

Bathtub and shower floors, walls above bathtubs with a showerhead, and shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet above the floor (R307.2).

Provide ultra-low flush water closets for all new construction. Existing shower heads and toilets must be adapted for low water consumption.

Provide (70) (72) inch high non-absorbent wall adjacent to shower and approved shatter-resistant materials for shower enclosure. (1210.2.3, 2406.4.5, R307.2, R308.4)

Water heater must be strapped to wall. (507.3 & LAPC)

Smoke detectors shall be provided for all dwelling units intended for human occupancy, upon the owner's application for a permit for alterations, repairs, or additions, exceeding one thousand dollars ($1,000). (R314.6.2)

Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section R303.1 or shall be provided with artificial light that is adequate to provide an average illumination of 6 foot-candles over the area of the room at a height of 30 inches above the floor level. (R303.1)

A copy of the evaluation report and/or conditions of listing shall be made available at the job site

Lots shall be graded to drain surface water away from foundation walls with a minimum fall of 6 inches within the first 10 feet (R401.3)

Ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gage sheet steel or other approved material and shall not have openings into L[t] the garage (R302.5.2).

Other penetrations of garage/dwelling ceilings and walls shall be protected as required by Section R302.11, Item 4 (R302.5.3).

Through penetrations of fire-resistance-rated wall or floor assemblies shall comply with Section R302.4.1.1 or R302.4.1.2.

Membrane penetrations shall comply with Section R302.4.1 Where walls are required to have a fire-resistance rating, recessed fixtures shall be installed so that the required fire-resistance rating will not be reduced.

In combustible construction, fire blocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space. (R302.1 1)

In combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1,000 square feet. Draftstopping shall divide the concealed space into approximately equal areas. (R302.12)

Sprinkler system must be approved by the Mechanical Division prior to installation.

The building shall be equipped with an automatic \' residential fire sprinkler system in accordance with section R313.3 or NFPA13D. (R313, 12.21A17(d))

A fire alarm (visual and audible) system is required. The alarm system must be approved by the Fire Department and Electrical Plan Check prior to installation. (LAMC 57.122)

Carbon monoxide alarm is required per (420.6, R315)

Heater shall be capable of maintaining a minimum room temperature of 68°F at a point 3 feet above the floor and 2 feet from exterior walls in all habitable rooms at the design temperature. (R303.9)

Buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. (R319.1)

Protection of wood and wood based products from decay shall be provided in the locations specified per Section R317.1 by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA Ui for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA Ui.

Provide anti-Graffiti finish within the first 9 feet, measured from grade, at exterior walls and doors. Exception: Maintenance of building affidavit is recorded by the owner to covenant and agree with the City of Los Angeles to remove any graffiti within 7-days of the graffiti being applied. (6306)

Glazing in hazardous locations shall be tempered (2406.4, R308.4): a. Ingress and egress doors
b. Panels in sliding or swinging doors
c. Doors and enclosure for hot tub, bathtub, showers (Also glazing in wall enclosing these compartments within 5' of standing surface)
d. If within 2' of vertical edge of closed door and within 5' of standing surface
e. In wall enclosing stairway landing
f. Guards and handrails

USTile
Clay Roofing Products

Westlake
Royal Roofing Solutions™

PRODUCT INFORMATION

Product Name:	**2-Piece Mission - Red**
SKU Number:	**1UADU7025-1UBDU7025**
Product Type:	**Standard Weight**
Color:	**Red**

Available Regions:

Nationwide

Cool Rated Product

Reflectivity:	**0.31**
Aged Ref. (3 yr):	**Pending**
Emmisivity:	**0.86**
Aged Em. (3 yr):	**Pending**
SRI:	**32**
Aged SRI (3 yr):	**Pending**
CRRC ID#:	**0224**
Seller ID#:	**0942**

Tile Specifications:

Size:	**18 x 7-8.5 in**
Coverage:	**172**
Approx. Installed Weight:	**1000 lbs**
Pieces per Pallet:	**360**
Squares per Pallet:	**2.09**
Approx. Weight per Pallet:	**2150 lbs**

*Calculated Aged Value
The printed color shown here may vary from actual available tile color and should not be used to color match. Please contact your local Sales Representative for actual tile samples.

1.800.669.TILE (8453)
www.WestlakeRoyalRoofing.com

CRRC COOL ROOF RATING COUNCIL ®

	Initial	Weathered
Solar Reflectance	0.31	Pending
Thermal Emittance	0.86	Pending

Rated Product ID Number	0224
Licensed Seller ID Number	0942
Classification	Production Line

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary. Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.

GAF

TRI-PLY®

APP Granule Membrane

(Formerly Tri-Ply® TP-4G)

Description
Tri-Ply® APP Granule Membrane is a granule-surfaced modified bitumen membrane manufactured to stringent GAF specifications. Its core is a strong, resilient, non-woven polyester mat that is coated with weather-resistant APP polymer-modified asphalt.

Uses
Tri-Ply® APP Granule Membrane is designed for new roofing and reroofing applications, as well as flashings. It is also ideal for repair of built-up roofing membranes or other modified bitumen systems.

Advantages
- Lightweight… installed roof designs weigh less than 2 pounds per square foot (9.8 kg per square meter).

Advantages (Continued)
- Resilient… polyester mat core allows it to resist splits and tears due to its pliability and elongation characteristics.
- Durable… specially formulated modified asphalt for lasting performance.

Applicable Standards
Meets ASTM D6222, Type I, Grade G
FM Approved
Miami-Dade County Product Control Approved
UL Listed

Nominal Specifications	
Roll Size	1 square roll 106.4 gross sq. ft. (9.89 m²)
Roll Length	32.25' (9.83 m)
Roll Width	39.6" (1 m)
Roll Weight	99 lb. (44.9 kg)

CertainTeed
SAINT-GOBAIN

Technical Data Sheet

Landmark Solaris®

PRODUCT INFORMATION

Landmark Solaris® innovative technology produces a shingle that reflects solar energy in a traditional color palette. All colors are rated by Cool Roof Rating Council (CRRC) and meet California's Title 24 requirements for cool steep slope roofing. Landmark Solaris shingles are manufactured using the same high standards as all CertainTeed roofing products and are covered by the same superior warranty protection. These shingles are available in "Metric" dimensions 13 1/4" x 38 3/4". This product also features CertainTeed's NailTrak® that offers a wider nailing area.

Landmark Solaris algae-resistant (AR) shingles have the additional attribute of resisting the growth of algae especially in damp regions. AR shingles are not available in all regions.

Colors: Please refer to product brochure or CertainTeed website for the colors available in your region.

Color	Solar Radiative Properties							Energy Star Certified?
	CRRC Product ID#	Solar Reflectance		Thermal Emittance		Solar Reflective Index		
		Initial	Aged	Initial	Aged	Initial	Aged	
Aged Cedar **	0668-0055	0.26	0.24	0.92	0.90	28	24	Yes
Birchwood	0668-0084	0.21	0.21	0.92	0.83	21	17	No
Burnt Sienna **	0668-0153	0.20	Pending	0.92	Pending	20	20 *	No
Crystal Gray **	0668-0058	0.27	0.26	0.93	0.90	29	27	Yes
Georgetown Gray **	0668-0116	0.20	0.20	0.91	0.92	19	20	No
Graphite **	0668-0155	0.21	Pending	0.91	Pending	21	21 *	No
Heather Blend **	0668-0117	0.20	0.20	0.91	0.92	19	20	No
Mist White **	0668-0071	0.26	0.28	0.92	0.90	28	29	Yes
Moiré Black	0668-0129	0.19	0.18	0.91	0.92	18	17	No
Mojave Tan	0668-0115	0.19	0.20	0.88	0.90	17	19	No
Resawn Shake **	0668-0118	0.19	0.20	0.92	0.93	19	20	No
Silver Birch **	0668-0072	0.26	0.27	0.90	0.89	27	28	Yes
Weathered Wood **	0668-0119	0.20	0.21	0.91	0.91	19	21	No

* Aged SRI is calculated using the California Energy Commission's Solar Reflective Index (SRI) Calculation Worksheet.
** Product meets the cool roofing requirements of Green Building Standards Code of Los Angeles County for residential buildings.

Limitations: Use on roofs with slopes greater than 2" per foot. Low-slope applications (2:12 to < 4:12) require additional underlayment. In areas prone to snow and ice, apply CertainTeed WinterGuard® Waterproofing Shingle Underlayment, or its equivalent along the eaves, according to application instructions provided with the product and on the shingle package.

Product Composition: Landmark Solaris shingles are composed of a fiber glass mat base. Ceramic-coated mineral granules with high solar reflectance are tightly embedded in carefully refined, water-resistant asphalt. Two pieces of the shingle are firmly laminated together in special tough asphaltic cement. All Landmark Solaris shingles have self-sealing adhesive strips.

Applicable Standards:
ASTM E108 Class A Fire Resistance
UL 790 Class A Fire Resistance
ASTM D3462
ASTM D3018 Type I
ASTM D3161 Class F Wind Resistance
Miami-Dade County Product Control Approved
Meets TDI Windstorm Requirements
ASTM D7158 Class H Wind Resistance
CSA Standard A123.5
ICC-ES ESR-1389 & ESR-3537
Florida Product Approval # FL5444
Can be used to comply with California Title 24, Part 6 (Steep Slope)

Technical Data:

Weight/Square (approx.)	216 lb
Shingles/Square (approx.)	66 *
Dimensions (overall)	13 1/4" x 38 3/4"
Weather Exposure	5 5/8"

*Based on 100 sq. ft. of exposed area.

INSTALLATION
Detailed installation instructions are supplied on each bundle of shingles and must be followed. Separate application sheets may also be obtained from CertainTeed.

Hips and Ridges: Use CertainTeed Shadow Ridge® or Mountain Ridge® shingles of a like color for capping hips and ridges.

MAINTENANCE
These shingles do not require maintenance when installed according to manufacturer's application instructions. However, to protect the investment, any roof should be routinely inspected at least once a year. Older roofs should be looked at more frequently.

WARRANTY
Landmark Solaris shingles carry a Lifetime Limited Warranty and 10-year SureStart™ protection when applied to stated CertainTeed application instructions for this product. Landmark Solaris AR shingles carry a 10-year algae resistance warranty. For specific warranty details and limitations, refer to the warranty itself (available from the local supplier, roofing contractor or on-line at www.certainteed.com).

FOR MORE INFORMATION
Sales Support Group: 800-233-8990
Web site: www.certainteed.com

CertainTeed
20 Moores Road
Malvern, PA 19355

CertainTeed
SAINT-GOBAIN

Yakov Design
Drafting service
(323)922-2211
info@yakovdesign.com

ADDRESS

GENERAL NOTES,
ROOF SPECIFICATIONS

SCALE:

DATE: 04.22.2024

0.2

Job Name:	
Tag#	

DAIKIN

Submittal Data Sheet — FTXB18AXVJU / RXB18AXVJU

1.5-Ton Wall Mounted Heat Pump System

Complete warranty details available from your local dealer or at www.daikincomfort.com. To receive the 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec. *If product is installed in a commercial application, limited warranty period is 5 years.*

Efficiency

Cooling		Heating	
SEER	17	HSPF	9
EER	10.5	COP	3.3

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	18,000 (4,300 – 21,200)
Sensible @ AHRI	12,864
Operating Range	50°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB; Outdoor: 95°F DB/75°F WB

Heating (Btu/hr)	
1: @ 47° Rated (Min/Max)	17,900 (4,000 – 22,500)
2: @ 17° Rated	10,200
3: @ 5°	8,765
Operating Range	5°F – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 47°F DB/43°F WB
2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 17°F DB/15°F WB
3: Heating Conditions: Indoor: 69.8°F DB; Outdoor: 5°F WB

Indoor Specifications

	Cooling		Heating	
Airflow Rate (cfm)	H	M	H	M
	430	374	435	374
	L		L	
	318		318	
Sound (dBA) H / M / L	40 / 37 / 35		40 / 37 / 35	
Dimensions (H × W × D) (in)	12-5/8 × 46-1/8 × 9-1/2			
Weight (Lbs)	31			

Electrical

	208/60/1	230/60/1
System MCA	16.2	16.2
System MFA	20	20
Compressor RLA	16	16
Outdoor fan motor FLA	.50	.50
Outdoor fan motor W	61	61
Indoor fan motor FLA	.24	.24
Indoor fan motor W	40	40

MFA: Max. fuse amps **MCA**: Min. circuit amps (A) **FLA**: Full load amps (A) **RLA**: Rated load amps (A) **W**: Fan motor rated output (W)

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	2.75			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	1690	H	1690
Sound Pressure Level (dBA)	53			
Dimensions (H × W × D) (in)	25-11/16 × 33-11/16 × 12-15/16			
Weight (Lbs)	82			

Piping

Liquid (in)	1/4
Gas (in)	1/2
Drain (in)	3/4
Max. Interunit Piping Length (ft)	98.4
Max. Interunit Height Difference (ft)	32.8
Chargeless (ft)	24.6
Additional Charge of Refrigerant (oz/ft)	.21

Daikin North America LLC San Felipe, Suite 500 Houston, TX 77056
(Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications and information in this data sheet without notice and without incurring any obligations)

Submittal Revision Date: March 2021 Page 1 of 4

FTXB18AXVJU / RXB18AXVJU Performance Tables

Cooling Mode

AFR (CFM)	EWB	EDB	66.2°F TC	66.2°F SC	66.2°F PI	77.0°F TC	77.0°F SC	77.0°F PI	86.0°F TC	86.0°F SC	86.0°F PI	95.0°F TC	95.0°F SC	95.0°F PI	104.0°F TC	104.0°F SC	104.0°F PI	114.8°F TC	114.8°F SC	114.8°F PI
318	61.6°F	69.2°F	16971	11207	1.30	16371	10914	1.41	15762	10620	1.52	15130	10316	1.65	13893	9600	1.79	12826	9030	1.97
		74.6°F	16994	13419	1.30	16390	13112	1.41	15783	12807	1.52	15152	12489	1.65	13921	11664	1.79	12876	11005	1.97
		80.0°F	17128	15215	1.30	16558	14869	1.41	15976	14518	1.53	15374	14147	1.65	14186	13165	1.80	13198	12364	1.98
		85.4°F	17655	17655	1.31	17148	17148	1.42	16628	16628	1.54	16093	16093	1.67	14917	14917	1.81	13956	13956	2.00
	67.0°F	74.6°F	18719	10463	1.32	18063	10198	1.43	17400	9926	1.55	16711	9646	1.68	15358	8984	1.82	14198	8460	2.01
		80.0°F	18732	11971	1.32	18072	11701	1.43	17411	11433	1.55	16725	11156	1.68	15373	10436	1.82	14216	9886	2.01
		85.4°F	18761	14772	1.32	18113	14457	1.43	17473	14137	1.55	16810	13797	1.68	15478	12902	1.82	14359	12210	2.01
		90.8°F	18983	18983	1.32	18365	18365	1.43	17770	17770	1.55	17164	17164	1.69	15881	15881	1.83	14847	14847	2.02
	72.4°F	80.0°F	20594	10241	1.34	19881	9993	1.46	19157	9743	1.58	18408	9475	1.71	16927	8829	1.86	15669	8324	2.05
		85.4°F	20601	12480	1.34	19889	12214	1.46	19160	11937	1.58	18412	11653	1.71	16933	10908	1.86	15675	10344	2.05
		90.8°F	20612	14575	1.34	19899	14298	1.46	19174	14014	1.58	18425	13724	1.71	16955	12884	1.86	15714	12239	2.05
		96.2°F	20679	16528	1.35	19996	16197	1.46	19302	15860	1.58	18600	15510	1.72	17152	14541	1.86	15948	13796	2.05
374	61.6°F	69.2°F	17659	11688	1.31	17021	11387	1.42	16376	11084	1.54	15707	10772	1.66	14412	10030	1.81	13296	9440	1.99
		74.6°F	17712	14187	1.31	17075	13855	1.42	16436	13524	1.54	15772	13184	1.67	14490	12300	1.81	13394	11608	1.99
		80.0°F	17925	16114	1.31	17323	15738	1.42	16725	15334	1.54	16125	14877	1.67	14886	13818	1.82	13869	12926	2.00
		85.4°F	18672	18672	1.32	18132	18132	1.43	17579	17579	1.56	17008	17008	1.69	15759	15759	1.83	14730	14730	2.03
	67.0°F	74.6°F	19454	11058	1.33	18761	10780	1.44	18058	10499	1.56	17331	10210	1.69	15916	9514	1.84	14704	8968	2.02
		80.0°F	19488	12736	1.33	18793	12455	1.44	18090	12173	1.56	17364	11884	1.70	15954	11110	1.84	14749	10519	2.03
		85.4°F	19581	15712	1.33	18900	15372	1.44	18223	15028	1.57	17527	14660	1.70	16137	13708	1.84	14972	12950	2.03
		90.8°F	19908	19908	1.34	19301	19301	1.45	18686	18686	1.57	18066	18066	1.71	16734	16734	1.86	15645	15645	2.05
	72.4°F	80.0°F	21375	10826	1.36	20623	10572	1.47	19856	10305	1.59	19067	10027	1.73	17521	9352	1.87	16206	8824	2.06
		85.4°F	21401	13285	1.36	20647	13010	1.47	19877	12720	1.59	19089	12423	1.73	17544	11635	1.87	16229	11041	2.06
		90.8°F	21440	15568	1.36	20695	15270	1.47	19935	14959	1.60	19150	14640	1.73	17618	13732	1.88	16330	13038	2.07
		96.2°F	21572	17598	1.36	20876	17265	1.47	20146	16906	1.60	19414	16512	1.74	17911	15452	1.88	16699	14577	2.08
430	61.6°F	69.2°F	18313	12197	1.32	17641	11887	1.43	16964	11574	1.55	16261	11250	1.68	14914	10478	1.82	13748	9861	2.01
		74.6°F	18409	14821	1.32	17739	14469	1.43	17072	14115	1.55	16382	13744	1.68	15046	12826	1.82	13900	12093	2.01
		80.0°F	18705	16984	1.33	18093	16546	1.44	17482	16082	1.56	16855	15585	1.69	15576	14437	1.83	14514	13479	2.02
		85.4°F	19641	19641	1.34	19066	19066	1.45	18480	18480	1.57	17872	17872	1.71	16548	16548	1.86	15455	15455	2.05
	67.0°F	74.6°F	20156	11699	1.34	19427	11410	1.45	18688	11117	1.58	17928	10816	1.71	16453	10083	1.85	15190	9511	2.04
		80.0°F	20215	13535	1.34	19489	13226	1.46	18756	12916	1.58	18000	12600	1.71	16527	11784	1.85	15274	11148	2.04
		85.4°F	20382	16657	1.35	19661	16294	1.46	18957	15921	1.58	18230	15522	1.71	16785	14497	1.86	15582	13665	2.05
		90.8°F	20824	20824	1.35	20215	20215	1.47	19592	19592	1.59	18946	18946	1.73	17552	17552	1.88	16415	16415	2.07
	72.4°F	80.0°F	22117	11444	1.37	21331	11194	1.48	20529	10913	1.61	19703	10626	1.74	18098	9915	1.89	16726	9363	2.08
		85.4°F	22163	14109	1.37	21373	13842	1.48	20570	13540	1.61	19743	13233	1.74	18140	12391	1.89	16777	11747	2.08
		90.8°F	22240	16535	1.37	21471	16246	1.49	20681	15904	1.61	19868	15553	1.75	18279	14578	1.89	16934	13835	2.09
		96.2°F	22437	18670	1.37	21735	18330	1.49	20983	17929	1.62	20229	17484	1.75	18691	16308	1.90	17435	15353	2.10

Heating Mode

Indoor DB°F	5.0 TC	5.0 PI	14.0 TC	14.0 PI	23.0 TC	23.0 PI	32.0 TC	32.0 PI	42.8 TC	42.8 PI	50.0 TC	50.0 PI
60.8	8981	1.14	11141	1.23	13302	1.30	15493	1.38	18086	1.48	19814	1.54
64.4	8888	1.20	11049	1.28	13240	1.36	15400	1.44	17993	1.53	19721	1.60
68.0	8796	1.25	10956	1.34	13148	1.41	15308	1.50	17900	1.59	19629	1.66
69.8	8765	1.28	10925	1.37	13086	1.44	15246	1.52	17870	1.62	19598	1.68
71.6	8703	1.31	10895	1.39	13055	1.47	15215	1.55	17808	1.65	19536	1.71
75.2	8611	1.37	10802	1.45	12962	1.53	15123	1.61	17715	1.70	19444	1.77

(Outdoor WB°F)

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°F)
EDB: Entering Dry Bulb Temp. (°F)
TC: Total Cooling Capacity (Btu/h)
SC: Sensible Cooling Capacity (Btu/h)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. ▭ Shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.

Daikin North America LLC San Felipe, Suite 500 Houston, TX 77056
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Submittal Revision Date: March 2021 Page 4 of 4

PERFORMANCE PLATINUM™

Rheem — The new degree of comfort.®

PERFORMANCE PLATINUM™ High Efficiency Condensing Tankless Gas Water Heaters are designed to provide continuous hot water

Efficiency
- .93 UEF with stainless steel condensing heat exchanger

Easy Installation and Service
- **NEW! 2" venting connections**
- **NEW! Vent up to 150 ft with 3" PVC and 60 ft with 2" PVC**
- Built-in condensate neutralizer
- 1/2" Gas line compatibility up to 24 ft.[1]
- **NEW! Includes easy to install hanging bracket for time savings** (indoor models only)
- **Exclusive! Maintenance Notice Setting** – Alerts homeowner, after 500 hours of use, to call for service (optional)
- Self-diagnostic system for easy installation and service
- High-altitude capability – up to 8,400 ft. elevation above sea level[2]
- Digital remote control **now pre-wired!** 10 ft. of thermostat wire included – shows temperature setting and service codes
- Requires 120V power supply

Performance
- **Industry Leading! Low Flow Activation** – Minimum flow rate of .26 GPM and minimum activation flow rate of .40 GPM ensures hot water even in low demand situations
- **Recirculation Pump Kit-Ready** – Providing faster hot water at the tap and savings of up to 12,000 gallons water/year[3]
- **Exclusive! Hot Start Programming** – Minimizes cold water bursts by staying in ready-fire state for back-to-back hot water needs

Technology
- **EcoNet® Enabled** – all Tankless products from 2010 to present can connect to EcoNet mobile app via Tankless EcoNet Accessory Kit (REWRA630TWH)
- For higher demand applications, easily link multiple tankless units to operate as one system (20 units max. additional accessories required)

Environmentally Friendly
- **Low Emissions** – Ultra low NOx burner meets SCAQMD rule 1146.2 requirements
- **Exclusive! Water Savings Setting** – Save up to 1,100 gallons water/year[4] by reducing flow at the tap until set temperature is achieved (optional)

Safety
- **Exclusive! Overheat film wrap** – prevents dangerous temperatures and provides industry best side-to-side clearance of 1/2 inch
- Maximum water temperature is 140°F. For higher temperature applications, upgrade kits are available

Warranty
- 12-Year heat exchanger – residential, 5-year heat exchanger – commercial, 5-year parts and 1-year labor

See Warranty Certificate for complete information

PERFORMANCE PLATINUM High Efficiency Condensing Tankless
11,000-199,900 BTU/h

Natural Gas · Propane Gas · LEED Points = 2

EcoNet® PERFORMANCE PLATINUM Tankless Water Heater with EcoNet® WiFi Included

ECOH200DVLN-2
Indoor Direct Vent with EcoNet® 11,000-199,900 BTU/h Only (Outdoor model also available)

Shares all efficiency, performance, technology, warranty and safety values as standard models, with added WiFi capability.

Smart Home Features
- Water leak detection alert and system shut off (indoor models only) – may qualify for insurance discounts
- Mobile alerts for notifications/maintenance reminders
- Mobile gas and water usage reports
- Integration with NEST & WINK smart home systems

Product Includes
- Factory-installed translator
- Leak detection cable (for indoor models)
- Wi-Fi Module, connection cable and power cord

App available free in App Store and Google Play for Android

ANDROID APP ON Google play · Available on the App Store

12/20 FORM NO. THD-3197 Rev. 2

PERFORMANCE PLATINUM™

Rheem — The new degree of comfort.®

PERFORMANCE PLATINUM™ Hybrid Electric is the most efficient water heater available

Efficiency
- High 3.75 - 4.07 UEF reduces operating cost
- ENERGY STAR® rated

Performance
- Delivers hot water faster than most standard electric water heaters – 60-87 gallons first-hour delivery, depending on model
- Ambient operating range: 37-145° F is widest in class, offering more days of HP operation annually; designed to meet Northern Climate Spec (Tier 4)

Easy Installation
- Easy access side connections
- Quick access to electrical junction box
- Easily replaces a standard electric water heater

Integration
- Electronic control for easy temperature adjustment and mode management
- Audible alarm for service alerts

EcoNet®
- Integrated EcoNet® WiFi-connected* technology (2.4 GHz only) and free mobile app gives users control over water systems, allowing for customizable temperature, vacation settings, energy savings and system monitoring at home or away. Visit Rheem.com/EcoNetConnect
- Demand Response Ready – CTA-2045 Port easily connects to utility programs

Operation Modes
- Energy Saver
- Heat Pump
- High Demand
- Electric
- Vacation/Away: 2-28 days (or placed on hold indefinitely)

Plus...
- Premium grade anode rod with resistor extends the life of the tank
- 3/4" NPT water inlet and outlet; 3/4" condensate drain connections
- Incoloy stainless steel resistor elements
- Dry-fire protection
- Easy access, top mounted washable air filter
- 2" Non-CFC foam insulation
- Enhanced flow brass drain valve
- Temperature and pressure relief valve installed
- Design certified to NSF/ANSI 372 (Lead Content)

Warranty
- 10-Year limited warranty for tank and parts, 1-year full in-home labor warranty
  See Residential Warranty Certificate for complete information

Units meet or exceed ANSI requirements and have been tested according to D.O.E. procedures. Units meet or exceed the energy efficiency requirements of NAECA, ASHRAE standard 90, ICC Code and all state energy efficiency performance criteria.

* WiFi broadband internet connection required

PERFORMANCE PLATINUM Hybrid
40, 50, 65 and 80-Gallon Capacities
208-240 Volt / 1 PH
Electric

LEED Points = 3

See specifications chart on back.

12/22 FORM NO. THD-PPEH5-30 Rev. 5

Rheem — The new degree of comfort.®

PERFORMANCE PLATINUM™ Condensing Tankless Specifications

MODEL NUMBER	GAS INPUT BTU/H	TYPE	NUMBER OF BATHROOMS*	TEMP. RANGE	MIN. FLOW/ ACTIVATION GPM	GPM @ 67° RISE MAX.	GPM @45° RISE MAX.	GPM @35° RISE MAX.	CONNECTION WATER	CONNECTION GAS	HEIGHT	WIDTH	DEPTH	VENT DIAM.	SHIP WEIGHT (LBS.)	UNIFORM ENERGY FACTOR (UEF)
ECOH200DVLN-2	11,000-199,900	Indoor Direct Vent	4	85° to 140° F	0.26/0.40	5.7	8.5	9.5	3/4	3/4	27-1/2	18-1/2	9-3/4	2" or 3" PVC 2-Pipe	82	0.93
ECOH200DVELN-2 (EcoNet® Included)	11,000-199,900	Indoor Direct Vent	4	85° to 140° F	0.26/0.40	5.7	8.5	9.5	3/4	3/4	27-1/2	18-1/2	9-3/4	2" or 3" PVC 2-Pipe	82	0.93
ECOH200XLN-2	11,000-199,900	Outdoor	4	85° to 140° F	0.26/0.40	5.6	8.5	9.5	3/4	3/4	27-1/2	18-1/2	9-3/4	N/A	82	0.93
ECOH200XELN-2 (EcoNet® Included)	11,000-199,900	Outdoor	4	85° to 140° F	0.26/0.40	5.6	8.5	9.5	3/4	3/4	27-1/2	18-1/2	9-3/4	N/A	82	0.93
ECOH180DVLN-2	11,000-180,000	Indoor Direct Vent	3 - 4	85° to 140° F	0.26/0.40	5.2	7.7	9.0	3/4	3/4	27-1/2	18-1/2	9-3/4	2" or 3" PVC 2-Pipe	82	0.93
ECOH180DVELN-2 (EcoNet® Included)	11,000-180,000	Indoor Direct Vent	3 - 4	85° to 140° F	0.26/0.40	5.2	7.7	9.0	3/4	3/4	27-1/2	18-1/2	9-3/4	2" or 3" PVC 2-Pipe	82	0.93
ECOH180XLN-2	11,000-180,000	Outdoor	3 - 4	85° to 140° F	0.26/0.40	5.2	7.7	9.0	3/4	3/4	27-1/2	18-1/2	9-3/4	N/A	82	0.93
ECOH180XELN-2 (EcoNet® Included)	11,000-180,000	Outdoor	3 - 4	85° to 140° F	0.26/0.40	5.2	7.7	9.0	3/4	3/4	27-1/2	18-1/2	9-3/4	N/A	82	0.93
ECOH160DVLN-2	11,000-157,000	Indoor Direct Vent	3	85° to 140° F	0.26/0.40	4.6	6.7	8.4	3/4	3/4	27-1/2	18-1/2	9-3/4	2" or 3" PVC 2-Pipe	82	0.93
ECOH160XLN-2	11,000-157,000	Outdoor	3	85° to 140° F	0.26/0.40	4.5	6.7	8.4	3/4	3/4	27-1/2	18-1/2	9-3/4	N/A	82	0.93

(DESCRIPTION · FEATURES · ROUGHING IN DIMENSIONS (SHOWN IN INCHES) · ENERGY INFO.)

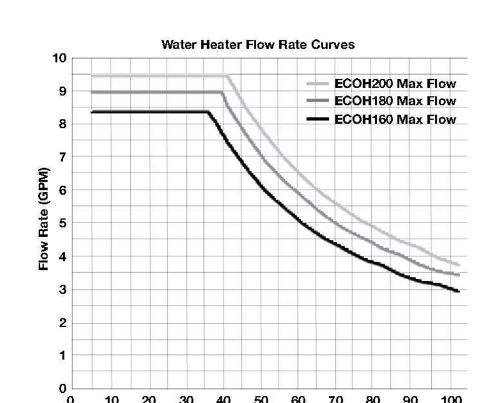
*Based on simultaneous showers using 2.5 GPM flow rate pre-mixed with cold water line. Flow rates vary depending on temperature of incoming cold water and water heater set temperature. Refer to flow rate curves for accurate sizing.
Uniform Energy Factor and Energy Factor based on Department of Energy (D.O.E.) requirements.
All models are available in Natural Gas and Propane (LP). For Propane replace the N with P when ordering.
SCAQMD 1146.2 compliant.
Factory set maximum temperature is 120° F. See Use and Care Manual for setting.
Consult factory for information on sizing the application.
Vent Termination Kits are required for Direct Vent models. Contact your distributor for details.
Proper gas pressure must be ensured to supply tankless gas water heaters – up to 199,900 BTU/h for ECOH200 models, up to 180,000 BTU/h for ECOH180 models, up to 157,000 BTU/h for ECOH160 models. (Consult your gas supplier)

[1] *Based on Rheem testing of 1/2" gas line with gas supply of 7" w.c. up to 24'; Installation conditions vary; Consult the Rheem® Use and Care Manual, the Rheem® Gas Piping Facts brochure (TK-GPF-12), the National Fuel Gas Code (NFFA 54, ANSI Z223.1), and any other local gas codes when installing a Rheem Tankless Water Heater.*
[2] *Contact customer service for exact altitude rating for each model.*
[3] *Pump kit designed for single unit applications only.*
[4] *Savings based on DOE test procedures.*

Model Number	35°	45°	50°	60°	67°	70°	80°	90°	100°
ECOH200 Water Flow (GPM)	9.5	8.5	7.7	6.4	5.7	5.5	4.8	4.3	3.8
ECOH180 Water Flow (GPM)	9.0	7.7	6.9	5.8	5.2	4.9	4.3	3.8	3.5
ECOH160 Water Flow (GPM)	8.4	6.7	6.0	5.0	4.6	4.3	3.8	3.3	3.0

(Temperature Rise (° F))

Above estimates are for sizing purposes only.

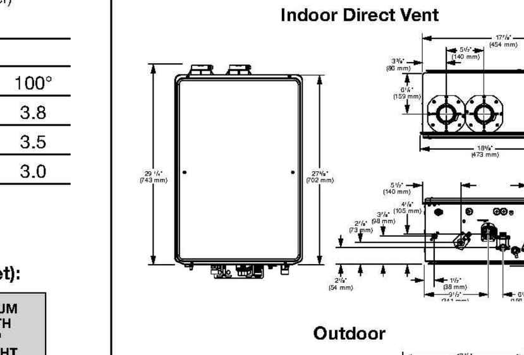


Maximum Vent Length (intake/outlet):

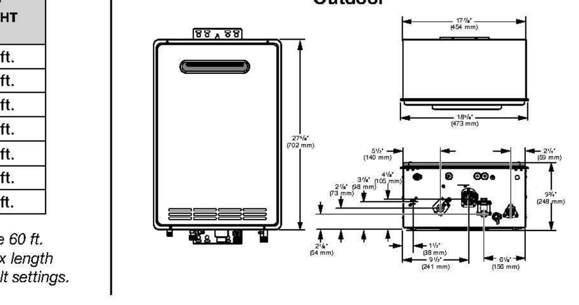
NUMBER OF 90° ELBOWS	MAXIMUM LENGTH OF 2" STRAIGHT PIPE*	MAXIMUM LENGTH OF 3" STRAIGHT PIPE
0	60 ft.	150.0 ft.
1	57 ft.	148.5 ft.
2	54 ft.	147.0 ft.
3	51 ft.	145.5 ft.
4	48 ft.	144.0 ft.
5	45 ft.	142.5 ft.
6	42 ft.	141.0 ft.

Dip switch setting change required to achieve 60 ft. maximum vent length on 2" straight pipe. Max length for 2" straight pipe is 22 ft. with factory default settings.

Indoor Direct Vent



Outdoor



Parts and Accessories

Venting & terminations – 2" or 3" PVC, recess boxes, pipe covers, extra remote controls, EZ-Link™ cable, manifolds and cables, service valve kits, service parts, flush kits, recirculation pump kits and AllClear™ water treatment system. For more information on Tankless parts and accessories, see the Parts and Accessories Catalog or call 866-720-2076.

In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.

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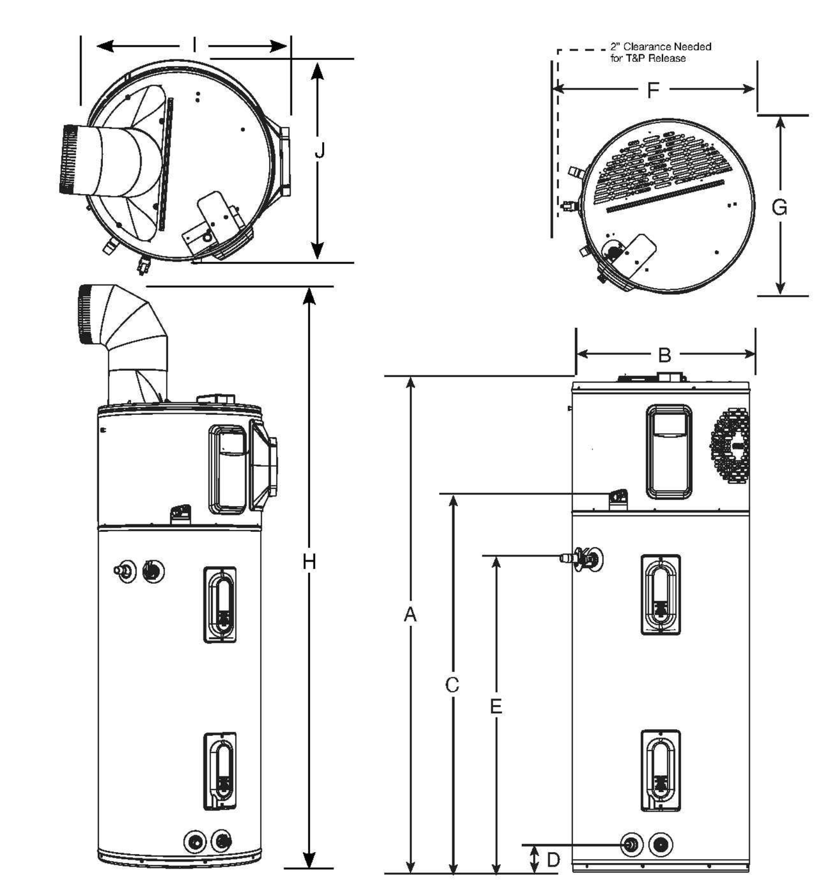
12/20 FORM NO. THD-3197 Rev. 2

Rheem — The new degree of comfort.®

PERFORMANCE PLATINUM™ Hybrid Specifications

Fuel Type	Desc.	Nominal Gallon Cap.	Rated Gallon Cap.	Model Number	Electric Breaker Size	Uniform Energy Factor (UEF)	Estimated Yearly Energy Cost	Element Wattage	Compressor Btu/H	First Hr. Rating (Gallons)	Recovery in G.P.H. 90° F Rise	Tank Height A	Diam. B	Ht. to Cold Inlet & Drain Valve	Ht. to Hot Outlet & T&P	Unit Wt. (LBS.)	Approx. Ship Wt. (LBS.)
30 AMPS																	
Electric	Tall	40	36	XE40T10H45U0	30	3.83	$119	4,500	4200	60	27	63"	20-1/4"	3-5/8"	39-5/8"	157	174
Electric	Tall	50	45	XE50T10H45U0	30	3.88	$117	4,500	4200	67	27	62"	22-1/4"	3-5/8"	39-5/8"	178	218
Electric	Tall	65	59	XE65T10H45U0	30	4.05	$171	4,500	4200	75	27	65"	24-1/4"	3-7/8"	42-3/8"	225	262
Electric	Tall	80	72	XE80T10H45U0	30	4.07	$171	4,500	4200	87	27	75"	24-1/4"	3-7/8"	42-3/8"	244	281



NOMINAL GALLON CAPACITY	MODEL NUMBER	A	B	C	D	E	F	G	H	I	J
40	XE40T10H45U0	62-5/16	20-1/4	47	3-5/8	39-5/8	23-3/8	20-1/2	78-7/8	22-3/8	23-1/4
50	XE50T10H45U0	61-3/4	22-1/4	47	3-5/8	39-5/8	25-3/8	22-1/2	78-5/8	24-3/8	25-9/16
65	XE65T10H45U0	64-3/16	24-1/4	49	3-7/8	42-3/8	27-1/2	24-5/8	81-1/8	26-1/2	27-3/8
80	XE80T10H45U0	74-3/16	24-1/4	59	3-7/8	42-3/8	27-1/2	24-5/8	91	26-1/2	27-3/8

(DESCRIPTION · DIMENSIONS (SHOWN IN INCHES))

2

Yakov Design
Drafting service
(323)922-2211
info@yakovdesign.com

ADDRESS

MECHANICAL EQUIPMENT SPECIFICATIONS

SCALE:
DATE: 04.22.2024

0.3

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

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

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.
Exceptions:
1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of *CAL*Green, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

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

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

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

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

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

4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

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

Exceptions:
1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

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

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

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

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Section 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as an EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1 Reserved.

4.106.4.2.2 Multifamily dwellings, hotels and motels

1. EV ready parking spaces with receptacles.

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

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

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

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

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

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

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

2. EV ready parking spaces with EV chargers.

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

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

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

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

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

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

EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 EVCS spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EVCS space is 12 feet (3658 mm). Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:

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

4.106.4.2.2.1.2 Accessible electric vehicle charging station spaces.
In addition to the requirements in Section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.

4.106.4.2.3 Reserved.

4.106.4.2.4 Reserved.

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

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multi-family buildings.
Where new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be EV capable spaces to support future Level 2 electric vehicle supply equipment. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE."

Notes:

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

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

DIVISION 4.2 ENERGY EFFICIENCY

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE
4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

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

4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

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

4.303.1.4 Faucets.

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

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

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

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

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

4.303.1.4.5 Pre-rinse spray valves.
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations),Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2

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

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

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

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

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

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

TABLE - MAXIMUM FIXTURE WATER USE

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

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

NOTES:

1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the *California Code Regulations*, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE
4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

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

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

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

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
3. Identify diversion facilities where the construction and demolition waste material collected will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

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

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

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

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

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

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

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

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL
4.501.1 Scope
The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

SECTION 4.502 DEFINITIONS
5.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

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

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

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GREEN BUILDING REQUIREMENTS

SCALE:

DATE: 04.22.2024

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]
(Less Water and Less Exempt Compounds in Grams per Liter)

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

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

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

TABLE 4.504.2 - SEALANT VOC LIMIT
(Less Water and Less Exempt Compounds in Grams per Liter)

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

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

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

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

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

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

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.506 INDOOR AIR QUALITY AND EXHAUST
4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

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

Notes:

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

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

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

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

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS
702 QUALIFICATIONS
702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

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

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

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

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

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

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

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

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GREEN BUILDING REQUIREMENTS

SCALE:

DATE: 04.22.2024

0.5

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 1 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

GENERAL INFORMATION					
01	Project Name	Proposed ADU for Standard Plan			
02	Run Title	Title 24 Analysis			
03	Project Location	_			
04	City		05	Standards Version	2019
06	Zip code	91307	07	Software Version	EnergyPro 8.2
08	Climate Zone	8	09	Front Orientation (deg/ Cardinal)	270
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 (ft²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft²)	740	19	Glazing Percentage (%)	10.98%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	Yes			

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

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 2 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

ENERGY DESIGN RATING				
	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	50.3	22.4		
Proposed Design	50	22.1	0.3	0.3

RESULT: [3] COMPLIES

1: Efficiency EDR includes improvements to the building envelope and more efficient equipment
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries
3: Building complies when efficiency and total compliance margins are greater than or equal to zero

- Standard Design PV Capacity: 1.60 kWdc
- PV System resized to 1.60 kWdc (a factor of 1.597) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY				
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	3.14	3.58	-0.44	-14
Space Cooling	16.74	17.7	-0.96	-5.7
IAQ Ventilation	2.92	2.92	0	0
Water Heating	24.12	21.74	2.38	9.9
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	**46.92**	**45.94**	**0.98**	**2.1**

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 Access (%)
1.6	NA	Standard	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	100

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 3 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck • Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
Building-level Verifications: • Indoor air quality ventilation • Kitchen range hood Cooling System Verifications: • Verified EER • Verified SEER • Verified Refrigerant Charge • Airflow in habitable rooms (SC3.1.4.1.7) Heating System Verifications: • Verified HSPF • 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 --

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Proposed ADU for Standard Plan	740	1	1	1	0	1

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 4 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
Proposed ADU	Conditioned	ADU Mini Split1	740	8	DHW Sys 1	N/A

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
North Wall	Proposed ADU	R-15 Wall	270	Front	200	16	90
West Wall	Proposed ADU	R-15 Wall	180	Right	266.66	5.25	90
South Wall	Proposed ADU	R-15 Wall	90	Back	200	60	90
East Wall	Proposed ADU	R-15 Wall	0	Left	266.66	0	90
Roof	Proposed ADU	R-30 Roof Attic	n/a	n/a	740	n/a	n/a

ATTIC							
01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Proposed ADU	Attic RoofProposed ADU	Ventilated	4	0.1	0.85	No	No

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
48 x 48 Window	Window	North Wall	Front	270			1	16	0.3	NFRC	0.23	NFRC	Bug Screen
42 x 18 Window	Window	West Wall	Right	180			1	5.25	0.3	NFRC	0.23	NFRC	Bug Screen
72 x 60 Window	Window	South Wall	Back	90			1	30	0.3	NFRC	0.23	NFRC	Bug Screen
72 x 60 Window 2	Window	South Wall	Back	90			1	30	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 5 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	Proposed ADU	740	112	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS							
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-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	R-8 / None	0.05	Inside Finish: Gypsum Board Sheathing / Insulation: R-8 Sheathing Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco
Attic RoofProposed ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-15	None / None	0.07	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-2.0 insul.
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-30	None / None	0.032	Over Ceiling Joists: R-20.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION			
01	02	03	04
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 6 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

WATER HEATING SYSTEMS						
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

WATER HEATERS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# 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. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous	1	0	0.94-UEF	200000-Btu/Hr	0	n/a	n/a	n/a	n/a

WATER HEATING - HERS VERIFICATION							
01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

SPACE CONDITIONING SYSTEMS										
01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
ADU Mini Split1	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1	n/a	n/a	Setback	New	NA	1	1

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 7 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

HVAC - HEAT PUMPS										
01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Number of Units	Heating			Cooling		Zonally Controlled	Compressor Type	HERS Verification
			HSPF/COP	Cap 47	Cap 17	SEER	EER/CEER			
Heat Pump System 1	VCHP-ductless	1	9	33000	25600	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION								
01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge	Verified HSPF	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Required	Required	Yes	Yes	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION									
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 & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

IAQ (INDOOR AIR QUALITY) FANS					
01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
SFam IAQVentRpt	37	0.25	Default	0	n/a

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: Proposed ADU for Standard Plan **Calculation Date/Time:** 2021-04-01T15:35:09-07:00 **(Page 8 of 8)**

Calculation Description: Title 24 Analysis **Input File Name:** 21-0006-Standard ADU.ribd19x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Martin Blas	Documentation Author Signature: Martin Blas
Company: Yakov Design	Signature Date: 04/01/2021
Address: 5535 Westlawn Ave #376	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Los Angeles, CA 90066	Phone: 5623228070

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Martin Blas	Responsible Designer Signature: Martin Blas
Company: Yakov Design	Date Signed: 04/01/2021
Address: 5535 Westlawn Ave #376	License:
City/State/Zip: Los Angeles, CA 90066	Phone: 5623228070

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

NOTE:
TITLE 24 CALCULATIONS WAS PROVIDED FOR ALL ORIENTATIONS, AND THE WORST-CASE SCENARIO IS PRESENTED.

Yakov Design
Drafting service
(562)322-8070
info@yakovdesign.com

STANDARD PLAN PROGRAM

TITLE 24

NOTES:

SCALE:

DATE: 03.22.2024

T24.1

2019 Low-Rise Residential Mandatory Measures Summary

*NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.* (01/2020)

Building Envelope 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 Tables 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 caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods 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 CF1R.
§ 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 Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 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.*
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing 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. Masonry walls 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.*
§ 150.0(f):	**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).
§ 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 vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**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.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a 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.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 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:	
§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
§ 110.3(c)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

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.
Ducts 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 ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 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 gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	**Single Family Detached Dwelling Units.** Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems 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 Measures:	
§ 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 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:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems.*
§ 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).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Proposed ADU for Standard Plan — Date: 4/1/2021
System Name: ADU Mini Split — Floor Area: 740

ENGINEERING CHECKS	
Number of Systems	1
Heating System	
Output per System	33,000
Total Output (Btuh)	33,000
Output (Btuh/sqft)	44.6
Cooling System	
Output per System	30,600
Total Output (Btuh)	30,600
Total Output (Tons)	2.6
Total Output (Btuh/sqft)	41.4
Total Output (sqft/Ton)	290.2
Air System	
CFM per System	0
Airflow (cfm)	0
Airflow (cfm/sqft)	0.00
Airflow (cfm/Ton)	0.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

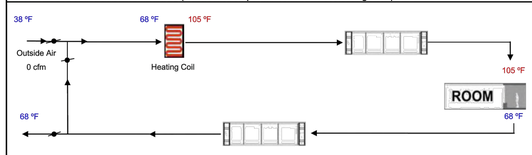
SYSTEM LOAD

	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Total Room Loads	306	6,540	341	182	7,194
Return Vented Lighting		0			
Return Air Ducts		0			0
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		0			0
Supply Air Ducts		0			0
TOTAL SYSTEM LOAD		6,540	341		7,194

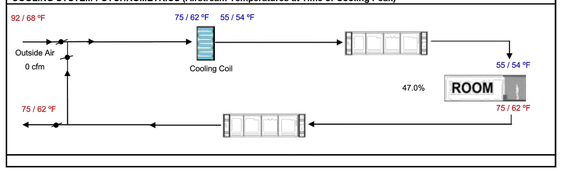
HVAC EQUIPMENT SELECTION

Panasonic KS30NKUA System	1	28,516		27,625
Total Adjusted System Output (Adjusted for Peak Design conditions)	1	28,516		27,625
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



NOTE:
TITLE 24 CALCULATIONS WAS PROVIDED FOR ALL ORIENTATIONS,
AND THE WORST-CASE SCENARIO IS PRESENTED.

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STANDARD PLAN PROGRAM

TITLE 24

NOTES:

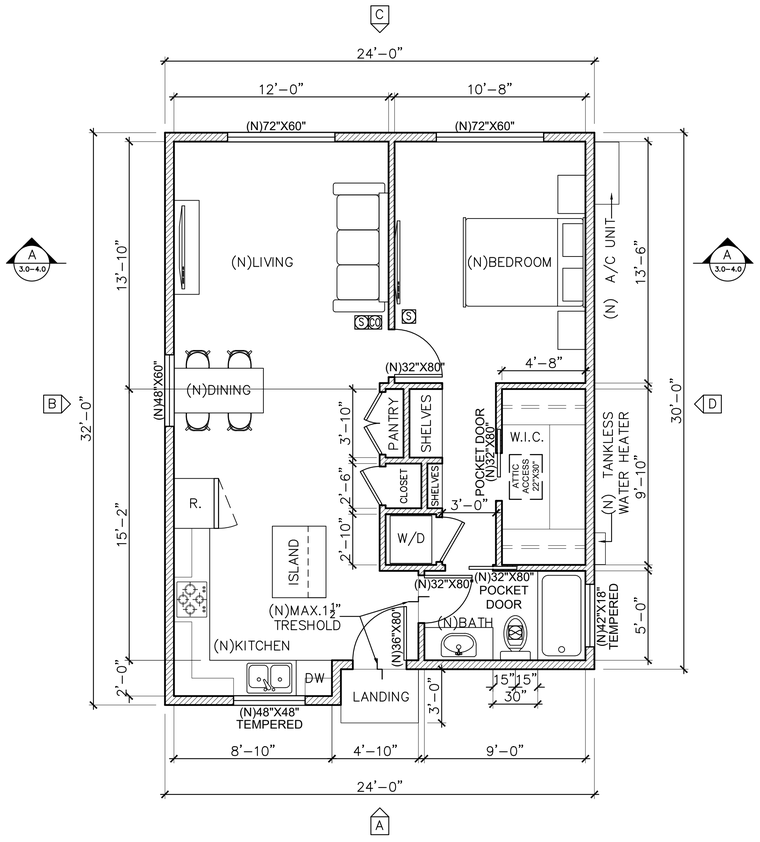
SCALE:

DATE: 03.22.2024

T24.2

FLOOR PLAN NOTES:

1. PROVIDE MIN. 24" CLEAR IN FRONT OF THE WATER CLOSET.
2. PROVIDE MIN. 30" CLEAR WIDTH FOR THE WATER CLOSET
3. HANDRAIL 34"-46" ABOVE THE STAIR NOSING PER APPLICABLE CBC
4. 42" HIGH GUARDRAIL, PER APPLICABLE CBC
5. DRYER. VENT HORIZONTAL TO OUTSIDE W/ BACKDRAFT DAMPER.
6. ROOF ABOVE
7. BASEMENT BELOW
8. 5/8" TYPE "X" GYP. BD. IN THE GARAGE AND UNDER STAIRS AT ENCLOSED USABLE SPACE W/ 6d COOLER NAILS @7" O.C.
9. ULTRA-LOW CONSUMPTION WATER CLOSET (1.28 GAL/FLUSH).
10. PROVIDE COPPER WATER LINE FOR ICE MAKER.
11. PROVIDE WATER AND WASTE FOR WASHER (RECESSED BOX AT INTERIOR LOCATIONS)
12. ELECTRICAL SERVICE PANEL.
13. SHOWER DRAIN IN FLOOR BELOW WASHER, CONN. TO 1 1/2" - DIA ABS PIPE W/ 1/4" PER FOOT SLOPED TO EXT.
14. 30" WIDE COOK TOP. BUILT-IN HOOD WITH LIGHT AND VENT TO OUTSIDE AIR.
15. A. STAIRS SHALL HAVE MIN. 7.75" RISE & MIN. 10" RUN
    B. MIN. 6'-8" HEADROOM CLEARANCE.
    C. MIN. 30" CLEAR WIDTH
    D. HANDRAILS 34" TO 38" HIGH ABOVE TREAD NOSING .
    E. HANDGRIPS PORTION OF HANDRAIL SHALL NOT BE LESS THAN 1.25" AND NO MORE THAN 2" CROSS-SECTIONAL DIMENSION HAVING A SMOOTH SURFACE WITH NO SHARP CORNERS.
    F. MAX. 4" CLEAR SPADING OPENING BETWEEN RAILS.
16. GLAZING IN HAZARDOUS LOCATIONS SHALL BE TEMPERED. (2406.4)
    a. PANELS IN SLIDING OR SWINGING DOORS.
    b. DOORS AND ENCLOSURE FOR HOT TUB, BATHTUB, SHOWERS (ALSO GLAZING IN WALL ENCLOSING THESE COMPARTMENTS WITHIN 5 FT. OF STANDING SURFACE.
    c. GLAZING IN FIXED OR OPERABLE PANELS TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24 INCH ARC OF VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE.
17. PROVIDE SLIDING FLY SCREEN AT OPENABLE PORTIONS OF SLIDING DOORS. PROVIDE STATIONARY FLY SCREENS AT OPENABLE PORTIONS OF WINDOWS.
18. EACH WATER CLOSET STOOL SHOULD BE LOCATED IN A CLEAR SPACE NOTE LESS THAN 30" IN WIDTH AND HAVE A MINIMUM CLEAR SPACE IN FRONT OF NOT LESS THAN 24" MAXIMUM 1.6 GALLONS/FLUSH FOR ALL TEH WATER CLOSETS.
19. PROVIDE ONLY VENTLESS ON-DEMAND WATER HEATERS.
20. FIRE BLOCKING MUST BE PROVIDED IN ACCORDANCE WITH SECTION 717 IN THE FOLLOWING LOCATIONS:
    a. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS..
    b. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT 10 FOOT INTERVALS ALONG THE LENGTH OF THE WALL
    c. AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVERED CEILINGS.
    d. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF STAIRS IF THE WALL UNDER THE STAIRS IS UNFINISHED.
    e. IN OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS WHICH AFFORD A PASSAGE FOR FIRE AT CEILING AND FLOOR LEVELS, WITH NONCOMBUSTIBLE MATERIALS. SUCH CLEARANCE SHALL BE MEASURED VERTICALLY FROM A PLANE PARALLEL AND TANGENT TO THE STAIRWAY TREAD NOSING TO THE SOFFIT ABOVE ALL POINTS.
22. PROVIDE 6" INCH CLEARANCES ON THE SIDES, BACK, FRONT AND CEILING OF THE FURNACE.
23. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL-BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC,) OR TO THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES-WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND /OR ADDITIONAL EXPENSES.
24. AN APPROVED SEISMIC GAS SHUTOFF VALVE WILL BE INSTALLED ON THE FUEL GAS LINE ON THE DOWN STREAM SIDE OF THE UTILITY METER AND BE RIGIDLY CONNECTED TO THE EXTERIOR OF THE BUILDING OR STRUCTURE CONTAINING THE FUEL GAS PIPING . PER ORDINANCE 170,158 INCLUDES COMMERCIAL ADDITIONS AND TI WORK OVER $10,000. SEPARATE PLUMBING PERMIT IS REQUIRED.
25. PROVIDE ULTRA-LOW FLUSH WATER CLOSETS FOR ALL NEW CONSTRUCTIONS. EXISTING SHOWER HEADS AND TOILETS MUST BE ADAPTED FOR LOW WATER CONSUMPTION.
26. PROVIDE 70" HIGH NON-ABSORBENT WALL ADJACENT TO SHOWER AND APPROVED SHATTER-RESISTANT MATERIALS FOR SHOWER ENCLOSURE.
27. WATER HEATER MUST BE STRAPPED TO WALL.
28. UNDER FLOOR VENTILATION OPENINGS IN THE UNDER FLOOR AREA SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    A. THE TOP OF THE OPENING SHALL BE LOCATED NOT MORE THAN 12 INCHES BELOW THE BOTTOM OF THE FLOOR JOIST.
    B. THE OPENINGS SHALL BE DISTRIBUTED APPROXIMATELY EQUALLY AND LOCATED TO PROVIDE CROSS VENTILATION, FOR EXAMPLE, BE LOCATING THE OPENING ALONG THE LENGTH OF AT LEAST TWO OPPOSITE SIDES OF THE BUILDING.
    C. THE OPENINGS SHALL BE THE LARGER OF: 1.5 SQUARE FEET FOR EACH 25 LINEAR FEET OR FRACTION OF EXTERIOR WALL, OR OPENINGS SHALL BE EQUAL TO 1% OF UNDER FLOOR AREA.
    D. THE OPENINGS MAY BE COVERED WITH CORROSION RESISTANT WIRE MESH WITH MESH
29. OPENINGS OF GREATER THAN 1.4 INCH AND LESS THAN 1.2 INCH IN DIMENSION. BUILDINGS WITH NATURAL VENTILATION ARE EXEMPTED FROM THE CONSTRUCTION REQUIREMENTS OF TABLE 71 PROVIDED THEY COMPLY WITH THE FOLLOWING:
    A. THE UNOBSTRUCTED OPENINGS SHALL EXCHANGE OUTSIDE AIR.
    B. THE SIZE OF THE UNOBSTRUCTED OPENINGS SHALL BE THE LARGER OF: 25% OF THE TOTAL PERIMETER WALL AREA OF THE LOWEST LEVEL OF THE BUILDING, OR AT LEAST 25% OF THE FLOOR AREA OF THE LOWEST OF THE BUILDING.
    C. THE UNOBSTRUCTED OPENINGS SHALL BE EVENLY DISTRIBUTED AND LOCATED WITHIN THE UPPER PORTION OF AT LEAST TWO OPPOSITE EXTERIOR WALLS OF THE LOWEST LEVEL OF THE BUILDING.
    D. THEY ARE PROVIDED WITH TRENCH DAMS AND CABLE OR CONDUIT SEALS.
30. PLUMBING FIXTURES ARE REQUIRED TO BE CONNECTED TO A SANITARY SEWER OR TO AN APPROVED SEWAGE DISPOSAL SYSTEM.
31. KITCHEN SINKS, LAVATORIES, BATHTUBS, SHOWERS, BIDETS, LAUNDRY TUBS,AND WASHING MACHINE OUTLETS SHALL BE PROVIDED WITH HOT AND COLD WATER AND CONNECTED TO AN APPROVED WATER SUPPLY.
32. A DOMESTIC CLOTHES DRYER DUCT SHALL BE OF METAL AND A MINIMUM OF 4" IN DIAMETER. THE EXHAUST DUCT SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14', INCLUDING TWO 90 DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. (504.3.2.2 & 504.3.2.2 CMC)



PROPOSED ADU FLOOR PLAN (N)

LEGEND:

- NEW WALL
- 1-HR WALL (REQUIRED IF FIRE SEPARATION DISTANCE IS LESS THAN 5')
- (S) 120v HARD-WIRED SMOKE DETECTOR WITH BATTERY BACK UP
- EXHAUST FAN 50 CFM VENTED TO OUTSIDE ENERGY STAR COMPLIANT W/HUMIDISTAT
- (CO) CARBON MONOXIDE SENSOR

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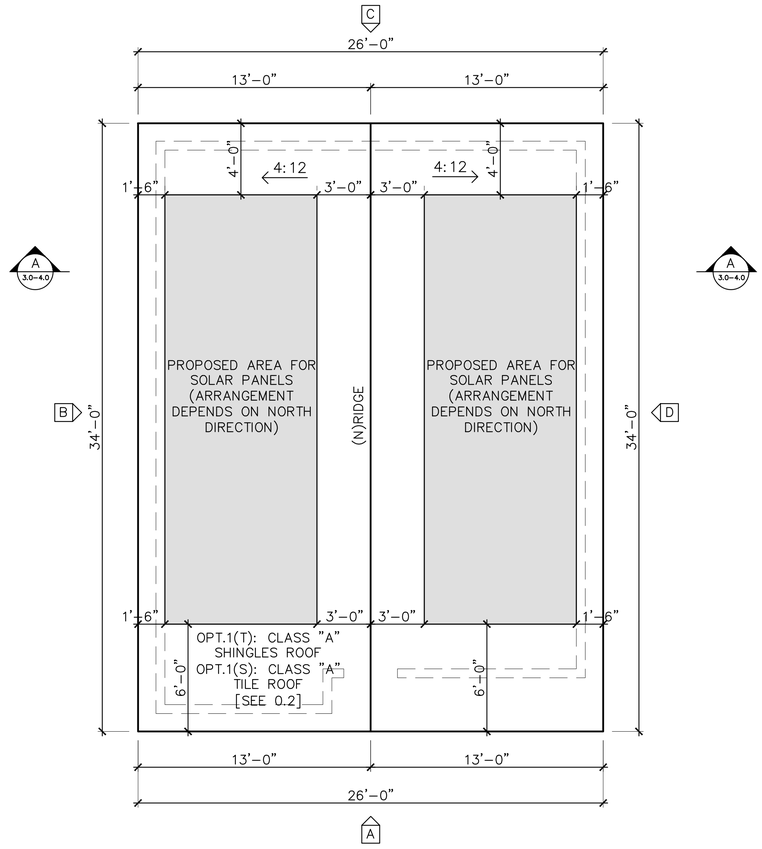
PROPOSED ADU FLOOR PLAN

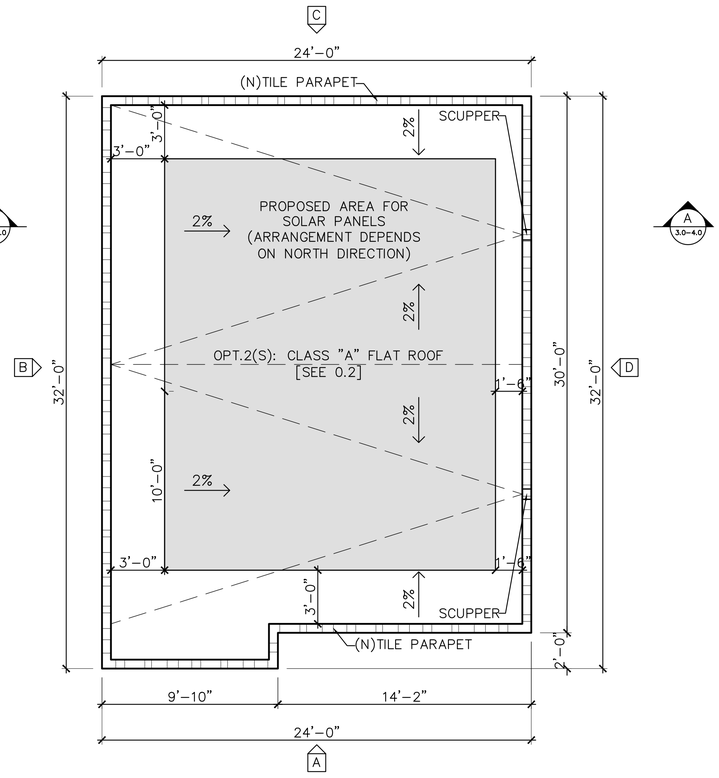
SCALE: 1/4"=1'-0"

DATE: 04.22.2024

1.0



PROPOSED ADU ROOF PLAN (OPTION 1) N



PROPOSED ADU ROOF PLAN (OPTION 2) N

ATTIC VENTILATION:

AREA OF THE ROOF TO BE VENTILATED: 740 S.F.
VENTILATION REQUIRED: 740 / 150 = 4.93 S.F.
VENTILATION PROVIDED:
PROVIDE 1 TRIANGLE VENT (1.56 S.F.)
PROVIDE 1 TRIANGLE VENT (3.52 S.F.)
1.56 S.F. + 3.52 S.F. = 5.08 S.F.

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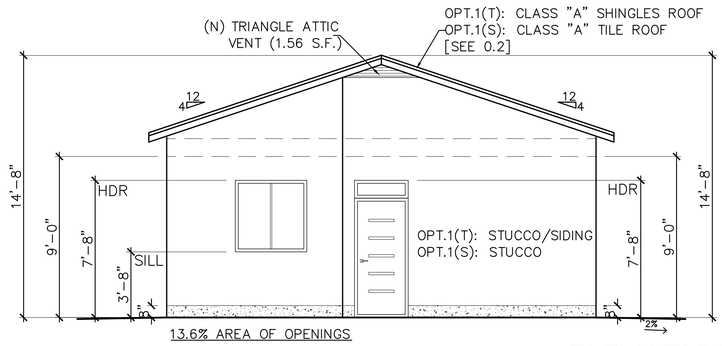
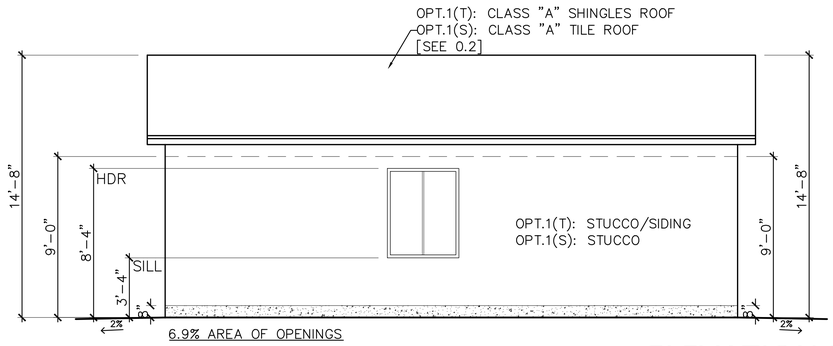
PROPOSED ADU ROOF PLANS

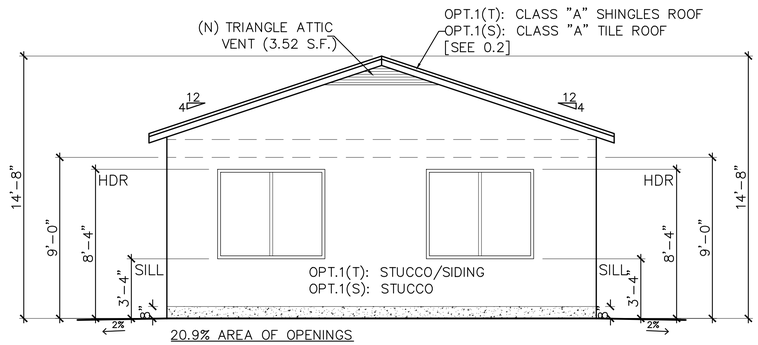
SCALE: 1/4"=1'-0"
DATE: 04.22.2024



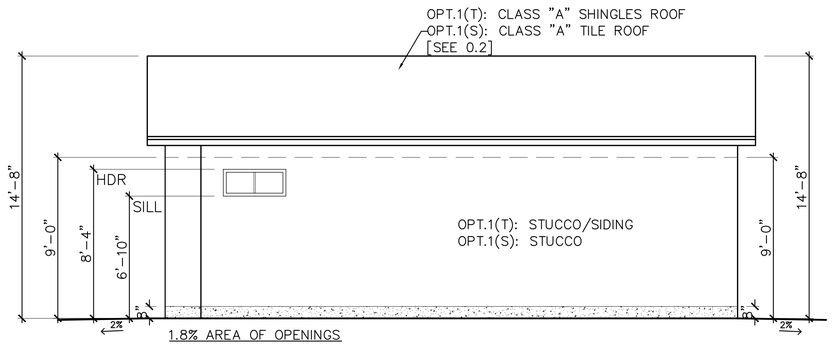
ELEVATION A (OPTION 1)



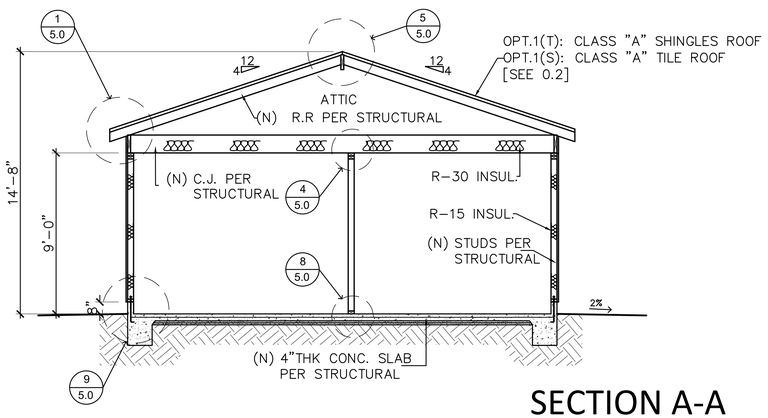
ELEVATION B (OPTION 1)



ELEVATION C (OPTION 1)



ELEVATION D (OPTION 1)



SECTION A-A (OPTION 1)

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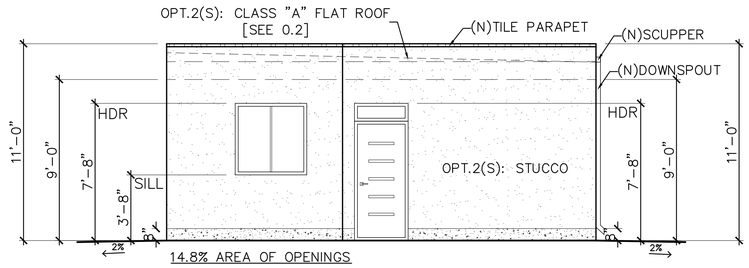
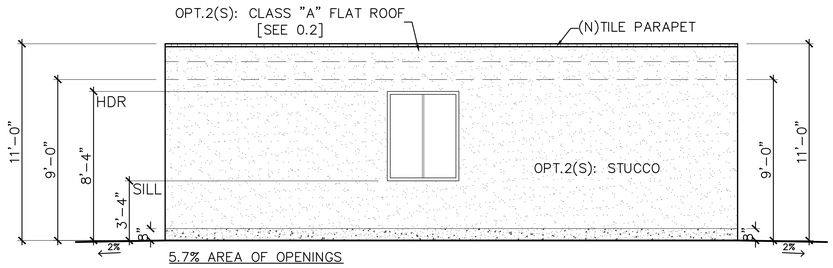
PROPOSED ADU
ELEVATIONS, SECTION A-A
(OPTION 1)

SCALE: 1/4"=1'-0"
DATE: 04.22.2024



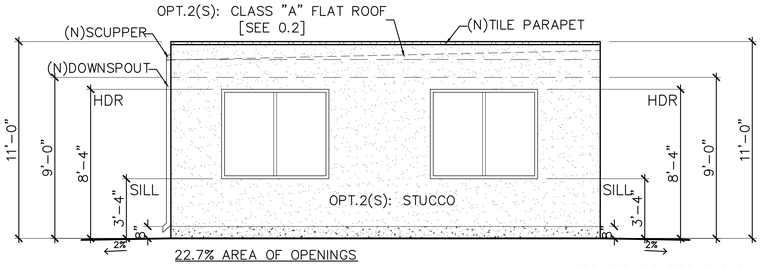
14.8% AREA OF OPENINGS

ELEVATION A (OPTION 2)



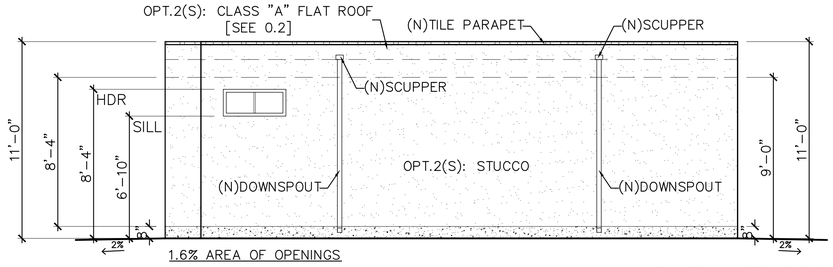
5.7% AREA OF OPENINGS

ELEVATION B (OPTION 2)



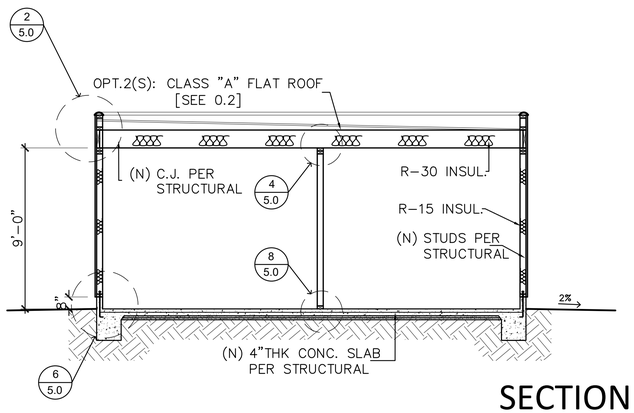
22.7% AREA OF OPENINGS

ELEVATION C (OPTION 2)



1.6% AREA OF OPENINGS

ELEVATION D (OPTION 2)



SECTION A-A (OPTION 2)

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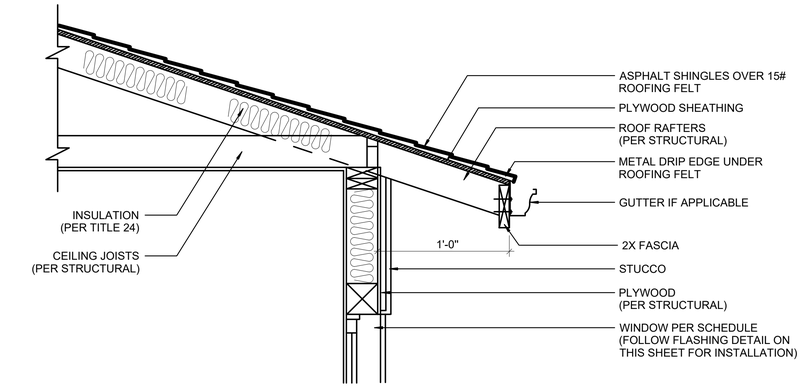
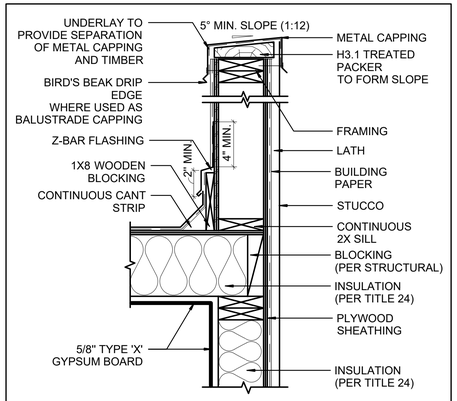
PROPOSED ADU
ELEVATIONS, SECTION A-A
(OPTION 2)

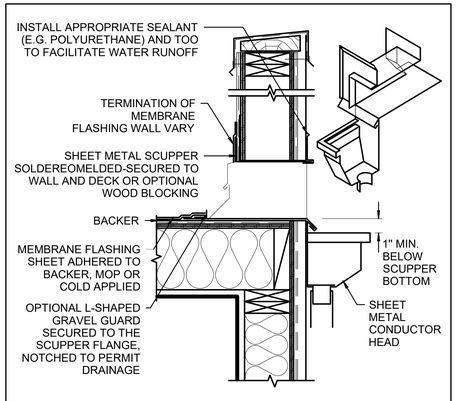
SCALE: 1/4"=1'-0"
DATE: 04.22.2024



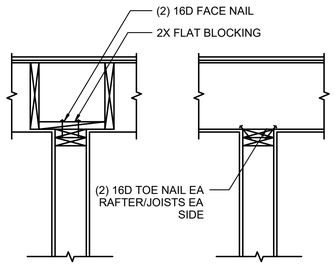
1 EAVE DETAIL



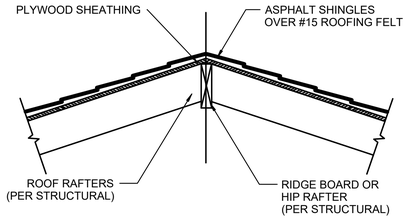
2 PARAPET DETAIL



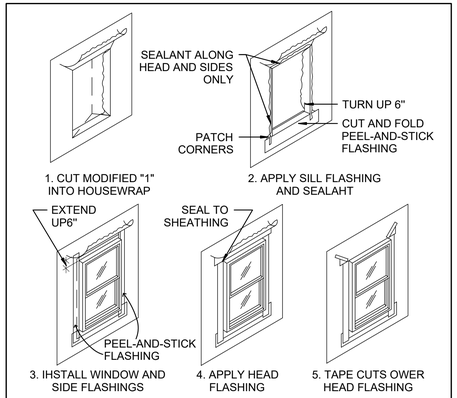
3 SCUPPER DETAIL



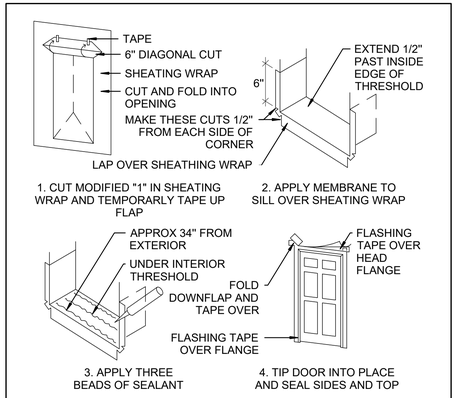
4 INTERIOR PARTITIONS DETAIL (UPPER)



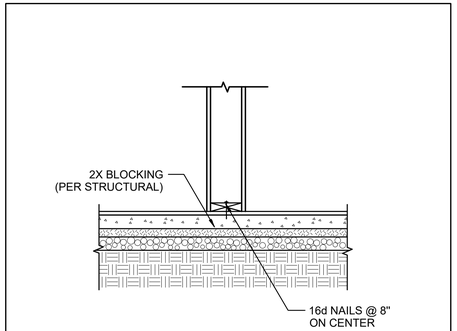
5 RIDGE AND HIP FLASHING



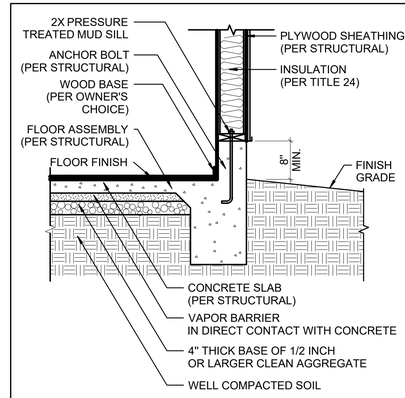
6 WINDOW FLASHING



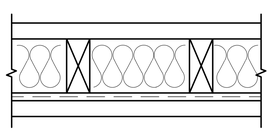
7 DOOR FLASHING



8 INTERIOR PARTITIONS DETAIL (LOWER)



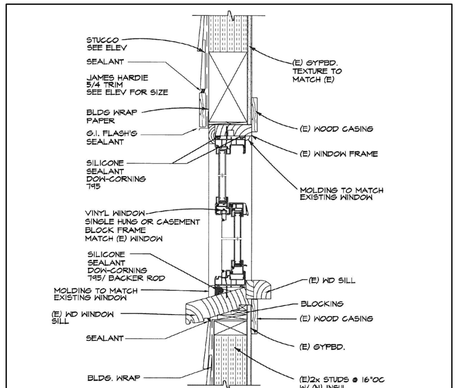
9 EXTERIOR WALL AT FIRST FLOOR



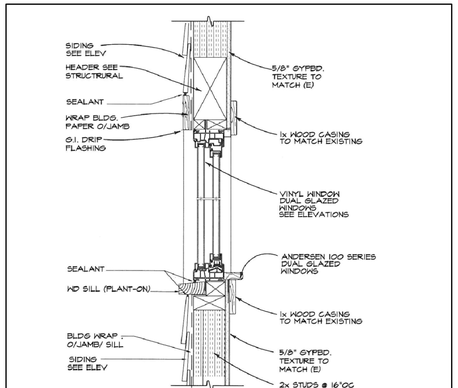
RESILIENT CHANNELS 24" O. C. ATTACHED AT RIGHT ANGLES TO ONE SIDE OF 2X4 WOOD STUDS 24" O. C. WITH 11/4" TYPE S DRYWALL SCREWS. ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLWS TO CHANNELS WITH 1" TYPE S DRYWALL SCREWS 8" O.C. WITHH VERTICAL JOINTS LOCATED MIDWAY BETWEEN STUDS. 3" MINERAL OR GLASS FIBER INSULATION IN STUD SPACE.
OPPOSITE SIDE:
ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 6D CEMENT COATED NAILS, 17/8" LONG, 0.0915" SHANK, 15/64" HEADS, 7" O. C. VERTICAL JOINTS STAGGERED 24" ON OPPOSITE SIDES. (LOAD-BEARING)

GA FILE NO. WP 3243 50-54 STC SOUND

10 1-HR RATED FIRE WALL DETAIL



11 RECESSED WINDOW DETAIL



12 RECESSED WINDOW DETAIL

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DETAILS

SCALE:

DATE: 04.22.2024

5.0

ALL TRADES

A. THE FOLLOWING ABBREVIATIONS OR ACRONYMS MAY BE USED IN THESE DRAWINGS:

PROJECT	=	NEW ADU
ARCHITECT	=	YAKOV DESIGN
SAA	=	SAA STRUCTURAL ENGINEERING PRIMARY CONTACT: NICK SIVUSHENKA, P.E.
GEOTECHNICAL ENGINEER	=	N/A
BUILDING DEPARTMENT	=	THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY
IBC	=	THE INTERNATIONAL BUILDING CODE, 2018 EDITION; SECONDARY BUILDING CODE FOR PROJECT.
CBC	=	THE CALIFORNIA BUILDING CODE, 2019 EDITION (CONSISTING OF THE 2018 IBC AS ADOPTED BY THE STATE OF CALIFORNIA); SECONDARY BUILDING CODE FOR PROJECT
ICC	=	THE INTERNATIONAL CODE CONFERENCE; AUTHOR OF IBC, SOURCE AUTHORITY FOR GENERAL CODE REQUIREMENTS.
ACI	=	THE AMERICAN CONCRETE INSTITUTE; SOURCE AUTHORITY FOR STRUCTURAL CONCRE WORK.
AISC	=	THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION; SOURCE AUTHORITY FOR STRUCTURAL STEEL WORK.
AISI	=	THE AMERICAN IRON AND STEEL INSTITUTE; SOURCE AUTHORITY FOR LIGHT GAGE STEEL FRAMING.
AWS	=	THE AMERICAN WELDING SOCIETY; SOURCE AUTHORITY FOR WELDING.
ASTM	=	THE AMERICAN SOCIETY FOR TESTING OF MATERIALS; SOURCE AUTHORITY FOR MATERIAL QUALITY AND TESTING STANDARDS.
CRSI	=	THE CONCRETE REINFORCING STEEL INSTITUTE; SOURCE AUTHORITY FOR REINFORCING STEEL FABRICATION AND INSTALLATION STANDARDS.

ABV	=	ABOVE
A.B.	=	ANCHOR BOLTS(S)
APX	=	APPROXIMATE OR APPROXIMATELY
ARCH	=	ARCHITECTURAL
BTWN	=	BETWEEN
REQD	=	REQUIRED
BLW	=	BELOW
BOT	=	BOTTOM
COL	=	COLUMN
CONT	=	CONTINUOUS
(E)	=	EXISTING (CONTRACTOR TO FIELD VERIFY)
EA	=	EACH
EL	=	ELEVATION
EMBD	=	EMBEDMENT
EQ	=	EQUAL
FIN	=	FINISH (SEE ARCHITECTURAL DETAILS)
FOF	=	FACE OF FINISH
FP	=	FULL PENETRATION (WELD)
F.S.	=	FAR SIDE
GA	=	GAGE (SHEET METAL OR WIRE AS APPLICABLE)
HORZ	=	HORIZONTAL
LLH	=	LONG LEG HORIZONTAL (ORIENTATION OF UNEQUAL LEG ANGLE)
LLV	=	LONG LEG VERTICAL (ORIENTATION OF UNEQUAL LEG ANGLE)
LSH	=	LONG SIDE HORIZONTAL (ORIENTATION OF RECTANGULAR TUBE)
LSV	=	LONG SIDE VERTICAL (ORIENTATION OF RECTANGULAR TUBE)
MAX	=	MAXIMUM
M.B.	=	MACHINE BOLTS OR BOLTS (INDICATED ASTM A307 FASTENERS)
MIN	=	MINIMUM
(N)	=	NEW
NIC	=	NOT IN CONTRACT (WORK EXCLUDED FROM SCOPE)
NOM	=	NOMINAL
NTS	=	NOT TO SCALE
O.C.	=	ON CENTER
OP	=	OPPOSITE
PC	=	PIECE
PP	=	PARTIAL PENETRATION (WELD)
PSF	=	POUNDS PER SQUARE FOOT
RQD	=	REQUIRED
SIM	=	SIMILAR
SMS	=	SHEET METAL SCREW (SELD TAPPING UNO)
SYM	=	SYMMETRICAL OR STMMETRY
STD	=	STANDARD
TOC	=	TOP OF CONCRETE
TOF	=	TOP OF FINISH
TOS	=	TOP OF STEEL (NOT TOP OF SLAB)
TYP	=	TYPICAL
UNO	=	UNLESS NOTED OTHERWISE
VERT	=	VERTICAL

B. LADBS NOTES:

1. CONTRACTORS RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTION SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER SEC 1704.4.
2. CONTINUOUS SPECIAL INSPECTION BY A REGISTERED DEPUTY INSPECTOR IS REQUIRED FOR FIELD WELDING, POST-INSTALLED ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED TO RESIST SUSTAINED TENSION LOADS, SHOTCRETE PLACEMENT, CONCRETE STRENGTH F=C > 2500 PSI, SPRAYED-ON FIREPROOFING, ENGINEERED MASONRY, HIGH-LIFT GROUTING, HIGH LOAD DIAPHRAGMS, SPECIAL MOMENT-RESISTING CONCRETE FRAMES, AND HELICAL PILE FOUNDATIONS.
3. FOUNDATION SILLS SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD.
4. SHOP WELDS MUST BE PERFORMED IN A LADBS LICENSED FABRICATOR SHOP
5. LADBS LICENSED FABRICATOR IS REQUIRED FOR STRUCTURAL STEEL
6. PROVIDE LEAD HOLE 40% - 70% OF THREADED SHANK DIAMETER AND FULL DIAMETER FOR SMOOTH SHANK PORTION.
7. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING TO COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM. SPECIAL INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS.
8. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING TO COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM. SPECIAL INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS.

C. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS ON THE SITE.

1. THE CONTRACTOR SHALL MAKE A SURVEY FOR GENERAL CONSISTENCY OF FIELD CONDITIONS WITH INFORMATION SHOWN IN THE CONTRACT DOCUMENTS BEFORE STARTING WORK. THIS SURVEY SHALL INCLUDE VERIFICATION OF DIMENSIONS AND ELEVATIONS.
2. SHOULD THE CONTRACTOR BECOME AWARE OF A DISCREPANCY OR INCONSISTENCY BETWEEN FIELD CONDITIONS AND INFORMATION SHOWN IN THE CONTRACT DOCUMENTS AT ANY TIME, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ARCHITECT. IF THE DISCREPANCY OR INCONSISTENCY INVOLVES OR EFFECTS WORK SHOWN IN THE STRUCTURAL DRAWINGS, SAA SHALL ALSO BE NOTIFIED, AND THE CONTRACTOR SHALL OBTAIN DIRECTION FROM SAA BEFORE PROCEEDING WITH AFFECTED WORK.
3. THE CONTRACTOR SHALL CONFIRM AND LIMIT LOADS IMPOSED ON THE STRUCTURE BY NEW MECHANICAL EQUIPMENT OR OTHER NEW NONSTRUCTURAL ITEMS, INCLUDING FRAMES, CURBS OR OTHER SUPPORTS AS OCCUR. WEIGHTS AND OTHER LOADS SHALL BE COMPARED TO AND SHALL NOT EXCEED THOSE SHOWN IN THESE STRUCTURAL DRAWINGS. WHERE WEIGHTS OR LOADS ARE NOT SHOWN, THE CONTRACTOR SHALL DETERMINE AND SUBMIT THEM TO SAA, WHICH SHALL VERIFY COMPATIBILITY WITH STRUCTURAL DESIGN BEFORE INSTALLATION.
4. NO SUBSTITUTION, CHANGE OR OTHER DEVIATION FROM THE REQUIREMENTS OF ANY CONTRACT DOCUMENT SHALL BE MADE WITHOUT THE APPROVAL OF OWNER.
   a. UNAUTHORIZED SUBSTITUTION, CHANGE OR DEVIATION SHALL BE SUFFICIENT CAUSE FOR REJECTION OF THE WORK AND/OR OF PAYMENT REQUESTS.
   b. NO DEVIATION FROM INFORMATION SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM SAA.
5. SHOP DRAWINGS AND OTHER SUBMITTALS PREPARED BY SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION.
   a. ACCEPTANCE OF A SHOP DRAWING SHALL NOT CONSTITUE APPROVAL OF ANY DEVIATION FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS.
   b. REQUESTS FOR APPOROVAL OF PROPOSED ALTERNATE DETAILS, MATERIAL SUBSTITUTIONS OR OTHER DEVIATIONS SHALL BE DIRECTED TO SAA INDEPENDENTLY FROM AND IN ADVANCE OF SUBMISSION OF AFFECTED SHOP DRAWINGS OR START OF AFFECTED PARTS OF THE WORK.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY ON THE PROJECT SITE.

1. SHOULD THE CONTRACTOR BECOME AWARE OF ANY CONDITION WHICH IN HIS OPINION MIGHT CAUSE DISTRESS OF ANY PART OF THE CONSTRUCTION OR ENDANGER STABILITY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER, ARCHITECT AND SAA AND TAKE ACTION NECESSARY TO PROTECT LIFE AND PROPERTY PENDING DIRECTION FROM OWNER.
2. MEANS AND METHODS OF CONSTRUCTION SHALL BE SELECTED BY THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR BRACING OR SHORING AS REQUIRED TO ASSURE SAFETY AND STABILITY DURING CONSTRUCTION AND TO SATISFY BUILDING DEPARTMENT REQUIREMENTS.

E. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PLAN THE WORK SO AS TO MINIMIZE ITS IMPACT ON THE OPERATIONS OF THE BUILDING'S OCCUPANTS, WHO MAY INTEND TO ATTEMPT TO REMAIN IN OPERATION TO THE GREATEST EXTENT POSSIBLE DURING THE PROJECT.

1. NO PROCEDURE WHICH CAUSES DAMAGE TO THE BUILDING OR ITS CONTENTS OR WHICH AFFECTS OCCUPANT OPERATIONS SHALL BE USED UNLESS NO REASONABLE ALTERNATIVE THAT WOULD REDUCE THE IMPACT IS POSSIBLE.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE OWNER OR LANDLORD OF ANY PROCEDURE WHICH MIGHT IMPACT THEIR OPERATIONS WITH AS MUCH ADVANCE NOTICE AS POSSIBLE AND TO MAKE ALL TREASONABLE EFFORTS TO COORDINATE OPERATIONS WITH THE OCCUPANTS SO AS TO MINIMIZE THE DISTURBANCE.

F. THE DESIGN REPRESENTED IN THESE DESIGN DRAWINGS IS BASED ON THE FOLLOWING DESIGN PARAMETERS:

1. GRAVITY LOADS:
   ROOF DEAD LOAD = 7 PSF
   ROOF LIVE LOAD = 20 PSF
   CEILING DEAD LOAD = 6 PSF
   CEILING LIVE LOAD = 10 PSF
2. WIND DESIGN DATA:
   EXPOSURE
   BASIC WIND SPEED = 95 MPH
   RISK CATEGORY = II
3. EARTHQUAKE DESIGN DATA:
   SEISMIC DESIGN CATEGORY = E (WORST CASE ASSUMED)
   OCCUPANCY CATEGORY = II
   IMPORTANCE FACTOR I = 1.0
   EQUIVALENT LATERAL FORCE PROCEDURE:
   LIGHT-FRAME (WOOD) SHEAR WALLS : R = 6.5; Cs = 0.400
   REDUNDANCY FACTOR = 1.3
   (WORST CASE ASSUMED)
4. FOUNDATIONS:
   FOUNDATIONS HAVE BEEN PROPORTIONED BASED ON THE FOLLOWING ALLOWABLE BEARING PRESSURES PER CBC:
   CONTINUOUS FOOTINGS 1500 PSF

PROJECT SCOPE

THE PROPOSED PROJECT INVOLVES THE CONSTRUCTION OF NEW ADU

STRUCTURAL OBSERVATION

THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED.

THE STRUCTURAL OBSERVER SHALL PREPARE A REPORT OF THE STRUCTURAL OBSERVATION REPORT FORM FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED. THE ORIGINAL OF THE STRUCTURAL OBSERVATION REPORT SHALL BE SENT TO THE BUILDING INSPECTOR'S OFFICE AND SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER. ONE COPY OF THE OBSERVATION REPORT SHALL BE ATTACHED TO THE APPROVED PLANS. THE COPY ATTACHED TO THE PLANS SHALL BE SIGNED AND SEALED BY THE RESPONSIBLE STRUCTURAL OBSERVER OR THE DESIGNEE. COPIES OF THE REPORT SHALL ALSO BE GIVEN TO THE OWNER, CONTRACTOR, AND DEPUTY INSPECTOR. ANY DEFICIENCY NOTED ON THE OBSERVATION REPORT WILL BECOME THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD TO VERIFY ITS COMPLETION BY HIM (HER), OR BY A REGISTERED DEPUTY INSPECTOR AT THE DISCRETION OF THE STRUCTURAL OBSERVER.

A FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR MUST BE SUBMITTED WHICH SHOWS THAT ALL OBSERVED DEFICIENCIES WERE RESOLVED AND STRUCTURAL SYSTEM GENERALLY CONFORMS TO THE APPROVED PLANS AND SPECIFICATIONS. THE DEPARTMENT OF BUILDING AND SAFETY WILL NOT ACCEPT THE STRUCTURAL WORK WITHOUT THIS FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR (WHEN PROVIDED) AND THE CORRECTION OF SPECIFIC DEFICIENCIES NOTED DURING NORMAL BUILDING INSPECTION.

STRUCTURAL OBSERVATION/ SIGNIFICANT CONSTRUCTION STAGES
(Only Checked items are required)

Architect or Engineer of Record for the project to be responsible for the "Structural Observation":
Name: Nick Slvushenka ☐ Licensed Architect ☒ Registered Engineer
Phone: (323) 448-4682 California Registration Number: C-87698

Construction Stage	Construction Type	Elements/Connections to be observed
Foundation	☒ Footing, Stem Walls, Piers ☐ Mat Foundation ☐ Caisson, Pile, Grade beams ☐ Stepping/Retaining Foundation, Hillside Special Anchors ☒ Others: slab on grade	Excavations, rebar placement, and anchor bolt templates prior to pouring concrete
Wall	☐ Concrete ☐ Masonry ☒ Wood ☐ Others:	Shear wall framing, sheathing, nailing and hardware (including holdowns)
Frame	☐ Steel Moment Frame ☐ Steel Braced Frame ☐ Concrete Moment Frame ☐ Masonry Moment Frame ☐ Others:	
Diaphragm	☐ Concrete ☐ Steel Deck ☒ Wood ☐ Others:	Roof framing, sheathing, nailing, and hardware
Others		

DECLARATION BY OWNER OR OWNER'S REPRESENTATIVE
I, ☐ the owner of the project ☐ the owner's representative, declare that the above listed firm or individual is hired by me to be the Structural Observer.

Signature **Date**

LA DBS DEPARTMENT OF BUILDING AND SAFETY

Los Angeles Regional Uniform Code Program
Committee I-3: Structural Observation

STRUCTURAL OBSERVATION PROGRAM
AND DESIGNATION OF THE
STRUCTURAL OBSERVER

PROJECT ADDRESS: _____ PERMIT APPL. NO.: _____
Description of Work: New ADU
Owner: _____ Architect: Yakov Design Engineer: SAA Structural

STRUCTURAL OBSERVATION
(only checked items are required)

Firm or Individual to be responsible for the Structural Observation:
Name: SAA Structural Engineering Phone: (323) 448-4682 Calif. Registration: C-87698

FOUNDATION	WALL	FRAME	DIAPHRAGM
☒ Footing, Stem Walls, Piers	☐ Concrete	☐ Steel Moment Frame	☐ Concrete
☐ Mat Foundation	☐ Masonry	☐ Steel Braced Frame	☐ Steel Deck
☐ Caisson, Piles, Grade Beams	☒ Wood	☐ Concrete Moment Frame	☒ Wood
☐ Step'g/Retain'g Foundation, Hillside Special Anchors	☐ Others:	☐ Others:	☐ Others:
☒ Others: slab on grade			

DECLARATION BY OWNER
I, the Owner of the project, declare that the above listed firm or individual is hired **by me** to be the Structural Observer.

Signature Date

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (required if the Structural Observer is different from the Architect or Engineer of Record)
I, the Architect or Engineer of record for the project, declare that the above listed firm or individual is designated by me to be responsible for the Structural Observation.

Signature License No. Date

INForm.08 (Part 2) (Rev. 06/19/17)

SPECIAL INSPECTIONS

THE OWNER SHALL RETAIN A DEPUTY INSPECTOR LICENSED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING & SAFETY IN ACCORDANCE WITH CHAPTER 17 OF CBC. THE FOLLOWING AREAS OF WORK REQUIRE INSPECTIONS BY A DEPUTY INSPECTOR TO VERIFY COMPLIANCE WITH CBC:

TRADE	INSPECTION DUTIES	INSPECTION DURATION
REBAR PLACEMENT	MATERIAL SPEC, REBAR SIZE AND CONFIGURATION	INTERMITTENT
INSTALLATION OF HOLDOWN ANCHOR BOLTS PRIOR TO CONCRETE PLACEMENT	VERIFY MATERIAL, SIZE, LOCATION AND INSTALLATION FOR COMPLIANCE WITH DESIGN DRAWINGS	PERIODIC
ADHESIVE ANCHORS	INSPECTION OF MATERIALS ND INSTALLATION IN ACCORDANCE WITH ICC APPROVAL	CONTINUOUS

ICC/LARR

THE FOLLOWING ARE A LIST OF COMPONENTS USED WITHIN THE PROJECT WITH INTERNATIONAL CODE COUNCIL REPORT NUMBERS AND CITY OF LOS ANGELES RESEARCH REPORT NUMBERS FOR THE CONTRACTOR TO OBTAIN AND FOLLOW PROVISIONS OF. ITEMS WITHOUT AN LARR# REQUIRE ONE TIME APPROVAL FROM CITY OF LOS ANGELES.

COMPONENT	ICC-ESR / IAPMO #	LARR # (LABC YR)
SIMPSON SDS WOOD SCREWS	ICC-ESR # 2236	LARR # 25711 (2011)
SIMPSON A35	ICC-ESR # 2606	LARR # 25814 (2014)
SIMPSON STRAPS	ICC-ESR # 2105	LARR # 25713 (2014)
SIMPSON HOLDOWNS	ICC-ESR # 2330	LARR # 25720 (2011)

Yakov Design
Drafting service
(562)322-80-70
info@yakovdesign.com

NEW ADU

GENERAL NOTES

SAA ENGINEERING
STRUCTURAL
PHONE: 323-448-4682
LICENSED PROFESSIONAL ENGINEER
NIKITA SIVUSHENKA
C 87698
CIVIL
STATE OF CALIFORNIA

SCALE: AS NOTED
DATE: 05/03/2024

S-0.1

STRUCTURAL LUMBER

A. IN ADDITION TO CODE, THE FOLLOWING SPECIFICATIONS AND STANDARDS APPLY TO STRUCTURAL LUMBER AND RELATED CARPENTRY WORK FOR PROJECT:

B.

1. NFPA NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
2. WCLIB GRADING RULES NO. 16 OR APPLICABLE WWPA GRADING RULES.

B. MATERIAL QUALITY SHALL BE CONSISTENT WITH DESIGN ASSUMPTIONS.

1. STRUCTURAL LUMBER SHALL BE DOUGLAS FIR-LARCH (UNO).
2. MEMBER SIZES SPECIFIED ARE NOMINAL. STRUCTURAL LUMBER SHALL BE FINISHED S4S (UNO).
3. STRUCTURAL LUMBER SHALL BE GRADE MARKED IN ACCORDANCE WITH REFERENCED GRADING STANDARDS (UNO).
4. MINIMUM GRADES SHALL BE AS REQUIRED BY APPLICABLE STANDARDS BUT AT LEAST EQUAL TO THE FOLLOWING:
    a. 2X WALL STUDS ONLY -- CONSTRUCTION GRADE
    b. OTHER STUDS, JOISTS AND RAFTERS -- NO. 2
    c. BEAMS, POSTS AND ALL OTHER STRUCTURAL LUMBER -- NO. 1 OR BETTER
5. HIGHER LUMBER GRADES SHALL BE USED WHERE INDICATED.
6. NAILS SHALL BE COMMON WIRE NAILS (UNO).
7. BOLTS SHALLS BE M.B. WITH STANDARD MALLEABLE IRON OR STEEL PLATE WASHERS UNDER ALL BOLT HEADS AND NUTS BEARING ON WOOD (UNO).
8. CONNECTION HARDWARE SHALL BE AS CALLED FOR. ALTERNATE PRODUCTS SHALL BE SUBSTITUTED ONLY WITH THE APPROVAL OF SAA AND BUILDING DEPARTMENT.
9. MACHINE NAILING SYSTEMS SHALL BE SUBJECT TO SATISFACTORY DEMONSTRATION AND TO THE ACCEPTANCE OF SAA AND BUILDING DEPARTMENT.
    a. THE CONTRACTOR SHALL MAKE APPROPRIATE SUBMISSIONS, INCLUDING TECHNICAL DATA, IN SUPPORT OF ANY PROPOSED MACHINE NAILING SYSTEM ON REQUEST.
    b. HEADS OR TOPS OF NAILS OR OTHER MACHINE DRIVEN FASTENERS SHALL NOT PENETRATE THE SURFACE OF THE WOOD MORE THAN WOULD BE NORMAL FOR HAND DRIVING.
    c. LUMBER DAMAGED BY OVERDRIVING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
    d. PERSISTANT OVERDRIVING SHALL BE SUFFICIENT CAUSE FOR REJECTION OF A MACHINE NAILING SYSTEM.
    e. EDGE DISTANCES FOR MACHINE DRIVEN FASTENERS SHALL BE AS REQUIRED FOR HAND DRIVING AND BY APPLICABLE CODES AND STANDARDS AND SHALL BE CONSISTENT WITH THE NAILING SYSTEM MANUFACTURER'S RECOMMENDATIONS.
    f. ACCEPTANCE OF A MACHINE NAILING SYSTEM SHALL BE SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE.
    g. MACHINE NAILING SHALL NOT BE USED WITH PLYWOOD LESS THAN 3/8" THICK.

C. APPROPRIATE PRECAUTIONS SHALL BE TAKEN TO ASSURE DURABILITY:

1. WOOD EXPOSED TO MOISTURE OR EARTH SHALL BE TREATED FOR PROTECTION AGAINST DECAY AND TERMITE ATTACK OR SHALL BE FOUNDATION GRADE REDWOOD. THIS REQUIREMENT SHALL APPLY TO:
    a. ANY WOOD EMBEDDED IN OR IN DIRECT CONTACT WITH CONCRETE OR MASONRY.
    b. ANY WOOD OTHER THAN WALL STUDS WITHIN ONE FOOT OF EARTH.
    c. ANY FLOOR JOIST WITHIN 18" OF EARTH.
2. PRESSURE TREATMENT PROCESS SHALL BE APPROVED BY BUILDING DEPARTMENT AND SAA. TREATMENT PROCESSES EFFECTING MATERIAL PROPERTIES SHALL NOT BE USED ON STRUCTURAL LUMBER WITHOUT SAA'S WRITTEN APPROVAL. ADDITIONALLY CUT ENDS OF LUMBERS MUST BE FIELD TREATED WITH AN APPROPRIATE AGENT TO AVOID COMPROMISING DECAY RESISTENCE OF LUMBER.
3. LUMBER USED IN THE WORK SHALL BE KILN DRIED TO AVOID EXCESSIVE SHRINKAGE OR WARPING. "GREEN" LUMBER WITH EXCESSIVE MOISTURE CONTENT SHALL NOT BE USED IN THE WORK.
4. SUBFLOORS, ATTICS, PLENUMS, AND OTHER VOID SPACES SHALL BE APPROPRIATELY VENTILATED.

D. QUALITY FRAMING PRACTICES SHALL BE EMPLOYED IN THE CONSTRUCTION:

1. WOOD COLUMNS AND POSTS SHALL BE SECURED IN POSITION AT TRUE END BEARINGS DESIGNED TO PROTECT AGAINST DECAY OR OTHER DAMAGE.
2. STUDS FOR WALLS AND PARTITIONS SHALL BE AS REQUIRED BY APPLICABLE STANDARDS OR SPECIFIC DETAILS, WHICHEVER ARE MORE RESTRICTIVE, BUT NO LESS THAN:
    a. 2X4 AT 16" o.c. FOR ANY WALL OR PARTITION.
    b. 2X6 AT 16" o.c. FOR STUDS OVER 9'-0" HIGH, CARRYING COMBINED FLOOR LOADS FROM MORE THAN ONE LEVEL OR EXTERIOR WALLS (UNO)
3. DOUBLE TOP PLATES MATCHING STUDS FOR SIZE AND GRADE SHALL BE PROVIDED AT ALL WALLS (UNO). SPLICES IN PLATES, IF USED, SHALL BE STAGGERED NO LESS THAN 4'-0" o.c.
4. 4X6 OR BETTER HEADER BEAMS OR LINTELS SHALL BE PROVIDED AT ALL OPENINGS IN WALLS AND PARTITIONS.
5. CONTINUOUS HORIZONTAL 2X FIRE BLOCKING OF DEPTH TO MATCH STUDS SHALL BE PROVIDED AT FLOORS, CEILINGS, SOFFITS AND AT NO MORE THAN 8'-0" o.c. VERTICALLY IN ALL STUD WALLS.
6. BORED HOLES IN STUDS SHALL BE PERMITTED ONLY WITHIN THE FOLLOWING RESTRICTIONS:
    a. HOLES SHALL NOT APPROACH WITHIN 3/4" OF EITHER EDGE OF THE STUD.
    b. HOLES SHALL NOT OCCUR WIHIN 6" OF ANY OTHER BORED HOLE, CUT, NOTCH, OR END OF THE STUD.
    c. HOLE DIAMETER SHALL BE LIMITED TO 60% OF WIDTH AT NON-BEARING STUDS IN INTERIOR PARTITIONS SUPPORTING ONLY THEIR OWN WEIGHT AND 40% OF WIDTH AT ALL OTHER STUDS.
8. NOTCHING OF STUDS SHALL BE PERMITTED ONLY WITHIN THE FOLLOWING RESTRICTIONS:
    a. NOTCHES SHALL BE NEATLY MADE WITH PREDRILLED CORNERS AND WITHOUT OVERCUTTING.
    b. NOTCHES SHALL NOT OCCUR WITHIN 6" OF ANY OTHER NOTCH, CUT, BORED HOLE, OR END OF THE STUD.
    c. NOTCH DEPTH SHALL BE LIMITED TO 40% OF WIDTH AT NON-BEARING STUDS IN INTERIOR PARTITIONS SUPPORTING ONLY THEIR OWN WEIGHT AND 25% OF WIDTH AT ALL OTHER STUDS.
    d. NOTCH WIDTH SHALL BE LIMITED TO TWICE MAXIMUM PERMITTED DEPTH BUT IN NO CASE MORE THAN SIX INCHES.
9. ALL STUD WALLS SHALL BE BRACED BY ONE OF THE FOLLOWING METHODS:
    a. 1/2" GYPSUM BOARD SHEATHING WITH 5d COOLER NAILS AT 7" o.c. TO ALL STUDS AND TOP AND BOTTOM PLATES AND AT 12" o.c. AT ALL OTHER STUDS. EDGE BLOCKING NOT REQUIRED.
    b. OTHER SHEAR RESISTING FINISH APPROVED BY BUILDING DEPARTMENT FOR EQUAL OR GREATER SHEAR STRENGTH THAN ITEM (a) ABOVE.
    c. 1X6 LET IN DIAGONAL BRACING AT NO MORE THAN 25'-0" o.c. ALONG WALL ANGLED TO CROSS AT LEAST FOUR STUD SPACES IN WALL HEIGHT, WITH 2-8d NAILS AT EACH STUD AND AT TOP AND BOTTOM PLATES.
    d. APPROVED STEEL STRAP BRACING SIMILAR TO ITEM (c) ABOVE.
    e. 5/16" PLYWOOD PANELS AT LEAST 4'-0" WIDE AND EXTENDING FULL HEIGHT OF WALL AT NO MORE THAN 25'-0" o.c. WITH 6d NAILS AT 6" o.c. TO STUDS AT VERTICAL SHEET EDGES AND TO TOP AND BOTTOM PLATES AND AT 12" o.c. AT ALL OTHER STUDS. EDGE BLOCKING NOT REQUIRED.
10. BEAMS OR GIRDERS SUPPORTED BY HANGERS OR STRUCTURAL STEEL SHALL HAVE AT LEAST 3" OF FIRM BEARING IN A DETAIL APPROVED BY SAA (UNO).
11. BEAMS OR GIRDERS SUPPORTED BY CONCRETE OR MASONRY SHALL HAVE AT LEAST 4" OF FIRM BEARING ON SOUND MATERIAL (UNO).
12. BEAMS OR GIRDERS SUPPORTED BY TIMBER SHALL HAVE FULL BEARING ACROSS THE SECTION OF THE POST, GIRDER OR OTHER SUPPORT (UNO).
13. JOISTS OR RAFTERS SUPPORTED BY METAL HANGERS SHALL HAVE AT LEAST 1%%30 1/2" OF FIRM BEARING (UNO).
14. JOISTS OR RAFTERS SUPPORTED BY CONCRETE OR MASONRY SHALL HAVE AT LEAST 3" OF FIRM BEARING ON SOUND MATERIAL (UNO).
15. JOISTS OR RAFTERS SUPPORTED BY TIMBER SHALL HAVE FULL BEARING ACROSS THE WIDTH OF BEAMS OR GIRDERS OR THE TOP PLATES OF STUD WALLS OR SHALL BE ALIGNED WITH AND FACE NAILED TO STUDS AND SUPPORTED BY A 1X4 RIBBON STRIP (UNO).
16. STABILITY BRACING SHALL BE PROVIDED AT NO MORE THAN 10'-0" o.c. FOR RAFTERS AND 8'-0" FOR JOISTS IN ONE OF THE FOLLOWING WAYS:
    a. CONTINUOUS 2X3 CROSS BRIDGING.
    b. CONTINUOUS FULL DEPTH BLOCKING.
    c. APPROVED METAL BRIDGING.
17. STABILITY BRACING SHALL BE PROVIDED FOR JOISTS AND RAFTERS AT ALL SUPPORTS IN ONE OF THE FOLLOWING WAYS:
    a. CONTINUOUS FULL DEPTH BLOCKING.
    b. FULL NAILING OF A HANGER APPROVED FOR ROTATIONAL RESTRAINT.
    c. END NAILING TO A RIM JOIST OR RAFTER.
18. RAFTERS OR JOISTS WITH COMMON INTERIOR BEARINGS SHALL BE LAPPED AT LEAST 4" OVER SUPPORT AND ATTACHED TO ONE ANOTHER WITH 3-16d NAILS.
19. FLOOR JOISTS UNDER PARTITIONS PARALLEL TO THEIR SPAN SHALL BE DOUBLED (UNO).
20. DOUBLED JOISTS OR OTHER VERTICALLY LAMINATED MEMBERS SHALL BE SECURELY INTERCONNECTED ALONG THEIR ENTIRE LENGTH.
    a. FASTENERS SHALL BE PLACED AT TOP AND BOTTOM QUARTER POINTS OF DEPTH AND STAGGERED.
    b. FASTENERS FOR 2X MEMBERS LESS THAN 12" DEEP MAY BE 16d NAILS AT 12" o.c. (UNO).
    c. FASTENERS FOR OTHER MEMBERS SHALL BE 1/2" DIAMETER BOLTS AT 24" o.c. (UNO).
21. STRUCTURAL FRAMING MEMBERS SHALL NOT BE NOTCHED WITHOUT SAA'S SPECIFIC APPROVAL.
22. BORED HOLES IN JOISTS OR RAFTERS SHALL BE PERMITTED ONLY WITHIN THE FOLLOWING RESTRICTIONS:
    a. HOLES SHALL NOT APPROACH WITHIN 2" OF EITHER EDGE OF THE MEMBER.
    b. HOLES SHALL NOT OCCUR WIHIN 12" OF ANY OTHER HOLE OR OF THE END OF THE MEMBER.
    c. HOLE DIAMETER SHALL BE LIMITED TO ONE-THIRD OF DEPTH.
23. END JOINTS IN ADJACENT BOARDS IN LUMBER SHEATHING SHALL BE SEPARATED BY AT LEAST TWO SUPPORT SPACES AND AT LEAST TWO BOARDS SHALL SEPARATE ANY TWO JOINTS ON THE SAME SUPPORT.
24. NAILS DRIVEN PERPENDICULAR TO GRAIN SHALL BE USED IN FAVOR OF TOE NAILS WHENEVER POSSIBLE.
25. WHEN TOE NAILS MUST BE USED, THEY SHALL BE DRIVEN AT AN ANGLE OF APPROXIMATELY THIRTY DEGREES TO THE FACE AND STARTED APPROXIMATELY ONE-THIRD OF THEIR LENGTH FROM THE END OF THE PIECE.
26. IMPROPERLY INSTALLED TOE NAILS SHALL NOT BE CONSIDERED AS HAVING STRUCTURAL VALUE AND MEMBERS DAMAGED BY IMPROPER TOE NAILING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
27. BOLT HOLES, INCLUDING THOSE AT SILL ANCHORS, SHALL BE NO LESS THAN 1/32" AND NO MORE THAN 1/16" LARGER THAN THE NOMINAL DIAMETER OF THE FASTENER (UNO). OVERSIZE BOLT HOLES SHALL BE SUFFICIENT CAUSE FOR REJECTION OF THE WORK.
28. THE CONTRACTOR SHALL VERIFY AND RETIGHTEN ALL BOLTS PRIOR TO APPLICATION OF FINISH OR TO OTHER CONSTRUCTION WHICH WOULD MADE THEM INACCESSIBLE.
29. NEITHER BOLTS, LAG SCREWS NOR WOOD SCREWS SHALL BE HAMMERED OR OTHERWISE DRIVEN INTO PLACE. DRIVING OF SUCH MEMBERS SHALL BE SUFFICIENT CAUSE FOR REJECTION OF THE FASTENING.
30. FRAMING HARDWARE SHALL BE INSTALLED WITH PROPER SIZE, LOCATION AND NUMBER OF FASTENERS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CONDITIONS OF RELEVANT APPROVALS.
31. SILL PLATES AT STUD WALLS SHALL BE PROPERLY DETAILED AND ANCHORED:
    a. SILLS SHALL BE 3X MINIMUM (UNO).
    b. SILLS BEARING ON MASONRY OR CONCRETE SHALL BE SECURED IN POSITION WITH NO LESS THAN 5/8" ANCHOR BOLTS AT 48" o.c. MAXIMUM WITH AT LEAST 7" EMBEDMENT INTO SOUND CONCRETE OR MASONRY GROUT.
    c. SILL ANCHOR BOLTS SHALL BE PROVIDED WITHIN 9" OF EACH END OF EACH PIECE AND NO PIECE SHALL HAVE LESS THAN TWO BOLTS.
    d. SILL ANCHOR BOLTS SHALL BE ARRANGED TO AVOID INTERFERENCE WITH FRAMING WHENEVER POSSIBLE.
32. WHERE GYPSUM BOARD, PLYWOOD OR OTHER STRUCTURAL SHEATHING IS SPECIFIED IN THE STRUCTURAL DRAWINGS, JOINTS SHALL NOT BE TAPED OR FINISH APPLIED UNTIL ATTACHMENT TO SUPPORTING FRAMING HAS BEEN INSPECTED AND APPROVED.
33. WHERE PLASTER OR STUCCO IS SPECIFIED IN THE STRUCTURAL DRAWINGS, APPLICATION SHALL NOT BEGIN UNTIL LATH TYPE AND ATTACHMENT TO SUPPORTING FRAMING HAS BEEN INSPECTED AND APPROVED.

EXCAVATIONS AND FOUNDATIONS

A. FOUNDATION EXCAVATION AND CONSTRUCTION SHALL BE ACCOMPLISHED IN A MANNER CONSISTENT WITH DESIGN ASSUMPTIONS:

1. FOOTINGS SHALL BE FOUNDED NO LESS THAN TWO FEET (2'-0") BELOW LOWEST ADJACENT FINISH GRADE, SLAB OR PAVEMENT AND BE EMBEDDED INTO NATIVE SOIL OR CERTIFIED COMPACTED FILL.

B. ALL EXCAVATION AND GRADING OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH REQUIREMENTS OF GOVERNING AUTHORITIES AND IN A MANNER CONSISTENT WITH QUALITY CONSTRUCTION STANDARDS.

1. EXCAVATIONS SHALL BE LAID BACK OR SHORED AS REQUIRED FOR SAFETY AND STABILITY AT ALL STAGES OF THE WORK.
2. ADEQUATE PROVISIONS FOR DRAINAGE AND REMOVAL OF RAINWATER, AND GROUNDWATER IF PRESENT, SHALL BE INCORPORATED INTO TEMPORARY SLOPES OR GRADED SURFACES IN ORDER TO PRESERVE STABILITY AND PROTECT AGAINST ILLEGAL, DANGEROUS, UNSIGHTLY, OR OTHERWISE INAPPROPRIATE RUN-OFF.
3. BACKFILL WHICH WILL SUPPORT STRUCTURAL LOADS SHALL BE PLACED IN LIFTS AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY UNDER THE SUPERVISION OF GEOTECHNICAL ENGINEER.
4. BACKFILL SHALL NOT BE PLACED AGAINST NEW RETAINING STRUCTURES UNTIL THEY AND THEIR SUPPORTS HAVE ACHIEVED THEIR DESIGN STRENGTH UNLESS APPROPRIATE TEMPORARY SUPPORTS ARE PROVIDED.
5. COMPACTION METHODS USED FOR BACKFILL BEHIND RETAINING STRUCTURES SHALL TAKE SURCHARGE OF THOSE STRUCTURES INTO CONSIDERATION. APPROPRIATE TEMPORARY SUPPORTS SHALL BE PROVIDED AS NECESSARY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR TO THE SATISFACTION OF OWNER, LANDLORD, ARCHITECT, BUILDING DEPARTMENT, AND SAA OF ANY DAMAGE TO RETAINING STRUCTURES CAUSED BY PREMATURE BACKFILLING, COMPACTION EFFORTS, OR OTHER CONSTRUCTION SURCHARGE.
7. CONCRETE SHALL NOT BE PLACED IN EXCAVATIONS CONTAINING STANDING WATER WITHOUT PRIOR APPROVAL. REQUESTS FOR SUCH APPROVAL SHALL INCLUDE DETAILED DESCRIPTION OF APPROPRIATE WET PLACEMENT PROCEDURES THAT SHALL BE SUBJECT TO THE APPROVAL OF GEOTECHNICAL ENGINEER, BUILDING DEPARTMENT, AND SAA AND WHICH, IF APPROVED, SHALL BE STRICTLY FOLLOWED.

STRUCTURAL CONCRETE

A. IN ADDITION TO CODE, THE FOLLOWING SPECIFICATIONS AND STANDARDS APPLY TO STRUCTURAL CONCRETE WORK FOR PROJECT:

1. ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318).
2. ACI CODE OF STANDARD PRACTICE.
3. ASTM C33 FOR AGGREGATE (UNO).
4. ASTM C330 FOR AGGREGATE FOR STRUCTURAL LIGHTWEIGHT CONCRETE (AS SPECIFIED).
5. ASTM C150 TYPE I OR II FOR CEMENT. ALL STRUCTURAL CONCRETE IN CONTACT WITH SOIL SHALL BE MADE WITH TYPE II CEMENT.
6. ASTM C260 FOR AIR ENTRAINING ADMIXTURES WHERE SPECIFIED OR ADDED AT CONTRACTOR'S OPTION.
7. ASTM C494 FOR WATER-REDUCING, RETARDING, ACCELERATING, WATER-REDUCING AND RETARDING OR WATER-REDUCING AND ACCELERATING ADMIXTURES WHERE SPECIFIED OR ADDED AT CONTRACTOR'S OPTION.
8. ASTM C618 FOR FLY ASH OR OTHER POZZOLANIC ADMIXTURES WHERE SPECIFIED OR ADDED AT CONTRACTOR'S OPTION. NO MORE THAN 15% OF THE TOTAL CEMENT CONTENT IN ANY STRUCTURAL CONCRETE MIX SHALL BE SUCH MATERIAL (UNO).
9. ASTM C94 FOR READY-MIXED CONCRETE. ALL STRUCTURAL CONCRETE SHALL BE DELIVERED TO THE SITE READY-MIXED.

B. STRUCTURAL CONCRETE SHALL BE OF SPECIFIED TYPES AND STRENGTHS AND OF QUALITY COMPATIBLE WITH THE REQUIREMENTS OF THE WORK.

1. ALL STRUCTURAL CONCRETE SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH OF AT LEAST 3,000 PSI AT THE AGE OF 28 DAYS (UNO). STRUCTURAL CONCRETE FOR THIS PROJECT DESIGNED USING 2500 PSI, BUT CONTRACTOR TO PLACE 3000 PSI MATERIAL (NO SPECIAL INSPECTION REQUIRED).
2. ALL STRUCTURAL CONCRETE SHALL BE STONE TYPE WITH A FULLY CURED DENSITY BETWEEN 140 AND 150 PCF (UNO).
3. STRUCTURAL LIGHTWEIGHT CONCRETE, WHERE SPECIFIED, SHALL HAVE A FULLY CURED DENSITY BETWEEN 110 AND 120 PCF (UNO).
4. SLUMPS OF STRUCTURAL CONCRETE SHALL BE AS SMALL AS PRACTICAL FOR THE INTENDED APPLICATION AND SHALL COMPLY WITH RECOMMENDATIONS OF REFERENCED STANDARDS AND LIMITATIONS OF THE MIX DESIGN.
5. NO CONCRETE WITH MEASURED SLUMP GREATERTHAN SIX INCHES SHALL BE USED IN THE WORKWITHOUT THE SPECIFIC WRITTEN APPROVAL OF SAA.SLUMP MAY BE MEASURED AT POINT OF PLACEMENT.

C. GROUT AND DRYPACK SHALL BE TREATED AS STRUCTURAL CONCRETE AND SHALL BE SUBJECT TO ALL APPLICABLE REQUIREMENTS OF THESE NOTES (UNO).

1. GROUT SHALL BE A HIGH-STRENGTH SHRINKAGE-COMPENSATING ("NONSHRINK") CEMENTITIOUS MATERIAL OBTAINING AN ULTIMATE COMPRESSIVE STRENGTH OF AT LEAST 5000 PSI ATTHE AGE OF 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C109.
2. GROUT SHALL BE A PRE-ENGINEERED PRODUCT ACCEPTABLE TO BUILDING DEPARTMENT AND SAA.
3. GROUT SHALL BE DELIVERED TO THE SITE PREMIXED IN MANUFACTURERS ORIGINAL PACKAGING. ONLY WATER SHALL BE ADDED ON SITE. GROUT SHALL BE PREPARED AND PLACED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. GROUT SHALL BE MIXED TO A UNIFORM FLUID CONSISTENCY, POURED INTO FORMS AS REQUIRED, AND CHAINED OR RODDED TO ASSURE THAT ALL VOIDS ARE FILLED.
5. GROUT CONTAINING METALLIC ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF BOTH ARCHITECT AND SAA.
6. DRYPACK, WHERE SPECIFIED, SHALL BE GROUT MIXED TO A STIFF CLAY-LIKE CONSISTENCY. CARE SHALL BE TAKEN TO ASSURE UNIFORMITY PRIOR TO PLACEMENT.
7. EXISTING CONCRETE OR OTHER POROUS SURFACES AGAINST WHICH GROUT OR DRYPACK IS TO BE PLACED SHALL BE MOISTENED TO PREVENT PREMATURE DEHYDRATION OF THE MATERIAL.
8. INSPECTION REQUIREMENTS FOR STRUCTURAL GROUT AND DRYPACK SHALL BE AS FOR STRUCTURAL CONCRETE EXCEPT THAT CUBES RATHER THAN CYLINDERS MAY BE TAKEN FOR COMPRESSIVE STRENGTH TESTING.
9. CONSISTENCY, POURED INTO FORMS AS REQUIRED, AND CHAINED OR RODDED TO ASSURE THAT ALL VOIDS ARE FILLED.
10. GROUT CONTAINING METALLIC ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF BOTH ARCHITECT AND SAA.
11. DRYPACK, WHERE SPECIFIED, SHALL BE GROUT MIXED TO A STIFF CLAY-LIKE CONSISTENCY. CARE SHALL BE TAKEN TO ASSURE UNIFORMITY PRIOR TO PLACEMENT.
12. EXISTING CONCRETE OR OTHER POROUS SURFACES AGAINST WHICH GROUT OR DRYPACK IS TO BE PLACED SHALL BE MOISTENED TO PREVENT PREMATURE DEHYDRATION OF THE MATERIAL.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MIX DESIGNS.

1. MIX DESIGNS FOR CONCRETE WITH SPECIFIED STRENGTH UP TO 2500 PSI MAY BE BY SUPPLIER AND NEED NOT BE SUBMITTED FOR REVIEW PRIOR TO USE.
2. MIX DESIGNS FOR CONCRETE WITH SPECIFIED STRENGTH GREATER THAN 2500 PSI SHALL BE BY A CALIFORNIA LICENSED CIVIL ENGINEER IN THE EMPLOY OF A CERTIFIED INDEPENDENT TESTING LABORATORY ACCEPTABLE TO BUILDING DEPARTMENT AND SAA. COSTS OF SUCH DESIGN SHALL BE BORNE BY THE CONTRACTOR.
3. CALCIUM CHLORIDE OR OTHER ADMIXTURES CONTAINING CHLORIDE OTHER THAN AS AN IMPURITY SHALL NOT BE USED IN STRUCTURAL CONCRETE WITHOUT THE WRITTEN APPROVAL OF SAA.
4. COPIES OF EACH MIX DESIGN, BEARING THE SEAL AND SIGNATURE OF THEIR DESIGNER AND ACCOMPANIED BY CERTIFIED RESULTS OF 7 AND 28 DAY TRIAL BATCH CYLINDER TEST RESULTS, SHALL BE SUBMITTED TO BUILDING DEPARTMENT AND SAA NO LESS THAN TWO WORKING DAYS BEFORE USE.
5. COPIES OF THE MIX DESIGN SHALL BE PRESENT AT BATCH PLANT AND JOB SITE PRIOR TO USE.

E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING PROPER PREPARATIONS PRIOR TO THE PLACEMENT OF STRUCTURAL CONCRETE.

1. THE CONTRACTOR SHALL DESIGN AND CONSTRUCT COMPETENT FORMS AS REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR THEIR ADEQUACY.
2. REINFORCEMENT SHALL BE PLACED AS CLOSE TO THE SURFACE OF CONCRETE AS PERMITTED WHILE MAINTAINING MINIMUM COVER AS FOLLOWS (UNO):
    a. AT SURFACES CAST AGAINST EARTH -- THREE INCHES (3").
    b. AT SURFACES EXPOSED TO EARTH OR WEATHER:
    i. FOR #6 OR LARGER BARS -- TWO INCHES (2").
    ii. FOR #5 AND SMALLER -- ONE AND ONE-HALF INCHES (1-1/2").
3. PROJECTING CORNERS OF EXPOSED CONCRETE STRUCTURAL MEMBERS SHALL BE FORMED WITH 3/4" CHAMFER (UNO).
4. REINFORCING STEEL, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE SECURED IN POSITION BEFORE CONCRETE PLACEMENT. SETTING DURING OR AFTER PLACEMENT SHALL NOT BE PERMITTED (UNO).
5. EXCEPT FOR SIMPLE, SYMMETRICAL, UNIFORM CONFIGURATIONS, THE CONTRACTOR SHALL PREPARE REINFORCEMENT PLACEMENT DRAWINGS. COPIES OF THESE DRAWINGS SHALL BE AVAILABLE FOR REFERENCE ON SITE AT LEAST ONE WORKING DAY BEFORE PLACEMENT OF CONCRETE AND BEFORE ANY INSPECTION OF THE REINFORCEMENT OR FORMWORK.
6. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE PLACEMENT OF CONCRETE TO ASSURE PROPER INCORPORATION OF REQUIRED SLEEVES, INSERTS, CURBS, DEPRESSIONS AND SIMILAR ITEMS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL COSTS OF CORRECTIVE ACTION IN CASE OF ITEMS IMPROPERLY LOCATED OR OMITTED FROM CONCRETE PLACEMENT.
8. THE CONTRACTOR SHALL SUBMIT SKETCHES SHOWING SIZE AND LOCATION OF ANY REQUIRED SLEEVE, INSERT, DEPRESSION, OR OTHER MODIFICATION TO STRUCTURAL CONCRETE NOT SHOWN IN THESE STRUCTURAL DESIGN DRAWINGS TO SAA FOR REVIEW AND SHALL OBTAIN ITS APPROVAL BEFORE PLACEMENT.

F. CONCRETE SHALL BE PLACED, FINISHED, AND CURED IN ACCORDANCE WITH THE RECOMMENDATIONS OF REFERENCED STANDARDS.

1. STRUCTURAL CONCRETE WITH SPECIFIED STRENGTH GREATER THAN 2500 PSI SHALL BE PLACED UNDER THE CONTINUOUS SUPERVISION OF A DEPUTY INSPECTOR LICENSED BY BUILDING DEPARTMENT. THIS INSPECTOR'S WORK SHALL INCLUDE PRE-PLACEMENT INSPECTION OF FORMWORK, REINFORCEMENT AND EMBEDDED ITEMS.
2. EXISTING CONCRETE AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE ROUGHENED TO AT LEAST 1/4" AMPLITUDE TO EXPOSE COARSE AGGREGATE, SANDBLASTED OR OTHERWISE THOROUGHLY CLEANED BY AN APPROVED METHOD, MOISTENED AND SCOURED WITH A CEMENT/WATER PASTE IMMEDIATELY PRIOR TO PLACEMENT OF NEW MATERIAL.
3. COLD JOINTS IN STRUCTURAL CONCRETE SHALL BE MADE AT LOCATIONS INDICATED IN DESIGN DRAWINGS OR APPROVED BY SAA. INCORPORATION OF UNAPPROVED JOINTS SHALL BE SUFFICIENT CAUSE FOR REJECTION OF WORK.
4. CURING COMPOUNDS, IF USED, SHALL BE OF APPROVED TYPES. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL OF CURING COMPOUNDS PROPOSED FOR USE ON SURFACES TO RECEIVE FINISH FROM THE FINISH MANUFACTURER PRIOR TO APPLICATION.
5. FORMS SHALL BE KEPT DAMP AND STRUCTURAL CONCRETE SURFACES EXPOSED TO THE ENVIRONMENT SHALL BE MOIST CURED OR OTHERWISE PROTECTED AGAINST PREMATURE DEHYDRATION FOR AT LEAST 72 HOURS AFTER PLACEMENT.

G. CONCRETE SHALL BE TESTED AND INSPECTED IN ACCORDANCE ACI-318 REQUIREMENTS BY QUALIFIED TECHNICIANS UNDER THE SUPERVISION OF A LICENSED CIVIL ENGINEER.

1. FOUR TEST CYLINDERS FROM EACH 150 YARDS, OR FRACTION THEREOF, POURED IN ANY ONE DAY, SHALL BE SECURED AND TESTED BY AN INDEPENDENT TESTING AGENCY; ONE TO BE TESTED AT 7 DAYS, TWO AT 28 DAYS, AND THE FOURTH HELD IN RESERVE.
2. QUALIFIED FIELD TESTING TECHNICIANS SHALL PERFORM TESTS ON FRESH CONCRETE AT THE JOB SITE, PREPARE SPECIMENS REQUIRED FOR CURING UNDER FIELD CONDITIONS, PREPARE SPECIMENS REQUIRED FOR TESTING IN THE LABORATORY, AND RECORD THE TEMPERATURE OF THE FRESH CONCRETE WHEN PREPARING SPECIMENS FOR STRENGTH TESTS. QUALIFIED LABORATORY TECHNICIANS SHALL PERFORM ALL REQUIRED LABORATORY TESTS.
3. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE WHICH FAILS TO ATTAIN SPECIFIED STRENGTH IN 28 DAYS IF SO DIRECTED BY THE ENGINEER OF RECORD. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE SATISFACTORILY REPAIRED OR THE HARDENED CONCRETE SHALL BE REPLACED.

REINFORCING STEEL

A. IN ADDITION TO CODE, THE FOLLOWING SPECIFICATIONS AND STANDARDS APPLY TO THE MANUFACTURE, FABRICATION AND INSTALLATION OF REINFORCING STEEL IN STRUCTURAL CONCRETE AND/OR MASONRY WORK FOR PROJECT:

1. CRSI HANDBOOK.
2. ASTM A615 GRADE 60 FOR ALL REINFORCING STEEL (UNO).
3. ASTM A185 FOR COLD DRAWN WELDED WIRE FABRIC (UNO). 4.AWS D1.4 FOR WELDING OF REINFORCING STEEL.

B. QUALITY DETAILING AND CONSTRUCTION STANDARDS SHALL BE OBSERVED.

1. REINFORCEMENT SHALL BE TRACEABLE FROM SOURCE TO SITE AND SHALL BE SAMPLED AND TESTED TO CONFIRM PHYSICAL PROPERTIES AS REQUIRED BY BUILDING DEPARTMENT OR OTHERWISE NOTED IN THE PROJECT SPECIFICATION.
2. REINFORCEMENT DELIVERED TO THE SITE SHALL BE ACCOMPANIED BY APPROPRIATE TESTING REPORTS AND CERTIFICATION, INCLUDING EVIDENCE OF CONFORMANCE WITH SPECIAL DUCTILITY REQUIREMENTS SPECIFIED ABOVE.
3. LACK OF CERTIFICATION OR INADEQUATE CERTIFICATION SHALL BE SUFFICIENT CAUSE FOR REJECTION OF MATERIAL. UNCERTIFIED OR INADEQUATELY CERTIFIED MATERIAL SHALL NOT BE STORED AT THE SITE OR USED IN THE WORK AND IF DELIVERED TO THE SITE SHALL BE IMMEDIATELY REMOVED.
4. SUBJECT TO SAA'S WRITTEN APPROVAL, REINFORCEMENT NOT MEETING THE SPECIAL DUCTILITY REQUIREMENTS SPECIFIED ABOVE (NOTE 2) MAY BE PERMITTED IN LOCATIONS NOT SUBJECT TO YIELDING UNDER SEISMIC LOAD.
5. BARS SHALL BE COLD BENT AS DETAILED OR OTHERWISE NECESSARY AROUND PINS OF REQUIRED RADIUS. REBENDING OF BARS SHALL NOT BE PERMITTED (UNO).
6. BENDS SHALL BE MADE IN SHOP WHENEVER POSSIBLE. BENDING OF IN PLACE BARS IN ANY MANNER WHICH MIGHT CAUSE STRESS TO EXISTING CONCRETE SHALL NOT BE PERMITTED (UNO).
7. RUST, GREASE, MILL SCALE OR OTHER MATERIAL WHICH MIGHT EFFECT BOND TO CONCRETE SHALL BE REMOVED IN AN APPROVED MANNER WITHOUT DAMAGE TO THE REINFORCEMENT AND BEFORE PLACEMENT OF CONCRETE.
8. SEE CONCRETE NOTES FOR PLACEMENT DRAWING REQUIREMENTS.

C. WELDING OF REINFORCEMENT IS NOT PERMITTED, UNLESS SPECIFICALLY DETAILED IN THE CONSTRUCTION DOCUMENTS.

D. ADDITIONAL TRIM AND CRACK CONTROL STEEL MAY BE REQUIRED DURING THE PROGRESS OF THE WORK. AN ALLOWANCE OF AT LEAST ONE PERCENT BY WEIGHT OF THE TOTAL REINFORCEMENT SHALL BE SET ASIDE FOR THIS PURPOSE. SUCH STEEL SHALL BE FABRICATED AND PLACED AT SAA'S DIRECTION.

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NEW ADU

GENERAL NOTES

SAA
STRUCTURAL ENGINEERING
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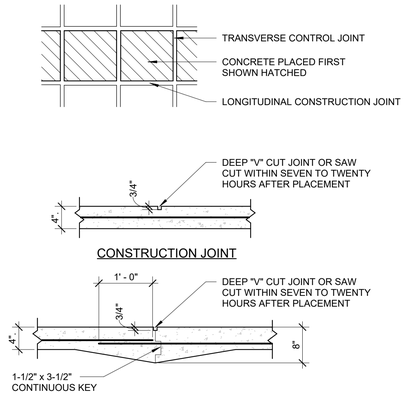
MIKITA SIVUSHENKA
C 87898
CIVIL

SCALE: AS NOTED
DATE: 05/03/2024

S-0.2



NOTES:

1. SLABS SHALL BE PLACED IN LONGITUDINAL STRIPS OR SECTIONS HAVING A MAXIMUM WIDTH OF 20'-0".
2. SLABS SHALL BE SUBDIVIDED BY CONTROL JOINTS HAVING A MAXIMUM SPACING OF 15'-0".
3. CONTROL JOINTS TO BE PERPENDICULAR TO CONSTRUCTION JOINTS.
4. REINFORCING SHALL BE SECUREDLY PLACED IN MIDDLE OF SLAB.
5. CURING SHALL BE MAINTAINED PER WRITTEN SPECIFICATIONS.

2 S-0.3 Typical Slab on Grade Joints

NOT TO SCALE

HOOKED BAR DEVELOPMENT LENGTH (Ldh)

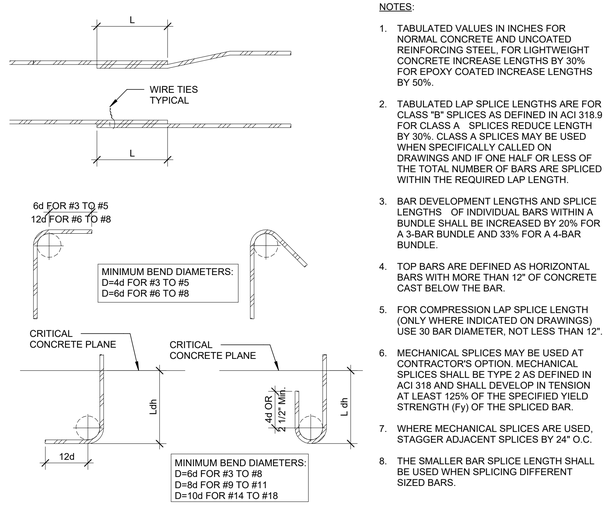
BAR SIZE	f_y (ksi)	f'_c = 3,000 psi		f'_c = 4,000 psi		f'_c = 5,000 psi		f'_c = 6,000 psi		f'_c = 7,000 psi		f'_c = 8,000 psi		f'_c = 9,000 psi		f'_c = 10,000 psi	
		TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
#4	60	8	9	7	7	6	6	6	6	6	6	6	6	6	6	6	6
#5	60	10	10	9	9	8	8	7	7	7	7	6	6	6	6	6	6
#6	60	12	12	10	10	9	9	9	9	8	8	8	8	7	7	7	7
#7	60	14	14	12	12	11	11	10	10	9	9	9	9	8	8	8	8
#8	60	16	16	14	14	12	12	11	11	11	11	10	10	9	9	9	9
#9	60	18	18	15	15	14	14	13	13	12	12	11	11	10	10	10	10
#10	60	20	20	17	17	16	16	14	14	13	13	12	12	12	12	11	11
#11	60	22	22	19	19	17	17	16	16	15	15	14	14	13	13	12	12
#11	75	28	28	24	24	21	21	20	20	18	18	17	17	16	16	15	15
#14	60	38	38	33	33	29	29	27	27	25	25	23	23	22	22	21	21
#14	75	47	47	41	41	36	36	33	33	31	31	29	29	27	27	26	26

BAR DEVELOPMENT LENGTH (Ld)

BAR SIZE	f_y (ksi)	f'_c = 3,000 psi		f'_c = 4,000 psi		f'_c = 5,000 psi		f'_c = 6,000 psi		f'_c = 7,000 psi		f'_c = 8,000 psi		f'_c = 9,000 psi		f'_c = 10,000 psi	
		TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	60	33	25	28	22	25	20	23	18	21	17	20	16	19	15	18	14
#4	60	43	33	37	29	34	26	31	24	28	22	27	21	25	19	24	18
#5	60	54	42	47	36	42	32	38	30	35	27	33	26	31	24	30	23
#6	60	65	50	56	43	50	39	46	35	42	33	40	31	37	29	36	27
#7	60	94	72	81	63	73	56	67	51	62	48	58	45	54	42	52	40
#8	60	107	83	93	72	83	64	76	59	70	54	66	51	62	48	59	45
#9	60	121	93	105	81	94	72	86	66	79	61	74	57	70	54	66	51
#10	60	136	105	118	91	106	81	98	74	89	69	84	64	79	61	75	58
#11	60	151	116	131	101	117	90	107	82	99	76	93	71	87	67	83	64
#11	75	189	145	164	126	146	113	134	103	124	95	116	89	109	84	104	80
#14	60	181	140	157	121	141	108	128	99	119	92	111	86	105	81	100	77
#14	75	227	174	196	151	176	135	160	123	148	114	139	107	131	101	124	96

BAR LAP SPLICE LENGTH

BAR SIZE	f_y (ksi)	f'_c = 3,000 psi		f'_c = 4,000 psi		f'_c = 5,000 psi		f'_c = 6,000 psi		f'_c = 7,000 psi		f'_c = 8,000 psi		f'_c = 9,000 psi		f'_c = 10,000 psi	
		TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	60	43	33	36	29	33	26	30	23	27	22	26	21	25	20	23	18
#4	60	56	43	48	38	44	34	40	31	36	29	35	27	33	25	31	23
#5	60	70	55	61	47	55	42	49	39	46	35	43	34	40	31	38	30
#6	60	85	65	73	56	65	51	60	46	55	43	52	40	48	38	47	35
#7	60	122	94	105	82	94	73	87	66	81	62	75	59	70	55	68	52
#8	60	139	108	121	94	108	83	99	77	91	70	86	66	81	62	77	59
#9	60	157	121	13	105	122	94	112	86	103	79	96	74	91	70	86	66
#10	60	177	137	153	118	138	105	125	96	116	90	109	83	103	79	98	75
#11	60	196	151	170	131	152	117	139	107	129	99	121	92	113	87	108	83
#11	75	246	189	213	164	190	147	174	134	161	124	151	116	142	109	135	104
#14	USE MECHANICAL SPLICE																

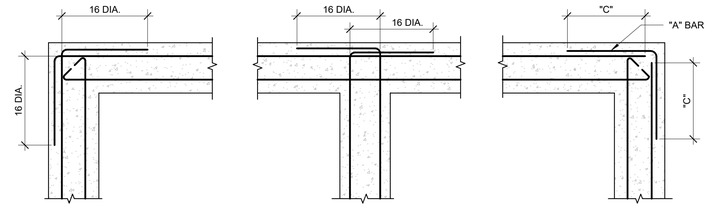


NOTES:

1. TABULATED VALUES IN INCHES FOR NORMAL CONCRETE AND UNCOATED REINFORCING STEEL, FOR LIGHTWEIGHT CONCRETE INCREASE LENGTHS BY 30% FOR EPOXY COATED INCREASE LENGTHS BY 50%.
2. TABULATED LAP SPLICE LENGTHS ARE FOR CLASS "B" SPLICES AS DEFINED IN ACI 318.9 FOR CLASS A SPLICES REDUCE LENGTH BY 30%. CLASS A SPLICES MAY BE USED WHEN SPECIFICALLY CALLED ON DRAWINGS AND IF ONE HALF OR LESS OF THE TOTAL NUMBER OF BARS ARE SPLICED WITHIN THE REQUIRED LAP LENGTH.
3. BAR DEVELOPMENT LENGTHS AND SPLICE LENGTHS OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE INCREASED BY 20% FOR A 3-BAR BUNDLE AND 33% FOR A 4-BAR BUNDLE.
4. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BAR.
5. FOR COMPRESSION LAP SPLICE LENGTH (ONLY WHERE INDICATED ON DRAWINGS) USE 30 BAR DIAMETER, NOT LESS THAN 12".
6. MECHANICAL SPLICES MAY BE USED AT CONTRACTOR'S OPTION. MECHANICAL SPLICES SHALL BE TYPE 2 AS DEFINED IN ACI 318 AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH (Fy) OF THE SPLICED BAR.
7. WHERE MECHANICAL SPLICES ARE USED, STAGGER ADJACENT SPLICES BY 24" O.C.
8. THE SMALLER BAR SPLICE LENGTH SHALL BE USED WHEN SPLICING DIFFERENT SIZED BARS.

1 S-0.3 Tension Lap Splice & Embedment Length in Concrete

NOT TO SCALE

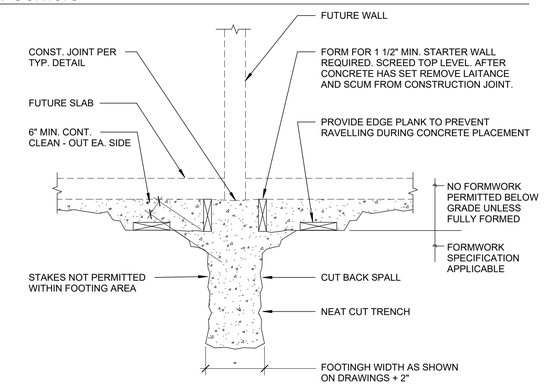


NOTES:

1. IF "A" BAR IS USED, "C" IS BASED UPON ACI CLASS "B" SPLICE PER DETAIL 1, THIS SHEET.
2. WHERE SINGLE LAYER OF REINFORCEMENT OCCURS, BEND BARS AS SHOWN FOR BARS AT OUTSIDE FACE.
3. AT INTERSECTIONS, ALTERNATE BENDS IN EACH DIRECTION.
4. WHERE SPLICES OF DIFFERENCT SIZE BARS OCCUR, CORNER DOWEL SIZE AND LAPS ARE BASED ON LARGER BAR SIZE.

5 S-0.3 Concrete Wall Corners

NOT TO SCALE



NOTE:

ALL FOOTINGS POURED AGAINST EARTH ARE SUBJECT TO APPROVAL OF SOIL AND STRUCTURAL ENGINEERS AND MUST BE CONSTRUCTED IN THE MANNER SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE

8 S-0.3 Footing Form Against Soil

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TYPICAL DETAILS

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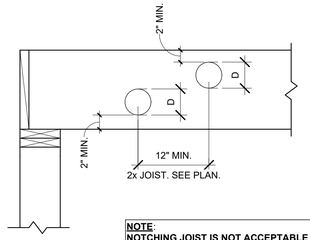
STATE OF CALIFORNIA

SCALE: AS NOTED

DATE: 05/03/2024

S-0.3

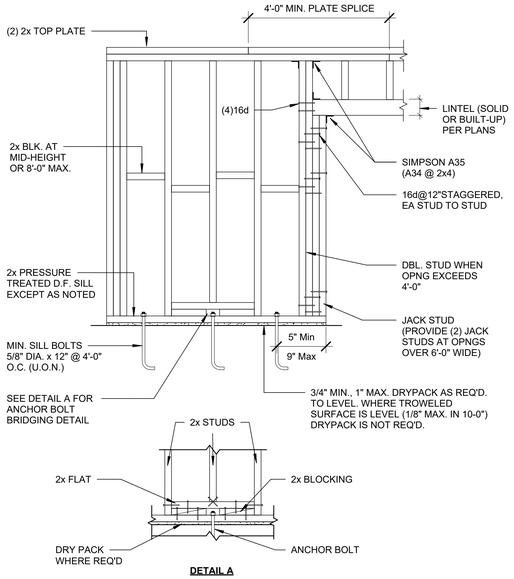


SIZE	MAX. D
2x6	1 3/4"
2x8	2 3/8"
2x10	3"
2x12	3 3/4"
2x14	4 3/8"

NOTE:
NOTCHING JOIST IS NOT ACCEPTABLE WITHOUT STRUCTURAL ENGINEER'S APPROVAL

4 S-0.4 Typical Boring of Joists

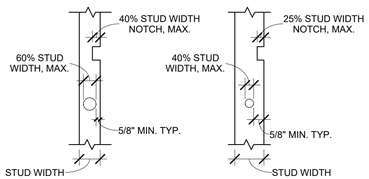
NOT TO SCALE



DETAIL A

3 S-0.4 Typical Notching & Boring of Studs

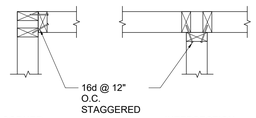
NOT TO SCALE



NON-BRG STUDS EXT. & BRG. STUDS

NOTE:
NOTCH AND BORING NOT TO OCCUR IN SAME STUD SECTION.

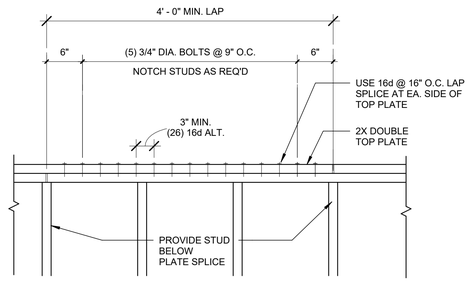
NOTCH/BORE % OF STUD	2x4	2x6
25%	7/8"	1 3/8"
40%	1 3/8"	2 1/8"
60%	2"	3 1/4"



CORNER **INTERSECTION**

8 S-0.4 Typ. Stud Wall Corners & Intersections

NOT TO SCALE



NAILING SCHEDULE

	CONNECTION	NAILING [1]
1.	JOIST TO SILL OR GIRDER, TOENAIL	3-8d
2.	BRIDGING TO JOIST, TOENAIL EACH END	2-8d
3.	1"x6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8d
4.	WIDER THAN 1"x6" SUBFLOOR TO EACH JOIST, FACE NAIL	3-8d
5.	2" SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	2-16d
6.	SOLE PLATE TO JOIST OR BLOCKING, TYPICAL FACE NAIL SOLE PLATE TO JOIST OR BLOCKING, AT BRACED WALL PANELS	16d AT 16" O.C. 3-16d PER 16"
7.	TOP PLATE TO STUD, END NAIL	2-16d
8.	STUD TO SOLE PLATE	4-8d TOENAIL OR 2-16d END NAIL
9.	DOUBLE STUDS, FACE NAIL	16d AT 24" O.C.
10.	DOUBLED TOP PLATES, TYPICAL FACE NAIL DOUBLE TOP PLATES,LAP SPLICE	16d AT 16" o.c. 8-16d
11.	BLOCKING BETWEEN JOIST OR RAFTERS TO TOP PLATE, TOENAIL	3-8d
12.	RIM JOIST TO TOP PLATE, TOENAIL	8d AT 6" O.C.
13.	TOP PLATES, LAPS AND INTERSECTIONS	2-16d
14.	CONTINUOUS HEADER, TWO PIECES	16d AT 16" O.C. ALONG EA. END
15.	CEILING JOIST TO PLATE, TOENAIL	3-8d
16.	CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
17.	CEILING JOIST, LAPS OVER PARTITIONS, FACE NAIL	3-16d
18.	CEILING JOIST TO PARALLEL RAFTERS, FACE NAIL	3-16d
19.	RAFTER TO PLATE, TOENAIL	3-8d
20.	1" BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
21.	1"x8" SHEATHING OR LESS TO EACH BEARING, FACE NAIL	2-8d
22.	WIDER THAN 1"x8" SHEATHING TO EACH BEARING, FACE NAIL	3-8d
23.	BUILT UP CORNER STUDS	16d AT 24" O.C.
24.	BUILT UP GIRDER AND BEAMS	20d AT 32" O.C. AT TOP AND BOTTOM AND STAGGERED 2-20d AT ENDS AND AT EA. SPLICE
25.	2" PLANKS	2 - 16d AT EACH BEARING
26.	COLLAR TIE TO RAFTER, FACE NAIL	3-10d
27.	JACK RAFTER TO HIP	3-8d TOENAIL OR 2-16d FACE NAIL
28.	ROOF RAFTER TO 2x RIDGE BEAM	2-16d TOENAIL OR FACE NAIL
29.	JOIST TO BAND JOIST, FACE NAIL	3-16d
30.	LEDGER STRIP	3-16d
31.	WOOD STRUCTURAL PANELS AND PARTICLEBOARD [2] SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING) 1/2" AND LESS 19/32" TO 3/4" 7/8" TO 1" 1 1/8" TO 1 1/4" SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING) 3/4" AND LESS 7/8" TO 1" 1 1/8" TO 1 1/4"	 6d [3,12] 8d [4] OR 6d [5] 8d [3] 10d OR 8d [5] 6d [5] 8d [5] 10d OR 8d [5]
32.	PANEL SIDING (TO FRAMING): 1/2" OR LESS 25/32"	 6d [6] 8d [6]
33.	FIBERBOARD SHEATHING: [7] 1/2" 25/32"	 NO. 11 GA. [8] 6d [4] NO. 11 GA. [8] 8d [4]
34.	INTERIOR PANELING 1/4" 3/8"	 4d [10] 6d [11]

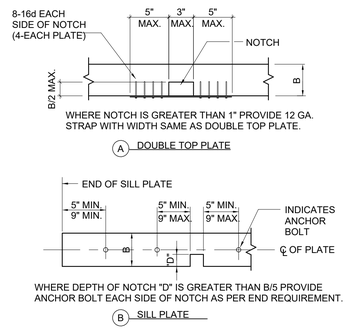
1. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
2. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO CBC SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
3. COMMON OR DEFORMED SHANK
4. COMMON
5. DEFORMED SHANK
6. CORROSION-RESISTANT SIDING OR CASING NAIL
7. FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NON-STRUCTURAL APPLICATIONS.
8. CORROSION-RESISTANT ROOFING NAILS WITH 7/16" DIAMETER HEAD AND 1/2" LENGTH FOR 1/2" SHEATHING AND 1 3/4" LENGTH FOR 25/32" SHEATHING
9. CORROSION RESISTANT STAPLES WITH NOMINAL 7/16" CROWN AND 1 1/8" LENGTH FOR 1/2" SHEATHING AND 1 1/2" LENGTH FOR 25/32" SHEATHING. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).
10. CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
11. PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS AT 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
12. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
13. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH.
14. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
15. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3 INCHES ON CENTER AT EDGES, 6 INCHES AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.
16. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.

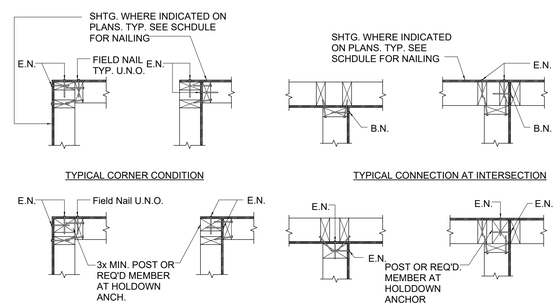
6 S-0.4 Nailing Schedule

NOT TO SCALE

5 S-0.4 Notching of Plates

NOT TO SCALE

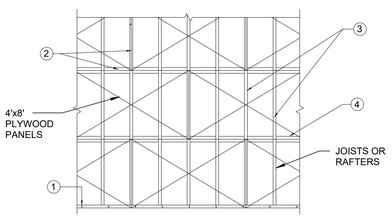




NOTES:
STUDS IN DIRECT CONTACT SHALL BE NAILED TOGETHER WITH 16d @ 12" O.C. (STAGGERED IF POSSIBLE). STUDS SEPARATED BY SHEATHING SHALL BE NAILED WITH 20d @ 12" O.C.
U.N.O. PRE-DRILLED HOLES ARE REQUIRED FOR 20d SPIKES.

13 S-0.4 Shear Wall Corners & Intersections

NOT TO SCALE

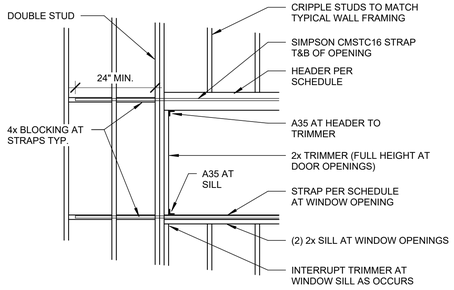


SYM.	
①	BOUNDARY NAILING
②	EDGE NAILING
③	INTERMEDIATE NAILING - 10" O.C. AT FLOORS, 12" O.C. AT ROOFS. SAME SIZE AS EDGE NAILS.
④	3x4 FLAT BLOCK WHERE REQ'D

NOTES:
1. PLYWOOD THICKNESS AND NAILING PER PLAN.
2. FACE GRAIN OF PLYWOOD SHALL RUN PERPENDICULAR TO SUPPORTS.
3. NAILS SHALL HAVE MIN. 3/8" EDGE DISTANCE AND SHALL NOT BE OVER-DRIVEN THRU OUTER PLY.
4. CONTINUOUS PANEL EDGES SHALL RECEIVE BOUNDARY NAILING.
5. STAGGER PLYWOOD JOINTS.

12 S-0.4 Typical Plywood Layout & Nailing

NOT TO SCALE

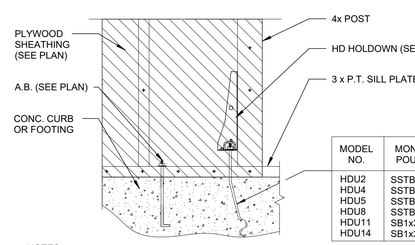


DOOR AND WINDOW HEADER SCHEDULE	
OPNG	HEADER
UP TO 3'-0"	4x4
UP TO 6'-0"	4x6
UP TO 8'-0"	4x8

NOTES:
1. HEADERS TO BE DF-L NO. 1. HEADER SIZES PER SCHEDULE U.O.N. ON PLANS.
2. STRAPS ARE TO BE INSTALLED OVER PLYWOOD.
3. PROVIDE E.N. TO ALL FRAMING MEMBERS AROUND OPENINGS AND BLOCKING.

11 S-0.4 Typical Framed Opening in Shearwall

NOT TO SCALE



MODEL NO.	MONO POUR	TWO POUR
HDU2	SSTB16	SSTB20
HDU4	SSTB20	SSTB24
HDU5	SSTB24	SSTB28
HDU8	SSTB28	SSTB34
HDU11	SB1x30	SB1x30
HDU14	SB1x30	SB1x30

MODEL NO.	DIA.	MIN. EMBED
SSTB20	5/8"	17
SSTB24	5/8"	20
SSTB28	7/8"	25
SSTB34	7/8"	25
SSTB36	7/8"	29

NOTES:
1. HOLDOWN HARDWARE SHALL BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
2. HOLDOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS.
3. HOLDOWN CONNECTOR BOLTS SHALL BE TIGHTENED PRIOR TO COVERING THE WALL FRAMING.
4. SEE FOUNDATION PLAN FOR LOCATION AND SHEARWALL INFORMATION.

10 S-0.4 Typical Detail at Holdown

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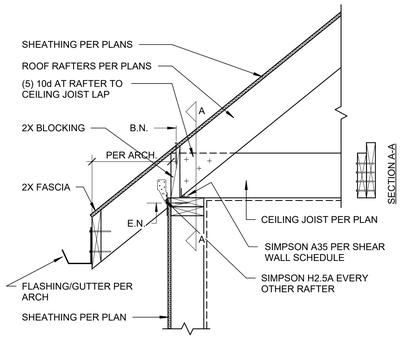
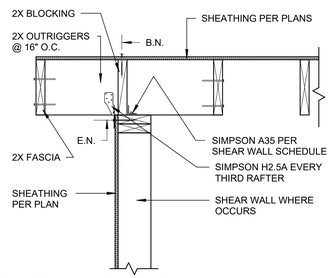
DATE: 05/03/2024

S-0.4



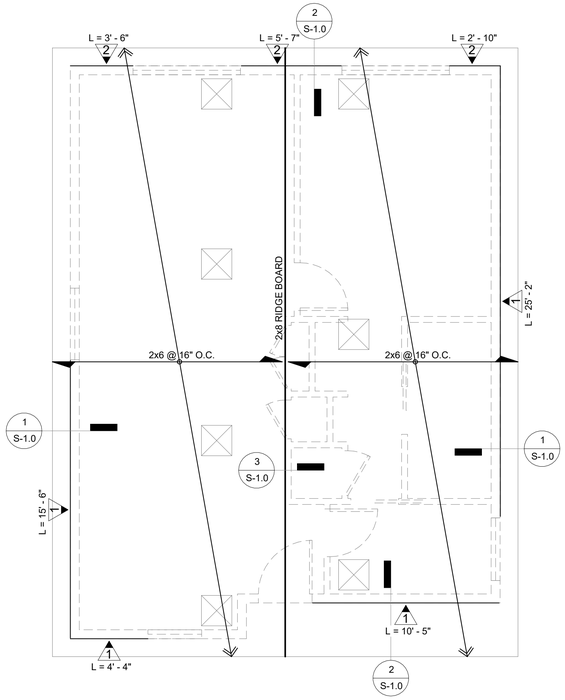
1 S-1.0 Typical Eave Detail

1" = 1'-0"



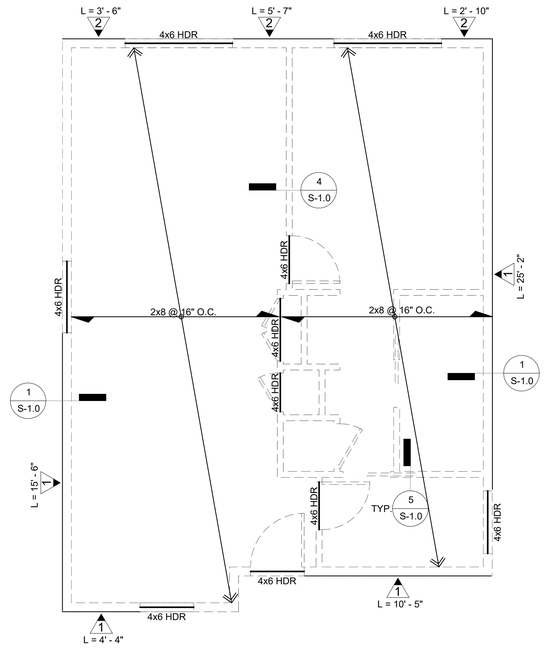
2 S-1.0 Typical Shear Transfer at Wall

1" = 1'-0"



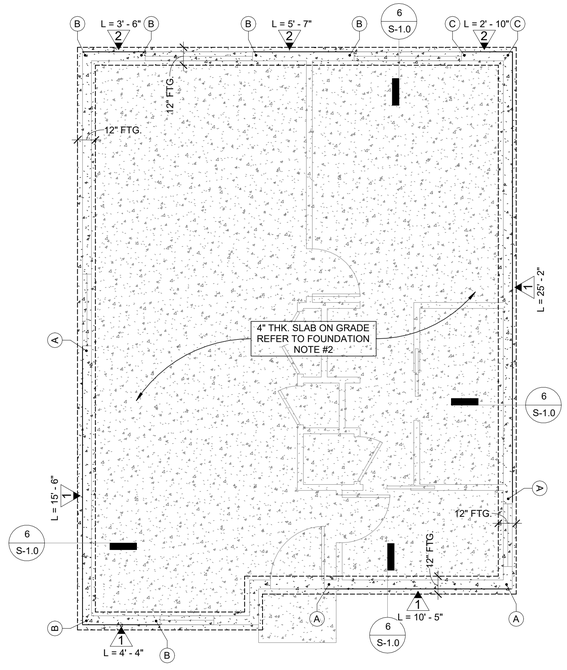
C S-1.0 Roof Framing Plan

1/4" = 1'-0"



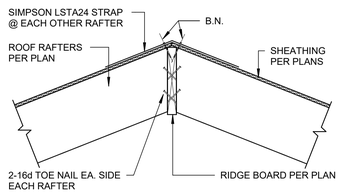
B S-1.0 Ceiling Fraiming Plan

1/4" = 1'-0"



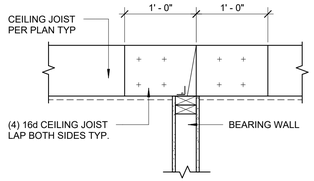
A S-1.0 Foundation Plan

1/4" = 1'-0"



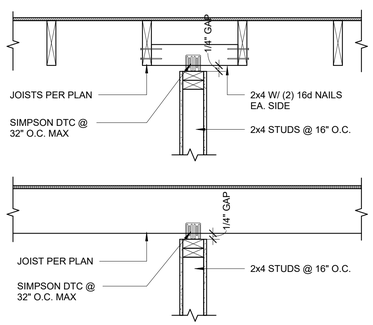
3 S-1.0 Typical Ridge Board Detail

1" = 1'-0"



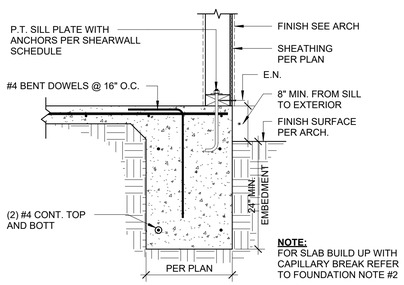
4 S-1.0 Bearing, Non-Shear Wall Detail

1" = 1'-0"



5 S-1.0 Typ. Non-Bearing Partition Wall Detail

1" = 1'-0"



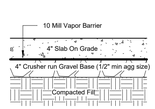
6 S-1.0 Typical Exterior Wall Footing Detail

3/4" = 1'-0"

Foundation Plan Notes

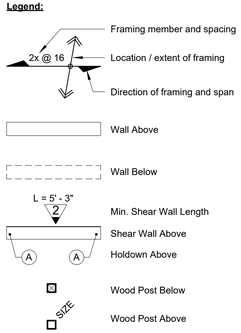
1. Footings are to be founded a minimum of 2'-0" below adjacent grade.
2. Slab on grade to be minimum 4" thick with #4@16" o.c. each way chaired at mid thickness. Slab to be underlain by 10 mil vapor barrier/4" crusher-run base compacted by mechanical means. Vapor barrier to be in conformance with ASTM E1643 and installed per manufacturer's recommendations with care taken to seal seams, penetrations and perimeter edges. See slab detail below.
3. Control joints are required for the slab on grade at a maximum spacing of 15' on centers each way. The contractor is required to submit a plan of proposed control joints to the Architect and SAA prior to placing concrete. See Typical Details for additional information.
4. Concrete curbs required along some exterior walls. Coordinate with Arch for extent and configuration of curbs. See structural detail sheets for relevant construction information where curbs required.
5. Foundation sills shall be naturally durable or preservative-treated wood.
6. If adverse soil conditions are encountered, a soils investigation report may be required.

Shear Wall Schedule						
			Sill Attachment			
ID	Sheathing	Nailing	Concrete	Wood	Top Attachment	Capacity (ASD)
1	1/2" CDX	10d@6,12	5/8"@32	SDS@16	A35@24	310 plf
2	1/2" Struct 1	10d@3,12	5/8"@24	SDS@8	A35@16	665 plf



Holdown Schedule				
ID	HD	Post	Fasteners	Comments
A	HDU2	4x4	(6) SDS	LARR 25720
B	HDU4	4x4	(10) SDS	LARR 25720
C	HDU5	4x4	(14) SDS	LARR 25720

Legend:



Shear Wall Notes

1. All exterior walls not otherwise designated as shear wall to be sheathed per item 1 in the Shear Wall Schedule.
2. Sill anchors to concrete to be A307 anchor rods with 7" embedment in foundation. If multiple pours used, specified embedment must be contained within top pour. If not, full embedment must be achieved in lower pour level. All sill anchors to have 2-1/2" square x 1/4" plate washers under nuts. Install sill anchors in centerline of sill plate.
3. Sill attachment to wood to be with Simpson SDS screws 1/4" with 1-1/2" min embed into subfloor or beams/framing below subfloor [LARR 25711].
4. Where sheathing nailing is less than 4" on center or where sheathing is applied to both sides of studs use 3x studs at panel edges or panel joints.
5. Sill and sole plates to be 3x minimum thickness. Use pressure treated material where in contact with concrete. See Structural Lumber section of General Notes for additional information.
6. Contractor responsible for maintaining copies of referenced Los Angeles Research Report and/or conditions of listing shall be made available at the job site.

Holdown Notes

1. Post sizes are minimums. Coordinate with wall framing and post sizes indicated on plans.
2. SDS = Simpson SDS25xxx (provide 1-1/2" min embed).
3. Hold-down connector bolts into wood framing require approved plate washers. Hold-downs shall be finger tight and 1/2 wrench turn just prior to covering the wall framing. Connector bolts into wood framing require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.299 inch by 3 inches by 3 inches.
4. Where double holdowns are specified at shearwall use 6x post and vertically stagger devices if necessary to avoid fasteners from fouling each other.
5. Provide Simpson SB anchor bolts [LARR 25827] at all holdowns. Coordinate anchor bolt diameter with holdown hardware.
6. Hold-down hardware must be secured in place prior to foundation inspection.
7. Bolts, fasteners and framing hardware in contact with preservative treated lumber to be hot dipped galvanized.

Framing Plan Notes

1. Roof sheathing to be 1/2" CD-X (Span Rating 32/16) with face grain perpendicular to framing direction with panel joints staggered. Nail to framing with 10d @ 6, 6,12.
2. Wall framing to be as follows unless noted otherwise:
   Exterior walls = 2x4 @16
   Interior non-bearing walls = 2x4 @ 16
   Plumbing walls = 2x6 @ 16 (or 2x4 @ 16 with furring to avoid cutting structural framing)
3. All diaphragm to utilize common nails or galvanized box nails.
4. All shearwall nailing shall utilize hot dipped galvanized box nails.
5. All bolt holes shall be drilled 1/32" to 1/16" oversized. For lag bolts provide lead hole 40% to 70% of threaded shank diameter and full diameter at smooth shank portion.
6. Contractor responsible for maintaining copies of referenced Los Angeles Research Report and/or conditions of Listing at the job site.
7. Roof diaphragm nailing to be inspected before covering. Face grain of plywood shall be perpendicular to supports. Floor shall have tongue and groove or blocked panel edges. Plywood spans shall conform with 2304.7

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FTG. & FRAMING PLANS, DETAILS (OPTION 1)

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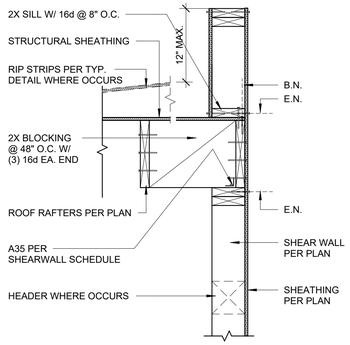
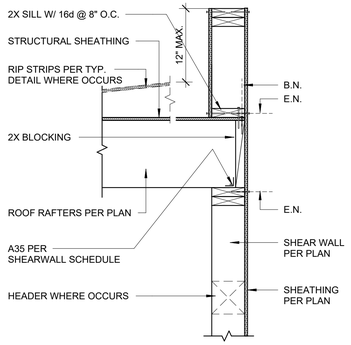
SCALE: AS NOTED

DATE: 05/03/2024

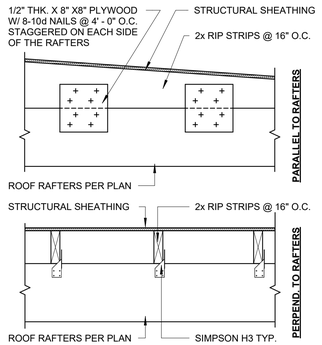
S-1.0



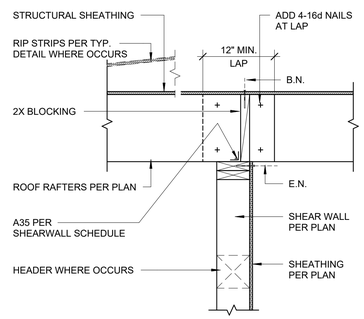
2 S-2.0 **Roof Framing Detail (Parallel)**
1" = 1'-0"



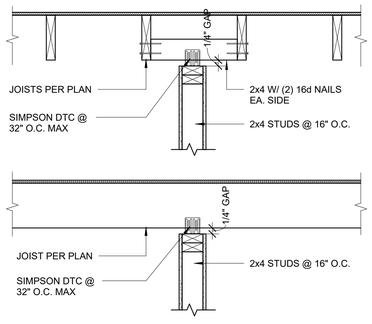
1 S-2.0 **Roof Framing Detail (Perpend).**
1" = 1'-0"



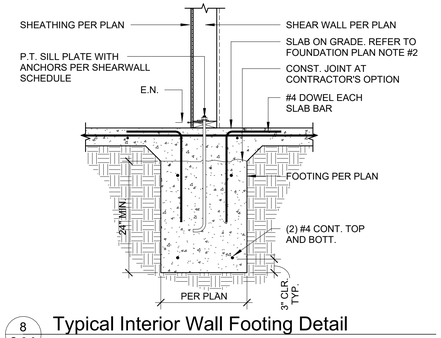
4 S-2.0 **Typ. Rip Strips Detail**
1" = 1'-0"



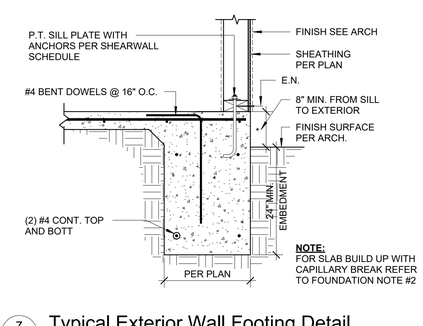
3 S-2.0 **Roof Framing Detail (Perpend.)**
1" = 1'-0"



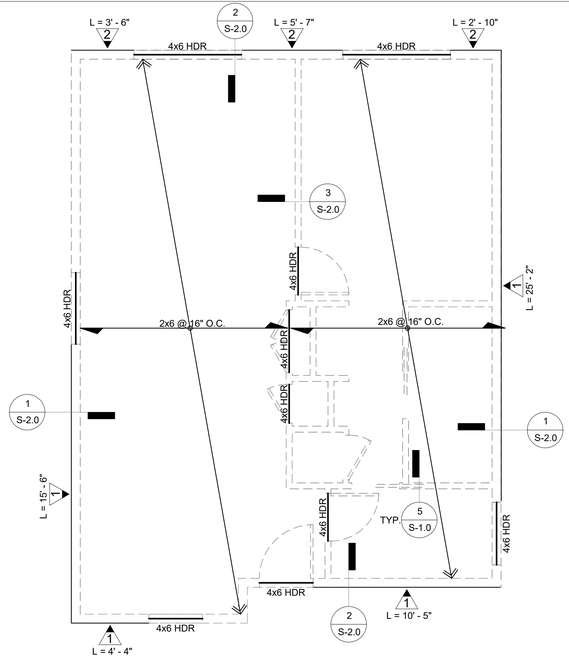
5 S-2.0 **Typ. Non-Bearing Partition Wall Detail**
1" = 1'-0"



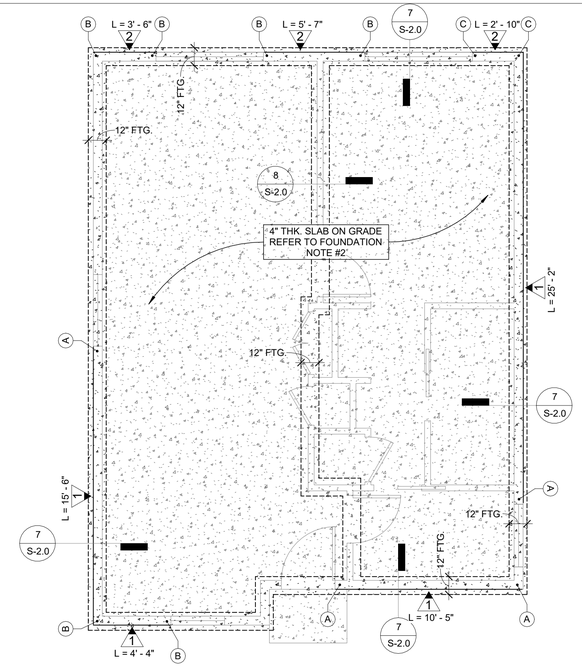
8 S-2.0 **Typical Interior Wall Footing Detail**
3/4" = 1'-0"



7 S-2.0 **Typical Exterior Wall Footing Detail**
3/4" = 1'-0"



B S-2.0 **Ceiling Fraiming Plan**
1/4" = 1'-0"

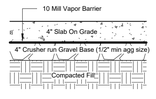


A S-2.0 **Foundation Plan**
1/4" = 1'-0"

Foundation Plan Notes

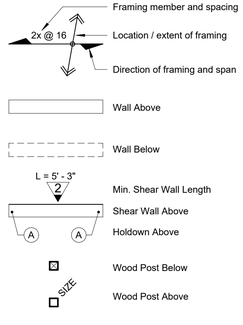
1. Footings are to be founded a minimum of 2'-0" below adjacent grade.
2. Slab on grade to be minimum 4" thick with #4@16" o.c. each way chaired at mid thickness. Slab to be underlain by 10 mil vapor barrier/4" crusher-run base compacted by mechanical means. Vapor barrier to be in conformance with ASTM E1643 and installed per manufacturer's recommendations with care taken to seal seams, penetrations and perimeter edges. See slab detail below.
3. Control joints are required for the slab on grade at a maximum spacing of 15' on centers each way. The contractor is required to submit a plan of proposed control joints to the Architect and SAA prior to placing concrete. See Typical Details for additional information.
4. Concrete curbs required along some exterior walls. Coordinate with Arch for extent and configuration of curbs. See structural detail sheets for relevant construction information where curbs required.
5. Foundation sills shall be naturally durable or preservative-treated wood.
6. If adverse soil conditions are encountered, a soils investigation report may be required.

Shear Wall Schedule						
			Sill Attachment			
ID	Sheathing	Nailing	Concrete	Wood	Top Attachment	Capacity (ASD)
1	1/2" CDX	10d@6,12	5/8"@32	SDS@16	A35@24	310 plf
2	1/2" Struct 1	10d@3,12	5/8"@24	SDS@8	A35@16	665 plf



Holdown Schedule				
ID	HD	Post	Fasteners	Comments
A	HDU2	4x4	(6) SDS	LARR 25720
B	HDU4	4x4	(10) SDS	LARR 25720
C	HDU5	4x4	(14) SDS	LARR 25720

Legend:



Shear Wall Notes

1. All exterior walls not otherwise designated as shear wall to be sheathed per item 1 in the Shear Wall Schedule.
2. Sill anchors to concrete to be A307 anchor rods with 7" embedment in foundation. If multiple pours used, specified embedment must be contained within top pour. If not, full embedment must be achieved in lower pour level. All sill anchors to have 2-1/2" square x 1/4" plate washers under nuts. Install sill anchors in centerline of sill plate.
3. Sill attachment to wood to be with Simpson SDS screws 1/4" with 1-1/2" min embed into subfloor or beams/framing below subfloor [LARR 25711].
4. Where sheathing nailing is less than 4" on center or where sheathing is applied to both sides of studs use 3x studs at panel edges or panel joints.
5. Sill and sole plates to be 3x minimum thickness. Use pressure treated material where in contact with concrete. See Structural Lumber section of General Notes for additional information.
6. Contractor responsible for maintaining copies of referenced Los Angeles Research Report and/or conditions of listing shall be made available at the job site.

Holdown Notes

1. Post sizes are minimums. Coordinate with wall framing and post sizes indicated on plans.
2. SDS = Simpson SDS25xxx (provide 1-1/2" min embed).
3. Hold-down connector bolts into wood framing require approved plate washers. Hold-downs shall be finger tight and 1/2 wrench turn just prior to covering the wall framing. Connector bolts into wood framing require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.299 inch by 3 inches by 3 inches.
4. Where double holdowns are specified at shearwall use 6x post and vertically stagger devices if necessary to avoid fasteners from fouling each other.
5. Provide Simpson SB anchor bolts [LARR 25827] at all holdowns. Coordinate anchor bolt diameter with holdown hardware.
6. Hold-down hardware must be secured in place prior to foundation inspection.
7. Bolts, fasteners and framing hardware in contact with preservative treated lumber to be hot dipped galvanized.

Framing Plan Notes

1. Roof sheathing to be 1/2" CD-X (Span Rating 32/16) with face grain perpendicular to framing direction with panel joints staggered. Nail to framing with 10d @ 6, 6,12.
2. Wall framing to be as follows unless noted otherwise:
   Exterior walls = 2x4 @16
   Interior non-bearing walls = 2x4 @ 16
   Plumbing walls = 2x6 @ 16 (or 2x4 @ 16 with furring to avoid cutting structural framing)
3. All diaphragm to utilize common nails or galvanized box nails.
4. All shearwall nailing shall utilize hot dipped galvanized box nails.
5. All bolt holes shall be drilled 1/32" to 1/6" oversized. For lag bolts provide lead hole 40% to 70% of threaded shank diameter and full diameter at smooth shank portion.
6. Contractor responsible for maintaining copies of referenced Los Angeles Research Report and/or conditions of Listing at the job site.
7. Roof diaphragm nailing to be inspected before covering. Face grain of plywood shall be perpendicular to supports. Floor shall have tongue and groove or blocked panel edges. Plywood spans shall conform with 2304.7

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NEW ADU

FTG. & FRAMING PLANS, DETAILS (OPTION 2)

SAA ENGINEERING
STRUCTURAL
PHONE: 323-448-4682
LICENSED PROFESSIONAL ENGINEER MIKITA SIVUSHENKA C 87898 CIVIL STATE OF CALIFORNIA

SCALE: AS NOTED

DATE: 05/03/2024

S-2.0

Building Materials Color Board

Project Name: ADU Option 1 (740 S.F.)

Design Style Option 1 (T): Traditional style, Gable roof, Asphalt shingles, Smooth Stucco, Siding combination

- **Exterior Wall Finish:**
  - Material: Smooth stucco, Board and Batten siding
  - Color: White color
  - Manufacturer: LaHabra Exterior Stucco, CertainTeed Board and Batten siding
  - Spec Sheet Reference Links: Stucco, Siding

- **Roofing:**
  - Material: Asphalt Shingles
  - Color: Graphite
  - Manufacturer: CertainTeed
  - Spec Sheet Reference Links: Shingles

Design Style Option 1 (S): Spanish Colonial Style, Gable Tile Roof, Smooth Stucco

- **Exterior Wall Finish:**
  - Material: Smooth stucco
  - Color: White color
  - Manufacturer: LaHabra Exterior Stucco
  - Spec Sheet Reference Links: Stucco

- **Roofing:**
  - Material: Clay Tile
  - Color: Red
  - Manufacturer: Westlake Royal Roofing Solutions
  - Spec Sheet Reference Links: Clay Tile

Design Style Option 2 (S): Spanish Colonial Style, Flat Roof With Parapet, Smooth Stucco

- **Exterior Wall Finish:**
  - Material: Smooth stucco
  - Color: White color
  - Manufacturer: LaHabra Exterior Stucco
  - Spec Sheet Reference Links: Stucco

- **Roofing:**
  - Material: Granule Membrane
  - Color: Gray
  - Manufacturer: GAF
  - Spec Sheet Reference Links: Flat Roof Membrane